

Fabric Manager Web Server

With Fabric Manager Web Server you can monitor Cisco MDS switch events, performance, and inventory from a remote location using a web browser.

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Fabric Manager Web Server Overview

Using Fabric Manager Web Server, you can monitor MDS switch events, performance, and inventory, and perform minor administrative tasks.

Fabric Manager Web Server provides the following features:

• Summary and drill down reports—The Performance Manager summary report provides a high-level view of your network performance. These reports list the average and peak throughput and provides hot-links to additional performance graphs and tables with additional statistics. Both tabular and graphical reports are available for all interconnections monitored by Performance Manager. Performance Manager also analyzes daily, weekly, monthly and yearly trends. These reports are only available if you create a collection using Performance Manager and start the collector.

See the "Historical Performance Monitoring" section on page 60-4.

• Zero maintenance database for statistics storage—No maintenance is required to maintain Performance Manager's round-robin database, because its size does not grow over time. At prescribed intervals the oldest samples are averaged (rolled-up) and saved. A full two days of raw samples are saved for maximum resolution. Gradually the resolution is reduced as groups of the oldest samples are rolled up together.

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Figure 7-1 Fabric Manager Web Server Filter Navigation Information Logout content tabs change password tree Summary - Microsoft Interne: Explorer provided by Cisco Systems, Inc. _ 7 ile Edit yiew Favorites Tools Help 🔵 Back 🔹 🕑 🕤 🛃 🛃 🏠 🔎 Search 👷 Favorites 🥝 🔗 🗕 📃 28 ddress 🕘 h tps://172.28.233.73/goHome.d 🗸 🔁 💜 Links t | About | Hels ahaha Fabric Manager CISCO Health Performance Inventory Custom Admin User ID: admin 🚽 SAN SAN Prob Switches: ISLs Hosts: 0 warnin AN Events for last 24 Ho ergenc Alert Error Varning Info Debug 84664

You see Fabric Manager Web Server as shown in Figure 7-1.

Navigating Fabric Manager Web Server

With most screens, Fabric Manager Web Server has standardized on certain navigation conventions.

Navigation Tree

You can use the filter navigation tree on the left pane to access the areas you want. In general:

- Select **SAN** to view information for all fabrics and VSANs in the SAN. When you do this, a "Fabric" column is added as the first column of the tables.
- Click a fabric folder to view information for that specific fabric.
- Some screens have expandable fabric folders. You can expand the fabric folders (by clicking the + or icons in front of the folders) to see a list of VSANs in that fabric. Select a VSAN to view information for that VSAN.

The features accessible from the tabs are limited to the areas you select in the filter tree.

Table Filtering and Navigation

You can filter the display of some tables to view subsets of the information. At the top right of these tables are one or more drop-down lists. Select an item from these lists, and then click **Filter** to filter the table information on that item.

You can change the number of rows displayed per page by selecting a number from the **Rows per page** drop-down list at the lower left corner of the table. Once you select a number, the table is updated with the new number of rows–you do not have to click a button.

For tables with multiple pages of information, you can:

- Jump to the first or last page of the table by clicking the "first page" or "last page" icons (arrows with a bar in front of it)
- Jump to the next page or previous page by clicking the "next page" or "previous page" icons (arrows)
- Jump to a specific page by entering the page number in the **Go to page** field and clicking the **Go** button.

You can search certain columns in the tables for information if a table column has a black icon next to the column head. Click the icon to display a Search dialog box.

Printing

There is a **Print** icon in the lower right corner of some tables. Click this icon to view the table in a printer-friendly format. You can then print the page from the browser.

Exporting to a File

There is an **Export** icon in the lower right corner of some tables. Click this icon to export the data to a .CSV file that can be read by programs such as Microsoft Excel.

Sorting Columns

On some screens, you can click a column head to sort the information for that column.

Installing Fabric Manager Web Server

If you are installing the Fabric Manager Web Server software for the first time, or if you want to update or reinstall the software, you access the supervisor module of the switch using a web browser. Install Fabric Manager Web Server on the same workstation where you installed Fabric Manager Server.

You must install Fabric Manager Web Server to view Performance Manager reports through a web browser.

For switches running Cisco MDS 9000 FabricWare, you need to install the Fabric Manager Web Server software from the CD-ROM included with your switch, or download Fabric Manager from Cisco.com.

To install Fabric Manager Web Server from the CD-ROM, navigate to the Fabric Manager installation notes and follow the directions.

To download the software from Cisco.com (requires a valid user name and password), go to the following website:

http://cisco.com/cgi-bin/tablebuild.pl/mds-fm

To download and install the software on your workstation, follow these steps:

Step 1 Optionally, enter the IP address or host name of the supervisor module running Cisco MDS SAN-OS in the Location or Address field of your browser. You see the installation page displayed by the HTTP server of the supervisor module.

When you connect to the server for the first time, it checks to see if you have the correct Sun Java Virtual Machine version installed on your workstation. If you do not have the correct version installed, a link is provided to the appropriate web page on the Sun Microsystems website so you can install it.

- a. Click the Sun Java Virtual Machine software link (if required) to install the software.
- **b.** Using the instructions provided by the Sun Microsystems website, reconnect to the supervisor module by reentering the IP address or host name in the Location or Address field of your browser.



Note

We recommend Java version 1.5(x). To use IPv6 addresses, you must have Java version 1.5. To change the Java Runtime Environment (JRE) version, start **Java Web Start** and set the Java preferences.

- **Step 2** Click the **Fabric Manager Web Server** installation link. You see a prompt asking for permission to install the application on your workstation.
- **Step 3** Click **Yes** to run the installer, which detects the installed version of the software, and prompts for upgrades or downgrades and other options if applicable.

Note

If TCP port 80 is in use, Fabric Manager Web Server checks port 8080 next. If that port is also in use, Fabric Manager Web Server uses the next available port. You can set the TCP port that you want Fabric Manager Web Server to use during the installation process.

Unless you specify a different directory on a Windows PC, the software is installed in the default location of C:\Program Files\Cisco Systems\MDS 9000. A Cisco MDS 9000 program group is created under Start > Programs. This program group contains shortcuts to Fabric Manager and Device manager.

On a UNIX (Solaris or Linux) machine, the installation path is /usr/local/cisco_mds9000. If this directory is not writable by the user, which is the case for non-root users, the default is set to \$HOME/cisco_mds9000. Shell scripts are created in the bin directory.



On a Windows PC, you install Fabric Manager Web Server as a service. This service can then be administered using the Services Panel from the Windows Control Panel. By default, Fabric Manager Web Server automatically starts when the workstation is rebooted. You can change this behavior by modifying the properties in the Services Panel.



In releases earlier than Cisco SAN-OS Release 3.1(2b), you must restart Fabric Manager Web Server if you restart Cisco MDS Database Server from the Services window.



You need to configure the Fabric Manager Server on the DNS server for remote logins unless the Fabric Manager Server is binding to a specific interface.

Using Fabric Manager Web Server with SSL

Fabric Manager Web Server uses TCP port 80 by default. If you want to install SSL certificates and use Fabric Manager Web Server over HTTPS (using TCP port 443 or another custom port), you need a certificate for each external IP address that accepts secure connections. You can purchase these certificates from a well-known Certificate Authority (CA).

To enable SSL, users must set up the keystore to use either self-signed certificate or a certificate from a trusted third party company like Verisign.

To create a local certificate, follow these steps:

Step 1 Set up a keystore to use self-signed certificate (local certificate). From the command line, issue the following command:

%JAVA_HOME%/bin/keytool -genkey -alias tomcat -keyalg RSA -keystore "C:\Program Files\Cisco Systems\MDS 9000\keystore"

Step 2 Enter your name, organization, state, and country. Enter changeit when prompted for a keystore password. If you prefer to use your own password, don't forget to change the keystorepass attribute in the server.xml file. When prompted for a key password, press enter or use the same password as the keystore password.

Note You can now follow the steps in the next section for modifying Fabric Manager Web Server to use SSL.

To set up a keystore to use CA certificate, follow these steps:

Complete Steps 1 and 2 above and then Step 3.

Step 3 In order to obtain a certificate from the Certificate Authority of your choice, you must create a Certificate Signing Request (CSR). The CSR is used by the certificate authority to create a certificate that identifies your website as secure.

To create a CSR, follow these steps:

Step 1 Create a local certificate (as described in the previous section).

Note You must enter the domain of your website in the field first and last name in order to create a working certificate.

Step 2 The CSR is then created with with this command:

keytool -certreq -keyalg RSA -alias tomcat -file certreq.csr -keystore "C:\Program Files\Cisco Systems\MDS 9000\keystore"

- Step 3 Now you have a file called certreq.csr. The file is encoded in PEM format. You can submit it to the certificate authority. You can find instructions for submitting the file on the Certificate Authority website. You will receive a certificate.
- **Step 4** Once you have your certificate, you can import it into you local keystore. First, you must import a Chain Certificate or Root Certificate into your keystore. You can then import your certificate.

Step 5 Download a Chain Certificate from the Certificate Authority where you obtained the certificate.

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Step 6 For Verisign.com commercial certificates, go to:

http://www.verisign.com/support/install/intermediate.html

Step 7 For Verisign.com trial certificates, go to:

http://www.verisign.com/support/verisign-intermediate-ca/Trial_Secure_Server_Root/index.ht
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Step 8 For Trustcenter.de, go to:

http://www.trustcenter.de/certservices/cacerts/en/en.htm#server

For Thawte.com, go to:

http://www.thawte.com/certs/trustmap.html

Step 9 Import the Chain Certificate into your keystore by issuing the following command:

keytool -import -alias root -keystore "C:\Program Files\Cisco Systems\MDS 9000\keystore"
-trustcacerts -file <filename_of_the_chain_certificate>

Step 10 Import the new certificate in X509 format:

keytool -import -alias tomcat -keystore "C:\Program Files\Cisco Systems\MDS 9000\keystore"
-trustcacerts -file <your_certificate_filename>

To modify Fabric Manager Web Server to use SSL, follow these steps:

- **Step 1** Stop Fabric Manager Web Server if you have already launched it. If you installed this on Windows, you can stop the service using Windows Services under Administrative Tools.
- **Step 2** Use a text editor to open **\jboss\server\default\deploy\jboss-web.deployer\server.xml** from the directory where Fabric Manager Web Server is installed. You see the following lines in the beginning after some copyright information:

Step 3 Comment the first <Connector> element and uncomment the second one. Note that the port changes from 8443 to 443 and keystore and keypass are added. Your file should look like the following example:

```
port="443" minProcessors="5" maxProcessors="75"
enableLookups="true"
acceptCount="10" debug="0" scheme="https" secure="true">
<Factory className="org.apache.catalina.net.SSLServerSocketFactory"
clientAuth="false" protocol="TLS"
keystoreFile="C:\Program Files\Cisco Systems\MDS 9000\keystore"
keystorePass="changeit"/>
</Connector>
```

- **Step 4** Save this file.
- Step 5 Restart Fabric Manager Web Server.



