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CHAPTER 1

Overview

This chapter describes the system management features that you can use to monitor and manage a device.

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Cisco NX-OS Device Configuration Methods

You can configure devices using direct network configuration methods or web services hosted on a data center network management (DCNM) server.

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Figure 1 shows the device configuration methods available to a network user.

Figure 1 Cisco NX-OS Device Configuration Methods

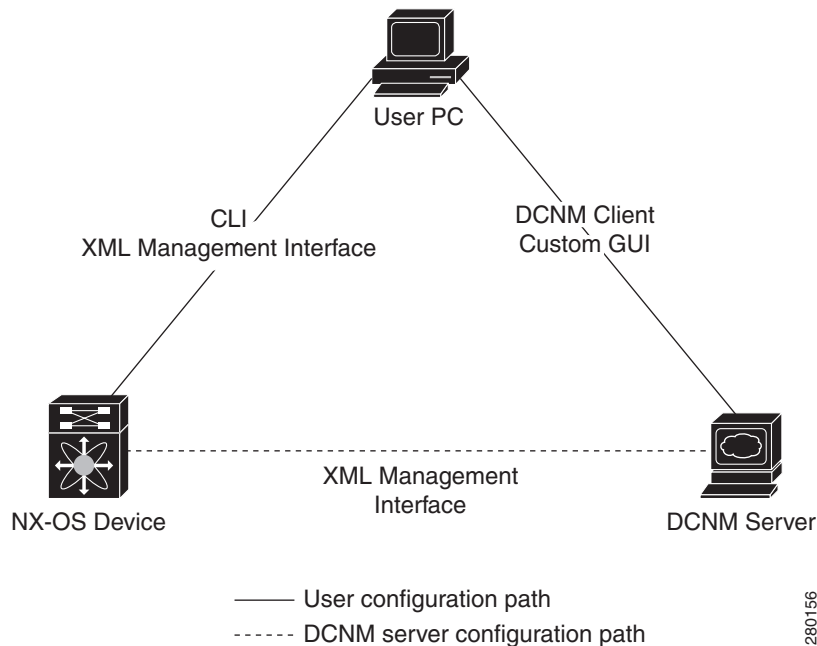


Table 1 lists the configuration methods with documents where you can find more information.

Table 1 Configuration Methods Book Links

Configuration Method	Document
CLI from SSH ¹ , Telnet session or console port	<i>Cisco NX-OS Fundamentals Configuration Guide</i>
XML management interface	<i>Cisco NX-OS XML Management Interface User Guide</i>
DCNM client	<i>Cisco DCNM Fundamentals Configuration Guide</i>
User-defined GUI	<i>Cisco DCNM Web Services API Programmer Guide</i>

1. Secure shell (SSH).

This section includes the following topics:

- [Configuring with CLI or XML Management Interface, page 1-2](#)
- [Configuring with DCNM or a Custom GUI, page 1-3](#)

Configuring with CLI or XML Management Interface

You can configure Cisco NX-OS devices using the command line interface (CLI) or the XML management interface over SSH as follows:

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- CLI from an SSH session, a Telnet Session, or the Console Port—You can configure devices using the CLI from an SSH session, a Telnet session, or the console port. SSH provides a secure connection to the device. The CLI command references are organized by feature. For more information, see the *Cisco NX-OS Fundamentals Configuration Guide*.
- XML Management Interface over SSH—You can configure devices using the XML management interface, which is a programmatic method based on the NETCONF protocol that complements the CLI functionality. For more information, see the *Cisco NX-OS XML Management Interface User Guide*.

Configuring with DCCM or a Custom GUI

You can configure Cisco NX-OS devices using the DCCM client or from your own GUI as follows:

- DCCM Client—You can configure devices using the DCCM client, which runs on your local PC and uses web services on the DCCM server. The DCCM server configures the device over the XML management interface. For more information about the DCCM client, see the *Cisco DCCM Fundamentals Configuration Guide*.
- Custom GUI—You can create your own GUI to configure devices using the DCCM web services application program interface (API) on the DCCM server. You use the SOAP protocol to exchange XML-based configuration messages with the DCCM server. The DCCM server configures the device over the XML management interface. For more information about creating custom GUIs, see the *Cisco DCCM Web Services API Programmer Guide*.

