CHAPTER 4

Diagnostics and Troubleshooting with the Multicast Manager Tool

This chapter contains the following sections:

Managing Diagnostics

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

The following section describes router-specific diagnostics:

Show All Groups

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

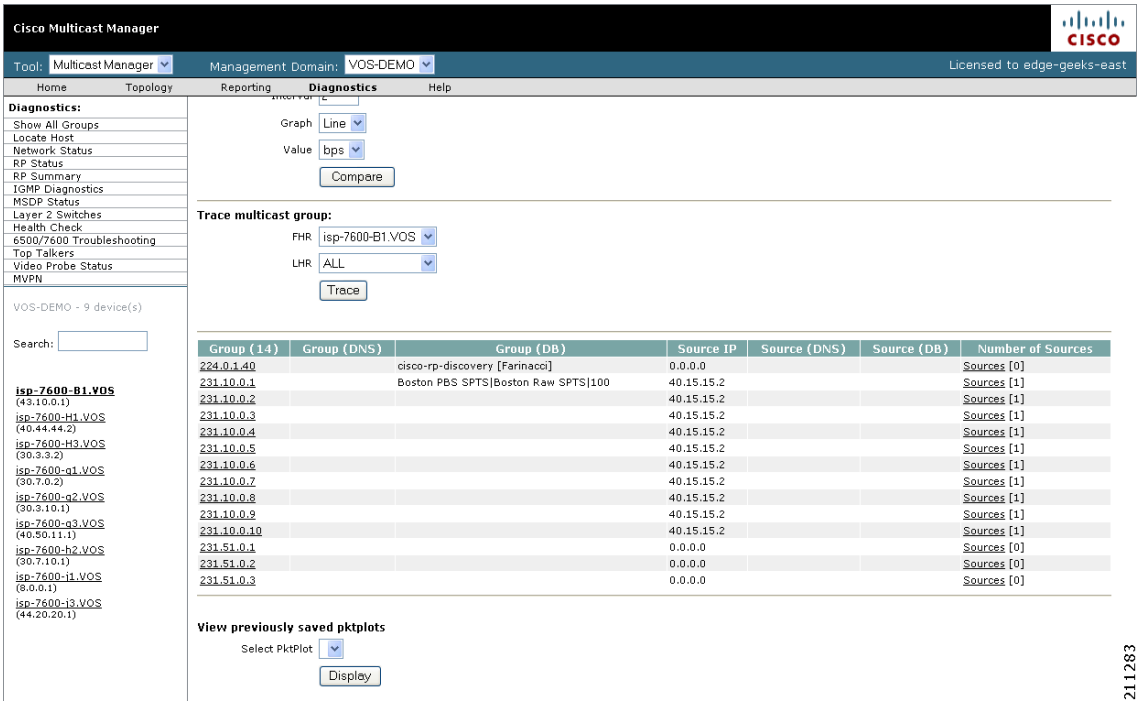
1. View all the active sources and groups in the network in tabular format. Groups are listed in numerical order, and the number of sources for each group appears in the last column. If there is more than one source for a group, select **Sources** to view them all.
2. Draw complete graphical trees by 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



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.

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:

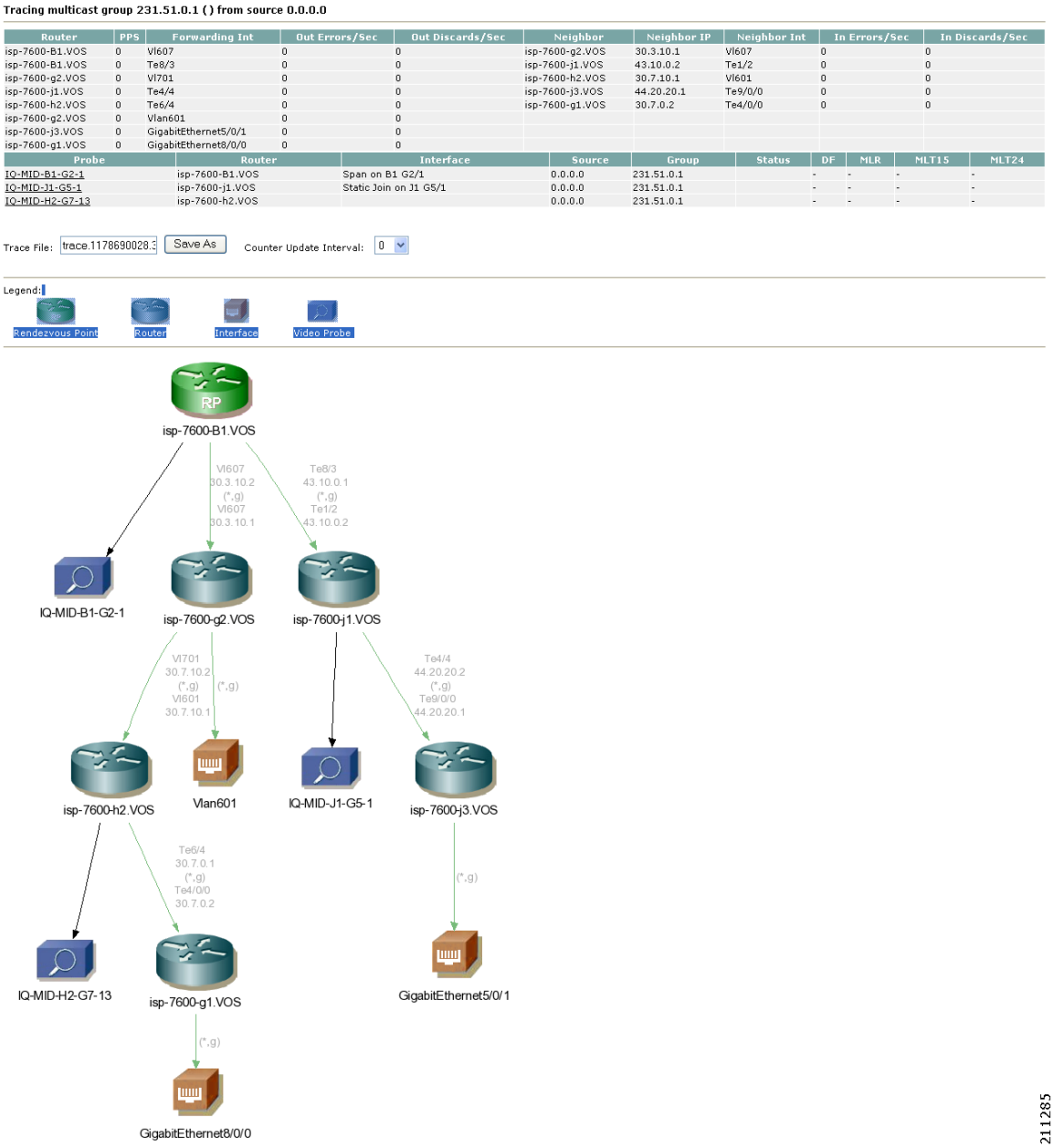
- **FHR—**Select the first hop router that the trace should start under.
- **LHR—**Select the last hop router that the trace should end under.
- Click **Trace**. The CMM draws a tree of the source and group selected from the router in FHR to the router in LHR.

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)



Step 9 To display packet error counters, select a **Counter Update Interval**. These counters are updated each period.

