



CHAPTER 1

System Management Overview

You can use the system management features to monitor and manage a switch using Cisco MDS NX-OS software. These features include Call Home, SNMP, RMON, SPAN, and the Embedded Event Manager (EEM).

This chapter describes these features and includes the following sections:

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Cisco Fabric Services

The Cisco MDS NX-OS software uses the Cisco Fabric Services (CFS) infrastructure to enable efficient database distribution and to promote device flexibility. CFS simplifies SAN provisioning by automatically distributing configuration information to all switches in a fabric.

For information on configuring CFS, see Chapter 2, “Using the CFS Infrastructure.”

System Messages

System messages are monitored remotely by accessing the switch through Telnet, SSH, or the console port, or by viewing the logs on a system message logging server. Log messages are not saved across system reboots.

For information about configuring system messages, see Chapter 3, “Configuring System Message Logging.”

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Call Home

Call Home provides e-mail-based notification of critical system events. A versatile range of message formats are available for optimal compatibility with pager services, standard e-mail, or XML-based automated parsing applications. Common uses of this feature may include direct paging of a network support engineer, e-mail notification to a Network Operations Center, and utilization of Cisco Smart Call Home services for direct case generation with the Technical Assistance Center.

For information about configuring Call Home, see Chapter 4, “Configuring Call Home.”

Scheduler

The Cisco MDS command scheduler feature helps you schedule configuration and maintenance jobs in any switch in the Cisco MDS 9000 Family switches. You can use this feature to schedule jobs on a one-time basis or periodically. The Cisco NX-OS command scheduler provides a facility to schedule a job (set of CLI commands) or multiple jobs at a specified time in the future. The jobs can be executed once at a specified time in the future or at periodic intervals.

For information on configuring the Cisco MDS command scheduler feature, see Chapter 5, “Scheduling Maintenance Jobs.”

System Processes and Logs

The health of a switch can be monitored by various system processes and logs. The Online Health Management System (system health) is a hardware fault detection and recovery feature. This Health Management System ensures the general health of switching, services, and supervisor modules in any switch in the Cisco MDS 9000 Family.

For information on monitoring the health of the switch, see Chapter 6, “Monitoring System Processes and Logs.”

Embedded Event Manager

Embedded Event Manager (EEM) monitors events that occur on your device and takes action to recover or troubleshoot these events, based on your configuration. EEM consists of three major components:

- Event statements—Events to monitor from another Cisco NX-OS component that may require some action, workaround, or notification.
- Action statements —An action that EEM can take, such as sending an e-mail or disabling an interface, to recover from an event.
- Policies—An event paired with one or more actions to troubleshoot or recover from the event.

For information on configuring EEM, see Chapter 7, “Configuring the Embedded Event Manager.”

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SNMP

Simple Network Management Protocol (SNMP) is an application layer protocol that facilitates the exchange of management information between network devices. In all Cisco MDS 9000 Family switches, three SNMP versions are available: SNMPv1, SNMPv2c, and SNMPv3. The CLI and SNMP use common roles in all switches in the Cisco MDS 9000 Family. You can use SNMP to modify a role that was created using the CLI and vice versa.

Users, passwords, and roles for all CLI and SNMP users are the same. A user configured through the CLI can access the switch using SNMP (for example, the DCNM-SAN or the Device Manager) and vice versa.

For information on configuring SNMP, see Chapter 7, “Configuring SNMP.”

RMON

RMON is an Internet Engineering Task Force (IETF) standard monitoring specification that allows various network agents and console systems to exchange network monitoring data. You can use the RMON alarms and events to monitor Cisco MDS 9000 Family switches running the Cisco SAN-OS Release 2.0(1b) or later or Cisco Release NX-OS 4.1(3) or later software.

For information on configuring RMON, see Chapter 8, “Configuring RMON.”

Domain Parameters

The Fibre Channel domain (fcdomain) feature performs principal switch selection, domain ID distribution, FC ID allocation, and fabric reconfiguration functions as described in the FC-SW-2 standards. The domains are configured on a per-VSAN basis. If you do not configure a domain ID, the local switch uses a random ID.

For information on configuring the Fibre Channel domain feature, see Chapter 9, “Configuring Domain Parameters.”

SPAN

The Switched Port Analyzer (SPAN) feature is specific to switches in the Cisco MDS 9000 Family. It monitors network traffic through a Fibre Channel interface. Traffic through any Fibre Channel interface can be replicated to a special port called the SPAN destination port (SD port). Any Fibre Channel port in a switch can be configured as an SD port. Once an interface is in SD port mode, it cannot be used for normal data traffic. You can attach a Fibre Channel analyzer to the SD port to monitor SPAN traffic.

For information on SPAN feature, see Chapter 10, “Monitoring Network Traffic Using SPAN.”

Fabric Configuration Server

The Fabric Configuration Server (FCS) provides discovery of topology attributes and maintains a repository of configuration information of fabric elements. A management application is usually connected to the FCS on the switch through an N port. In the Cisco MDS 9000 Family switch environment, multiple VSANs constitute a fabric, where one instance of the FCS is present per VSAN.

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For information on configuring FCS, see Chapter 11, “Configuring Fabric Configuration Servers.”