System Messages

You can use system message logging to control the destination and to filter the severity level of messages that system processes generate. You can configure logging to a terminal session, a log file, and syslog servers on remote systems.

System message logging is based on RFC 3164. For more information about the system message format and the messages that the device generates, see the *Cisco NX-OS System Messages Reference*.

For information about configuring system messages, see [Chapter 3, “Configuring System Message Logging.”](#)

Call Home

Call Home provides e-mail-based notification of critical system events. Cisco NX-OS provides a range of message formats for optimal compatibility with pager services, standard e-mail, or XML-based automated parsing applications. You can use this feature to page a network support engineer, e-mail a Network Operations Center, or use Cisco Smart Call Home services to automatically generate a case with the Technical Assistance Center.

For information about configuring Call Home, see [Chapter 4, “Configuring Smart Call Home.”](#)

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Rollback and Session Manager

The rollback feature allows you to take a snapshot, or checkpoint, of the Cisco NX-OS configuration and then reapply that configuration to your device at any point without having to reload the device. Rollback allows any authorized administrator to apply this checkpoint configuration without requiring expert knowledge of the features configured in the checkpoint.

Session Manager allows you to create a configuration session and apply all commands within that session atomically.

For information about configuring rollback and Session Manager, see [Chapter 5, “Configuring Rollback and Session Manager.”](#)

Command Scheduler

The command scheduler provides a facility to schedule a job (set of CLI commands) or multiple jobs at a specified time in the future. Cisco NX-OS executes the jobs once at a specified time in the future or at periodic intervals.

You can use this feature to schedule QOS policy changes, backup data, save the configuration and other similar jobs. For information about the command scheduler, see [Chapter 6, “Scheduling Maintenance Jobs.”](#)

SNMP

The Simple Network Management Protocol (SNMP) is an application-layer protocol that provides a message format for communication between SNMP managers and agents. SNMP provides a standardized framework and a common language used for the monitoring and management of devices in a network.

For information about 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. Cisco NX-OS supports RMON alarms, events, and logs to monitor Cisco NX-OS devices.

For information about configuring RMON, see [Chapter 8, “Configuring RMON.”](#)

Online Diagnostics

Cisco Generic Online Diagnostics (GOLD) defines a common framework for diagnostics operations across Cisco platforms. The online diagnostics framework specifies the platform-independent fault-detection architecture for centralized and distributed systems. This includes the common diagnostics CLI and the platform-independent fault-detection procedures for boot-up and runtime diagnostics.

The platform-specific diagnostics provide hardware-specific fault-detection tests and take appropriate corrective action in response to diagnostics test results.

For information about configuring online diagnostics, see [Chapter 9, “Configuring Online Diagnostics.”](#)

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EEM

The Embedded Event Manager (EEM) helps detect and handle critical events in the system. EEM provides event detection and recovery, including monitoring of events either as they occur or as thresholds are crossed.

For information about configuring EEM, see [Chapter 10, “Configuring the Embedded Event Manager.”](#)

On-Board Failure Logging

You can configure a device to log failure data to persistent storage, which you can retrieve and display for analysis at a later time. This on-board failure logging (OBFL) feature stores failure and environmental information in nonvolatile memory on the module. The information helps in post-mortem analysis of failed modules. For information about configuring OBFL, see [Chapter 11, “Configuring Onboard Failure Logging.”](#)

SPAN

You can configure an Ethernet switched port analyzer (SPAN) to monitor traffic in and out of your device. These features allow you to duplicate packets from source ports to destination ports.

For information about configuring SPAN, see [Chapter 12, “Configuring SPAN.”](#)

NetFlow

NetFlow identifies packet flows for both ingress and egress IP packets and provides statistics based on these packet flows. NetFlow does not require any change to either the packets themselves or to any networking device.

For information about configuring NetFlow, see [Chapter 13, “Configuring NetFlow.”](#)

Troubleshooting Features

Cisco NX-OS provides a number of troubleshooting tools (such as ping, traceroute, Ethalyzer, and the Blue Beacon feature). See the *Cisco Nexus 7000 Series NX-OS Troubleshooting Guide, Release 4.0* for details on these features.

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