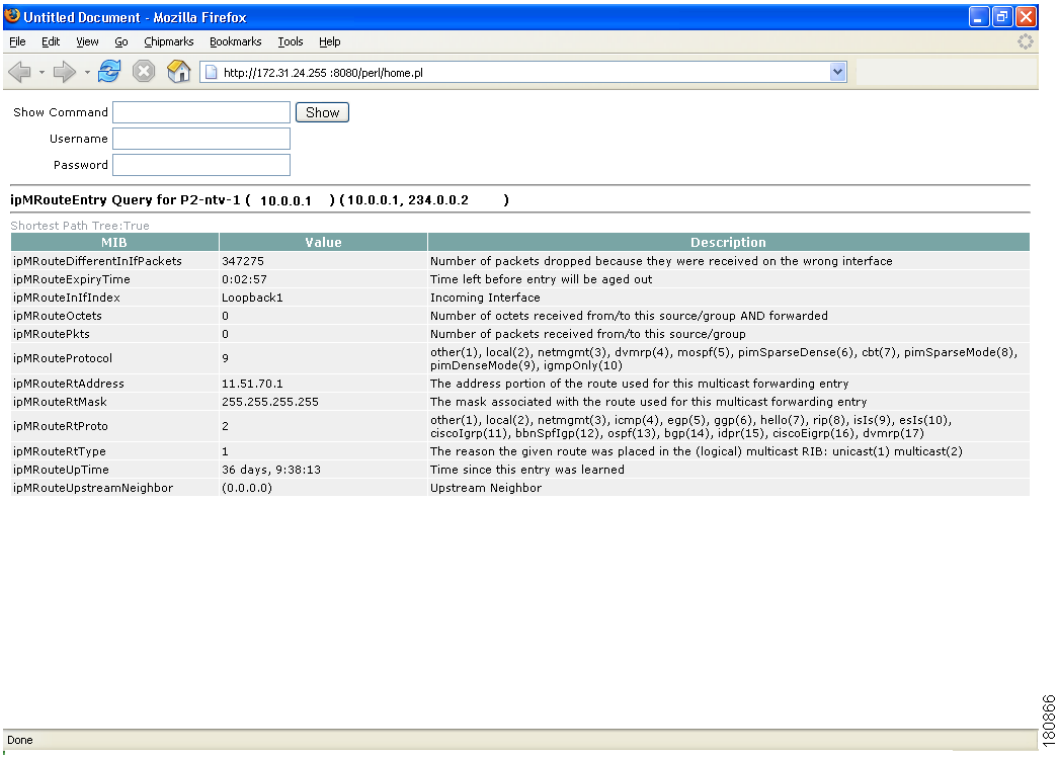
Step 10 To save the multicast tree as a baseline, enter a name within **Trace File**, and click **Save As**. The window closes. You can use the saved baseline for tree polling (see Tree Polling, page 2-39).

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.

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



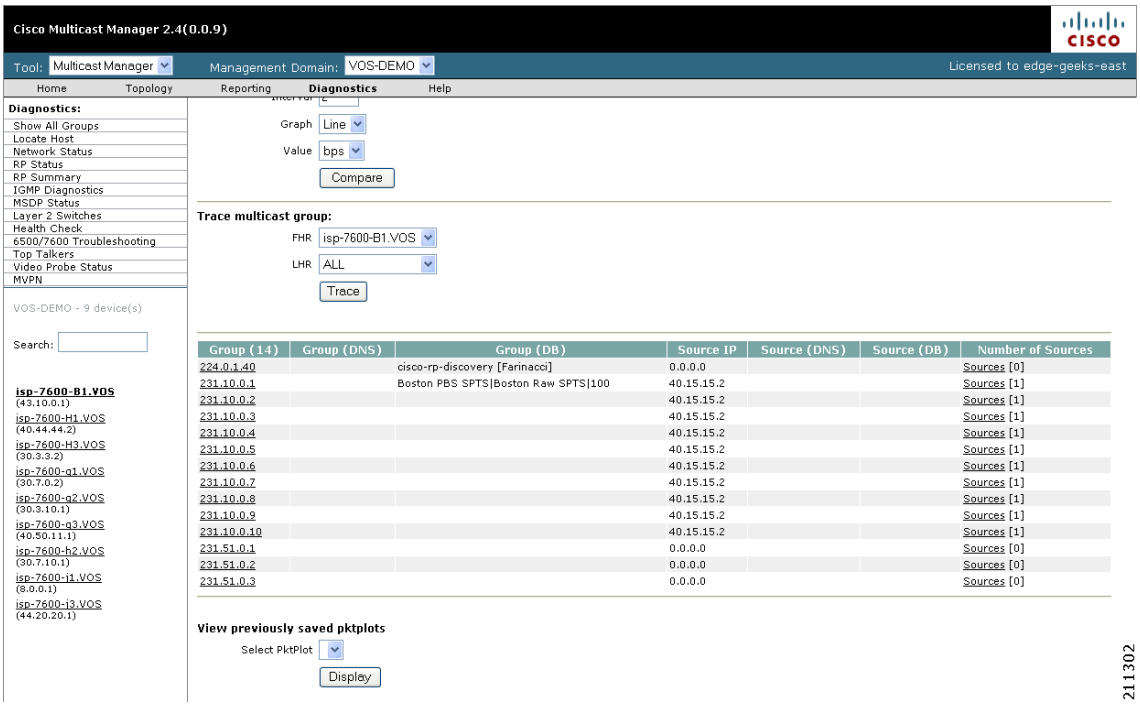
The trace information page contains these fields and selections:

- **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 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**.

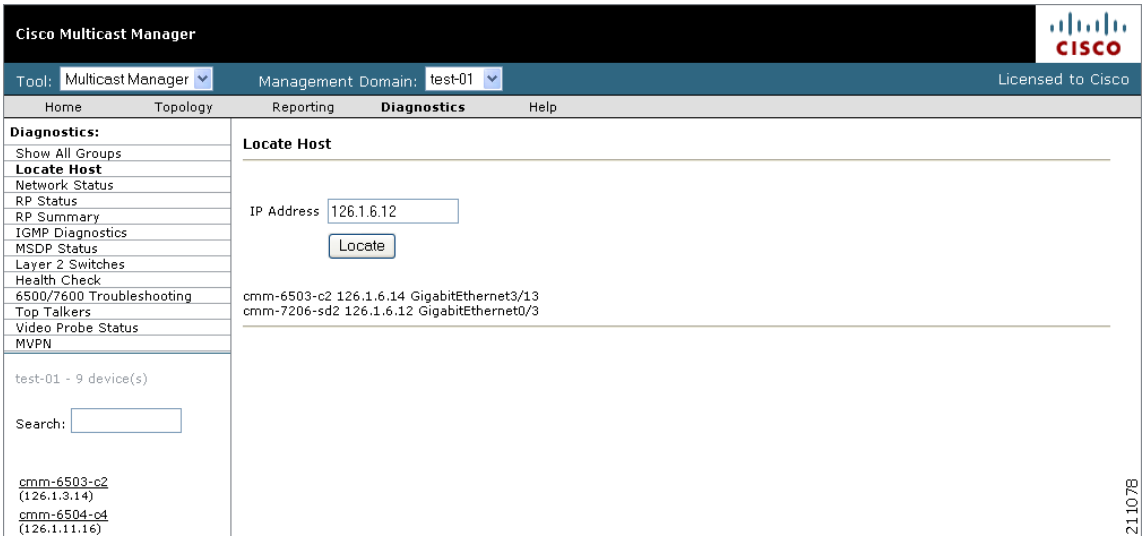
Step 14 To view previously saved traces, select the trace, and click **Display**.

