



CHAPTER 4

Diagnostics and Troubleshooting with the Multicast Manager Tool

This chapter contains the following sections:

- [Managing Diagnostics, page 4-1](#)
- [Viewing User Guide Help, page 4-28](#)

Managing Diagnostics

The **Diagnostics** tool gives you a global view and a router-specific view of your network. The following sections describe global diagnostics:

- [Show All Groups, page 4-2](#)
- [Locate Host, page 4-7](#)
- [Network Status, page 4-7](#)
- [RP Status, page 4-8](#)
- [RP Summary, page 4-9](#)
- [IGMP Diagnostics, page 4-9](#)
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- [Health Check, page 4-12](#)
- [6500/7600 Troubleshooting, page 4-12](#)
- [Top Talkers, page 4-14](#)
- [Video Probe Status, page 4-15](#)
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The following section describes router-specific diagnostics:

- [Managing Router Diagnostics, page 4-25](#)

Show All Groups

With the **Show All Groups** page, you can:

1. View all the active sources and groups in the network in tabular format. Groups are listed in numerical order, and the number of sources for each group appears in the last column. If there is more than one source for a group, select **Sources** to view them all.
2. Draw complete graphical trees by clicking on a group.
3. Draw filtered graphical trees by selecting the **Source**, **Group**, **FHR** and **LHR**.
4. Plot the pps/bps for a particular source and group.

To use the Show All Groups page:

Step 1 On the Diagnostics menu, select **Show All Groups**.

The Multicast Diagnostics page appears, as shown in [Figure 4-1](#).

Figure 4-1 Multicast Diagnostics Page

Group (14)	Group (DNS)	Group (DB)	Source IP	Source (DNS)	Source (DB)	Number of Sources
224.0.1.40		cisco-rp-discovery [Farinacci]	0.0.0.0			Sources [0]
231.10.0.1		Boston PBS SPTS Boston Raw SPTS 100	40.15.15.2			Sources [1]
231.10.0.2			40.15.15.2			Sources [1]
231.10.0.3			40.15.15.2			Sources [1]
231.10.0.4			40.15.15.2			Sources [1]
231.10.0.5			40.15.15.2			Sources [1]
231.10.0.6			40.15.15.2			Sources [1]
231.10.0.7			40.15.15.2			Sources [1]
231.10.0.8			40.15.15.2			Sources [1]
231.10.0.9			40.15.15.2			Sources [1]
231.10.0.10			40.15.15.2			Sources [1]
231.51.0.1			0.0.0.0			Sources [0]
231.51.0.2			0.0.0.0			Sources [0]
231.51.0.3			0.0.0.0			Sources [0]

Step 2 From the drop-down list below the **Source** field in the Set Source and Group to Work On pane, select a source to work on.

Step 3 From the drop-down list below the **Group** field in the Set Source and Group to Work On pane, select a group to work on.

The Multicast Diagnostics page appears with the source and group selected.

Step 4 (Optional) If you are using S,G caching, the cache contents appear. In this case, click **Refresh Cache** to refresh the table of sources and groups.

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Step 5 If there are a lot of sources and groups present, you can filter the display to show only those you are interested in:

- **Source**—Enter or select the IP address of the source to monitor.
- **Filter Groups**—Filters the output to contain only the relevant groups.
- **Group**—Enter or select the IP address of the group to monitor.
- **Filter Sources**—Filters the output to contain only the relevant sources.
- **Reset SG Lists**—Clears any entries and refreshes the source and group lists.

To ensure a source is sending data, you can plot traffic over a period of time:

- **Select Router**—Select the router to take the sample from.
- **Samples**—Enter the number of samples (1-50).



Note If the device is a 6500, you may need to adjust the sampling period in order to generate useful data.

- **Interval**—Enter the interval between samples (1-90s).
- **Graph**—Select the type of graph, line or bar.
- **Value**—Select the value, bps or pps.
- Click **Plot**. This produces a graph for the currently selected S,G on the selected router. You can also save this graph on the server.



Note This option is not meant for long term polling, but rather as an immediate troubleshooting tool. For long term polling of PPS data, the S,G should be configured under S,G Threshold polling

Step 6 To draw a graphical tree between two particular routers:

- **FHR**—Select the first hop router that the trace should start under.
- **LHR**—Select the last hop router that the trace should end under.
- Click **Trace**. The CMM draws a tree of the source and group selected from the router in FHR to the router in LHR.

Step 7 To list all of the active sources and groups, within the Show All Groups page, simply scroll down to see all entries.

Step 8 To draw a multicast tree, select a **Group** (in the first column of the Source and Group table). A new page appears with the multicast tree in tabular and graphical format. Routers known as RPs to the source router appear green.



Note If there is more than one source for the group, select **Sources** under **Number of Sources** and select the source you want to draw the tree from.

Figure 4-2 Drawing a Multicast Tree (Baseline)

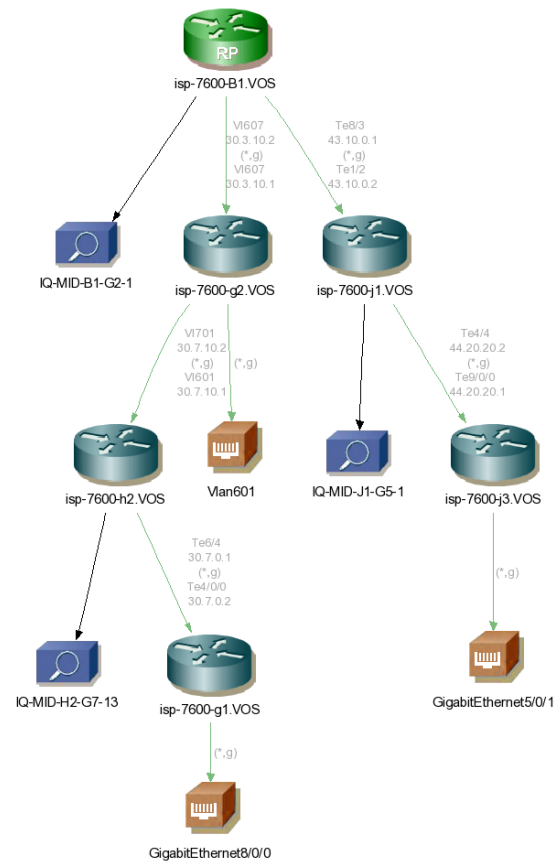
Tracing multicast group 231.51.0.1 (*) from source 0.0.0.0

Router	PPS	Forwarding Int	Out Errors/Sec	Out Discards/Sec	Neighbor	Neighbor IP	Neighbor Int	In Errors/Sec	In Discards/Sec
isp-7600-B1.VOS	0	Vi607	0	0	isp-7600-g2.VOS	30.3.10.1	Vi607	0	0
isp-7600-B1.VOS	0	Te8/3	0	0	isp-7600-j1.VOS	43.10.0.2	Te1/2	0	0
isp-7600-g2.VOS	0	Vi701	0	0	isp-7600-h2.VOS	30.7.10.1	Vi601	0	0
isp-7600-j1.VOS	0	Te4/4	0	0	isp-7600-j3.VOS	44.20.20.1	Te9/0/0	0	0
isp-7600-h2.VOS	0	Te6/4	0	0	isp-7600-g1.VOS	30.7.0.2	Te4/0/0	0	0
isp-7600-g2.VOS	0	Vlan601	0	0					
isp-7600-j3.VOS	0	GigabitEthernet5/0/1	0	0					
isp-7600-g1.VOS	0	GigabitEthernet8/0/0	0	0					

Probe	Router	Interface	Source	Group	Status	DF	MLR	MLT15	MLT24
IQ-MID-B1-G2-1	isp-7600-B1.VOS	Span on B1 G2/1	0.0.0.0	231.51.0.1		-	-	-	-
IQ-MID-J1-G5-1	isp-7600-j1.VOS	Static Join on J1 G5/1	0.0.0.0	231.51.0.1		-	-	-	-
IQ-MID-H2-G7-13	isp-7600-h2.VOS		0.0.0.0	231.51.0.1		-	-	-	-

Trace File: Save As Counter Update Interval: 0

Legend:



- Step 9** To display packet error counters, select a **Counter Update Interval**. These counters are updated each period.
- Step 10** To save the multicast tree as a baseline, enter a name within **Trace File**, and click **Save As**. The window closes. You can use the saved baseline for tree polling (see [Tree Polling, page 2-39](#)).