If you restart Fabric Manager Server with SSL enabled, you must restart Fabric Manager Web Server. If you want to stop and restart Fabric Manager Server with SSL disabled, then you must restart Fabric Manager Web Server.

Launching Fabric Manager Web Server

Before you can use Fabric Manager Web Server to monitor a switch, the service must be started on the server you are connecting through. The browser does not have to be on the same workstation where Fabric Manager Web Server is installed.

To launch Fabric Manager Web Server, follow these steps:

Step 1 If you are on the same workstation where you installed Fabric Manager Web Server, then open your browser and in the Location field enter http://localhost:PORT. Enter your port number if you specified a different port during installation. You can omit the port number if you used port 80 by default.

If you are on a different workstation from where you installed Fabric Manager Web Server, then open your browser and in the Location field enter **http://<yourServerAddress>:PORT**, where <*yourServerAddress>* is the address where you installed Fabric Manager Web Server, and *PORT* is 80 by default. Enter your port number if you specified a different port during installation.

<u>)</u> Tip

Choose **Start > Control Panel > Administrative Tools > Services** to verify that Fabric Manager Web Server has started. To start **Fabric Manager Web Server**, use a browser to go to the location of the service.

You can also view this information using the **Admin > Status** menu of the Fabric Manager Web Server client.

On a UNIX workstation, use the following command: \$ /usr/local/cisco_mds9000/bin/FMWebClient.sh status

You see the Fabric Manager Web Server dialog box shown in Figure 7-2. The text field at the bottom shows the Message of the Day from the server you logged into.

Figure 7-2 Fabric Manager Web Server Login Dialog Box



Step 2 Enter your user name and password.

Step 3 Click Login.

<u>Note</u>

If you have a new installation of Fabric Manager, the default user ID and password is admin/password. We recommend you change your password the first time you use Fabric Manager Server. If you do not have a new installation, you can use any existing passwords.

After launching Fabric Manager Web Server, you see the initial screen, which you can also see by choosing **Health** > **Summary**. Fabric Manager Web Server polls the Fabric Manager Server database to display the managed devices in the left pane.

Health

The Healh tab shows events and issues for the selected items, persistent across user sessions.

The Health tab contains the following subtabs:

- **Summary**—Shows a summary of events and problems for all SANs, or a selected SAN, fabric, or switch. You can click any of the blue links for more information about that item.
- **Fabric**—Shows a detailed list of events and hardware, or accounting. You can filter these events by severity, date, and type of event.
- Syslog—Shows a detailed list of system messages. You can filter these events by severity, date, and type of event.
- Analysis—Enables you to schedule or run analysis reports and compile results to analyze the Fabric Manager Server database statistics.

Viewing Summary Information

To view a summary of events and problems using Fabric Manager Web Server, follow these steps:

Step 1 Choose **Health > Summary**.

You see the Summary tab. In the left navigation pane you see a list of the fabrics managed by Fabric Manager Server. In the right pane is a summary table of problems and events for the last 24 hours (see Figure 7-3).



Figure 7-3 Summary Tab

- **Step 2** Do one of the following:
 - Click **SAN** to display summary information for all fabrics.
 - Click one of the fabrics to display summary information for that fabric.
- **Step 3** Click the warnings next to Switches, ISLs, Hosts, or Storage (other than 0) to see an inventory of switches, ISLs, or end devices for that fabric.
- **Step 4** Click the number of events next to the event severity levels (Emergency, Alert, Critical, Error, Warning, Notice, Info, or Debug) to see a table of events and descriptions for that fabric.

Viewing Fabric Information

To view a detailed list of events and hardware, or accounting using Fabric Manager Web Server, follow these steps:

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Health

Step 1 Choose **Health > Fabric**.

You see the Fabric tab shown in Figure 7-4.

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Step 2 Expand a fabric and click one of the switches to display event information for that switch.

Viewing Syslog Information

To view a detailed list of system messages using Fabric Manager Web Server, follow these steps:

Step 1 Choose Health > Syslog.

You see the Syslog tab shown in Figure 7-5.

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5. Fabric 5W-122 SW-125 No	
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8. Fabric 5W-V 693-59 SW-C838-63 N0	
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- **Step 2** Select one of the fabrics to display a table of syslog information for that fabric.
- **Step 3** Expand a fabric and select one of the switches to display syslog information for that switch.
- Step 4 If you have selected a fabric and one or more switches in that fabric have system messages, you see Events, Hardware, Accounting, and Link Incidents in the Files column. Click one of these message types to see system messages for the switches in that fabric filtered by the message type you clicked.



If you select a switch, choose an interval and a message type from the drop-down lists, and then click **Filter** to see system messages filtered by the message type you chose.

Viewing Analysis Reports

As of Cisco SAN-OS Release 3.2(1), you can run or schedule analysis reports to summarize the Fabric Manager Server database statistics. You can run or schedule the following analysis reports:

- **Connectivity** (Host to Storage or Storage to Host)—The connectivity report summarizes zoning for multiple hosts or storage devices. If you choose host to storage, the report shows all storage devices zoned as accessible by each host. If you choose storage to host, the report shows all hosts that can access a specific storage device.
- **Zoning Discrepancies**—The zoning discrepancies report identifies zoning issues that might impact connectivity or security.
- **Multi Path**—The multi path report determines the number of active and inactive paths between hosts and storage enclosures.
- Switch Health—The switch health report provides status information on all critical Cisco MDS 9000 system, module, port and Fibre Channel services.

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• **Fabric Configuration**—The fabric configuration analysis compares multiple switches to a specific switch or a saved configuration.

To run analysis reports using Fabric Manager Web Server, follow these steps:

Step 1 Choose **Health > Analysis**.

You see the Analysis tab shown in Figure 7-6.

Figure 7-6 Analysis Tab

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Step 2 Select a report from the **Report Type** drop-down list.

Step 3 Click **Run Report** to run the report.

To schedule a report to run at a specified time, see "Generating Custom Reports by Template" section on page 7-35.

Performance

The Performance tab shows an overview of the average throughput and link utilization of SAN components. You see pie charts for the throughput and utilization. You can click a pie chart to view a table of the data. In these tables, clicking a blue link displays a graph of that data, if applicable. The Filter drop-down list at the top right of the screen allows you to filter the data based on various periods of time.

The Performance tab contains the following subtabs:

- Summary—Shows the total utilization and throughput in summary form.
- End Devices—Shows a detailed list of end devices (host or storage), port traffic, and errors.
- ISLs—Shows a detailed list of ISL traffic and errors.

- NPV Links— Shows a detailed list of traffic between NPV devices and ports.
- Flows—Shows a detailed list of host-to-storage traffic.
- Ethernet—Shows a detailed list of GigE ports.
- Others—Shows a detailed list of other statistics.
- **Traffic Analyzer**—Shows a summary of SPAN ports configured in the SAN and any traffic analyzers configured.
- **Prediction**—Displays a graph that predicts future performance to help determine when storage network connections will become overutilized.
- Switch Bandwidth—Shows total bandwidth for a switch.

Viewing Performance Summary Information

To view total utilization and throughput in summary form using Fabric Manager Web Server, follow these steps:

Step 1 Choose Performance > Summary.

You see the Summary tab shown in Figure 7-7.



Step 2 Expand a fabric and select one of the VSANs to display network throughput and link utilization information for that VSAN.

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Click a pie chart (Hosts, Storage, or ISLs) to go to the appropriate performance table.

Viewing Performance Information for End Devices

To view host and storage port traffic and errors using Fabric Manager Web Server, follow these steps:



Step 2 Expand a fabric and select one of the VSANs to display performance information for the end devices in that VSAN.



Note

There are variations to this procedure. In addition to these basic steps, you can also:

- Select the type of ports and the time range, and click Filter to filter the display of those criteria.
- Click the name of a device in the Name column to see a graph of the traffic on that device for the past 24 hours. You can change the time range for this graph by selecting it from the drop-down list in the upper right corner.

• Select the Host Enclosures type filter and then click a link in the **Name** column to display the performance information for that host.

Viewing Performance Information for ISLs

To view ISL traffic and errors using Fabric Manager Web Server, follow these steps:



Step 2 Expand a fabric and select one of the VSANs to display performance information for the ISLs in that VSAN.



There are variations to this procedure. In addition to the basic steps described above, you can also:

- Select the time range, and click Filter to filter the display.
- Click the name of an ISL from the Name column to see a graph of the traffic across that ISL for the past 24 hours. You can change the time range for this graph by selecting it from the drop-down list in the upper right corner.

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Viewing Performance Information for NPV Links

To view traffic between NPV devices and ports using Fabric Manager Web Server, follow these steps:

Step 1 Choose Performance > NPV Links.

You see the NPV Links tab shown in Figure 7-10



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🔶 🕸 🗧 🗸 🍘 NPV Links	🗙 🔐 Cisco MDS 9000 Family Fabri 🎎 Cisco MDS 9000 Family Fabri 👘 🖓 🔹 🔂 🔹 🖶 🔹 🔂 🔹	÷
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Step 2 Expand a fabric and select one of the VSANs to display performance information for the NPV Links in that VSAN.

Note

There are variations to this procedure. In addition to the basic steps described above, you can also:

- Click the name of an NPV Link from the Name column to see a list of the traffic for the past 24 hours.
- You can change the time range for this information by selecting it from the drop-down list in the upper right corner.