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

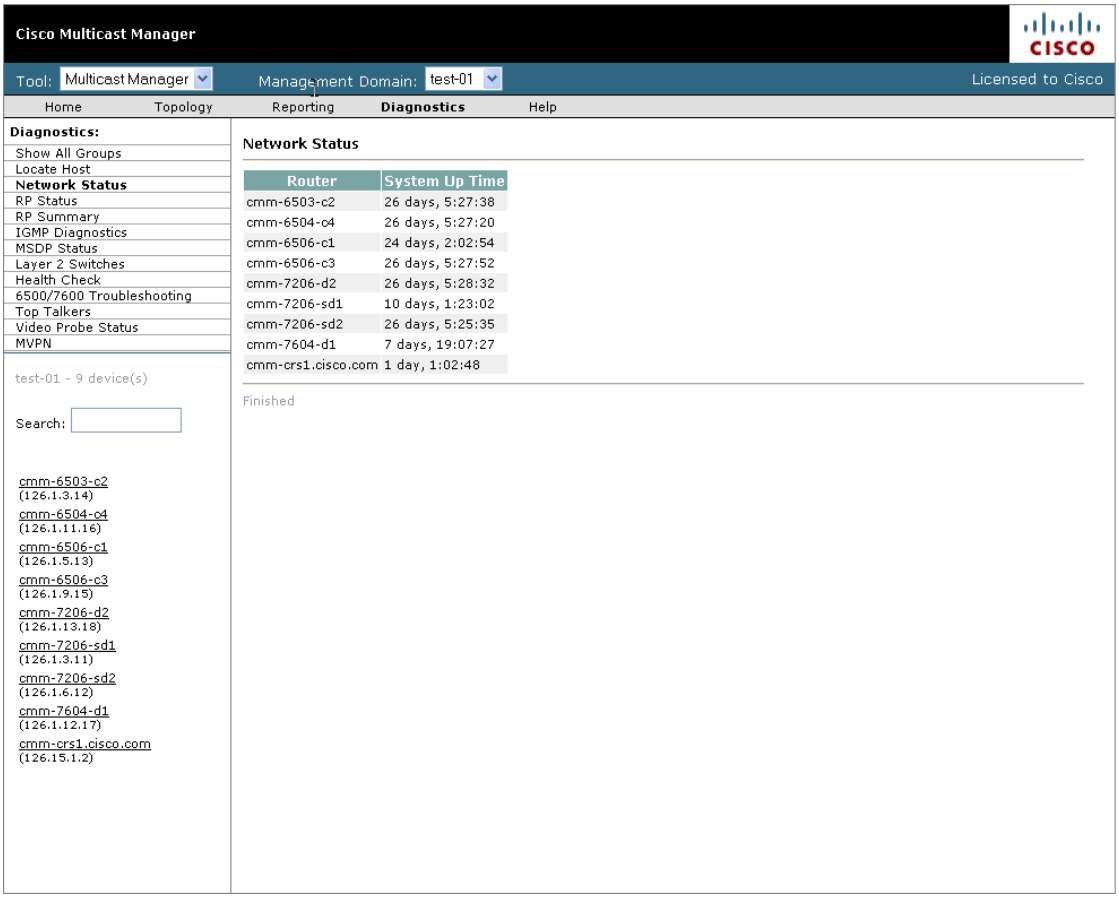


Network Status

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

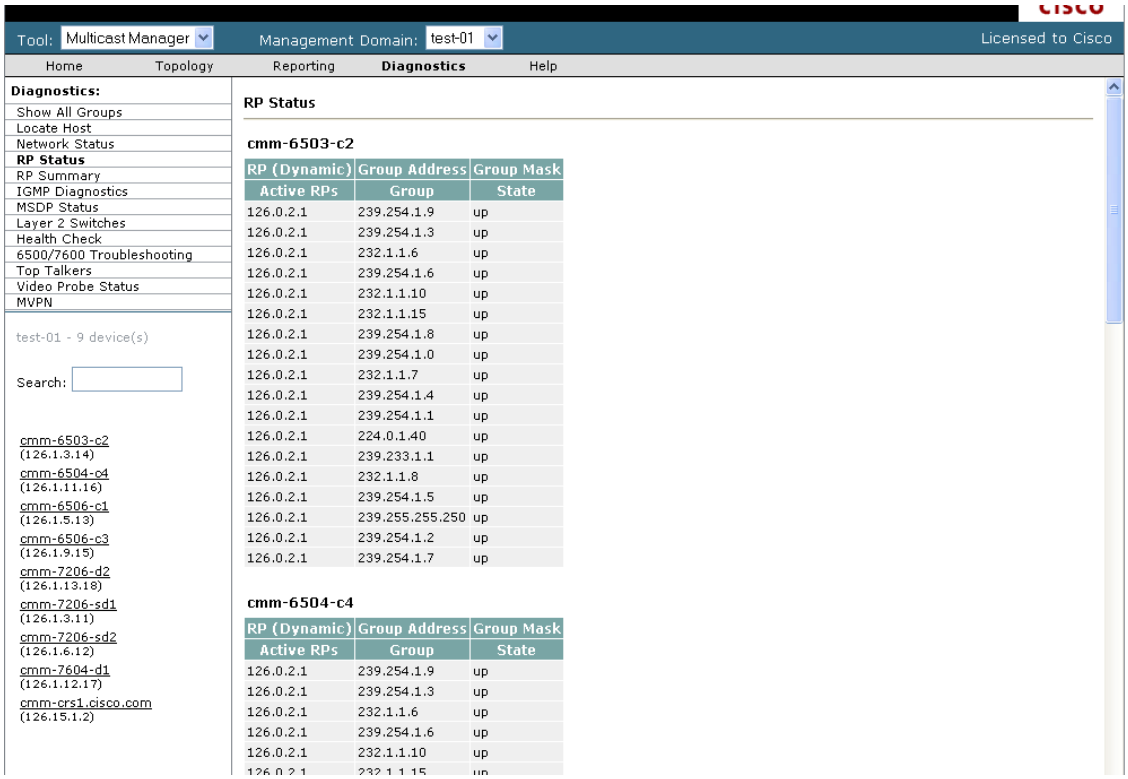


RP Status

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



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.

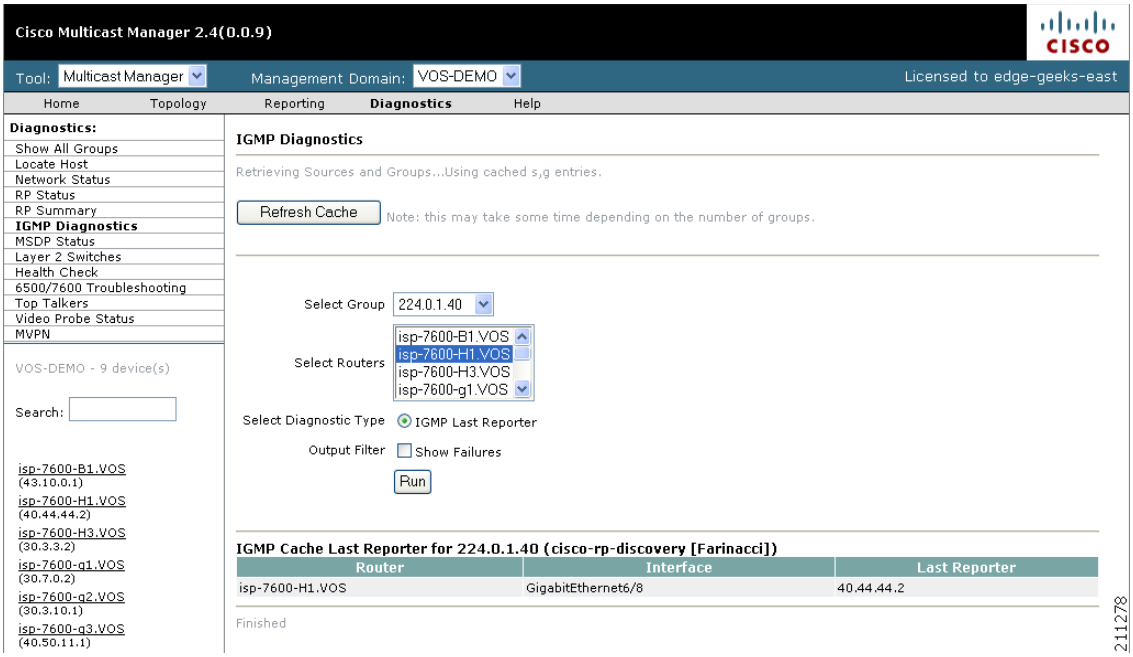
Step 2 **Select Diagnostic Type** is always set to **IGMP Last Reporter**.