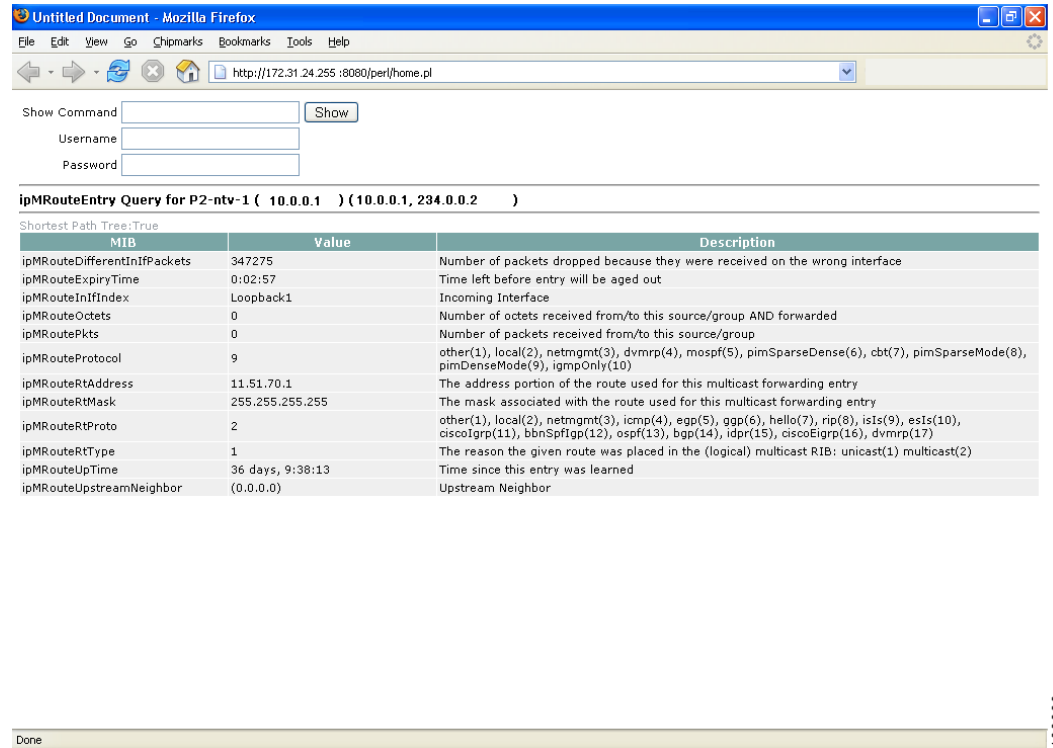
Note You can also save the tree as a .jpeg, .bmp, or .png file by right-clicking it.

- Step 11** (Optional) To view routing information for a router on a router in the multicast tree click on the router icon.

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This opens another page that contains IP multicast routing information for the S,G that has been traced: Figure 4-3 shows sample routing information.

Figure 4-3 Viewing IP Multicast Routing Information



The trace information page contains these fields and selections:

- **Show Command**—Enter any show commands on the router. A new window opens that contains multicast route information for the selected router.
- **Username**—Enter your username.
- **Password**—Enter your password.
- **MIB**—The name of the MIB entry in the MIB to monitor the router.
- **Value**—The value of the MIB entry.
- **Description**—A description of the MIB entry.

Step 12 To display details about a router listed in the lower left pane, click on the router name.

Figure 4-4 shows an example.

Figure 4-4 Multicast Diagnostics

The screenshot shows the Cisco Multicast Manager 2.4(0.0.9) interface. The top navigation bar includes 'Home', 'Topology', 'Reporting', 'Diagnostics', and 'Help'. The 'Diagnostics' section is active, showing a 'Graph' section with a 'Line' graph type and 'bps' value, and a 'Trace multicast group' section with 'FHR' set to 'isp-7600-B1.VOS' and 'LHR' set to 'ALL'. Below these sections is a table of source information.

Group (14)	Group (DNS)	Group (DB)	Source IP	Source (DNS)	Source (DB)	Number of Sources
224.0.1.40		cisco-rp-discovery [Farinacci]	0.0.0.0			Sources [0]
231.10.0.1		Boston PBS SPTS Boston Raw SPTS 100	40.15.15.2			Sources [1]
231.10.0.2			40.15.15.2			Sources [1]
231.10.0.3			40.15.15.2			Sources [1]
231.10.0.4			40.15.15.2			Sources [1]
231.10.0.5			40.15.15.2			Sources [1]
231.10.0.6			40.15.15.2			Sources [1]
231.10.0.7			40.15.15.2			Sources [1]
231.10.0.8			40.15.15.2			Sources [1]
231.10.0.9			40.15.15.2			Sources [1]
231.10.0.10			40.15.15.2			Sources [1]
231.51.0.1			0.0.0.0			Sources [0]
231.51.0.2			0.0.0.0			Sources [0]
231.51.0.3			0.0.0.0			Sources [0]

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The example in Figure 4-4 shows the following information:

- **Group (DNS)**—Name given to this group in DNS.
- **Group (DB)**—Name given to this group in the address database.
- **Source IP**—IP address of the source.
- **Source (DNS)**—Name given to this source in DNS.



Note The Source (DNS) field is populated only if DNS is configured, and if **Resolve Sources** is selected on the Device Configuration page. It should be noted that resolving thousands of addresses via DNS can be extremely slow.

- **Source (DB)**—Name given to this source in the address database.
- **Number of Sources**—Number of sources in this group.

Step 13 To view previously saved source bps/pps files, select the file, and click **Display**.

Step 14 To view previously saved traces, select the trace, and click **Display**.

Locate Host

Using the Locate Host page, you can find sources and receivers in the network. Enter the **IP Address** or hostname (if DNS is configured) and click **Locate**.

Figure 4-5 shows the Locate Host page.

Figure 4-5 Locate Host Page

The screenshot displays the Cisco Multicast Manager interface. At the top, it shows 'Cisco Multicast Manager' and the Cisco logo. Below this, there are dropdown menus for 'Tool: Multicast Manager' and 'Management Domain: test-01', along with 'Licensed to Cisco'. A navigation bar includes 'Home', 'Topology', 'Reporting', 'Diagnostics' (which is active), and 'Help'. On the left side, under 'Diagnostics:', there is a list of options including 'Show All Groups', 'Locate Host' (which is selected), 'Network Status', 'RP Status', 'RP Summary', 'IGMP Diagnostics', 'MSDP Status', 'Layer 2 Switches', 'Health Check', '6500/7600 Troubleshooting', 'Top Talkers', 'Video Probe Status', and 'MVPN'. Below this list, it says 'test-01 - 9 device(s)' and has a 'Search:' input field. The main content area is titled 'Locate Host' and contains an 'IP Address' input field with '126.1.6.12' and a 'Locate' button. Below the button, the following results are shown: 'cmm-6503-c2 126.1.6.14 GigabitEthernet3/13' and 'cmm-7206-sd2 126.1.6.12 GigabitEthernet0/3'. A vertical ID '211078' is visible on the right edge of the screenshot.

Network Status

Using the Network Status page, you can view the status of all devices in the current multicast domain. The System Up Time appears for all devices that are up. Devices that are down or unreachable appear in red.

Figure 4-6 shows the Network Status page.

Figure 4-6 Network Status

The screenshot shows the Cisco Multicast Manager interface. The top navigation bar includes 'Home', 'Topology', 'Reporting', 'Diagnostics' (selected), and 'Help'. The 'Diagnostics' section is expanded, showing a list of diagnostic tools. The 'Network Status' tool is selected, displaying a table of network status for the management domain 'test-01'.

Router	System Up Time
cmm-6503-c2	26 days, 5:27:38
cmm-6504-c4	26 days, 5:27:20
cmm-6506-c1	24 days, 2:02:54
cmm-6506-c3	26 days, 5:27:52
cmm-7206-d2	26 days, 5:28:32
cmm-7206-sd1	10 days, 1:23:02
cmm-7206-sd2	26 days, 5:25:35
cmm-7604-d1	7 days, 19:07:27
cmm-crs1.cisco.com	1 day, 1:02:48

The left sidebar shows a search box and a list of devices under 'test-01 - 9 device(s)'. The devices listed are:

- cmm-6503-c2 (126.1.3.14)
- cmm-6504-c4 (126.1.11.16)
- cmm-6506-c1 (126.1.5.13)
- cmm-6506-c3 (126.1.9.15)
- cmm-7206-d2 (126.1.13.18)
- cmm-7206-sd1 (126.1.3.11)
- cmm-7206-sd2 (126.1.6.12)
- cmm-7604-d1 (126.1.12.17)
- cmm-crs1.cisco.com (126.15.1.2)

The status of the network status check is 'Finished'.

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RP Status

Using the RP Status page, you can view all routers in the database, their RPs, and the active groups. In a large network with many S,Gs, it may take some time for this data to appear, because each router in the multicast domain is queried.