Viewing Performance Information for Flows

To view host and storage traffic using Fabric Manager Web Server, follow these steps:

Step 1 Choose **Performance > Flows**.

You see the Flows tab shown in Figure 7-11.

Figure 7-11

Flows Tab

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	Note: Values computed and updated every hour by using the 5 minutes traffic average.

Step 2 Expand a fabric and select one of the VSANs to display performance information for the flows in that VSAN.



- There are variations to this procedure. In addition to these basic steps, you can also:
- Select the time range, and click Filter to filter the display.
- Click the name of a flow from the Name column to see a graph of the traffic over that flow for the past 24 hours. You can change the time range for this graph by selecting it from the drop-down list in the upper right corner.

Viewing Performance Information for GigE Ports

To view GigE ports using Fabric Manager Web Server, follow these steps:

Step 1 Choose **Performance > Ethernet**.

You see the Ethernet tab shown in Figure 7-12.

Figure 7-12 Ethernet Tab

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	1. Fabric_SVV-122	SVV-124:gigE4/5	fcip	100.000MB	1.303KB	1.294KB	2.598KB	1.831KB	1.754KB	0	0	2007/08/29-15:29
	2. Fabric_SW-122	SVV-123:gigE3/2	fcip	n/a	1.146KB	1.148KB	2.295KB	1.300KB	1.301KB	0	0	2007/08/29-15:29
	3. Fabric_SW-122	SVV-123:gigE3/1	fcip	100.000MB	148B	154B	302B	1.763KB	1.839KB	0	0	2007/08/29-15:29
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Step 2 Expand a fabric and select one of the VSANs to display the GigE ports in that VSAN.

Note

There are variations to this procedure. In addition to the basic steps described above, you can also:

- Select the time range, and click Filter to filter the display.
- Click the name of a GigE port from the Name column to see a graph of the traffic across that GigE port for the past 24 hours. You can change the time range for this graph by selecting it from the drop-down list in the upper right corner.

Viewing Other Statistics

To view other statistics using Fabric Manager Web Server, follow these steps:

```
Step 1 Choose Performance > Others.
```

You see the Others tab shown in Figure 7-13.

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	1. Fabric_SW-122 SW-125 Memory	67 68 2007/08/29-16:13	
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	4. Fabric_SW-122 SW-128 Memory	28 29 2007/08/29-16:13	
	6 Fabric SW422 SW423 Memory	26 27 2007/00/23-10.13	
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Figure 7-13 Others Tab



Step 2 Expand a fabric and select one of the VSANs to display the other statistics in that VSAN.

There are variations to this procedure. In addition to the basic steps described above, you can also:

- Select the time range, and click **Filter** to filter the display.
- Click the IP address of a switch from the Name column to see a graph of the traffic across that switch for the past 24 hours. You can change the time range for this graph by selecting it from the drop-down list in the upper right corner.

Viewing Detailed Traffic Information

To view SPAN port detailed traffic using Fabric Manager Web Server, follow these steps:

Step 1Choose Performance > Traffic Analyzer.You see the Traffic Analyzer tab shown in Figure 7-14.

Traffic Analyzer ·	Microsoft Internet Explorer provided by Cisco Systems, Inc.	@l
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	The latest Traffic Analyzer installation is available here.	

Figure 7-14 Traffic Analyzer Tab

Step 2 Do one of the following:

- Select a SAN to display a list of SPAN ports for switches in all fabrics in the SAN.
- Select one of the fabrics to display a list of SPAN ports for switches in that fabric.

Viewing Predicted Future Performance

To plan storage network changes, it is necessary to determine when configuration changes (such as re-zoning) may be needed to meet growing performance demands. Fabric Manager Server provides a performance prediction report to enable you to more easily predict when storage network connections will become overutilized.

In general, to create a performance prediction report, do the following:

- Specify the period of time in the past that you want to use as a sample to predict the future performance.
- Specify the threshold values that you do not want to exceed.
- Specify the period of time in the future for which you want to view performance.

Fabric Manager Server extrapolates the performance and lists in chronological order which interfaces are expected to reach the threshold within the specified time period.

Using the Default Values

When you first view predicted future performance by selecting **Performance > Prediction**, you see a table showing the predicted performance for your entire SAN using the default values. The default values are:

- Scope—entire SAN
- Past performance period-Month
- Future performance period—Month
- Threshold—80%
- SAN elements or links—ISLs
- Performance prediction type—Average

Click a link in the **Name** column to view a graph of that ISL's performance for the past 24 hours. To view the performance for the past week, month, year, or custom time, select an option from the drop-down list.

Using Your Own Values

L

To view a table of predicted future performance with your own values using Fabric Manager Web Server, follow these steps:

Step 1 Choose **Performance > Prediction**.

You see the Prediction tab shown in Figure 7-15.

Figure 7-15 Prediction Tab

Prediction - Microsof	t Internet E	xplo	orer provided by Cisco	Syster	ms, Inc.			_ 7
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- **Step 2** Expand a fabric and select one of the VSANs to specify that the prediction report will be generated for that VSAN.
- **Step 3** Select the period of time (Week, Month, 3 Months, 6 Months or Year) to use to predict performance from the past drop-down list.
- **Step 4** Select the period of time (Week, Month, 3 Months, 6 Months or Year) for which to make the prediction from the future drop-down list.

Step 5 Enter the threshold percentage (1-100) of utilization that you do not want the traffic to exceed.

Performance

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- Step 6 Enter the number of ISLs, hosts, storage devices, or flows for which you want to make the prediction. The prediction will show the top 10, top 20, or top 50 with the most traffic.
- **Step 7** Select the type of traffic prediction to show:
 - Average—The average value of all the sample data is used.
 - **Peak**—The average value of all the peak values is used. The number of peak values is obtained by dividing the total number of records into groups based on the number you enter in the **Use Peak Value of Every** *xx* **Records** field. For example, if you have 1000 records and you enter 100 into the field, your records are divided into 10 groups and 10 peak values are used.
- Step 8 Click Predict.

You see the prediction table with the new data. Click the links in the Name column to show performance charts based on the history data.

Viewing Switch Bandwidth

To view the total bandwidth for a switch using Fabric Manager Web Server, follow these steps:

Step 1 Choose Performance > Switch Bandwidth.

You see the Switch Bandwidth tab shown in Figure 7-16.

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	3. Fabric_SW-Vegas-59	9 SW-Excal-61	1.137KB	1.237KB	2.375KB	1.144KB	1.246KB	0	0 2007/08/29-15:29	
	4. Fabric_SW-122	SW-123	1.091KB	963B	2.054KB	1.312KB	1.239KB	0	0 2007/08/29-15:29	
	5. Fabric_SW-Vegas-59	9 SW-Vegas-60	710B	780B	1.491KB	7188	790B	0	0 2007/08/29-15:29	
	6. Fabric_SW-Vegas-59	9 SW-Vegas-59	594B	861B	1.456KB	598B	864B	0	0 2007/08/29-15:29	
	7. Fabric_SW-122	SW-125	62.235MB	346B	810B	130.691MB	373B	0	0 2007/08/29-15:29	
	8. Fabric_SW-122	SW-128	346B	464B	810B	373B	514B	0	0 2007/08/29-15:29	
	9. Fabric_SW-122	172.28.232.127	400B	321B	7218	445B	491B	0	0 2007/08/29-15:29	
	10. Fabric_SW-Vegas-59	9 SW-Casa-83	242B	97B	339B	247B	100B	0	0 2007/08/29-15:29	
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Step 2 Select the period of time (**24 Hours**, **Week**, **Month** or **Year**) for which you want to view bandwidth usage from the **Last** drop-down list.

Inventory

The Inventory tab shows an inventory of the selected SAN, fabric, or switch. You can export this information to an ASCII file in comma-separated value format that can be read by applications such as Microsoft Excel. You can set the number of rows and columns per page.

The Inventory tab contains the following subtabs:

- VSANs—Shows details about VSANs.
- Switches—Shows details about switches.
- Licenses—Shows details about the licenses in use in the fabric.
- Modules—Shows details for MDS switching and services modules, fans, and power supplies.
- End Devices—Shows the host and storage ports.
- ISLs—Shows the Inter-Switch Links.
- NPV Links—Shows the links betweek NPV devices and ports.
- Zones—Shows the active zone members (including those in inter-VSAN zones).
- Summary—Shows VSANs, switches, ISLs, ports, and end devices.

Viewing Detailed Information for VSANs

To view detailed inventory information about VSANs using Fabric Manager Web Server, follow these steps:

Step 1 Choose **Inventory > VSANs**.

You see the VSANs tab shown in Figure 7-17.

7-23

Figure 7-17

VSANs Tab

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Select one of the fabrics to display VSAN inventory information for that fabric.



There are variations to this procedure. In addition to these basic steps, you can also:

• Select the status level, then click **Filter** to filter the display to show all VSANs or just those with errors.

Viewing Detailed Information for Switches

To view detailed inventory information about switches using Fabric Manager Web Server, follow these steps:

Step 1 Choose **Inventory** > **Switches**.

You see the Switches tab shown in Figure 7-18.

Figure 7-18

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Switches Tab

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Step 2 Do one of the following:

- Select a SAN to display switch inventory information for all fabrics in the SAN.
- Select one of the fabrics to display switch inventory information for that fabric.
- Expand a fabric and select one of the VSANs to display switch inventory information for that VSAN.

Viewing License Information

To view license information for switches using Fabric Manager Web Server, follow these steps:

Step 1 Choose **Inventory > Licenses**.

You see the Switch Licenses tab shown in Figure 7-19.

