



Troubleshooting the Fabric

There are several things you can do to use Fabric Manager to troubleshoot your fabric.

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Analyzing Switch Device Health

The Switch Health option lets you determine the status of the components of a specific switch.

To use the Switch Health option, follow these steps:

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- Step 1** Choose **Tools > Switch Health** from the Fabric Manager. You see the Switch Health Analysis window.
 - Step 2** Click **Start** to identify any problems that may currently be affecting the selected switch. The Switch Health Analysis window displays any problems affecting the selected switches.
 - Step 3** Fix these problems.
 - Step 4** Click **Clear** to remove the contents of the Switch Health Analysis window.
 - Step 5** Click **Close** to close the window.
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Analyzing End-to-End Connectivity

You can use the End-to-End Connectivity option to determine connectivity and routes among devices with the switch fabric. The connectivity tool checks to see that every pair of end devices can talk to each other, using a Ping test and by determining if they are in the same VSAN or in the same active zone. This option uses versions of the **ping** and **tracert** commands modified for Fibre Channel networks.

To use this option, follow these steps:

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- Step 1** Choose **Tools > End to End Connectivity** from the Fabric Manager. You see the End to End Connectivity window.
 - Step 2** Choose the VSAN in which you want to verify connectivity from the VSAN drop-down list.
 - Step 3** Identify any latency issues in the network fabric by clicking the option **Report average latencies greater than** and entering the number of microseconds.
 - Step 4** Click **Ensure that members can communicate** to perform a Fibre Channel ping between the selected end points.
 - Step 5** Identify the number of packets, the size of each packet, and the timeout in milliseconds.
 - Step 6** Analyze the redundant paths between endpoints by clicking **Ensure that redundant paths exist between members**.
 - Step 7** Click **Analyze**. The End to End Connectivity Analysis window displays the selected end points with the switch to which each is attached, and the source and target ports used to connect it.
The output shows all the requests which have failed. The possible descriptions are:
 - Ignoring empty zone—No requests are issued for this zone.
 - Ignoring zone with single member—No requests are issued for this zone.
 - Source/Target are unknown—No nameserver entries exist for the ports or we have not discovered the port during discovery.
 - Both devices are on the same switch.
 - No paths exist between the two devices.
 - VSAN does not have an active zone set and the default zone is denied.
 - Average time ... micro secs—The latency value was more than the threshold supplied.
 - Step 8** Click **Clear** to remove the contents of the window.
 - Step 9** Click **Close** to close the window.
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Analyzing Switch Fabric Configuration

The Fabric Configuration option lets you analyze the configuration of a switch by comparing the current configuration to a specific switch or to a policy file. You can save a switch configuration to a file and then compare all switches against the configuration in the file.

To use the Fabric Configuration option to analyze the configuration of a switch, follow these steps:

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- Step 1** Choose **Tools > Fabric Configuration** from the Fabric Manager. You see the Fabric Configuration window.

- Step 2** Choose if you want to compare the selected switch to another switch or to a Policy File.
- If you are making a switch comparison, click **Switch** and then click the drop-down arrow to see a list of switches.
 - If you are making a policy comparison, click **Policy File**, and then click the button to the right of this option to browse your file system and select a policy file (*.XML).
- Step 3** Click **Rules** to set the rules to apply when running the Fabric Configuration Analysis tool. You see the Rules window.
- Step 4** Change the default rules as required and click **OK**.
- Step 5** Click **Compare**. The system analyzes the configuration and displays issues that arise as a result of the comparison.
- Step 6** Click to place a check mark in the Resolve column for the issues you want to resolve.
- Step 7** Resolve them by choosing the **Resolve Issues** option.
- Step 8** Click **Clear** to remove the contents of the window.
- Step 9** Click **Close** to close the window.
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Analyzing the Results of Merging Zones

You can use the Zone Merge option on the Fabric Manager Tools menu to determine if two connected switches have compatible zone configurations.

To use the Zone Merge option, follow these steps:

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- Step 1** Choose **Tools > Zone Merge** from the Fabric Manager. You see the Zone Merge Analysis window.
- Step 2** Choose a switch from each pull-down list.
- Step 3** Identify the VSAN for which you want to perform the zone merge analysis.
- Step 4** Click **Analyze**. The Zone Merge Analysis window displays any inconsistencies between the zone configuration of the two selected switches.
- Step 5** Click **Clear** to remove the contents of the window.
- Step 6** Click **Close** to close the window.
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Issuing the Show Tech Support Command

You can issue a show tech support command from Fabric Manager for one or more switches in a fabric. The results of each command are written to a text file, one file per switch, in a directory you specify. You can then view these files using Fabric Manager.