Figure 4-7 shows the RP Status page.

Figure 4-7 RP Status Page

The screenshot shows the Cisco Multicast Manager interface. At the top, it says 'Tool: Multicast Manager' and 'Management Domain: test-01'. The navigation menu includes Home, Topology, Reporting, **Diagnostics**, and Help. Under 'Diagnostics', there are links for Show All Groups, Locate Host, Network Status, **RP Status**, RP Summary, IGMP Diagnostics, MSDP Status, Layer 2 Switches, Health Check, 6500/7600 Troubleshooting, Top Talkers, Video Probe Status, and MVPN. Below the menu, it says 'test-01 - 9 device(s)' and has a search box. A list of devices is shown, including cmm-6503-c2, cmm-6504-c4, cmm-6506-c1, cmm-6506-c3, cmm-7206-d2, cmm-7206-sd1, cmm-7206-sd2, cmm-7604-d1, and cmm-crs1.cisco.com. The main content area shows 'RP Status' for two groups: 'cmm-6503-c2' and 'cmm-6504-c4'. Each group has a table with columns for 'RP (Dynamic)', 'Group Address', and 'Group Mask'. The 'RP (Dynamic)' column is further divided into 'Active RPs' and 'Group'. The 'Group Mask' column is further divided into 'Group' and 'State'. The 'Active RPs' column shows IP addresses, and the 'State' column shows 'up' for all entries.

RP (Dynamic)	Group Address	Group Mask
Active RPs	Group	State
126.0.2.1	239.254.1.9	up
126.0.2.1	239.254.1.3	up
126.0.2.1	232.1.1.6	up
126.0.2.1	239.254.1.6	up
126.0.2.1	232.1.1.10	up
126.0.2.1	232.1.1.15	up
126.0.2.1	239.254.1.8	up
126.0.2.1	239.254.1.0	up
126.0.2.1	232.1.1.7	up
126.0.2.1	239.254.1.4	up
126.0.2.1	239.254.1.1	up
126.0.2.1	224.0.1.40	up
126.0.2.1	239.233.1.1	up
126.0.2.1	232.1.1.8	up
126.0.2.1	239.254.1.5	up
126.0.2.1	239.255.255.250	up
126.0.2.1	239.254.1.2	up
126.0.2.1	239.254.1.7	up

RP (Dynamic)	Group Address	Group Mask
Active RPs	Group	State
126.0.2.1	239.254.1.9	up
126.0.2.1	239.254.1.3	up
126.0.2.1	232.1.1.6	up
126.0.2.1	239.254.1.6	up
126.0.2.1	232.1.1.10	up
126.0.2.1	232.1.1.15	up

RP Summary

Using the RP Summary, you can view all the RPs that the CMM is aware of, based upon the discovery. For details on clicking on an RP, see [Viewing Topology, page 3-2](#).

IGMP Diagnostics



Note IGMP Diagnostics does not work for IOS 12.0S devices.

Using the IGMP Diagnostics page, you can see the interfaces that have joined onto a particular group:

- Step 1** Select the routers you want to query.
- Step 2** Select **Diagnostic Type** is always set to **IGMP Last Reporter**.
- Step 3** Select **Show Failures** to display all interfaces on the router.

Step 4 Click **Run**.

Figure 4-8 shows the IGMP Diagnostics page.

Figure 4-8 IGMP Diagnostics Page

Cisco Multicast Manager 2.4(0.0.9)

Tool: Multicast Manager Management Domain: VOS-DEMO Licensed to edge-geeks-east

Home Topology Reporting **Diagnostics** Help

Diagnostics:

- Show All Groups
- Locate Host
- Network Status
- RP Status
- RP Summary
- IGMP Diagnostics**
- MSDP Status
- Layer 2 Switches
- Health Check
- 6500/7600 Troubleshooting
- Top Talkers
- Video Probe Status
- MVPN

VOS-DEMO - 9 device(s)

Search:

isp-7600-B1.VOS (43.10.0.1)

isp-7600-H1.VOS (40.44.44.2)

isp-7600-H3.VOS (30.3.3.2)

isp-7600-g1.VOS (30.7.0.2)

isp-7600-g2.VOS (30.3.10.1)

isp-7600-g3.VOS (40.50.11.1)

IGMP Diagnostics

Retrieving Sources and Groups...Using cached s,g entries.

Note: this may take some time depending on the number of groups.

Select Group: 224.0.1.40

Select Routers: isp-7600-B1.VOS, **isp-7600-H1.VOS**, isp-7600-H3.VOS, isp-7600-g1.VOS

Select Diagnostic Type: IGMP Last Reporter

Output Filter: Show Failures

IGMP Cache Last Reporter for 224.0.1.40 (cisco-rp-discovery [Farinacci])

Router	Interface	Last Reporter
isp-7600-H1.VOS	GigabitEthernet6/8	40.44.44.2

Finished

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MSDP Status

Using the MSPD Status page, you can view all routers running MSDP and their peering connectivity. You can also view details for a specific router, such as peering information and the SA cache.



Note

The MSDP MIB is supported only in IOS releases 12.0S, 12.1T (12.2) and 12.3. Version 12.1(x) does not support this MIB. Therefore, any RP running 12.1(x) with MSDP configured does not appear on this table.

To view peer information or SA cache information, select a router from the list and click the corresponding button.

Figure 4-9 shows the MSDP Status page.

Figure 4-9 MSDP Status Page

The screenshot shows the Cisco Multicast Manager interface. The top navigation bar includes 'Home', 'Topology', 'Reporting', 'Diagnostics', and 'Help'. The 'Diagnostics' section is active, showing a sidebar with options like 'Show All Groups', 'Locate Host', 'Network Status', 'RP Status', 'RP Summary', 'IGMP Diagnostics', 'MSDP Status', 'Layer 2 Switches', 'Health Check', '6500/7600 Troubleshooting', 'Top Talkers', 'Video Probe Status', and 'MVPN'. The 'MSDP Status' page displays a table of peers:

Local	Peer	Remote IP	State
cmm-6504-c4	cmm-6506-c3	126.0.1.15	established
cmm-6506-c3	cmm-6504-c4	126.0.1.16	established
cmm-7206-d2	cmm-7604-d1	126.0.1.17	established
cmm-7206-sd1	cmm-7206-sd2	126.0.1.12	established
cmm-7206-sd2	cmm-7206-sd1	126.0.1.11	established
cmm-7604-d1	cmm-7206-d2	126.0.1.18	established

Below the table, there is a 'Select MSDP Router' dropdown menu with 'cmm-6504-c4' selected, and buttons for 'Peer Info' and 'SACache Info'. A search box and a list of devices are also visible in the sidebar.

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Layer 2 Switches

Using the Layer 2 Switches pages, you can view:

- Layer 2 Multicast Information.
- Layer 2 Host IPs.



Note

These queries require the VTY password, or a TACACS username/password. The table that is generated, shows, from a Layer 2 perspective, which multicast groups are being forwarded out which interfaces.

To view Layer 2 multicast information or host IPs:

- Step 1** Enter your username.
- Step 2** Enter your password.
- Step 3** Select the switch(es) you want to view.

Step 4 Click **Query**.

A display of L2 Multicast information appears. The possible IP addresses that can be mapped to the MAC address are also shown.

Health Check

Using the Health Check page, you can run a health check on a domain. To run a health check, select it from the list, and click **Run**.

Figure 4-10 shows a sample health check display.

Figure 4-10 Health Check

The screenshot shows the Cisco Multicast Manager interface. At the top, it says 'Cisco Multicast Manager' and 'Licensed to edge-geeks-east'. The navigation menu includes 'Home', 'Topology', 'Reporting', 'Diagnostics', and 'Help'. The 'Diagnostics' section is active, showing a 'Select Health Check' dropdown menu with 'Boston-Post-AZ' selected and a 'Run' button. Below this, it says 'Running (Boston-Post-AZ.health) Health Check'. A table displays the results of the health check:

Type	Testing	Status
RP	isp-7600-h2.VOS	0:21 days, 12:31:27
TREE	Boston-Post-AZ.trace	CHANGED

Below the table, it says 'Finished'. On the left side, there is a search bar and a list of devices under 'VOS-DEMO - 9 device(s)'. The devices listed are:

- isp-7600-B1.VOS (43.10.0.1)
- isp-7600-H1.VOS (40.44.44.2)
- isp-7600-H3.VOS (30.3.3.2)

The color of the displayed text on the Health Check display indicates the status of the monitored condition:

- Gray = normal
- White = normal
- Red = error condition

6500/7600 Troubleshooting

Using the 6500/7600 Troubleshooting page, you can enable the CMM to gather accurate packet forwarding statistics and other information in a timely manner. This option initiates a remote login session into the PFC. A persistent Telnet session issues show commands and displays live statistics. These sessions are terminated when the windows are closed.