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	1 Eabric SIAL122 SIAL12	2 MAINERAME PKG	Unused	Unicensed	Grace Period Evnire	d		
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	3. Fabric_SVV-122 SVV-12	2 PORT_ACTIVATION_PKG	Unused	Unlicensed		.,		
	4. Fabric_SW-122 SW-12	10G_PORT_ACTIVATION_PKG	Unused	Unlicensed				
	5. Fabric_SVV-122 SVV-12	2 SAN_EXTN_OVER_IP	Unused	Unlicensed				
	6. Fabric_SVV-122 SVV-12	2 SAN_EXTN_OVER_IP_IPS2	Unused	Unlicensed				
	7. Fabric_SW-122 SW-12	2 STORAGE_SERVICES_ENABLER_PKG	Unused	Unlicensed				
	8. Fabric_SVV-122 SVV-12	2 ENTERPRISE_PKG	In Use	Unlicensed	Grace Period: 758 d	lays 16 hou	rs 3 mins 35 seconds	
	9. Fabric_SW-122 SW-12	2 SAN_EXTN_OVER_IP_18_4	Unused	Unlicensed				
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Figure 7-19 Switch Licenses Tab



Step 2

Select one of the fabrics to display license information for switches in that fabric.

There are variations to this procedure. In addition to these basic steps, you can also:

• Select the status level, and click **Filter** to filter the display to show all licenses or just those with errors.

Viewing Detailed Information for Modules

To view detailed inventory information about modules using Fabric Manager Web Server, follow these steps:

Step 1 Choose **Inventory > Modules**.

You see the Modules tab shown in Figure 7-20.

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- 🗀 Fabric_SW-Vegas-59									Status: A	All 🗸
									Showing 1-10) of 98 record
	Fabric Switch	Name	ModelName	SerialNum	Туре	Slot H	lardware Revision	Software Revision	AssetID	OperStatus
	1. Fabric_SW-122 172.28.232	127 Fan Module-1	DS-2SLOT-FAN	N/VG103101GJ	fan	N/A 2	0		73-8339-06	ok
	2. Fabric_SW-122 172.28.232	127 MDS 2 Slot Chassis	DS-C9216A-K9	FOX1033DAFV	chassis	N/A 2.	0		73-9660-03	n/a
	 Fabric_SW-122 172.28.232 	127 PowerSupply-2	DS-CAC-845W	QCS1047100F	powerSupply	N/A 1.	2		341-0052-03	ok
	4. Fabric_SW-122 172.28.232	127 4x1GE IPS, 18x1/2/4Gbps FC/Sup2	2 DS-X9222I-K9	JAB111400B9	module	1 0.	305	3.2(1)	73-11018-03	ok
	5. Fabric_SW-122 SW-122	MDS 2 Slot Chassis	DS-C9216-K9	FOX0832040T	chassis	N/A 1.	0		73-8294-02	n/a
	6. Fabric_SVV-122 SVV-122	PowerSupply-1	DS-CAC-845W	QCS083310C7	powerSupply	N/A 1.	0		341-0052-02	ok
	7. Fabric_SVV-122 SVV-122	PowerSupply-2	DS-CAC-845/V	QCS08331019	powerSupply	N/A 1.	0		341-0052-02	ok
	8. Fabric_SVV-122 SVV-122	1/2 Gbps FC/Supervisor	DS-X9216-K9-SUP	JAB0838012L	module	1 5.	2	3.1(2b)	73-8297-11	ok
	9. Fabric_SVV-122 SVV-122	Fan Module-1			fan	N/A 0.	0			ok
	10. Fabric_SVV-122 SVV-123	MDS 9 Slot Chassis	DS-C9509	FOX080105NX	chassis	N/A 1.	0		73-8014-03	n/a
	10. Fabric_SW-122 SW-123	MDS 9 Slot Chassis	DS+C9509	FOX080105NX	chassis	N/A 1	0		73-8014-03	n/a
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Step 2 Do one of the following:

- Select a SAN to display module inventory information for all fabrics in the SAN.
- Select one of the fabrics to display module inventory information for that fabric.
- Expand a fabric and select one of the VSANs to display module inventory information for that VSAN.

Viewing Detailed Information for End Devices

To view detailed inventory information about end devices using Fabric Manager Web Server, follow these steps:

Step 1 Choose **Inventory > End Devices**.

You see the End Devices tab shown in Figure 7-21.

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	2 Fabric SW-122	500 S	EAGATE 10:00:00:04:0E:04:00:00	Glogic 21.01.00.00.00.08.14.00	10:00:00:04:cf:04:00:00	0x190100	SW-122 (C1/12 SW-124 (c3/15	200 20b	ok	
	3. Fabric SVV-122	400 S	EAGATE 10:00:00:04:CF:02:00:00	Seagate 10:00:00:04:cf:02:00:00	10:00:00:04:cf:02:00:00	0xef0101	SVV-124 fc3/14	2Gb	ok	
	4. Fabric SVV-122	500 G	LOGIC 10:00:00:E0:88:03:00:00	Qlogic 10:00:00:e0:8b:03:00:00	10:00:00:e0:8b:03:00:00	0xb30200	SW-125 fc1/7	2Gb	ok	
	5. Fabric_SW-122	400 G	LOGIC 10:00:00:E0:88:01:00:00	Qlogic 10:00:00:e0:8b:01:00:00	10:00:00:e0:8b:01:00:00	0×240200	SW-125 fc1/8	2Gb	ok	
	6. Fabric_SW-Vegas-59	1 2	1:00:00:E0:8B:19:94:57	21:00:00:e0:8b:19:94:57	21:00:00:e0:8b:19:94:57	0×120100	SVV-52 fc1/9	2Gb	ok	
	7. Fabric_S/V-Vegas-59	1 2	1:00:00:E0:8B:19:5F:57	DA_test	21:00:00:e0:8b:19:5f:57	0×0b0100	SVV-Casa-84 fc1/29	2Gb	ok	
	8. Fabric_SW-Vegas-59	1 1	0:00:00:00:C9:43:01:98	10:00:00:00:c9:43:01:98	10:00:00:00:09:43:01:98	0×100600	SW-Paradise-63 fc1	/5 2Gb	ok	
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Figure 7-21 End Devices Tab





If you filter by hosts or enclosures, you can click a host in the resulting table to see host enclosure performance, a list of hosts, a list of hosts to which your device is connected, and the connection paths. This allows you to see performance statistics for hosts and enclosures.

You can also filter by end devices or by port groups to view aggregate information for those port groups, such as peak and average usage.

Viewing Detailed Information for ISLs

To view detailed inventory information about ISLs using Fabric Manager Web Server, follow these steps:

Step 1 Choose **Inventory > ISLs**.

You see the ISLs tab shown in Figure 7-22.

gure 7-22	ISLs Tab									
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v VSANs → Switches	Licenses Modules SAN	End Devices 🔸 ISLs 🔸 Zon	es ♦ Summar	y •>						
Fabric_SW-122 Fabric SW-Vegas-59										
								status: All		
							Sho	owing 1-10 of 15 records		
	Fabric	VSANs	From Switch	From Interface	To Switch	To Interface	Spee	d Status		
	1. Fabric_SW-122	1,2	172.28.232.127	fc1/1	SW-124	fc2/9	2Gb	Trunk Not Fully Active		
	2. Fabric_SW-122	1,2	172.28.232.127	tc1/2	SVV-124	tc2/13	266	Trunk Not Fully Active		
	3. Fabric_SVV-122	1,2,3,4,5,200,300,400,500,600,999	599-123	102/5	SVV-122	toin0	200	ok .		
	4. Fabric_SVV-122	1,2,3,200,500,400,500,600	599-125	fel 4	SVV-124	10p2	100	UK Taunis bink Fudha Bakian		
	5. Fabric_SW-122	1,2,3,400,500,600	5/1/125	101/1	SW-124	1C3/9	100	Trunk Not Fully Active		
	7 Fabric SW-Vecas-59	1,000	SAL52	fc1/13	SM/Evcel-61	fc1/12	200 20b	Trunk Not Fully Active		
	8 Fabric SM-Vegas-59	1	SML52	chappel128	SIA(Eycal-61	chappel128	4Gh	Trunk Not Fully Active		
	9. Fabric SW-Vegas-59	1	SW-Casa-83	fc1/1	SW-Casa-84	fc1/1	2Gb	ok		
	10. Fabric_SW-Vegas-59	1,3	SVV-Casa-83	fc1/2	SW-Vegas-60	fc4/5	2Gb	ok		
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Expand a fabric and select one of the VSANs to display ISL inventory information for that VSAN.



There are variations to this procedure. In addition to these basic steps, you can also:

• Select the status level, and click **Filter** to filter the display to show all ISLs or just those with errors.

Viewing Detailed Information for NPV Links

To view detailed inventory information about NPV Links using Fabric Manager Web Server, follow these steps:

```
Step 1 Choose Inventory > NPV Links.
```

You see the NPV Links tab as shown in Figure 7-23.

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		_	_	_	_	Statu	s: All	4 records	
	Fabric	VSANs	From NPIV(Core)	From Interface	To NPV Device	To Interface	Speed	Status	
	1. Fabric_q148	1	v-30	fc8/8	npv1	fc1/5	2Gb	ok	
	2. Fabric_q148	1	v-30	fc8/4	npv2	fc1/3	2Gb	ok	
	3. Fabric_q148	1	v-30	fc8/13	npv2	fc1/5	2Gb	ok	
	4. Fabric_q148	1	v- <mark>3</mark> 2	fc8/14	npv1	fc1/6	2Gb	ok	
	Rows	per page	e: 10 💙	I⊲ ·	🕥 Go to page:	1 of 1 Pa	ges 🖒		
							-		



Viewing Detailed Information for Zones

To view detailed inventory information about zones using Fabric Manager Web Server, follow these steps:

Step 1Choose Inventory > Zones.You see the Zones tab shown in Figure 7-24.