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



MSDP Status

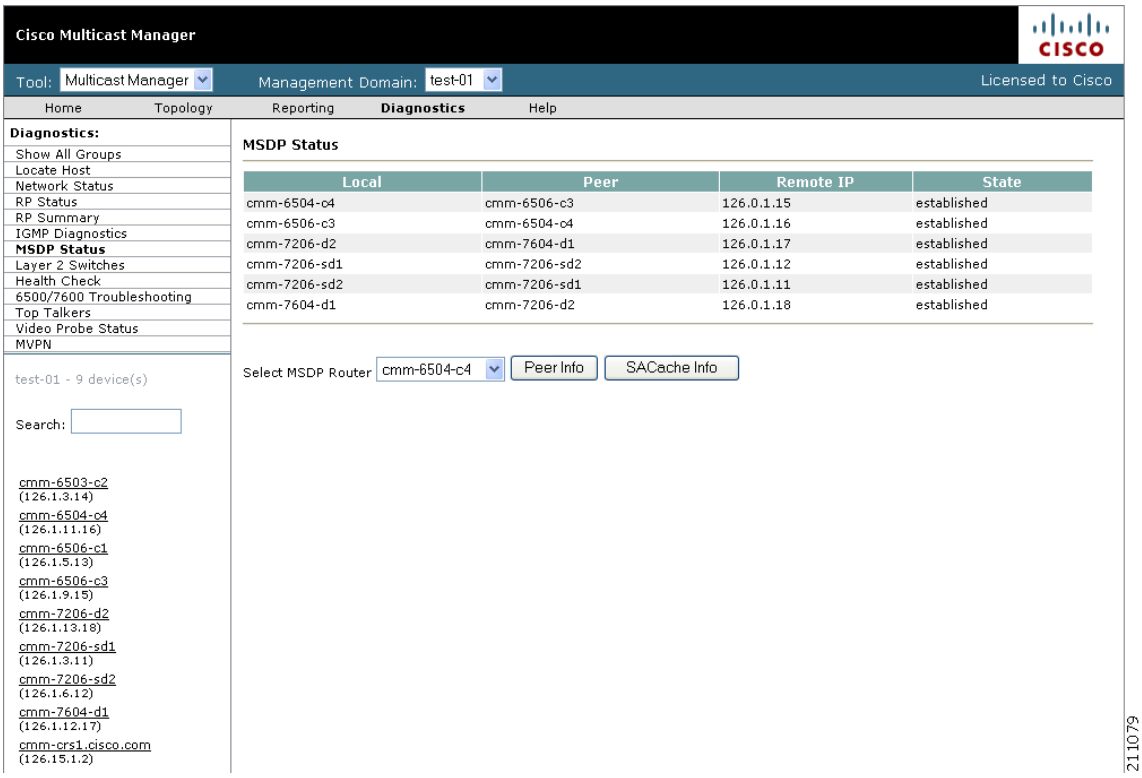
Using the MSPD Status page, you can view all routers running MSDP and their peering connectivity. You can also view details for a specific router, such as peering information and the SA cache.

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



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**.

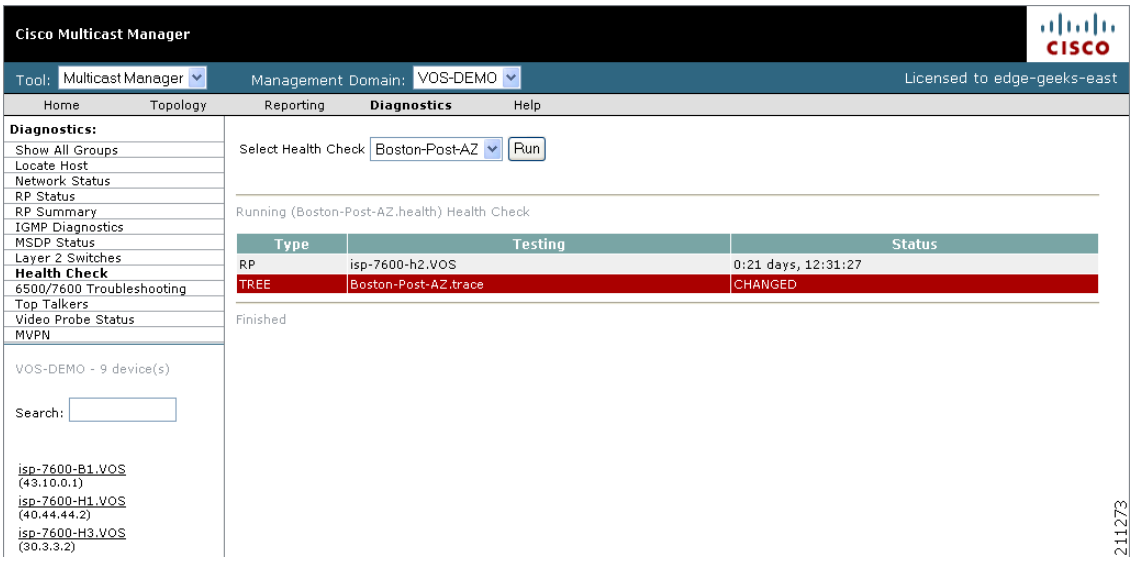
A display of L2 Multicast information appears. The possible IP addresses that can be mapped to the MAC address are also shown.

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

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

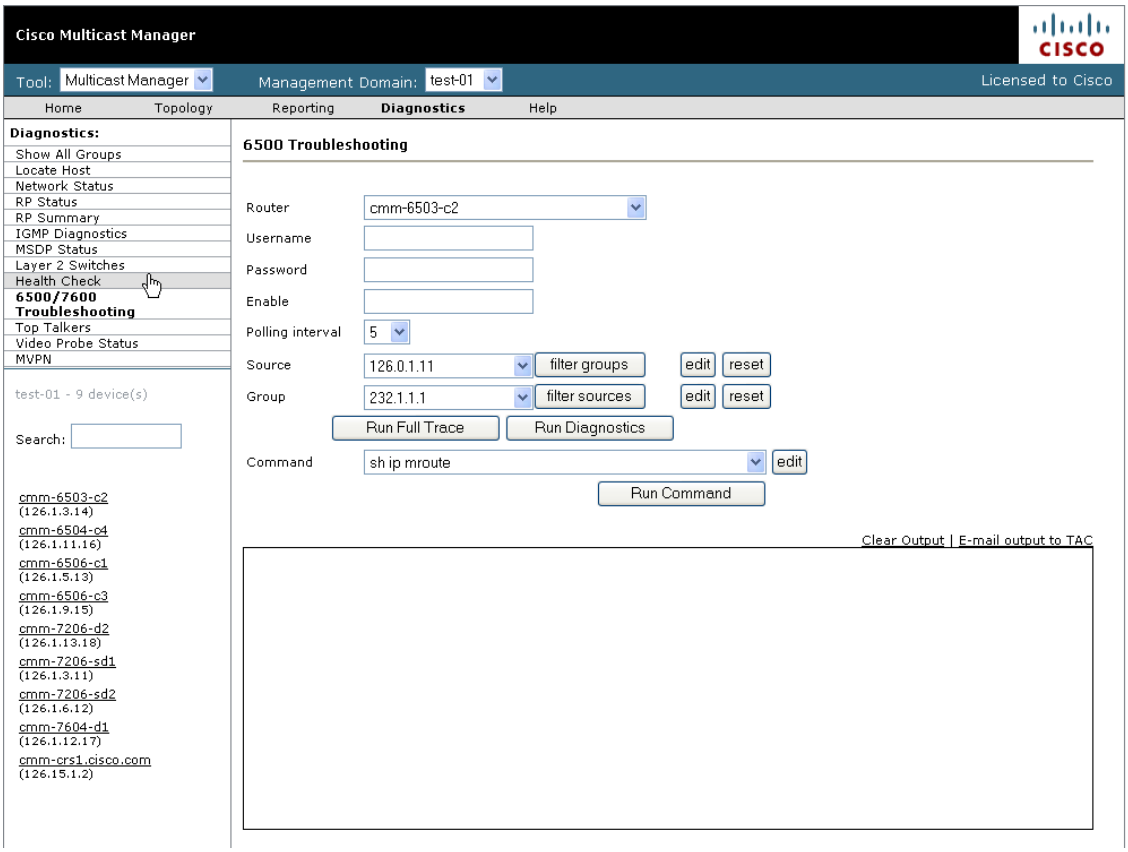
6500/7600 Troubleshooting

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 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.