Tip

All important sources and groups should be proactively monitored. Use the 6500 Troubleshooting tool to investigate a current problem.

Figure 4-11 shows the 6500/7600 Troubleshooting diagnostics page.

Figure 4-11 6500/7600 Troubleshooting Page

The screenshot displays the Cisco Multicast Manager interface for the 6500/7600 Troubleshooting page. The top navigation bar includes 'Home', 'Topology', 'Reporting', 'Diagnostics', and 'Help'. The left sidebar shows a 'Diagnostics' menu with options like 'Show All Groups', 'Locate Host', and '6500/7600 Troubleshooting'. The main content area is titled '6500 Troubleshooting' and contains the following fields and buttons:

- Router:** A dropdown menu showing 'cmm-6503-c2'.
- Username:** An empty text input field.
- Password:** An empty text input field.
- Enable:** An empty text input field.
- Polling interval:** A dropdown menu set to '5'.
- Source:** A dropdown menu showing '126.0.1.11' with 'filter groups' and 'edit' buttons.
- Group:** A dropdown menu showing '232.1.1.1' with 'filter sources' and 'edit' buttons.
- Buttons:** 'Run Full Trace', 'Run Diagnostics', and 'Run Command' buttons.
- Command:** A text input field containing 'sh ip mroute' with an 'edit' button.
- Output Area:** A large empty rectangular box for displaying diagnostic results, with 'Clear Output | E-mail output to TAC' links.

On the left sidebar, a list of devices is shown under 'test-01 - 9 device(s)'. The devices listed are:

- cmm-6503-c2 (126.1.3.14)
- cmm-6504-c4 (126.1.11.16)
- cmm-6506-c1 (126.1.5.13)
- cmm-6506-c3 (126.1.9.15)
- cmm-7206-d2 (126.1.13.18)
- cmm-7206-sd1 (126.1.3.11)
- cmm-7206-sd2 (126.1.6.12)
- cmm-7604-d1 (126.1.12.17)
- cmm-crs1.cisco.com (126.15.1.2)

The 6500/7600 Troubleshooting page contains the following fields and buttons:

Fields and Buttons	Description
Router	Select a 6500 or 7600 router.
Username	Enter your username.
Password	Enter the MSFC password.
Enable	Enter the enable password.
Polling Interval	Interval at which the statistics are updated.
Source	IP address of the source.
Group	IP address of the group.
Edit	Lets you manually type in a group or source address.
Reset	Populates the source and group lists again.
Run Full Trace	Starts the tree at the source instead of the selected router. For details, see Show All Groups, page 4-2 .

Fields and Buttons	Description
Run Diagnostics	Draws a graphical tree of the source and group selected, starting at the router selected. Live traffic statistics also appear for this source and group at this router. You can click any other router in the picture to see live packets statistics for them (see Show All Groups, page 4-2). Ensure pop-up blockers are disabled.
Command	Provides a list of show commands.
Edit	Add your own command by clicking Edit , typing in your command, then click Run Command .
Run Command	Runs the selected show command. Output appears in the text box below.
Clear Output	Clears the output.
E-mail output to TAC	Emails the output to the Cisco TAC. Note Your server must have email set up.

When troubleshooting a problem, you can keep a record of the command output:

-
- Step 1** Right-click in the output.
 - Step 2** Choose **Select All**.
 - Step 3** Copy and paste the content.
-

Top Talkers

Using the Top Talkers page, you can view the top 20 talkers, sorted by long term. The top 20 talkers are dynamically updated at every polling interval.

-
- Step 1** Select a router to monitor.
 - Step 2** Enter your username and password.
 - Step 3** Select a polling interval, indicating the period (in seconds) for the window to update.
 - Step 4** Click **Top Talkers**.
-

Figure 4-12 Top Talkers

Source	Group	Short Term	Medium Term	Long Term
172.16.0.0	239.0.0.2	500 pps/1104 kbps(1sec)	1102 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1103 kbps(1sec)	1105 kbps(last 50 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1101 kbps(1sec)	1108 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1104 kbps(1sec)	1104 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1114 kbps(1sec)	1111 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1109 kbps(1sec)	1105 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1091 kbps(1sec)	1103 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1107 kbps(1sec)	1101 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1105 kbps(1sec)	1104 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1103 kbps(1sec)	1101 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1105 kbps(1sec)	1100 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1101 kbps(1sec)	1105 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1119 kbps(1sec)	1108 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1113 kbps(1sec)	1112 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1108 kbps(1sec)	1106 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1110 kbps(1sec)	1108 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1097 kbps(1sec)	1099 kbps(last 50 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1114 kbps(1sec)	1104 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1108 kbps(1sec)	1104 kbps(last 40 secs)	1103 kbps(life avg)
172.16.0.0	239.0.0.2	500 pps/1093 kbps(1sec)	1105 kbps(last 40 secs)	1103 kbps(life avg)

Video Probe Status

You can view diagnostic information about video probes and the flows that they are monitoring from the View Probe Status window.

View probe status shows you:

- The source, group, and channel association that you are troubleshooting.
- A graphical topology tree that clearly shows all of the routers that form the tree, and their input and output interfaces, along with IP addresses and interface descriptions
- The packets per sampling period being received at each point in the tree (sampling periods range from 5 seconds to 30 and are configurable).
- The packet input, output and discard errors being received at each interface.
- A text representation of the tree, which is invaluable when troubleshooting large multicast trees.

In addition, Cisco Multicast Manager draws a topology tree that shows:

- The probes that are positioned along this tree
- The router and interfaces of the probes
- The current status of the flow (Red, Yellow or Green)
- Current and historical flow statistics
- In-depth channel association information

To view video probe status:

Step 1 Select **Multicast Manager > Diagnostics**.

Step 2 Click **Video Probe Status**.

The Video Flow Status window appears, as shown in [Figure 4-13](#). This window shows the probes that are currently configured and running, and indicates how many flows are being monitored and the status of the probe.

The probe status can be:

Green	Good
Yellow	A threshold was exceeded but the status is now normal
Red	Thresholds are currently being exceeded

Figure 4-13 Video Flow Status Window

The screenshot shows the Cisco Multicast Manager interface. The top navigation bar includes 'Home', 'Topology', 'Reporting', 'Diagnostics', and 'Help'. The 'Diagnostics' section is active, showing a list of diagnostic tools on the left and the 'Video Probe Status' window on the right. The 'Video Probe Status' window has a 'Monitor' button and a table of probes. The table has columns for 'Probe', 'Flows', and 'Status'. The probes listed are IQ-EDGE-H1-G1-16 (18 flows, Red status), IQ-HE-H3-G4-1 (20 flows, Green status), IQ-MID-B1-G2-1 (10 flows, Green status), IQ-MID-H2-G7-13 (0 flows, Green status), and IQ-MID-J1-G5-1 (10 flows, Green status).

Probe ↑	Flows	Status
IQ-EDGE-H1-G1-16	18	●
IQ-HE-H3-G4-1	20	●
IQ-MID-B1-G2-1	10	●
IQ-MID-H2-G7-13	0	●
IQ-MID-J1-G5-1	10	●

Step 3 To view the current activity on a probe, click on the Probe ID or on the Flows number.

The Video Flow Status window appears, as shown in [Figure 4-14](#), and indicates the status of the video flows.

Figure 4-14 Viewing Video Flow Status

The screenshot displays the Cisco Multicast Manager interface. The top navigation bar includes 'Home', 'Topology', 'Reporting', 'Diagnostics', and 'Help'. The 'Diagnostics' section is active, showing 'Video Flow Status (IQ-EDGE-H1-G1-16)'. A search bar is present with the text 'VOS-DEMO - 9 device(s)'. The main table lists video flow entries with the following columns: Name, Last Updated, Source:Port, Group:Port, Status, MDI, MLT15, and MLT24. The table contains 17 rows of data, with the first row showing a red status indicator and the others showing green status indicators.