Figure 7-24	Zones Tab				
Zones - Microsoft	Internet Explorer provide	d by Cisco Syste	ems, Inc.		- 7
<u>Eile Edit V</u> iew F <u>a</u> vorites	<u>T</u> ools <u>H</u> elp				1
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Address 🗃 https://172.28.2	33.73/s280.do				🔽 🛃 Go 🛛 Links 🎽 🧲
CISCO Fabric I	lanager			Chang	je Password Download Logout About Help
VSANS + Switches	Licenses Modules End Devices Inventory Custom A	dmin • • Zones • Summary • 1			User ID: admin
3 SAN	SAN				
Fabric_SW-122 Fabric_SW-Vegas-59					
			Status: All	~	
			Showing 1-8	of 8 records	
	Fabric VSAN Id Zoneset	Zone 🚜 Type Switch	Interface Member 🚜 Fc	1 LUNS	
	1. Fabric_SVV-Vegas-59 IVR IVR_Zoneset1	IVR_Zone1 VWVN SVV-Cas	a-84 fc1/29 21:00:00:e0:8b:19:5f:57 0xb0*	00	
	2. Fabric_SVV-Vegas-S9 IVR IVR_Zoneseti	IVR_ZODET VWWN	22:00:00:20:37:18:20:d5		
	5. Fabric_SVV-Vegas-S9 IVR IVR_Zoneset1 6. Echric_SVV-Vegas-S9 IVR 1/R Zoneset1	IVR_Zone1 vwvw	21:01:00:60:66:39:01:56		
	5 Fabric SALVegas-59 IVR IVR_Zoneset1	IVR Zone1 WWN	22:00:00:20:37:39:66:58		
	6 Fabric SALVegas-59 IVR IVR Zoneset1	IVR Zone1 WWW	22.00.00.20.37.39.70.21		
	7. Fabric SW-Vegas-59 IVR IVR Zoneset1	IVR Zone1 VW/N	22:00:00:20:37:88:2e:32		
	8. Fabric_SW-Vegas-59 IVR IVR_Zoneset1	IVR_Zone1 VW/N SVV-52 f	c1/9 21:00:00:e0:8b:19:94:57 0x120	100	
	Rows per page. 10 💌		I Go to page: 1 of 1 Page:	Go ▷ ▷1	
				30	



2 Expand a fabric and select one of the VSANs to display zone inventory information for that VSAN.



There are variations to this procedure. In addition to these basic steps, you can also:

Select the status level, and click Filter to filter the display to show all zones or just those with errors.

Viewing Summary Inventory Information

To view a summary of VSANs, switches, ISLs, ports, and end devices using Fabric Manager Web Server, follow these steps:

Step 1 Choose **Inventory > Summary**.

You see the Summary tab shown in Figure 7-25.

• E http://171.71.49	.165/s210.do				~	4 size
🥖 Summary						🙆 • 🗟 - 🖶
Fabric Ma Health Perform	nager Web (ance Inventory	Client Report SME Ad	min		Change Pa	assword Download Logout
Summary 🔹 VSAN	s 🔹 Switches 🔹	Licenses 🔸 Module	es 🔹 End Devices	🔹 ISLs 🔹 NPV I	.ink <mark>s 🔹 Zones 🔹</mark>	
AN	SAN					
Fabric_q148	Invento	ory Summary				
	Logical	# Switches	# ISLs	# Ports	# End Devices	#
	VSANs	154 DS-C9124	3 Regular	29 E/TE Ports	62 Total Hosts	5
		DS-C9020-20K9	3 Port Channels	1 F/FL Ports	9 Total Storage	4
		DS-C9216a	1 Total	30 Fabric Ports	71 Total Ports	9
		DS-C9120	2	Total FC	648	
		DS-C9140	1	Ethernet Ports	20	
		DS-C9216	1			
		DS-C9509	4			
		Other	1			
	4	Total	16			

Step 2

Do one of the following:

- Select a SAN to display a summary of inventory information for all fabrics in the SAN.
- Select one of the fabrics to display a summary of inventory information for that fabric. ٠

Viewing Detailed Summary Inventory Information

Detailed summary includes a number of key summary statistics like port usage and any statistics information, license use summary, environmental status and switch states, monitoring and alerting status that is useful for creating comprehensive SAN health reports.

To view a detailed summary using Fabric Manager Web Server, follow these steps:

- Step 1 Choose Inventory > Summary.
- Step 2 Click Inventory Summary Details at the bottom of the page.

You see the Inventory Summary Details as shown in Figure 7-26.

K	刘 🔻 🙋 http	c://171.7	71.49.16	5/s211.do?filte	.fabri	cId=-1								~	++ ×	Google	2	
4	Summar	y Details	;														🕼 • (<u>a</u> - 4
ve	ntory Detail ce Count	Summ	ary Re	port														
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1.	. QLogic								1 (Cisco							15	
rt	Usage																	
					Port	Use				į	F	an Out Rat	ios	1	Port M	odule	Types	
	Fabric Name	Disk	Tape	Unknown De	vice	Host	ISL	NPV	Free	Total	Host:Disk	Port: ISL	Device:ISL	DWDM	10G SFP	SFP	GBIC	OTHER
1.	Fabric_q148	4	0		0	4	62	0	-70	0	1.0:1	-1.0:1	0.12:1	0	(78	0	5
2. al	TOTALS th Status And	4 d Moni	0 toring		0	4	62	0	-70	0	1.0:1	-1.0 : 1	0.12:1	0	() 78	0	5
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Figure 7-26 Detailed Summary Information

Report

The Report tab allows you to create customized reports based on historical performance, events, and inventory information gathered by the Fabric Manager Server. You can create aggregate reports with summary and detailed views. You can also view previously saved reports.

The Report tab contains the following subtabs:

- View—Displays previously saved reports.
- Generate—Generates a custom report based on the selected report template.
- Edit—Edits an existing report template.
- Create—Creates a report template, allowing you to select any combination of events, performance categories, and inventory.
- Scheduled Jobs—Displays scheduled jobs based on the selected report template.

Creating a Custom Report Template

You can create custom reports from all or any subset of information gathered by Fabric Manager Server. You create a report template by selecting events, performance, and inventory statistics that you want in your report and set the desired SAN, fabric or VSAN to limit the scope of the template. You can generate

and schedule a report of your fabric based on this template immediately or at a later time. Fabric Manager Web Server saves each report based on the report template used and the time you generate the report.

To create a custom report template using Fabric Manager Web Server, follow these steps:

Step 1 Choose Report> Create.

You see the Create Report tab as shown in Figure 7-27.

Figure 7-27	Create Report Tab)
-------------	-------------------	---

 		✓ 4 ₇	X a4 size
🕻 🎄 🍘 Create			
			🟠 • 🗟 · 🖶 • 🔂 • 🧔
Health Performance Inventory Rep	nt port SME Admin	Change Passw	ord Download Logout About User ID: a
 View Generate Edit Create San Pabric_q148 New Name: Health Summa Fabric E Analys Zone 1 Config Analys Switch 	Y vents Severity: All ♥ s ath • Storage Connectivity e to Host Connectivity biscrepancy is ←Policy Files not found ♥ Health	Last: 24 Hours V Inventory Status: All V Summary Details VSANs Switches Licenses Modules End Devices Type: All V ISLs Zones Visio Topology Map Show Link Label Show End Devices	 Performance Num: 10 End Devices Type: All Ports ISLs Embed Chart Flows Use Fixed Va Ethernet MaxYAxis: Others MinYAxis: Switch Bandwidth Predict next 6 months peak traffic for

- **Step 2** Provide a new name for the report.
- **Step 3** Indicate the information you want in the report by checking the **Events**, **Performance**, and **Inventory** check boxes.
- **Step 4** Optional Select Severity for events, Status for inventory information, or Type of end devices for performance information and inventory information.
- **Step 5** Click **Save** to save this report template.

Viewing Custom Reports by Template

Reports you generate are saved by Fabric Manager Server and are viewable by choosing **Custom** > **View**. To view a custom report using Fabric Manager Web Server, follow these steps:

Step 1 Choose Report > View.

You see the View Report table shown in Figure 7-28.





Step 2 Select the report that you want to view from the Navigation pane. You can view the report in the main screen or you can view the report in a new browser window if you click the report in the report table.

Generating Custom Reports by Template

You can generate reports based on a selected template or you can schedule the report to run at a specified time.

To generate a report or to schedule a report using Fabric Manager Web Server, follow these steps:

Step 1 Select a SAN, fabric, or VSAN on which to base the report.

Step 2 Choose **Report > Generate**.

You see the Generate Custom Report tab shown in Figure 7-29.

L

Report

Figure 7-29 Generate Custom Report Tab

enerate - Windows Inter	net Explorer	
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🕸 🌈 Generate		🙆 • 🔊 • 🖶 • 🔂 • 🤅
Fabric Ma Health Perform	nager Web Client	Change Password Download Logout About User ID: a
♦ View ♦ Generate	♦ Edit ♦ Create ♦ Scheduled Jobs ♦	
SAN Fabric_q148		
	Available: switch 💌	Use Scope from Template
	Report Name: 2008-05-30_02-33-17	
		Generate Schedule >>
	-	

- **Step 3** Choose a report template from the **Available** drop-down list.
- **Step 4** Optional Change the name of the report. By default, report names are based on the date and time generated.
- Step 5 Optional Deselect the Use Scope from Template check box to override the scope defined by the filter type.
- **Step 6** Click **Generate** to generate a report based on this template.

You see the report results in a new browser window. Alternatively, you can view the report by choosing **Report > View** and selecting the report name from the report template you used in the navigation pane.

- **Step 7** Click **Schedule** to schedule a report based on this template. You see the schedule panel.
- **Step 8** In the schedule panel, specify the scheduled run time and how often you want the report to run.
- Step 9 Enter a name for the report in the Job Name field and click Create Job to save the report.

You can view the scheduled jobs on the Scheduled Jobs page but once the scheduled jobs have started running, they are removed from the Scheduled Job table.

Modifying a Custom Report Template

To edit a custom report template using Fabric Manager Web Server, follow these steps:

Step 1	Choose Report > Edit .
	You see the Edit Report dialog box
Step 2	Choose a report template from the Available drop-down list and click Open.
	You see the current information that this report gathers as shown in Figure 7-30.