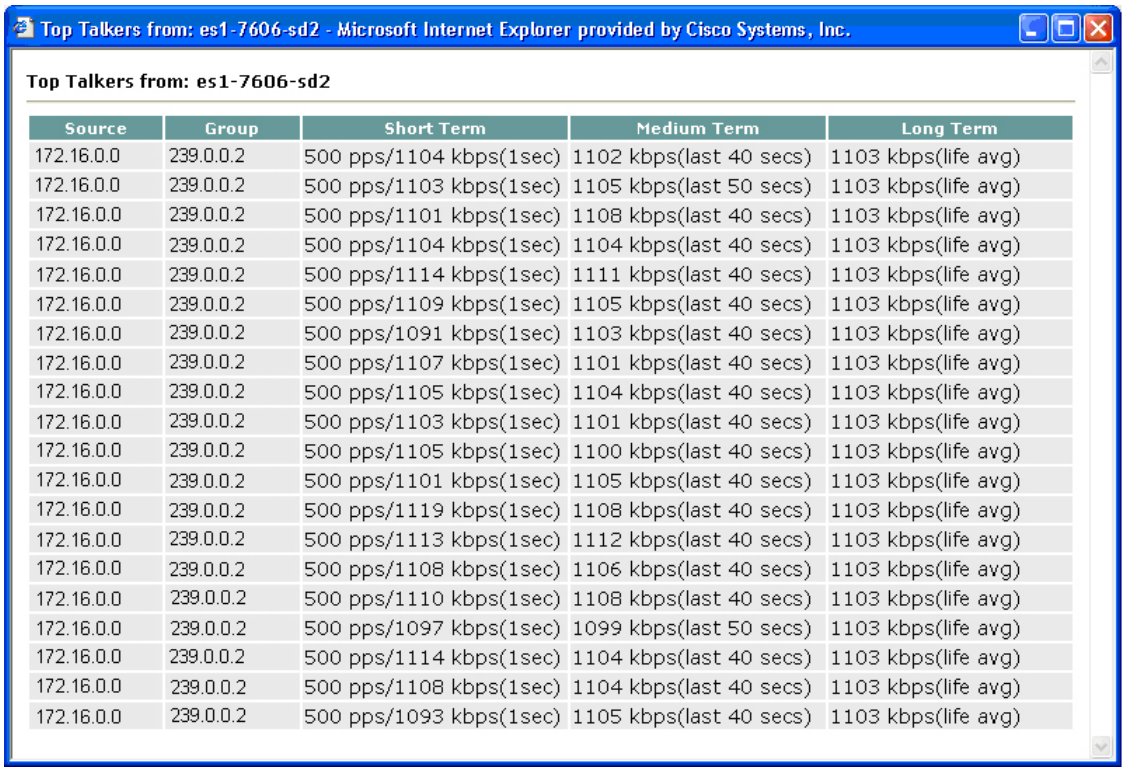
Step 1 Select a router to monitor.

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**.

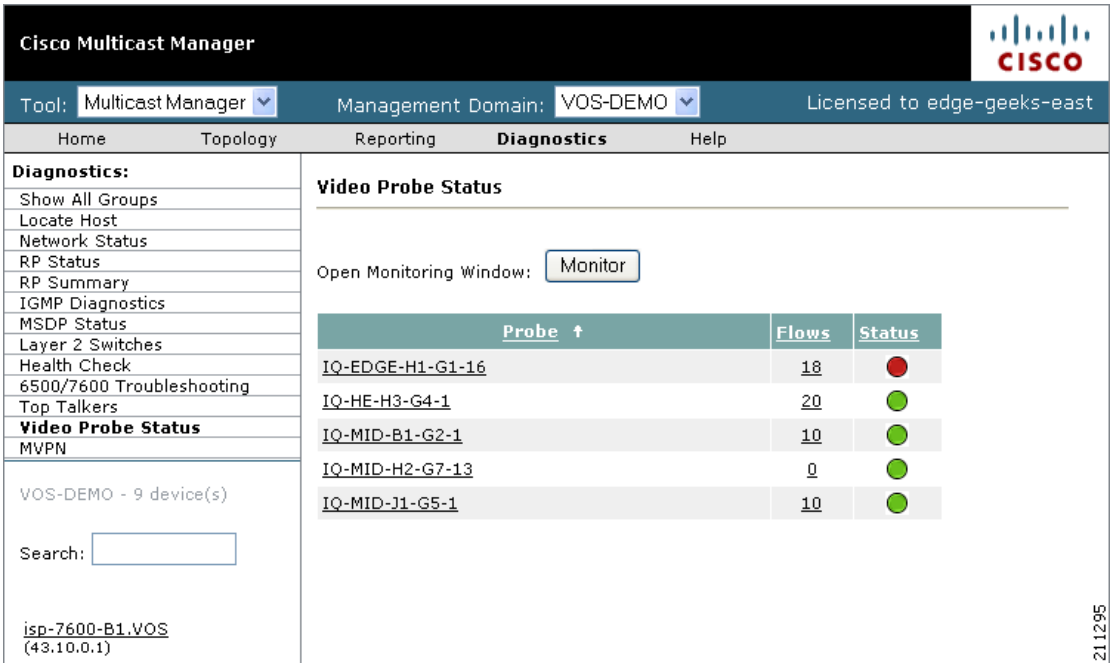
Step 2 Click **Video Probe Status**.

The Video Flow Status window appear, 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 in now normal
Red	Thresholds are currently being exceeded

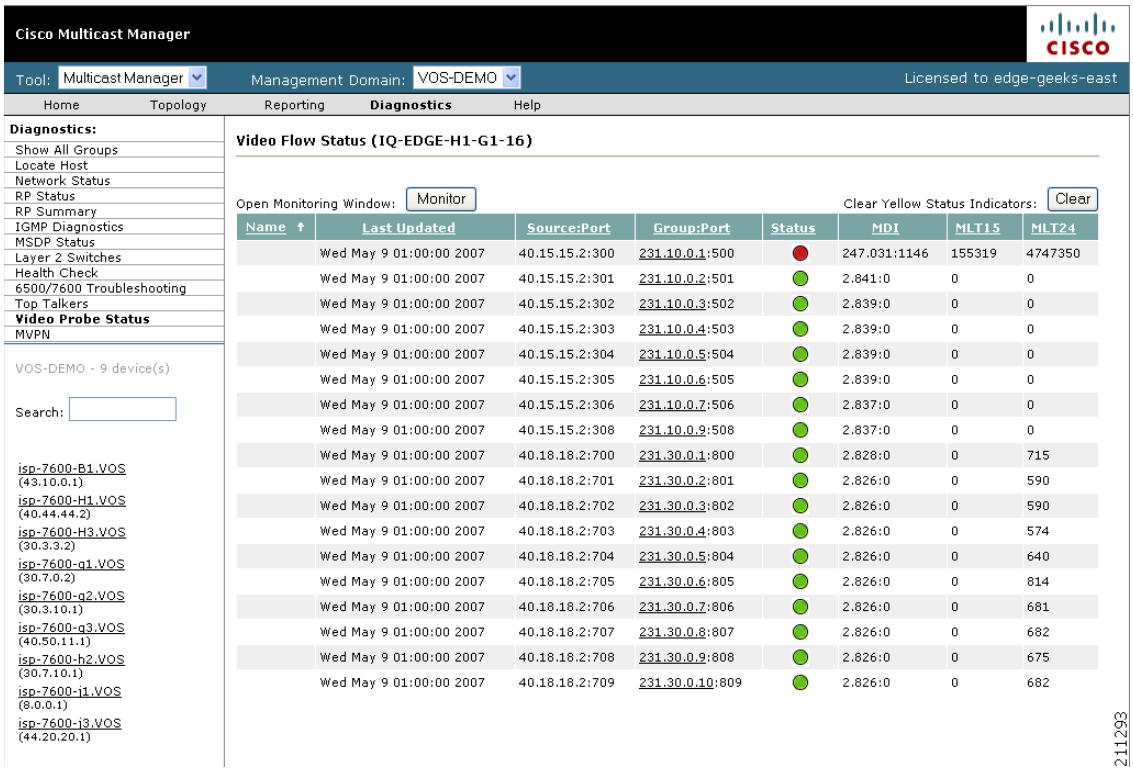
Figure 4-13 Video Flow Status Window



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



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:

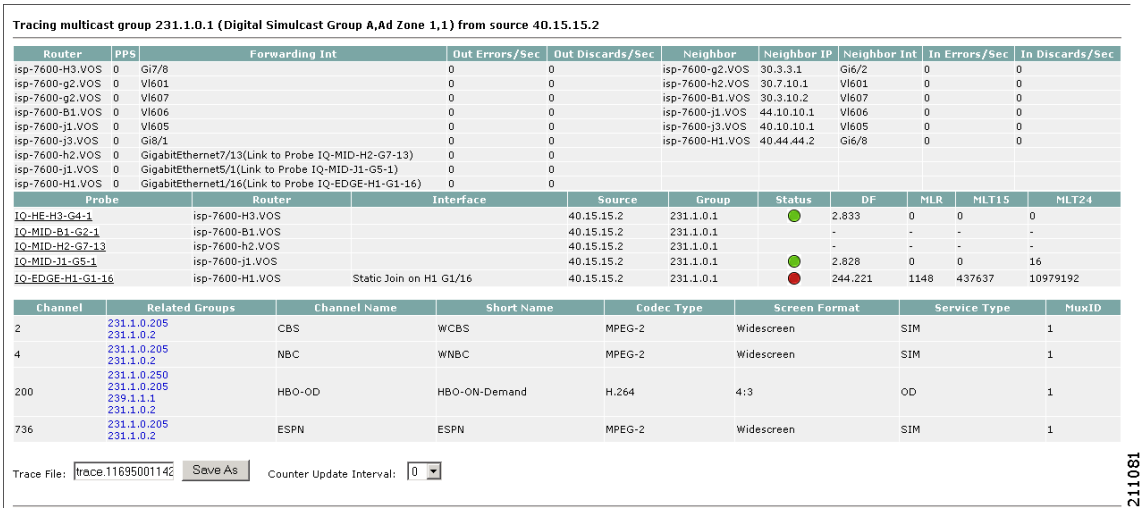
- Rendezvous Points
- Routers
- Interfaces
- Probes