Name	Last Updated	Source:Port	Group:Port	Status	MDI	MLT15	MLT24
	Wed May 9 01:00:00 2007	40.15.15.2:300	<u>231.10.0.1:500</u>	●	247.031:1146	155319	4747350
	Wed May 9 01:00:00 2007	40.15.15.2:301	<u>231.10.0.2:501</u>	●	2.841:0	0	0
	Wed May 9 01:00:00 2007	40.15.15.2:302	<u>231.10.0.3:502</u>	●	2.839:0	0	0
	Wed May 9 01:00:00 2007	40.15.15.2:303	<u>231.10.0.4:503</u>	●	2.839:0	0	0
	Wed May 9 01:00:00 2007	40.15.15.2:304	<u>231.10.0.5:504</u>	●	2.839:0	0	0
	Wed May 9 01:00:00 2007	40.15.15.2:305	<u>231.10.0.6:505</u>	●	2.839:0	0	0
	Wed May 9 01:00:00 2007	40.15.15.2:306	<u>231.10.0.7:506</u>	●	2.837:0	0	0
	Wed May 9 01:00:00 2007	40.15.15.2:308	<u>231.10.0.9:508</u>	●	2.837:0	0	0
	Wed May 9 01:00:00 2007	40.18.18.2:700	<u>231.30.0.1:800</u>	●	2.828:0	0	715
	Wed May 9 01:00:00 2007	40.18.18.2:701	<u>231.30.0.2:801</u>	●	2.826:0	0	590
	Wed May 9 01:00:00 2007	40.18.18.2:702	<u>231.30.0.3:802</u>	●	2.826:0	0	590
	Wed May 9 01:00:00 2007	40.18.18.2:703	<u>231.30.0.4:803</u>	●	2.826:0	0	574
	Wed May 9 01:00:00 2007	40.18.18.2:704	<u>231.30.0.5:804</u>	●	2.826:0	0	640
	Wed May 9 01:00:00 2007	40.18.18.2:705	<u>231.30.0.6:805</u>	●	2.826:0	0	814
	Wed May 9 01:00:00 2007	40.18.18.2:706	<u>231.30.0.7:806</u>	●	2.826:0	0	681
	Wed May 9 01:00:00 2007	40.18.18.2:707	<u>231.30.0.8:807</u>	●	2.826:0	0	682
	Wed May 9 01:00:00 2007	40.18.18.2:708	<u>231.30.0.9:808</u>	●	2.826:0	0	675
	Wed May 9 01:00:00 2007	40.18.18.2:709	<u>231.30.0.10:809</u>	●	2.826:0	0	682

Step 4 To view a trace showing information about a flow, as well as a topology tree that shows the devices and probes associated with the flow, click on a group name (underlined IP address).

Viewing Detailed Multicast Information and Probe Topology

You can view a detailed trace about a video flow and a topology tree that shows the following:

- Rendezvous Points
- Routers
- Interfaces
- Probes

To view a detailed flow trace and topology tree:

Step 1 On the video flow status window, click a group name (underlined IP address).

A message indicating the group and source that is being traced appears. The trace window includes a window with tables that show detailed information about the flow, as shown in Figure 4-15; and, Cisco Multicast Manager draws a topology tree for the flow, as shown in Figure 4-16.

Figure 4-15 Detailed Trace Table

Tracing multicast group 231.1.0.1 (Digital Simulcast Group A, Ad Zone 1,1) from source 40.15.15.2									
Router	PPS	Forwarding Int	Out Errors/Sec	Out Discards/Sec	Neighbor	Neighbor IP	Neighbor Int	In Errors/Sec	In Discards/Sec
isp-7600-H3.VOS	0	Gi7/8	0	0	isp-7600-g2.VOS	30.3.3.1	Gi6/2	0	0
isp-7600-g2.VOS	0	Vl601	0	0	isp-7600-h2.VOS	30.7.10.1	Vl601	0	0
isp-7600-g2.VOS	0	Vl607	0	0	isp-7600-B1.VOS	30.3.10.2	Vl607	0	0
isp-7600-B1.VOS	0	Vl606	0	0	isp-7600-j1.VOS	44.10.10.1	Vl606	0	0
isp-7600-j1.VOS	0	Vl605	0	0	isp-7600-j3.VOS	40.10.10.1	Vl605	0	0
isp-7600-j3.VOS	0	Gi8/1	0	0	isp-7600-H1.VOS	40.44.44.2	Gi6/8	0	0
isp-7600-h2.VOS	0	GigabitEthernet7/13(Link to Probe IQ-MID-H2-G7-13)							
isp-7600-j1.VOS	0	GigabitEthernet5/1(Link to Probe IQ-MID-J1-G5-1)							
isp-7600-H1.VOS	0	GigabitEthernet1/16(Link to Probe IQ-EDGE-H1-G1-16)							
Probe	Router	Interface	Source	Group	Status	DF	MLR	MLT15	MLT24
IQ-HE-H3-G4-1	isp-7600-H3.VOS		40.15.15.2	231.1.0.1		2.833	0	0	0
IQ-MID-B1-G2-1	isp-7600-B1.VOS		40.15.15.2	231.1.0.1	-	-	-	-	-
IQ-MID-H2-G7-13	isp-7600-h2.VOS		40.15.15.2	231.1.0.1	-	-	-	-	-
IQ-MID-J1-G5-1	isp-7600-j1.VOS		40.15.15.2	231.1.0.1		2.828	0	0	16
IQ-EDGE-H1-G1-16	isp-7600-H1.VOS	Static Join on H1_G1/16	40.15.15.2	231.1.0.1		244.221	1148	437637	10979192
Channel	Related Groups	Channel Name	Short Name	Codec Type	Screen Format	Service Type	MuxID		
2	231.1.0.205 231.1.0.2	CBS	WCBS	MPEG-2	Widescreen	SIM	1		
4	231.1.0.205 231.1.0.2	NBC	WNBC	MPEG-2	Widescreen	SIM	1		
200	231.1.0.250 231.1.0.205 239.1.1.1 231.1.0.2	HBO-OD	HBO-ON-Demand	H.264	4:3	OD	1		
736	231.1.0.205 231.1.0.2	ESPN	ESPN	MPEG-2	Widescreen	SIM	1		

Trace File: trace.11695001142 Counter Update Interval: 0

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The detailed flow trace table shows the following information:

Column	Information Shown
Router	The router that is being monitored.
PPS	Packets per second transmitted.
Forwarding Int	Interface that is forwarding the packets.
Out Errors/Sec	Output errors per second.
Out Discards/Sec	Output packets discarded, per second.
Neighbor	Hostname of the neighbor router in the network.
Neighbor IP	IP address of the neighbor router in the network.
Neighbor Int	The interface of the neighbor router in the network.
In Errors/Sec	Input errors per second.
In Discards/Sec	Input packets discarded, per second.

The probe status table shows the following information:

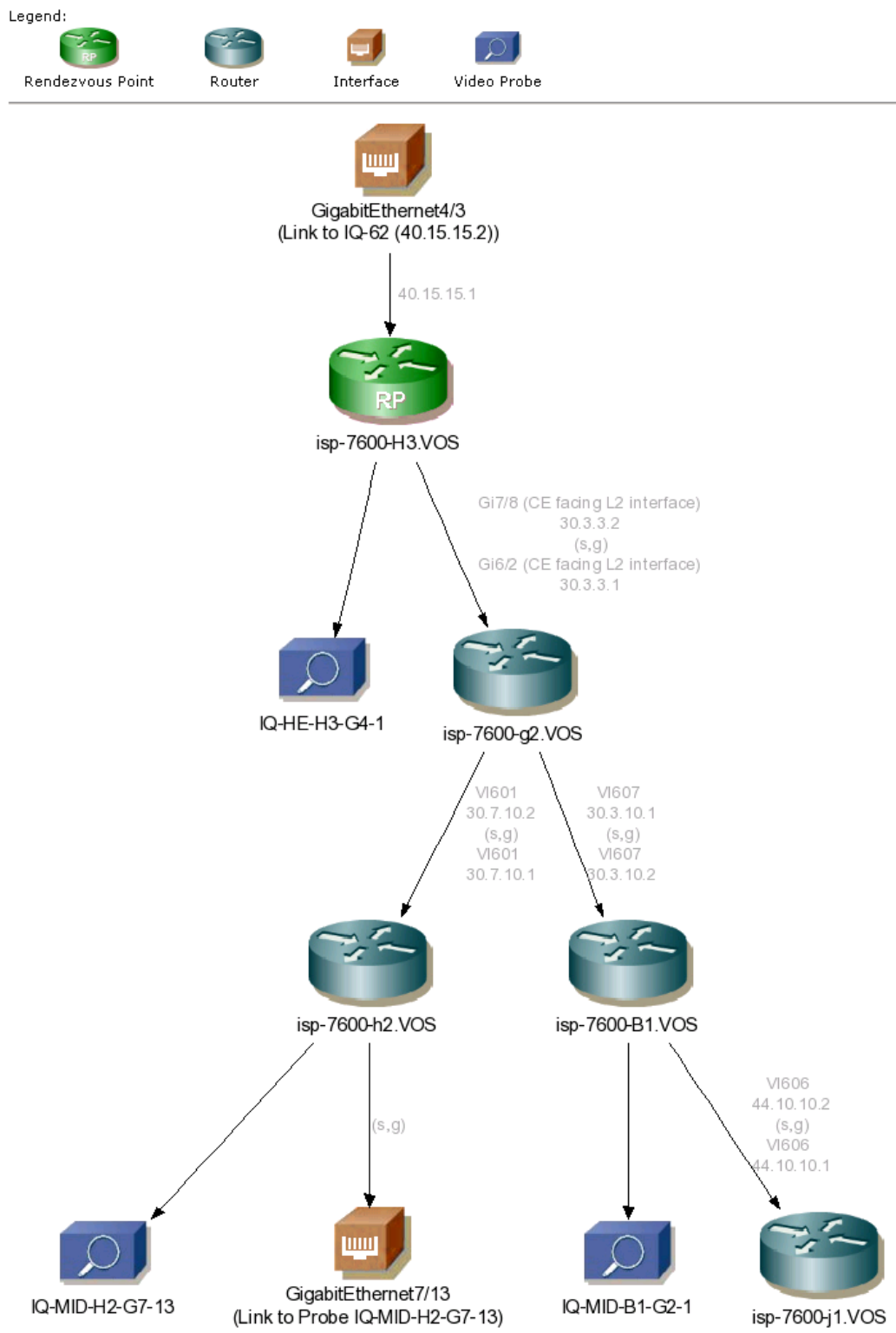
Column	Information Shown
Probe	Name of the probe.
Router	Router that the probe is monitoring.
Interface	The router interface to which the probe is connected.
Source	The source router that is multicasting the video data.
Group	The Group name of the source router.
Status	The status of the probe.
DF	The delay factor of the packets, in milliseconds.
MLR	The media loss rate (MLR) for the video stream.
MLT15	Total media packets lost in the last 15 minutes.
MLT24	Total media packets lost in the last 24 hours.