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Fabric Manage Health Performance	r Web Client Inventory Report SME Admin	Change Pa	assword Download Logout About User IC
SAN gFabric_q148	Available:Select Template V Health Summary Fabric Events Severity: All V Analysis Multi Path Host to Storage Connectivity Storage to Host Connectivity Zone Discrepancy Config AnalysisPolicy Files not found V Switch Health	Last: 24 Hours Y Inventory Status: All Summary Details VSANs Switches Licenses Modules End Devices Type: All ISLs Zones Visio Topology Map Show Link Label Show End Devices	Performance Num: 10 End Devices Type: All Ports ISLs Embed C Flows Use Fixed Ethernet MaxYAxis Others MinYAxis Switch Bandwidth Predict next 6 months peak training

- **Step 3** Indicate the information you want to gather in the report by checking the **Health**, **Analysis**, **Performance**, or **Inventory** check boxes.
- **Step 4** Optional Select a severity level for events, status for inventory information, or type of end device for performance information and inventory information.
- **Step 5** Click **Save** to save this report template.



You cannot change the SAN, fabric or VSAN the report is based on. Generate a new report for a new SAN, fabric or VSAN.

Viewing Scheduled Jobs by Report Template

To view scheduled jobs by report template using Fabric Manager Web Server, follow these steps:

Step 1 Choose Report> Scheduled Jobs.

You see the Scheduled Jobs table shown in Figure 7-31.

Figure 7-31 Scheduled Jobs Table



Step 2 Click a report template in the left navigation pane to view the scheduled jobs based on the selected template.

Admin

<u>Note</u>

Only network administrators can access the Fabric Manager Web Server Admin tab. Network operators cannot view the Admin tab.

The Admin tab allows you to perform minor administrative and configuration tasks on the Fabric Manager Server sending data to your web client.

The Admin tab contains the following subtabs:

- **Status**—Displays the status of, and allows you to start and stop, the Database Server, Fabric Manager Server, and Performance Collector services on your server. You should only need to restart services if something is not working properly, or if too large a percentage of system resources are being consumed.
- Configure—Allows you to configure various parameters for Fabric Manager Server.
- Logs—Allows you to view all the logs from the various services running on the Fabric Manager Server.



If you see a database file lock error in the database log, you can fix it by shutting down and restarting the database server using the web client.

Recovering a Web Server Password

Fabric Manager Web Server user passwords are encrypted and stored locally on the workstation where you installed Web Server. If you forget a password, you can create a new network-admin user locally on the workstation where you installed Web Server and then log in and delete the old user account under the Admin tab.

To create a user on the workstation where you installed Web Server and delete the old user, follow these steps:

- **Step 1** Go to the Web Server installation directory and **cd** to the bin directory.
- Step 2 Enter the following line to create a user: addUser.{sh,bat} <userName> <dbpassword>
- Step 3Choose Admin > Configure > Web Users > Local Database.You see the list of users in the local database.
- Step 4 Select the user that you want to delete and click Delete to remove the old user.

Starting, Restarting, and Stopping Services

To start, restart, or stop services using Fabric Manager Web Server, follow these steps:

Step 1

Choose Admin > Status.

You see a table of services and the status of each as shown in Figure 7-32.

Status - Microsoft Internet Explorer provided by Cisco Systems, Inc.	
Eile Edit View Favorites Iools Help	1
😋 Back 🔹 💿 👘 📓 🏠 🔎 Search 👷 Favorites 🤣 😥 - 嫨 🚍 🛄 🏭 🦓	
Address 🕘 https://172.28.233.73/s400.do	🗸 🔁 Go 🛛 Links 🎽 🍕
	Change Password Download Logout About Help
CISCO Health Performance Inventory Custom Admin	User D. admin
Select Service Name Status 1. O Performance Collector Running	
Start Stop Restart	
Note: Please wait a tew minutes for Performance Collector to start or restart.	

Figure 7-32 Fabric Manager Services Status

Step 2 Select the service(s) you want to start, restart, or stop.

Step 3 Click Start, Stop, or Restart.

The selected services are started, restarted, or stopped.

```
<u>Note</u>
```

If the word "more" is in the Status column, you can click it to view a detailed status of the service.

Adding, Editing, and Removing Managed Fabrics

Fabric Manager Web Server reports information gathered by Fabric Manager Server on any fabric known to the Fabric Manager Server.

To start managing a fabric from Fabric Manager Server using Fabric Manager Web Server, follow these steps:

- **Step 1** Choose **Admin > Configure**.
- **Step 2** Click **Fabrics** in the left navigation pane.

You see the list of fabrics (if any) managed by Fabric Manager Server in the Opened column (see Figure 7-33).

Figure 7-33

Send documentation comments to mdsfeedback-doc@cisco.com

List of Fabrics Managed by Fabric Manager Server

Fabrics - Micros	soft Internet Explorer provided by Cisco Systems, Inc.	
<u>Eile E</u> dit <u>V</u> iew F <u>a</u> vori	ites Tools Help	
🔇 Back 🔹 🕥 🕤 💌	😰 🏠 🔎 Search 👷 Favorites 🕢 🎯 🥪 🍓 🖂 🛄 🏭 🖏	
Address 🗃 https://172.2	8.233.73/s450.do	So Links » 🤅
alashi — i i		Change Password Download Logout About Help
CISCO Health	C Manager Performance Inventory Custom Admin	Liser ID: admin
🔶 Status 🔸 Confi	gure - Logs -	
Fabrics Forts Forts Forstat Forwarding Cents Forwarding Cents Preferences Communities FAS Uses AAA Local Robits Performance Collections Others Thysholds Collections Controlise	Showing 1-2 of 2 records Fabric Name Opmond Use ECAlles User Note: Licensed Use SNMP3 Let Opened 1. Fabric SW-122 true false admin network-admin true 08/29/0007 16:15:31 2. Fabric SW-Vegas-59 true false admin network-admin true 08/29/0007 16:15:29 Rows per page 10 Add Edit Remove Purge Down Elements CO	
		8468

Step 3 Click Add.

You see the Add Fabric dialog box shown in Figure 7-34.



3 Add Fabric - Micr	osoft I 📘 🗆 🔀
Fabric Seed Switch:	
Community:	
Use SNMPV3:	
	Add Close

- Step 4 Enter the seed switch IP address, read community and write community for this fabric.
- Step 5 Optional Check the SNMPV3 check box. If you check SNMPV3, the fields Read Community and Write Community change to User Name and Password. You must enter your user name and password.
- **Step 6** Click **Add** to begin managing this fabric.

To stop managing a fabric from Fabric Manager Server using Fabric Manager Web Server, follow these steps:

- **Step 1** Choose **Admin > Configure**.
- **Step 2** Click **Fabrics** in the left navigation pane.
- **Step 3** Check the check box next to the fabric that you want to remove and click **Remove** to discontinue data collection for that fabric.

To edit a fabric from Fabric Manager Server using Fabric Manager Web Server, follow these steps:

- Step 1 Choose Admin > Configure.
- **Step 2** Click **Fabrics** in the left navigation pane.
- Step 3 Check the check box next to the fabric that you want to edit and click Edit.

You see the Edit Fabric dialog box shown in Figure 7-35.

Figure 7-35 Edit Fabric Dialog Box

🖻 Edit Fabric - Microsoft I 🔲 🗖 🔀			
Fabric Name: Fabric v185			
User Name: admin			
Password:			
Use SNMPV3: 🔽			
Auth-Privacy: MD5 🛛 👻			
Monitor: TRUE	Manage Continuously 💌		
Modify Close			

- **Step 4** Enter a new fabric name, user name and password and specify how you want Fabric Manager Server to manage the fabric by selecting an option from the drop-down list.
- **Step 5** Click **Modify** to save the changes.

Viewing Trap and Syslog Registration Information

To view trap and syslog registration information from Fabric Manager Server using Fabric Manager Web Server, follow these steps:

- Step 1 Choose Admin > Configure.
- **Step 2** Click **Registration** in th left navigation pane.
- **Step 3** Select a fabric to display registration information for that fabric.

You see the Registration screen showing the registration information for the selected fabric (see Figure 7-36).

Admin

Figure 7-36	Registration	n Screen			
³ Events - Microso	ft Internet Exploi	rer provided b	y Cisco System	is, lnc.	
<u>Eile E</u> dit <u>V</u> iew F <u>a</u> vorite	es <u>T</u> ools <u>H</u> elp				1
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Address 🙆 https://172.28	.233.73/s140.do?filter.eve	nt.select=true&filter.e	event.type=1&filter.ev	ent.fabricId=101&filter.	event.seedSwitchAddress=172.28 🗸 🛃 Go 🛛 Links 🎽 🥊
CISCO Fabric	Manager				Change Password Download Logout About Help
+ Status + Config	Performance Inventory	Custom Admin			User ID: admin
Plantics Porvariant Porvariant Porvariant Preterences Counts Preterences Local Database Local Roles Performance Collections Conters Conters Thresholds Database	_ Fabric_SW-Vegas-59	SNMP Trap Address: 17. Systep Server Address: 17. Lest updated at: 200 Swetch 1. sw-122 clico.com 2. sw-122 clico.com 3. sw-122 clico.com 5. sw-122 clico.com 5. sw-122 clico.com 5. sw-122 clico.com 5. sw-125 clico.com 5. Sw-125 clico.com 7. Rows per page: 1.	128 233 73 2152(15522 receive 228 233 73 5140 received, 0 d 77/80264-16 21 35 No No No No No No No	d, 15480 dropped, 142 processed) ropped, 0 processed) Showing 1-6 of 6 records Registered For Systog No No No No No 1 of 1 Pages (a) (b) Purge All Events (c) (c)	



Optional - Click the **Print** icon or **the Export Report** icon for a copy of the information.

Configuring Forwarding of Notifications for Events

You can use Fabric Manager Web Server to add and remove notification forwards for system messages.



Fabric Manager Web Server forwards fabric events via email or SNMPv1 traps.

To add a notification forward using Fabric Manager Web Server, follow these steps:

- Choose Admin > Configure. Step 1
- Step 2 Click Forwarding in the left navigation pane.
- Step 3 Click Add.

You see the Add Notification dialog box shown in Figure 7-37.