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)	0	0					
isp-7600-j1.VOS	0	GigabitEthernet5/1(Link to Probe IQ-MID-J1-G5-1)	0	0					
isp-7600-H1.VOS	0	GigabitEthernet1/16(Link to Probe IQ-EDGE-H1-G1-16)	0	0					

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 Save As Counter Update Interval: 0

211081

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:

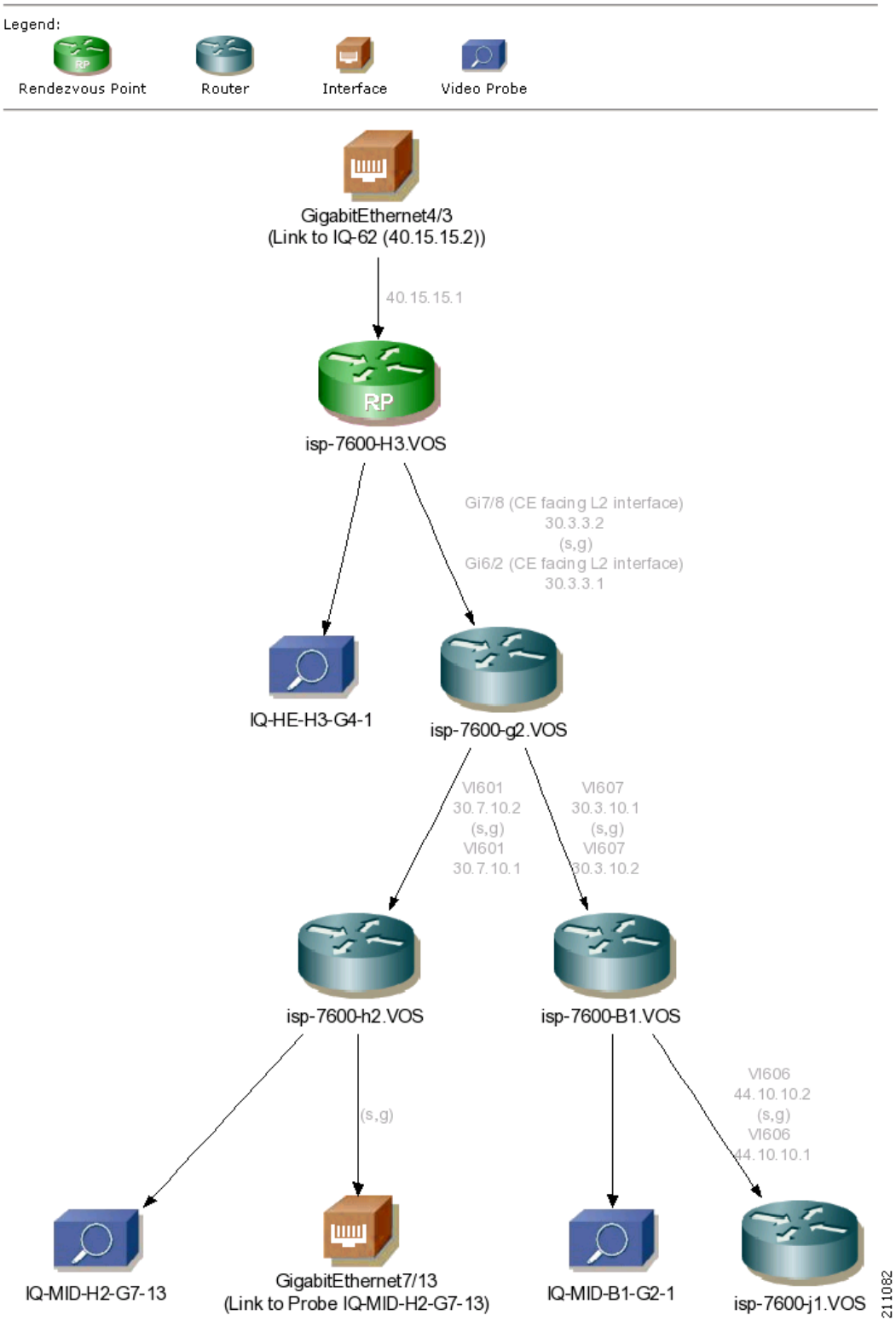
Column	Information Shown
Probe	Name of the probe.
Router	Router that the probe is monitoring.
Interface	The router interface to which the probe is connected.
Source	The source router that is multicasting the video data.
Group	The Group name of the source router.
Status	The status of the probe.
DF	The 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: Monitor Clear Yellow Status Indicators: 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:

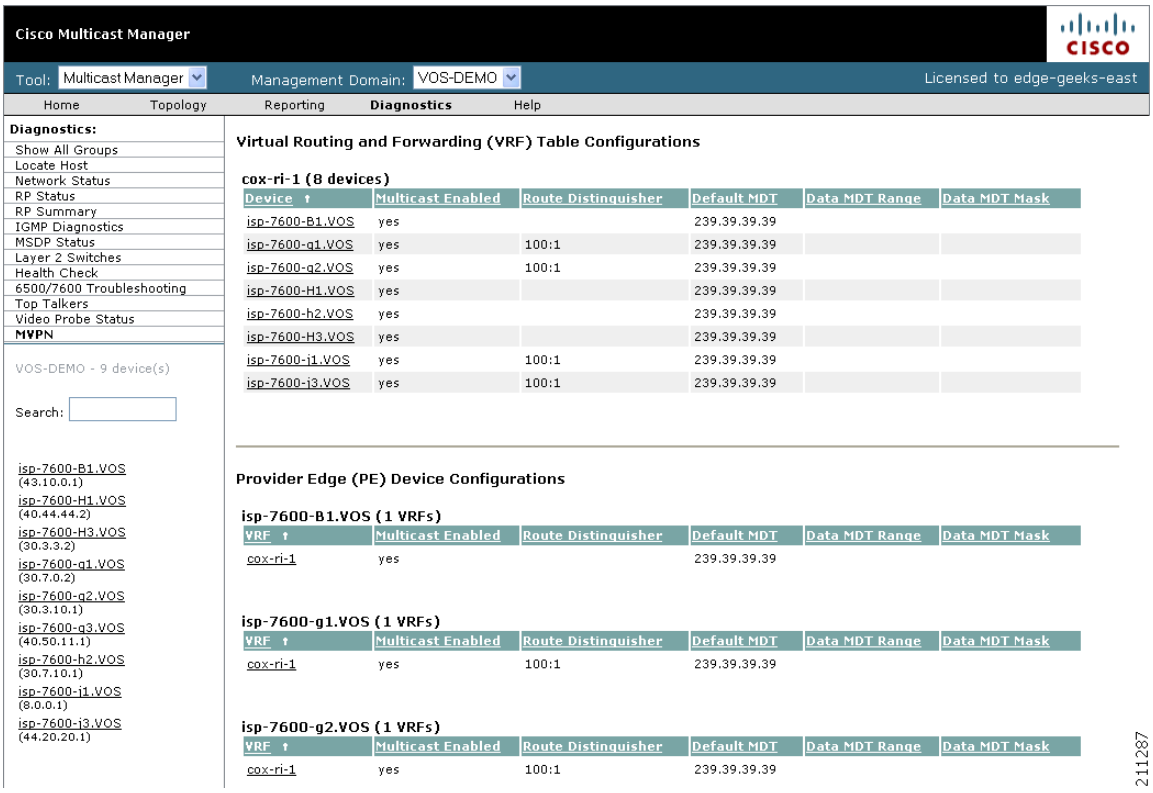
- Virtual Routing and Forwarding (VRF) Table Configurations
- Provider Edge (PE) Device Configurations
- The current status of a specified VRF