The channel information table shows information about each channel used to transmit the flow:

Column	Information Shown
Channel	The channels used to transmit the video.
Related Groups	The multicast group addresses of the multicast groups used to transmit the video data for this channel.
Channel Name	The name assigned to the channel.
Short Name	Short version of the channel name.
Codec Type	The type of CODEC used with this channel.
Screen Format	Screen format for this channel,
MuxID	A number representing the ID of the multiplexer.

Figure 4-16 shows a sample topology tree for the data that is shown in Figure 4-15.

Figure 4-16 Probe Topology Tree



The topology tree shows a network diagram starting with the router that is linked to the interface that is multicasting the video stream. This is indicated by an interface icon.

Each router in the topology is shown by a router icon, each interface by an interface icon, and each probe by a probe icon.

Step 2 To view a route query report for a router in the topology tree, click on the router icon for the router that you want to query.

Cisco Multicast Manager displays the results of a route query for the router. See [Figure 4-3](#) for a sample report.

Step 3 To view a Video Flow Status report for a probe shown in the topology tree, click on a probe icon.

Step 4 [Figure 4-17](#) shows a sample Video Flow Status report.

Figure 4-17 Viewing Video Flow Status

Video Flow Status (IQ-HE-H3-G4-1)							
Monitor Flows: <input type="button" value="Monitor"/>		Clear Yellow Status Indicators: <input type="button" value="Clear"/>					
Name	Last Updated	Source:Port	Group:Port	Status	MDI	MLT15	MLT24
Video 1	Mon Jan 22 17:55:04 2007	40.15.15.2:2000	231.1.0.1:1000	●	2.833:0	0	0
Video 2	Mon Jan 22 17:55:03 2007	40.15.15.2:2001	231.1.0.2:1001	●	2.833:0	0	0
Video 3	Mon Jan 22 17:55:03 2007	40.15.15.2:2002	231.1.0.3:1002	●	2.833:0	0	0
Video 4	Mon Jan 22 17:55:02 2007	40.15.15.2:2003	231.1.0.4:1003	●	2.833:0	0	0
Video 5	Mon Jan 22 17:55:03 2007	40.15.15.2:2004	231.1.0.5:1004	●	2.833:0	0	0
Video 6	Mon Jan 22 17:55:01 2007	40.15.15.2:2005	231.1.0.6:1005	●	2.833:0	0	0
	Mon Jan 22 17:55:03 2007	40.15.15.2:2006	40.17.17.2:1006	●	2.835:0	0	0
	Mon Jan 22 17:55:01 2007	40.15.15.2:2007	40.17.17.2:1007	●	2.833:0	0	0
	Mon Jan 22 17:55:03 2007	40.15.15.2:2008	40.17.17.2:1008	●	2.833:0	0	0
	Mon Jan 22 17:55:03 2007	40.15.15.2:2009	40.17.17.2:1009	●	2.833:0	0	0
	Mon Jan 22 17:55:04 2007	40.15.15.2:2010	40.17.17.2:1010	●	2.833:0	0	0
	Mon Jan 22 17:55:01 2007	40.15.15.2:2011	40.17.17.2:1011	●	2.833:0	0	0
	Mon Jan 22 17:55:02 2007	40.15.15.2:2012	40.17.17.2:1012	●	2.833:0	0	0
	Mon Jan 22 17:55:02 2007	40.15.15.2:2013	40.17.17.2:1013	●	2.833:0	0	0
	Mon Jan 22 17:55:02 2007	40.15.15.2:2014	40.17.17.2:1014	●	2.833:0	0	0
	Mon Jan 22 17:55:02 2007	40.15.15.2:2015	40.17.17.2:1015	●	2.833:0	0	0
	Mon Jan 22 17:55:03 2007	40.15.15.2:2016	40.17.17.2:1016	●	2.833:0	0	0
	Mon Jan 22 17:55:02 2007	40.15.15.2:2017	40.17.17.2:1017	●	2.833:0	0	0
	Mon Jan 22 17:55:03 2007	40.15.15.2:2018	40.17.17.2:1018	●	2.833:0	0	0
	Mon Jan 22 17:55:02 2007	40.15.15.2:2019	40.17.17.2:1019	●	2.833:0	0	0
	Mon Jan 22 17:55:03 2007	40.15.15.2:2020	40.17.17.2:1020	●	2.833:0	0	0
	Mon Jan 22 17:55:01 2007	40.15.15.2:2021	40.17.17.2:1021	●	2.833:0	0	0
	Mon Jan 22 17:55:02 2007	40.15.15.2:2022	40.17.17.2:1022	●	2.833:0	0	0
	Mon Jan 22 17:55:03 2007	40.15.15.2:2023	40.17.17.2:1023	●	2.833:0	0	0
	Mon Jan 22 17:55:01 2007	40.15.15.2:2024	40.17.17.2:1024	●	2.833:0	0	0
	Mon Jan 22 17:55:01 2007	40.15.15.2:2025	40.17.17.2:1025	●	2.833:0	0	0

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MPVN Status

Using the Diagnostics tool, you can view detailed information about the status of Multicast VPNs, including:

- Virtual Routing and Forwarding (VRF) Table Configurations
- Provider Edge (PE) Device Configurations
- The current status of a specified VRF

To view MVPN status:

Step 1 On the Diagnostics menu, select **MVPN**.

The MVPN Diagnostics page appears, as shown in [Figure 4-18](#).

Figure 4-18 MVPN Diagnostics Page

The screenshot displays the Cisco Multicast Manager interface. At the top, it shows the tool name 'Multicast Manager' and the management domain 'VOS-DEMO'. The navigation menu includes Home, Topology, Reporting, **Diagnostics**, and Help. The left sidebar lists various diagnostic tools, with 'MVPN' selected. Below this, a search box and a list of devices are shown. The main content area is titled 'Virtual Routing and Forwarding (VRF) Table Configurations' and shows a table for 'cox-ri-1 (8 devices)'. Below this, there are sections for 'Provider Edge (PE) Device Configurations' with three sub-sections: 'isp-7600-B1.VOS (1 VRFs)', 'isp-7600-g1.VOS (1 VRFs)', and 'isp-7600-g2.VOS (1 VRFs)'. Each sub-section contains a table with columns for VRF, Multicast Enabled, Route Distinguisher, Default MDT, Data MDT Range, and Data MDT Mask.