Figure 7-37 Add Notification Dialog Box

🖻 Add Notification - Micro 📃 🗆 🔀				
Туре:	Trap 💌			
Fabric:	All	~		
VSAN Scope:	🗹 All (or Id List :)		
Address:	hpo∨	Port: 162		
Minimum Severity:	Warning 🖌 👻			
		Add Close	01001	

- **Step 4** Choose a notification type, either **E-Mail** or **SNMP Trap**. If you choose **SNMP Trap**, a Port field is added to the dialog box.
- **Step 5** Choose the fabric for notification from the Fabric drop-down list.
- **Step 6** Either check the **VSAN Scope** check box to receive notifications for all VSANs, or enter the VSAN IDs in the **ID List** field to limit the VSANs for which you want to receive notifications.
- Step 7 Enter the e-mail address for notifications in the Address field.
- **Step 8** Select the severity level of the messages to receive from the **Minimum Severity** drop-down list.
- **Step 9** Click **Add** to add the notification.

Note

The traps sent by Fabric Manager Server correspond to the severity type followed by a text description:

```
trap type(s) = 40990 (emergency) 40991 (alert) 40992 (critical) 40993 (error) 40994
(warning) 40995 (notice) 40996 (info) 40997 (debug)textDescriptionOid = 1, 3, 6, 1, 4, 1,
9, 9, 40999, 1, 1, 3, 0
```

To remove a notification forward using Fabric Manager Web Server, follow these steps:

- Step 1 Choose Admin > Configure.
- Step 2 Click Forwarding in the left navigation pane.
- Step 3 Check the check box in front of the notification you want to remove.
- Step 4 Click Remove.

Viewing and Disconnecting Clients

To view or disconnect clients from the Fabric Manager Server using Fabric Manager Web Server, follow these steps:

- Step 1 Choose Admin > Configure.
- **Step 2 Click Clients** in the left navigation pane.

You see the Clients page shown in Figure 7-38.

Figure 7-38	List of Clients	
Clients - Micros	soft Internet Explorer provided by Cisco Systems, Inc.	
<u>Eile E</u> dit <u>V</u> iew F <u>a</u> vori	ites <u>T</u> ools <u>H</u> elp	4
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Address 🗃 https://172.2	28.233.73/s495.do	🔽 🔁 Go 🛛 Links 🎽 🍕
		Change Password Download Logout About Help
CISCO Health + Status + Confi	c Manager Performanco Inventory Custom Admin Jugar - Logs -	User ID: admin
- Fabrics - Events - Registration - Forwarding - Clients - Communities - Preferences - Communities - AAA - Local Statease - Local Statease - Count Roles - Proferences - Count Roles - Others - Others - Others - Datebase	Session II Iter IP Address Rote Login Last Access 1. 2 admin locahost network-admin 2007/08/29-13.25.48 2007/08/29-18.23.39 2. 3 admin locahost network-admin 2007/08/29-18.23.39 Rows per page 10 Image: The two of two of the two of two of the two of t	18.701

- **Step 3** Check the check box next to the client you want to disconnect.
- Step 4 Click Disconnect.

Configuring Fabric Manager Server Preferences

To configure Fabric Manager Server preferences, choose Admin > Configure and click Preferences in the left navigation panee. Follow the onscreen instructions.

Adding and Removing Communities

You can use Fabric Manager Web Server to add and remove communities.

To add a community fabric using Fabric Manager Web Server, follow these steps:

- **Step 1** Choose **Admin > Configure.**
- **Step 2** Click **Communities** in the left navigation pane.
- Step 3 Click Add.

You see the Add Community dialog box shown in Figure 7-39.

Admin

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Figure 7-39

e 7-39 Add Community Dialog Box

a Add Com	munity 📘 🗆 🔀
IP Mask/Address:	
Community:	
	Add Close
0	§
	č

Step 4 Enter the IP mask or address of the community in the IP Mask/Address field.



Step 5 Enter the name of the community in the Community field.

Step 6 Click **Add** to add the community.

To remove a community using Fabric Manager Web Server, follow these steps:

- Step 1 Choose Admin > Configure.
- **Step 2** Click Communities in the left navigation pane.

You see the Communities page shown in Figure 7-40.

Figure 7-40 Communities Page

Communities - Microsoft Internet Explorer provided by Cisco Systems In	
Eile Edit View Favorites Iools Help	
🕞 Back 🔹 🕥 - 💌 😰 🏠 🔎 Search 🤺 Favorites 🤣 😥 🛶 🌉 🍇	
Address 🗃 https://172.28.233.73/s456.do	✓ ➡ Go Links » €
allalla - Fatala Mananan	Change Password Download Logout About Help
CISCO Flash Performance Inventory Custom Admin	User D: admin
The P Mask can contain wildcards (0s) which are typically used to assign communities to subnets. For example: 10.0.0.0-public would be used to rai class A addresse beginning with 10. File Minint contact workser with StrokReg_CoMMANTA*.	
Registration Showing 1-1 of 1 records Forwarding	
Clients Preferences 1. 0.0.0 public public	
Communities FRS Users AAA Rows per page, 10 ♥	
- Local Roles > Performance - Collections Add Remove	
Others Tresholds	
	a
	0

Step 3 Check the check box next to the community you want to remove and click **Remove**.

<u>Note</u>

Cisco Fabric Manager 3.0(1) does not require you to make changes to the communities.properties file even if you are using a Cisco MDS 9020 switch or any third party devices.

Configuring AAA Information

To configure Fabric Manager Server preferences, click **Admin > Configure > FMS Users > AAA** and follow the instructions on the screen.

Adding and Removing Users

You can use Fabric Manager Web Server to add and remove Web Server users.

To add a user using Fabric Manager Web Server, follow these steps:

- Step 1 Choose Admin > Configure.
- **Step 2** Click Local Database in the left navigation pane.

You see the Local Database page shown in Figure 7-41.

a Local Database	- Microsoft Internet Explorer provided by Cisco Systems, Ir	nc. 🗖 🗗
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Address 🗃 https://172.28	3.233.73/s462.do	💌 🛃 Go 🛛 Links 🎽 🥊
uluilu Esprie	Manager	Change Password Download Logout About Help
CISCO Health	Performance Inventory Custom Admin	User ID: admin
	Showing 1-1 of 1 records	
Fabrics Events	User Name Role	
Registration Forwarding	1. O admin network-admin	
Clients	Development 10 V IG Go to page 1 of 1 Pages Go D	
- Communities	Rows per page. To the and a compassion of the co	
· AAA	Add Remove	
Local Database Local Roles		
Performance Collections		
Others		
- Database		
		2
		a

Figure 7-41 Local Database Page

Step 3 Click Add.

You see the Add User dialog box shown in Figure 7-42.

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Admin

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Figure 7-42 Add User Dialog Box

🛿 Add User - Microsoft Int 🔳 🗖 🔀		
User Name:		
Role:	network-operator 💌	
Password:		
Confirm Password:		
	Add Close	84695

- **Step 4** Enter the user name in the **User Name** field.
 - <u>Noto</u>
 - **Note** The user name **guest** is a reserved name (case insensitive). The guest user can only view reports. The guest user cannot change the guest password, nor can the guest user access the Admin tab in Fabric Manager Web Server.
- **Step 5** Select a role for the user from the **Role** drop-down list.
- **Step 6** Enter the password in the **Password** field.
- Step 7 Enter the password again in the Confirm Password field.
- **Step 8** Click **Add** to add the user to the database.
- **Step 9** Repeat Steps 3 through 7 to continue adding users.

To remove a user using Fabric Manager Web Server, follow these steps:

Step 1	Choose Admin > Configure.
Step 2	Click Local Database in the left navigation pane.
Step 3	Click the radio button next to the user you want to remove and click Remove .

Adding and Removing Roles

You can use Fabric Manager Web Server to add and remove Web Server roles. To add a role using Fabric Manager Web Server, follow these steps:

Step 1 Choose **Admin > Configure**.

Step 2 Click Local Roles in the left navigation pane.You see the Local Roles page as shown in Figure 7-43.

10.1

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Figure 7-43	Local Roles Page	
Local Roles - M	licrosoft Internet Explorer provided by Cisco Systems, Inc.	
Eile Edit View Favor	rites <u>T</u> ools <u>H</u> elp	4
🌀 Back 🔹 🕥 🐇 💌	📓 🏠 🔎 Search 🛧 Favorites 🔣 🔗 - چ 🔛 🛄 鑬 🖏	
Address 🗃 https://172.2	28.233.73/s464.do	🔽 🔂 😡 Links 🎽 🍕
cisco Health	ic Manager D Performance Inventory Custom Admin	Change Password Download Logout About Help User ID: admin
🔶 Status 🔶 Conf	figure 🗸 Logs 🔹	
Fabrics Fourts Registration Forwarding Clients Preterences Contructies Pasterences Local Database Collections Collections Collections Thresholds Database	Showing 1-1 of 1 records Role Name Access 1. admin Fabric_SW-122 Rows per page, 10 V K Coto page, 1 of 1 Pages (B)) Add. Remove	34709
		τ Φ

Step 3 Click Add.

You see the Add Role dialog box shown in Figure 7-44.

Select F	brics Visible to Operator Role
vailable Fabrics Fabric rtp5-iops-sw2 Fabric sw172-22-47-132	> Add >>

Figure 7-44 Add Role Dialog Box

- **Step 4** Enter the role name in the **Role Name** field.
- **Step 5** Select fabrics that the role can access from the Available Fabrics column and add them to the Selected Fabrics column.

- **Step 6** Click **Add** to add the role to the database.
- **Step 7** Repeat Steps 3 through 5 to add additional roles.

To remove a role using Fabric Manager Web Server, follow these steps:

- **Step 1** Choose **Admin > Configure**.
- Step 2 Click Local Roles in the left navigation pane.
- Step 3 Click the radio button next to the role you want to remove and click Remove.

Creating Performance Collections

If you are managing your fabrics with Performance Manager, you need to set up an initial set of flows and collections on the fabric. You can use Fabric Manager Web Server to add and remove performance collections.

۵, Note

You cannot manage performance collections for multiple devices through a single port interface. Since only one set of statistics exists per interface, Fabric Manager Web Server can manage performance collections for only one visible FL or iSCSI device through an interface.

To add a collection using Fabric Manager Web Server, follow these steps:

Step 1 Choose Admin > Configure.

Step 2 Click Collections in the left navigation pane.

You see the Collections page as shown in Figure 7-45.