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



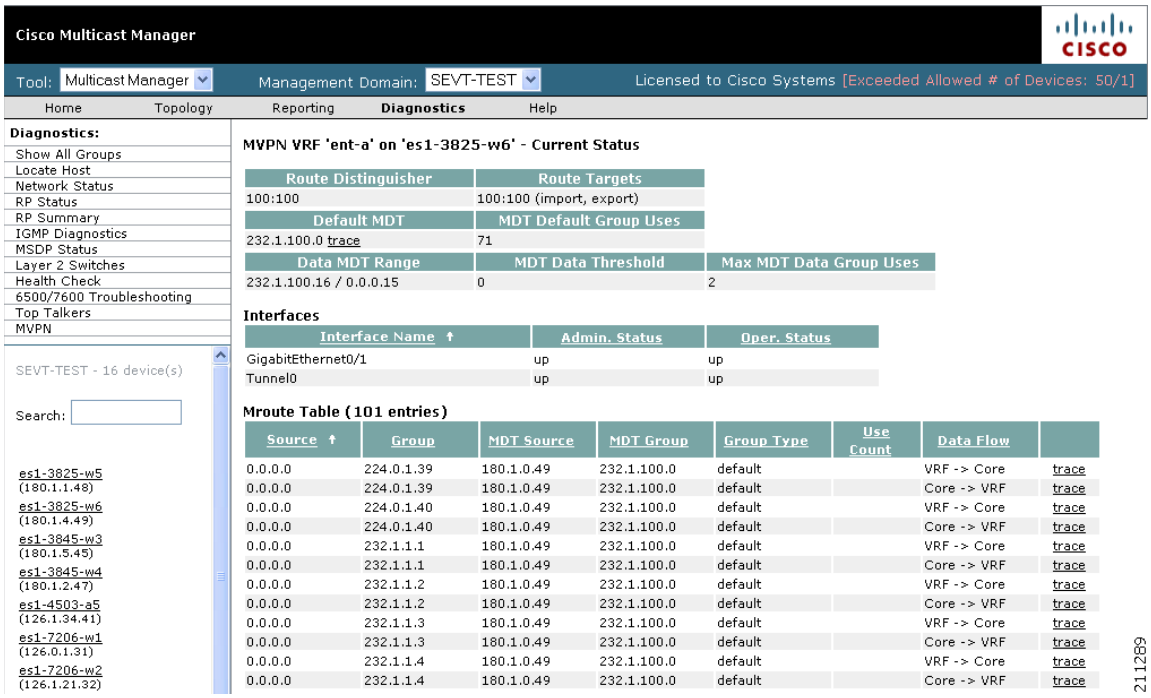
The MPVN Diagnostics page shows:

- 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 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)

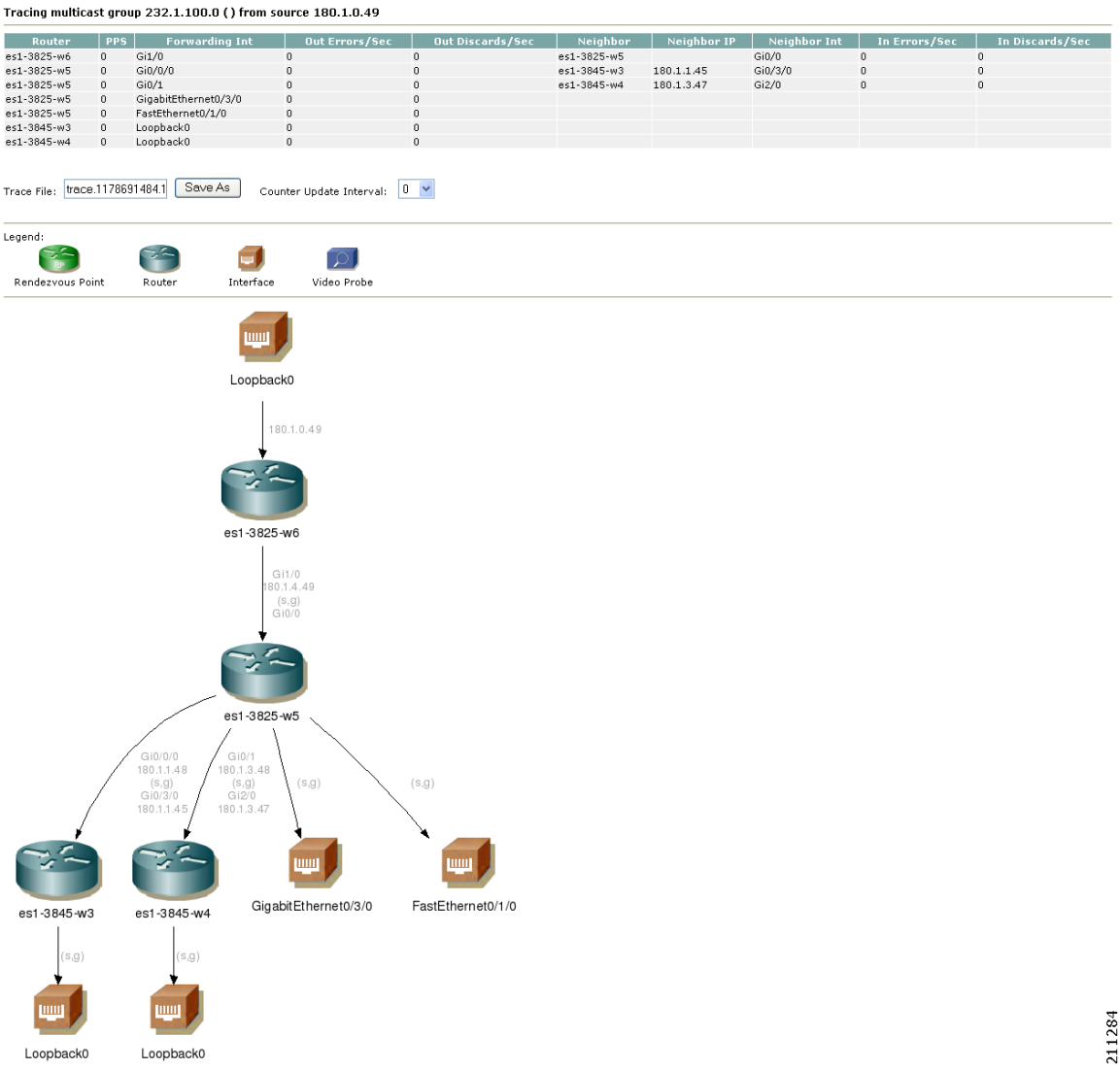
For each interface in the VRF, the VRF status page indicates the interface name, administrative status, and operation status of the interface.