Device	Multicast Enabled	Route Distinguisher	Default MDT	Data MDT Range	Data MDT Mask
isp-7600-B1.VOS	yes		239.39.39.39		
isp-7600-g1.VOS	yes	100:1	239.39.39.39		
isp-7600-g2.VOS	yes	100:1	239.39.39.39		
isp-7600-H1.VOS	yes		239.39.39.39		
isp-7600-h2.VOS	yes		239.39.39.39		
isp-7600-H3.VOS	yes		239.39.39.39		
isp-7600-i1.VOS	yes	100:1	239.39.39.39		
isp-7600-i3.VOS	yes	100:1	239.39.39.39		

VRF	Multicast Enabled	Route Distinguisher	Default MDT	Data MDT Range	Data MDT Mask
isp-7600-B1.VOS	yes		239.39.39.39		

VRF	Multicast Enabled	Route Distinguisher	Default MDT	Data MDT Range	Data MDT Mask
isp-7600-g1.VOS	yes	100:1	239.39.39.39		

VRF	Multicast Enabled	Route Distinguisher	Default MDT	Data MDT Range	Data MDT Mask
isp-7600-g2.VOS	yes	100:1	239.39.39.39		

The MVPN Diagnostics page shows:

- Virtual Routing and Forwarding (VRF) Table Configurations
- Provider Edge (PE) Device Configurations

Step 2 To view detailed information about the status a VRF, click on the device name in one of the VRF tables

Cisco Multicast Manager displays the status of the VRF, as shown in Figure 4-19.

Figure 4-19 Viewing VRF Status

The screenshot shows the Cisco Multicast Manager interface. The top navigation bar includes 'Home', 'Topology', 'Reporting', 'Diagnostics', and 'Help'. The 'Diagnostics' section is active, showing a list of diagnostic tools on the left and the VRF status page on the right. The VRF status page displays the following information:

MVPN VRF 'ent-a' on 'es1-3825-w6' - Current Status

Route Distinguisher	Route Targets	
100:100	100:100 (import, export)	
Default MDT	MDT Default Group Uses	
232.1.100.0 trace	71	
Data MDT Range	MDT Data Threshold	Max MDT Data Group Uses
232.1.100.16 / 0.0.0.15	0	2

Interfaces

Interface Name	Admin. Status	Oper. Status
GigabitEthernet0/1	up	up
Tunnel0	up	up

Route Table (101 entries)

Source	Group	MDT Source	MDT Group	Group Type	Use Count	Data Flow	
0.0.0.0	224.0.1.39	180.1.0.49	232.1.100.0	default		VRF -> Core	trace
0.0.0.0	224.0.1.39	180.1.0.49	232.1.100.0	default		Core -> VRF	trace
0.0.0.0	224.0.1.40	180.1.0.49	232.1.100.0	default		VRF -> Core	trace
0.0.0.0	224.0.1.40	180.1.0.49	232.1.100.0	default		Core -> VRF	trace
0.0.0.0	232.1.1.1	180.1.0.49	232.1.100.0	default		VRF -> Core	trace
0.0.0.0	232.1.1.1	180.1.0.49	232.1.100.0	default		Core -> VRF	trace
0.0.0.0	232.1.1.2	180.1.0.49	232.1.100.0	default		VRF -> Core	trace
0.0.0.0	232.1.1.2	180.1.0.49	232.1.100.0	default		Core -> VRF	trace
0.0.0.0	232.1.1.3	180.1.0.49	232.1.100.0	default		VRF -> Core	trace
0.0.0.0	232.1.1.3	180.1.0.49	232.1.100.0	default		Core -> VRF	trace
0.0.0.0	232.1.1.4	180.1.0.49	232.1.100.0	default		VRF -> Core	trace
0.0.0.0	232.1.1.4	180.1.0.49	232.1.100.0	default		Core -> VRF	trace

The VRF status page indicates:

- **Route Distinguisher**—The route distinguisher for the VRF.
- **Route Targets** —The route targets for the VRF.
- **Default MDT** —The default MDT or the VRF.
- **MDT Default Group Uses** —(please provide description)
- **Data MDT Range**—Default MDT range.
- **MDT Data Threshold Max MDT**—please provide description)
- **Data Group Uses** —please provide description)

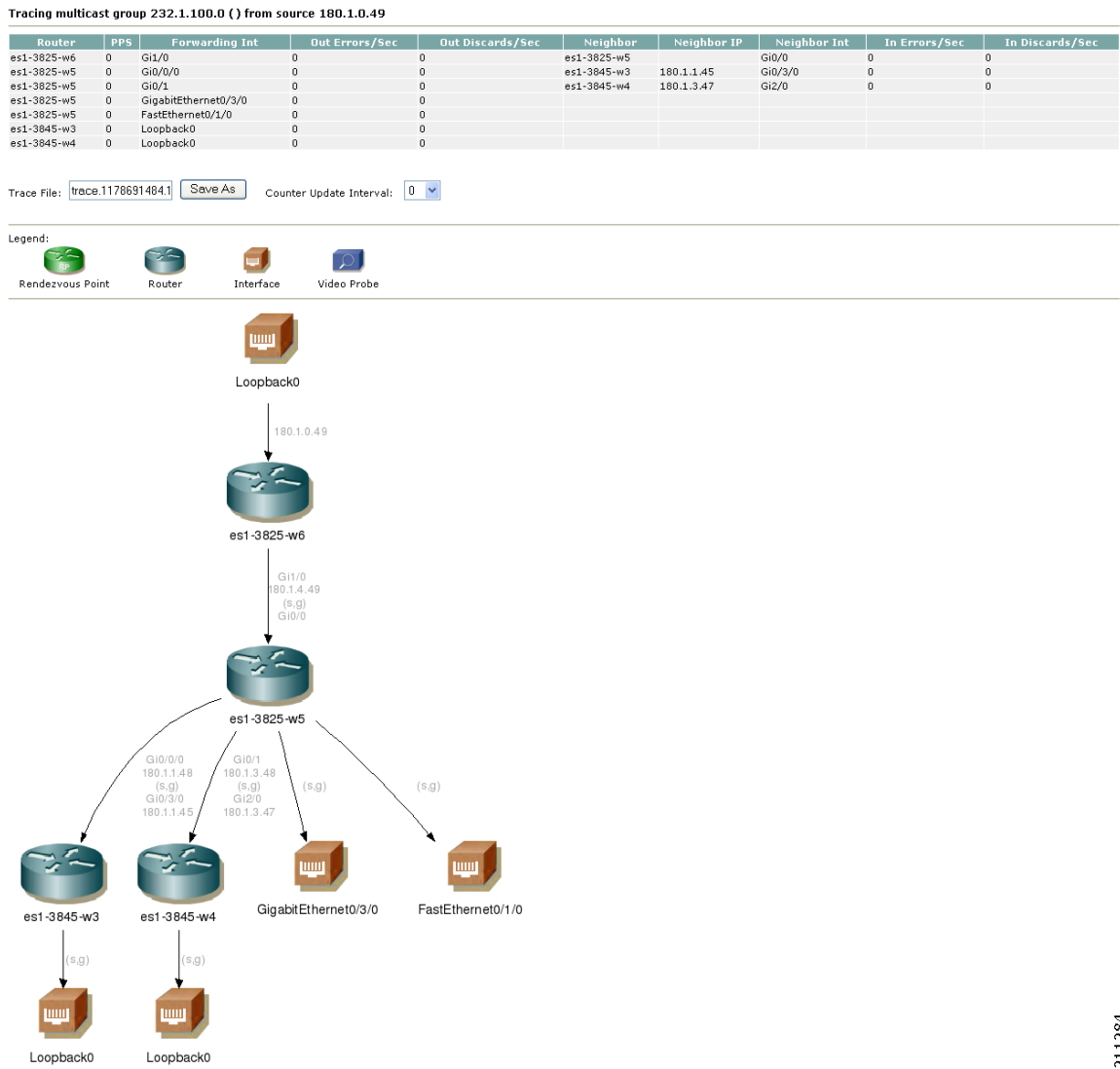
For each interface in the VRF, the VRF status page indicates the interface name, administrative status, and operation status of the interface.

The bottom portion of the display shows an Mroute table for the VRF.

- Step 3** To display the current status of a specified multicast group, click on **trace**, next to the IP address in the Default MDT column of the table.

A detailed trace and a topology diagram of the multicast group appear, as shown in Figure 4-20.

Figure 4-20 Viewing a Multicast Group Trace



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Step 4 To run a route entry query for a router, click on a router icon.

Figure 4-21 shows a sample route entry query display.

Figure 4-21 *Route Entry Query for a Router in a Multicast Group*



Managing Router Diagnostics

You can view specific multicast diagnostics on a router by clicking the router in the lower left pane.

The Router Diagnostics page is similar to the Multicast Diagnostics page (under Show All Groups), except data is for the selected router only.

- From the **Show Command** field, you can issue a show, ping, trace, or mtrace command. Scroll down to see all the sources and groups active on this router.
- From the SNMP Queries pane, for a selected router, you can view:
 - **IGMP Cache Entries**—Shows IGMP cache information.