You can also save the Fabric Manager map as a JPG file. The file is saved with the name of the seed switch (for example, 172.22.94.250.jpg).

You can zip up all the files (the show tech support output and the map file image) and send the resulting zipped file to technical support.

To use the Fabric Manager **show tech support** command, perform the following steps.

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- Step 1** Choose **Tools > Show Tech Support**. You see the Show Tech Support dialog box.
 - Step 2** Choose the switches for which you want to view Show Tech Support information by checking the check boxes next to their IP addresses.
 - Step 3** Choose the directory where you want the text files (containing the Show Tech Support information) to be written.
 - Step 4** Enter your username and password in the appropriate fields.

**Note**

In order for Fabric Manager to successfully issue the **show tech support** command on a switch, that switch must have this username and password. Fabric Manager will be unable to log into a switch that does not have this username and password, and an error will be returned for that switch.

- Step 5** Set the timeout value. The default is 30 seconds.
- Step 6** Check the SSH check box if you want to use SSH to connect to the switch. If you do not check the SSH check box, Telnet is used. (SSH is slower than Telnet, so if you are using SSH you may want to increase the timeout value described in Step 5.)
- Step 7** Click **OK** to start issuing the **show tech support** command to the switches you specified, or click **Close** to close the Show Tech Support dialog box without issuing the **show tech support** command.

In the Status column next to each switch, a highlighted status is displayed. A yellow highlight indicates that the Show Tech Support command is currently running on that switch. A red highlight indicates an error. A green highlight indicates that the Show Tech Support command has completed successfully. On successful completion, a button becomes available in the View column for each switch.

- Step 8** To view the Show Tech Support output, click the button next to the name of the switch. You see the Show Tech Support information in your default text editor.

**Note**

If you would like to view the Show Tech Support files without using Fabric Manager, you can open them with any text editor. Each file is named with the switch IP address and has a .TXT extension (for example, 111.22.33.444.txt).

Using Traceroute and Other Troubleshooting Tools

You can use the following options on the Tools menu to verify connectivity to a selected object or to open other management tools:

- Traceroute—Verify connectivity between two end devices that are currently selected on the Map pane.
- Device Manager—Launch the Device Manager for the switch selected on the Map pane.
- Command Line Interface—Open a Telnet or SSH session for the switch selected on the Map pane.

To use the Traceroute option to verify connectivity, follow these steps:

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- Step 1** Select two or more endpoints on the Fabric Manager map.

- Step 2 Choose **Tools > Traceroute**, or right-click one of the endpoints and choose **Trace Route** from the pop-up menu. You see the Traceroute window.
 - Step 3 Change the timeout value if the default (10 seconds) is too short or too long.
 - Step 4 Click **Start**.
 - Step 5 The results of the Traceroute operation appear in the Results box.
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Locating Other Switches

The Locate Switches option uses SNMPv2 and discovers devices responding to SNMP requests with the read-only community string public.

To locate switches that are not included in the currently discovered fabric, follow these steps:

- Step 1 Choose **File > Locate Switches** from the Fabric Manager main window. You see the Locate Switches dialog box.
- Step 2 Enter a range of specific addresses belonging to a specific subnet which limit the research for the switches. To look for a Cisco MDS 9000 switch belonging to subnet 192.168.199.0, use the following string:
`192.168.100. [1-254]`

Multiple ranges can be specified, separated by commas. For example, to look for all the devices in the two subnets 192.168.199.0 and 192.169.100.0, use the following string:
`192.168.100. [1-254] , 192.169.100. [1-254]`
- Step 3 Enter the appropriate read community string in the Read Community field. The default value for this string is “public.”
- Step 4 Click **Display Cisco MDS 9000 Only** to display only the Cisco MDS 9000 Family switches in your network fabric.
- Step 5 Click **Search** to discover switches and devices in your network fabric. You see the results of the discovery in the Locate Switches window.



Note The number in the lower left corner of the screen increments as the device locator attempts to discover the devices in your network fabric. When the discovery process is complete, the number indicates the number of rows displayed.

Configuring an OUI

When two WWNs in different VSANs on the same fabric have the same IP address, you will need to specify an Organizationally Unique Identifier (OUI) that Fabric Manager can use to differentiate the WWNs. If Fabric Manager encounters this situation, a dialog is displayed. Enter the OUI in the appropriate fields in the dialog. Restart Fabric Manager for your changes to take effect.

**Note**

This situation does not affect the availability or the functionality of the switch and/or fabric.