Figure 7-45 Collections Page



Admin

Step 3 Click Add.

Figure 7-46

You see the Create Collection dialog box shown in Figure 7-46.

Create Collection Dialog Box

Create Collect	tion - Microsoft Int 🔲 🗆 🔀
Fabric: Fa	bric v185 💌
VSAN Scope: 🔲	All (or Id List:)
Туре:	ISLs Hosts Storage Flows Ethernet Others
Enable Thresholds: 🔲	Traffic Event
C	reate Close

- **Step 4** Select a fabric for which to collect performance data from the **Fabric** drop-down list.
- **Step 5** Either check the **VSAN Scope** check box to receive notifications for all VSANs, or enter the VSAN IDs in the **ID List** field to limit the VSANs for which you want to collect performance data.
- **Step 6** Check the check boxes for the type(s) of entities for which you want to collect performance data.
- **Step 7** Check the check boxes for the type(s) of thresholds you want to enable.
- **Step 8** Click **Create** to add the collection and add it to the table.
- **Step 9** Repeat Steps 3 through 8 to continue adding roles.

Note

Performance Manager shows statistics for fabrics that you have configured collections for using the Collection Wizard.

To remove a collection using Fabric Manager Web Server, follow these steps:

Step 1	Choose Admin > Configure.
Step 2	Click Collections in the left navigation pane.
Step 3	Check the check box next to the collection you want to remove and click Remove .

Configuring Other Statistics

To configue other statistics using Fabric Manager Web Server, follow these steps:

- **Step 1** Choose **Admin > Configure.**
- **Step 2** Click Others in the left navigation pane.

You see the Others page as shown in Figure 7-47.

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Admin

3 Oide - Microe	soft Internet Evalerer provided by Cisco Systems Inc.	
File Edit View Ea	avorites Tools Help	
Address 🙆 https://17	72.28.233.73/s424.do	Image: Search Image: Search Calculation: Image: Search of Pavorites Image: Search
alah sa	brie Managor	Change Password Download Logout About Help
CISCO	alth Berfermanne Inventory Custom Admin	
◆ Status ◆ C		User D: admin
- Fabrics	Showing 1-10 of 12 records	
 Events Registration 	1. Fabric SV/-122 1.3.6.1.4.1.9.9.305.1.1.2.0 Memory SV/-122 GAUGE	
·· Forwarding	2. Fabric SW-122 1.3.6.1.4.1.9.9.305.1.1.2.0 Memory SW-123 GAUGE	
Clients Preferences	3. Fabric_SW-122 1.3.6.1.4.1.9.9.305.1.1.2.0 Memory SW-124 GAUGE	
Communities FMS Lisers	4. E Fabric_SW-122 1.3.6.1.4.1.9.9.305.1.1.2.0 Memory 172.28.232.127 GAUGE	
·· AAA	5. E Fabric_SW-122 1.3.6.1.4.1.9.9.305.1.1.2.0 Memory SW-125 GAUGE	
·· Local Database	6. E Fabric_SW-122 1.3.6.1.4.1.9.9.305.1.1.2.0 Memory SW-128 GAUGE	
Performance ··· Collections	7. Fabric_SW-122 1.3.6.1.4.1.9.9.305.1.1.1.0 CPU SW-122 GAUGE	
" Others	8. Fabric_SW-122 1.3.6.1.4.1.9.9.305.1.1.1.0 CPU SW-123 GAUGE	
Database	9. Fabric_SW-122 1.3.6.1.4.1.9.9.305.1.1.1.0 CPU SW-124 GAUGE	
	10. Fabric_SW-122 1.3.6.1.4.1.9.9.305.1.1.1.0 CPU 172.28.232.127 GAUGE	
	Rows per page: 10 V IV Go to page: 1 of 2 Pages 00 [2]	
	Add Remove	

Figure 7-47 Others Page

Step 3 Click Add.

You see the Add Oid dialog box shown in Figure 7-48.

Figure 7-48 Add Oid Dialog Box

add Oid	- Microsoft Internet Explorer 📃 🗖 🔀
Fabric:	Fabric rtp5-iops-sw2 💌
Other OID:	User Specify 💌
DisplayName:	
Switch:	▼ All
Туре:	GAUGE 👻
	Add Close

- **Step 4** Select a fabric for which you want to add other statistics.
- **Step 5** Select the statistic that you want to add from the drop-down list and specify a name for the statistic in the Display Name field.
- **Step 6** Click **Add** to add this statistic.

Configuring Collection Thresholds

To configure collection thresholds using Fabric Manager Web Server, follow these steps:

- Step 1 Choose Admin > Configure.
- Step 2 Click Thresholds in the left navigation pane.

You see the Thresholds page shown in Figure 7-49.

Figure 7-49 Thresholds Page



Step 3 If you are using absolute values, follow these steps. Otherwise skip to Step 3.

- **a.** To configure conditions for sending Critical notifications, check the **Send Critical** check box. In the "...when traffic exceeds" field, enter a number (from 5 to 95) to indicate the percentage at which the Critical notification is sent. For example, entering **10** causes a notification to be sent when traffic at any given time exceeds 10% of capacity.
- **b.** To configure conditions for sending Warning notifications, check the **Send Warning** check box. In the "...when traffic exceeds" field, enter a number (from 5 to 95) to indicate the percentage at which the Warning notification is sent. For example, entering **9** causes a notification to be sent when traffic at any given time exceeds 9% of capacity.
- **Step 4** Select the time period for the collection (**1 Week**, **1 Month**, or **1 Year**) from the Baseline Values over past drop-down list. The baseline value represents the sum of the absolute values.
 - **a.** To configure conditions for sending Critical notifications, check the **Send Critical** check box. In the "...when traffic exceeds" field, enter a number to indicate the percentage at which the Critical notification is sent. For example, entering **300** causes a notification to be sent when traffic for the selected period exceeds 300% of capacity.

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Admin

b. To configure conditions for sending Warning notifications, check the Send Warning check box. In the "...when traffic exceeds" field, enter a number to indicate the percentage at which the Warning notification is sent. For example, entering 150 causes a notification to be sent when traffic for the selected period exceeds 150% of capacity.

Step 5 Click Apply.

Admin

Importing the RRD Statistics Index

To manually import the RRD statistics index, follow these steps:

- **Step 1** Stop Fabric Manager Server.
- **Step 2** Copy the original RRD file into \$INSTALLDIR/pm/db.
- Step 3 Run "\$INSTALLDIR/bin/pm.bat s"
- **Step 4** Restart the Fabric Manager Server and add the fabric.

Configuring the RRD Database

Configuring the RRD database allows you to set the intervals at which data samples are collected. After applying the configuration, the database storage format is converted to a new format at those intervals. Since database formats are incompatible with each other, you must copy the old data (before the conversion) to the \$INSTALLDIR/pm directory. See"Importing the RRD Statistics Index".

To configure the RRD database using Fabric Manager Web Server, follow these steps:

- **Step 1** Choose **Admin > Configure**.
- **Step 2** Click Database in the left navigation pane.

You see the Performance Database (collection interval) page as shown in Figure 7-50.

Performance	e Databas	e - Micros	oft Interne	et Explor	er provided l	y Cisco Syst	ems, Inc.		
le <u>E</u> dit <u>V</u> iew F <u>a</u>	<u>a</u> vorites <u>T</u> oo	ls <u>H</u> elp							
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idress 🗃 https://1	72.28.233.73,	/s423.do						Image: Second	Go Links »
								Change Password Download	I Logout I About I He
CISCO He	bric Mana alth Perform Configure + Log	ger mance Inven gs +	tory Custom	Admin					User ID: adm
		Intervals		Samples		1			
 Fabrics Events 	Days	Default	ISLS	Default	ISLS				
Registration Forwarding Cliente	2.083	5 min	5 min 💌	600	600				
Preferences Communities	14.583	30 min		700					
> FMS Users	64.583	2 hr		775					
AAA Local Database	300.0	1 day		300					
Local Roles Performance	Disk Space Total Disk S	per ISL/End Device ipace in Use: 13.9M	: 115KB B						
Collections Others Thresholds					Apply Defaults				
" Database									

Figure 7-50 Performance Database Page

- **Step 3** Enter the number of days to collect samples at 5-minute intervals in the top row of the **Days** column.
- **Step 4** Enter the number of days to collect samples at 30-minute intervals in the second row of the **Days** column.
- **Step 5** Enter the number of days to collect samples at 2-hour intervals in the third row of the **Days** column.
- **Step 6** Enter the number of days to collect samples at 1-day intervals in the bottom row of the **Days** column.



As of Cisco SAN-OS Release 3.1(1) and later, you can configure the sampling interval for ISLs. Select a sampling interval from the ISLs drop-down list.

Step 7 Click **Apply** to apply your changes, or click **Defaults** to reset the file sizes to the default values.

If you are applying new values, or if the current values are not the default values, you see a message indicating that conversion of the RRD files will take a certain amount of time and that the database will be unavailable until then. The time it takes depends on the difference between the old and new values.



The system allows you to convert data, one process at a time. When you start converting the data, the Apply and Default buttons change to Refresh and Cancel so that another process cannot be inadvertently started. The display is the same for all browsers accessing the server during this time. Click **Refresh** to view the latest progress. Click **Cancel** to cancel the process of converting the data. If the job is successfully canceled, you see the Apply and Default buttons again. If the cancel job is not successful, you see a message indicating that the cancellation has failed.

If you want to perform this procedure, it is best to perform it before collecting a lot of data. Otherwise, converting the data can take a long time.

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Viewing Log Information

You may occasionally want to view logs such as the Fabric Manager Server log. These processes have no corresponding GUI to allow you to view information about these log files. If you see errors, preserve these two files for viewing.

To view log information using Fabric Manager Web Server, follow these steps:

 Step 1
 Choose Admin > Logs.

You see a list of viewable logs in the left column.

Step 2 Click a log file to view it.

Download

Downloading Fabric Manager Client

You must use Fabric Manager Web Server to launch Fabric Manager Client. See the "Launching Fabric Manager Client in Cisco SAN-OS Release 3.2(1) and Later" section on page 5-2 for information on launching Fabric Manager Client.