Figure 4-22 IGMP Cache Entries

igmpCacheEntry Query for P2-7206-1 (10.0.0.1) () ()

igmpCacheExpiryTime	Interface	Time remaining before this entry will be aged out
224.0.1.39	SRP1/0	0:02:58
224.0.1.39	GigabitEthernet4/0	0:02:58
224.0.1.39	Tunnel22	0:00:00
224.0.1.39	Loopback1	0:01:56
224.0.1.39	Loopback2	0:02:54
224.0.1.39	Tunnel0	0:02:53
224.0.1.39		0:00:00
224.0.1.39	GigabitEthernet3/0	0:02:01
224.0.1.40	SRP1/0	0:01:58
224.0.1.40	Loopback1	0:01:53

igmpCacheLastReporter	Interface	Source of last membership report
224.0.1.39	SRP1/0	239.0.0.5
224.0.1.39	GigabitEthernet4/0	239.0.0.5
224.0.1.39	Tunnel22	239.0.0.5
224.0.1.39	Loopback1	239.0.0.5
224.0.1.39	Loopback2	239.0.0.5
224.0.1.39	Tunnel0	239.0.0.5
224.0.1.39		239.0.0.5
224.0.1.39	GigabitEthernet3/0	239.0.0.5
224.0.1.40	SRP1/0	239.0.0.5
224.0.1.40	Loopback1	239.0.0.5

igmpCacheSelf	Interface	Local system is a member of this group true(1) false(2)
224.0.1.39	SRP1/0	1
224.0.1.39	GigabitEthernet4/0	1
224.0.1.39	Tunnel22	1
224.0.1.39	Loopback1	1
224.0.1.39	Loopback2	1

Figure 4-23 Multicast Information

Multicast Info for P2-7206-1 (10.0.0.1) () ()

PIM Neighbors

Local Int	Neighbor	Neighbor IP
GigabitEthernet3/0	P2-ntv-1	10.0.0.1
GigabitEthernet4/0	P2-ntv-2	10.0.0.1
SRP1/0		10.0.0.1
SRP1/0		10.0.0.1
SRP1/0	P2-7206-2	10.0.0.1
SRP1/0	P3-7206-1	10.0.0.1
SRP1/0	P3-7206-2	10.0.0.1
Tunnel22		10.0.0.1

PIM Interface Mode

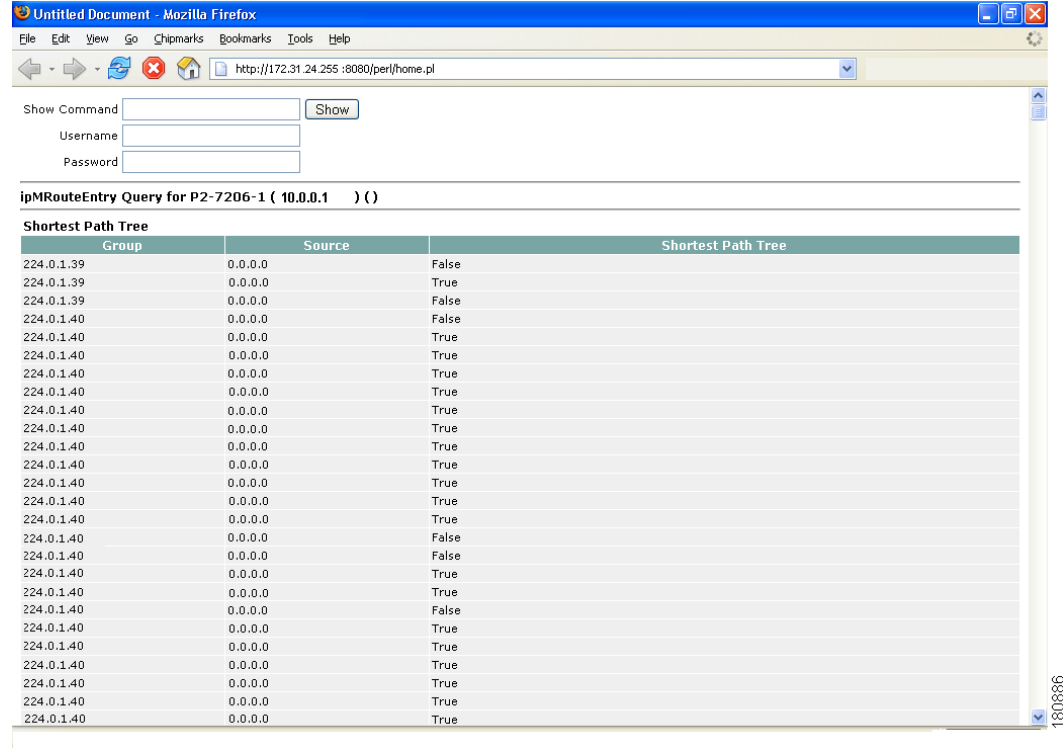
Local Int	Local IP	PIM Mode	DR
SRP1/0	224.0.0.1	sparse	P3-7206-2 (224.0.0.1)
GigabitEthernet4/0	224.0.0.1	sparse	P2-ntv-2 (224.0.0.1)
Tunnel22	224.0.0.1	sparse	N/A (0.0.0.0)
Loopback1	224.0.0.1	sparse	P2-7206-1 (224.0.0.1)
Loopback2	224.0.0.1	sparse	P3-7206-1 (224.0.0.1)
Tunnel0	224.0.0.1	sparse	P2-7206-1 (224.0.0.1)
	224.0.0.1	sparse	N/A (0.0.0.0)
GigabitEthernet3/0	224.0.0.1	sparse	P2-ntv-1 (224.0.0.1)

IGMP Interface Version

Local Int	Local IP	IGMP
SRP1/0	224.0.0.1	2
GigabitEthernet4/0	224.0.0.1	2
Tunnel22	224.0.0.1	2
Loopback1	224.0.0.1	2
Loopback2	224.0.0.1	2
Tunnel0	224.0.0.1	2

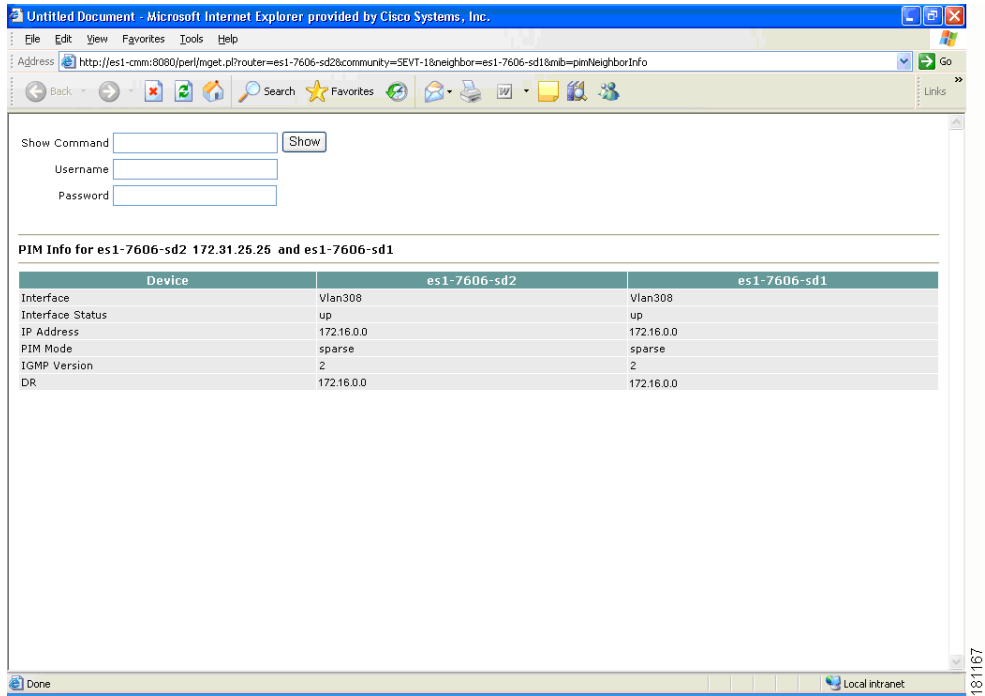
- **Multicast Routing Table**—Shows the multicast routing table.
- **Multicast Information**—Shows multicast topology information.

Figure 4-24 Multicast Routing Table



- **PIM Neighbor Information**—Check that a PIM neighbor exists and compare a router's PIM neighbor information. Select the PIM neighbor you want to query.

Figure 4-25 PIM Neighbor Information



Viewing User Guide Help

To view a PDF version of the *User Guide for Cisco Multicast Manager, 2.4*, select **Help**.