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



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

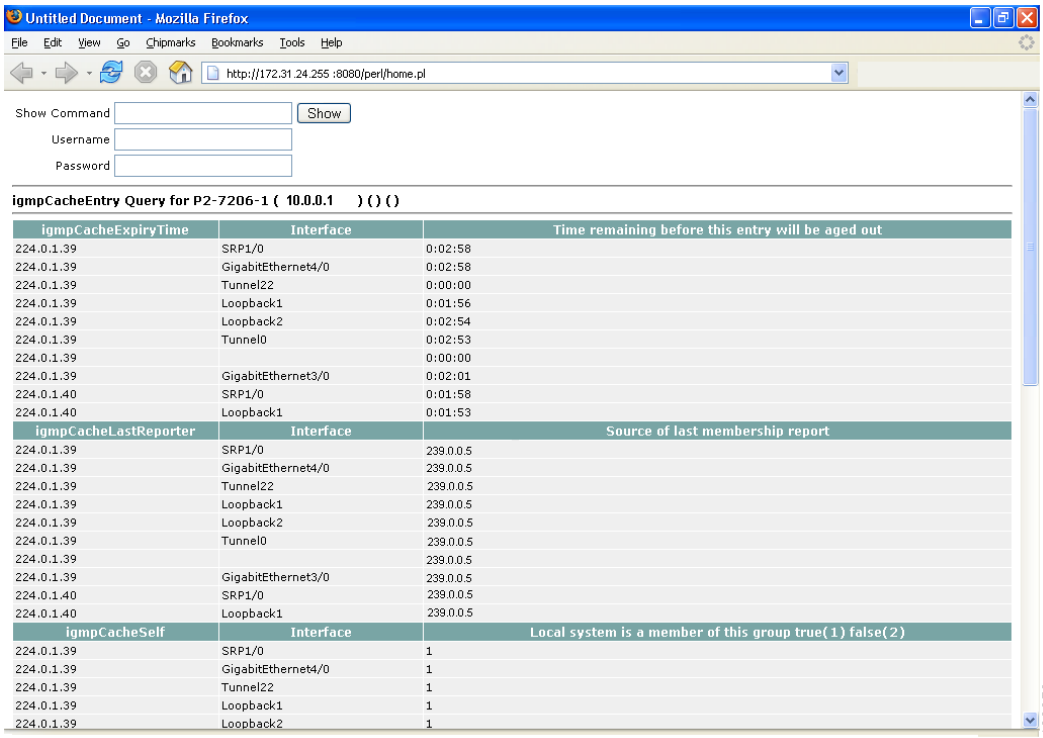
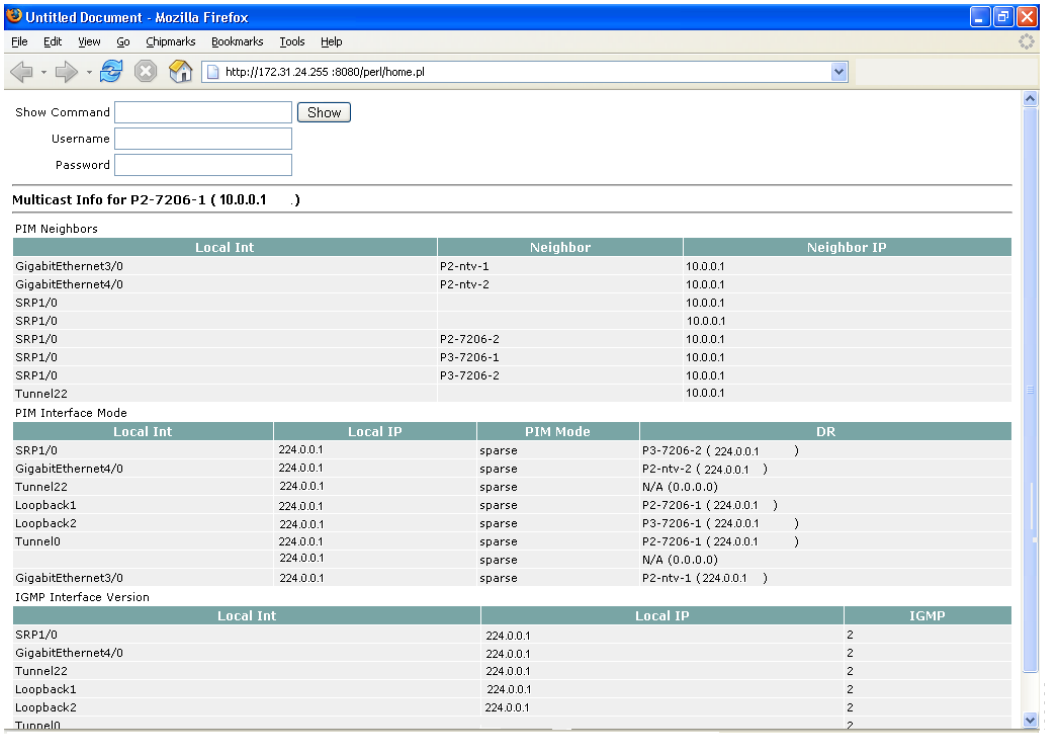
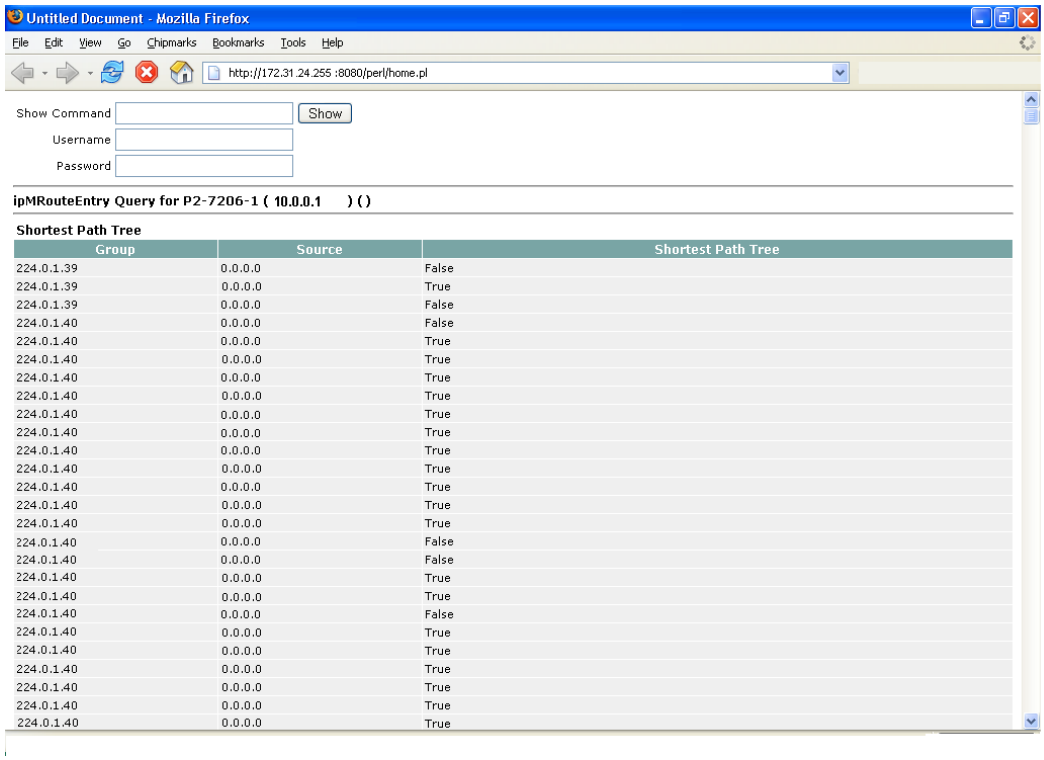


Figure 4-23 Multicast Information



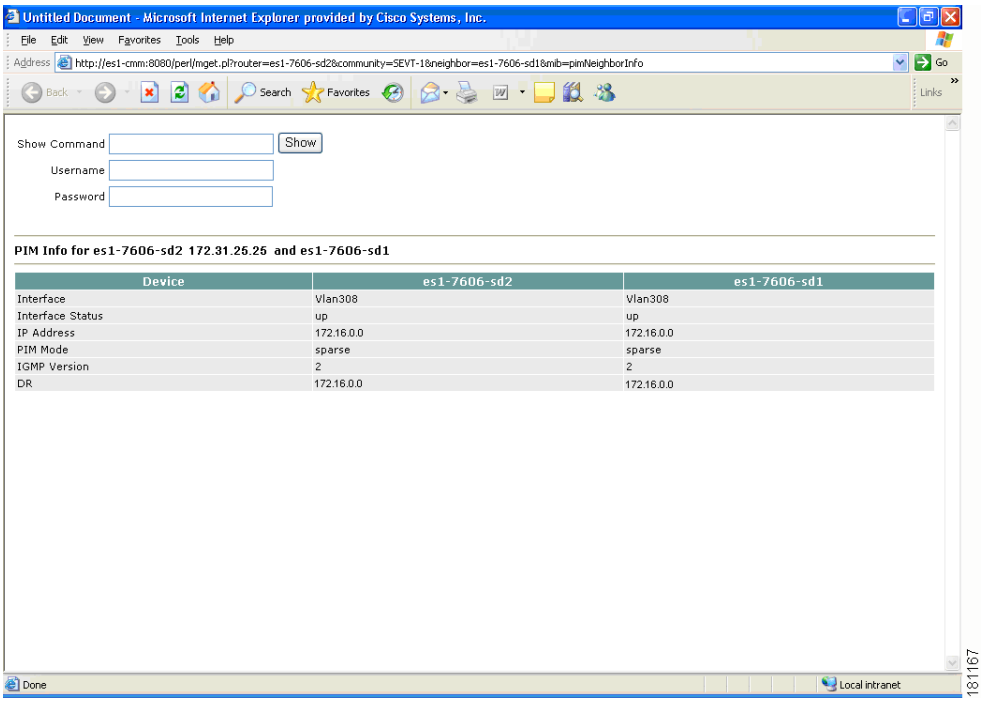
- **Multicast Routing Table**—Shows the multicast routing table.
- **Multicast Information**—Shows multicast topology information.

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**.