New Features and Enhancements

Cisco Data Center Network Manager (DCNM), includes the new features, enhancements, and hardware support that are described in the following section:

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New Features and Enhancements in Cisco DCNM, Release 10.4(1)

This section includes information about the new features, enhancements, and hardware support for Cisco DCNM, Release 10.4(1).

HBA Link Diagnostics

The HBA Link Diagnostics feature helps in validating the health of links between Host Bus Adapters (HBAs) and Cisco MDS switches in a network. The servers connect to Storage Area Networks (SANs) through hardware devices are called HBAs. This connectivity comprises of many optical and electrical components that may develop faults during their lifetime. The HBA Link Diagnostics feature allows identification of faulty cables, transceivers, ASICs, drivers, firmware issues or software issues, thereby eliminating dropped frames and ensuring reliable I/O operations of the server.

For more information about the Configuring HBA Link Diagnostics for Cisco MDS switches in a network, see the Cisco MDS 9000 Series NX-OS System Management Configuration Guide.

From the menu bar of Cisco DCNM Web Client, choose **Inventory** > **Switches**, and then click the **Interfaces** tab. The HBA diagnostic button appears in the interfaces tab for SAN discovered switches. Click the HBA diagnostic button to launch Host Diagnostic. The Link Diagnostic screen appears.

Supported Platforms

Cisco DCNM 10.4(1) enables you to run HBA Link Diagnostics on the following platforms:

- Cisco MDS 48-Port 16-Gbps Fibre Channel Switching Module: DS-X9448-768K9
- Cisco MDS 48-Port 32-Gbps Fibre Channel Switching Module: DS-X9648-1536K9
- Cisco MDS 24/10 SAN Extension Module (FC ports only): DS-X9334-K9
- Cisco MDS 9396S Multilayer Fabric Switch

Getting Loopback Capabilities

The **Get Loopback Capabilities** button is disabled when you click the Start button. The Loopback Capabilities button is to be used before clicking the Start button to see the capabilities of port or HBA.

Aborting Link Diagnostic Tests on a Port

If you want to stop the link diagnostic test, click the **Stop** button in the Link Diagnostic screen.

Disabling a Port From the Diagnostic Mode

You can click the **Disable Diagnostic** button for taking the port out of diagnostic mode when you have finished the testing.

Monitoring the Running Diagnostic Test

You can click the **Monitor existing Diag** button to begin monitoring a test that is already running. If no test is running, then you will be informed of this and Cisco DCNM will attempt to retrieve the results from the last test that ran and display them. If the port has already been taken out of diagnostic mode then retrieving of the results will fail and a message will be printed.

Displaying Diagnostic Test Results

If the **Show Results during polling** check box is selected, it will output the CLI progress details to the output window for each poll for the test progress. Otherwise results are only printed at test completion.

For more information about performing HBA link diagnostic tests, see the Cisco DCNM Online Help.

Switch On-Board SAN Analytics

The Switch On-Board SAN Analytics feature enables you to retrieve switch on board analytics data from switches. This data is displayed on the Switch Dashboard. To access the Switch On-Board SAN Analytics feature, choose **Inventory > View > Switches**, and then click the **Switch On-Board SAN Analytics** tab. The tab displays the following graphs:

- Top 10 Slowest Ports
- Top 10 Slowest Target Ports
- Top 10 Slowest Flows
- Top 10 Slowest ITLs
- Top 10 Port Traffic
- Top 10 Target Ports Traffic
- Top 10 Flow Traffic
- Top 10 ITL Traffic

Health Score in Switch Dashboard

Currently the health score of a switch is displayed in the switch tables of the Inventory > View > Switches and Dashboard > Network pages. The health score percentage is presented on a color bar. Clicking the color

bar displays more detail such as health score calculation, module list, switch port list, and events. The health score of switches can be viewed from the Switch Dashboard. The health score details can be viewed from the System Info tab.

Support for New Cisco Nexus 9000 Hardware

The following is a list of new hardware supported in Cisco DCNM Release 10.4(1).

Table 1: Support for New Cisco Nexus 9000 Hardware

Hardware Description	Part Number
36 40/100G Ethernet module for Nexus 9500 series	N9K-X9736C-FX
64x100G QSFP28 + 2x10GSFP 1RU	N9K-C9364C
36x100G Ethernet module for Nexus 9000 series	N9K-X9636C-RX
48P 1/10/25G + 6x100G QSFP28 1RU	N3K-C36180YC-R

Support for New Cisco MDS Hardware

Cisco MDS 9132T Fibre Channel Switch—The Cisco MDS 9132T 32-Gbps 32-Port Fibre Channel Switch is a powerful compact one rack-unit (1RU) SAN fabric switch. Cisco DCNM 10.4(1) supports Cisco MDS Fibre Channel fixed switch, which provides an optional LEM (Linecard Expansion Module) containing additional 16 ports, while the fixed module has 16 port fixed 4/8/16/32G Fiber Channel. Cisco DCNM can recognize the optional LEM when plugged-in.

ISSU Enhancements for Cisco MDS Switches

Automatic file selection based on the current image selection—Cisco DCNM 10.4(1) enables can select the images automatically to devices of same platform types that support same images. In case of the Cisco Nexus devices the same image is applied for all the devices having same platform and the model number (first two letters of model number). In case of Cisco MDS devices, mapping is as follows:

Table 2: Cisco MDS Switches

Switch	System Image
MDS 9124/9134	m9100-s2ek9-mz.*
MDS 9148	m9100-s3ek9-mz.*
MDS 9216i/9216A	m9200-ek9-mz.*
MDS 9222i	m9200-s2ek9-mz.*
MDS 95xx with SUP1	m9500-sf1ek9-mz.*
MDS 95xx with SUP2/SUP2A	m9500-sf2ek9-mz.*
MDS 9250i	m9250-s5ek9-mz.*

Switch	System Image
MDS 9148S	m9100-s5ek9-mz.*
MDS 9396S	m9300-s1ek9-mz.*
MDS 97xx	m9700-sf3ek9-mz.*

This mapping applicable for Cisco MDS 9120 and Cisco MDS 9140 switches as well.

Automatic file selection based on version and path—Cisco DCNM 10.4(1) enables you to select kickstart and system image automatically by providing the server details along with the image version and path. You can select the images automatically to devices of same platform types that support same images.

Support for FC-NPV on Cisco Nexus 9000 Series Switches

Fiber Channel over Ethernet (FCoE) N-port Virtulization (NPV) is an enhanced form of FCoE Initialization Protocol (FIP) snooping that provides a secure method to connect FCoE-capable hosts to an FCoE-capable FCoE forwarder (FCF) device.

With the FC-NPV feature on N9K, Cisco DCNM provides support to discover and manage Cisco Nexus 9000 Series Switches with FC-NPV mode and any port configured using the fc type. In addition, you can use Cisco DCNM-SAN NPV wizard to configure Cisco Nexus 9000 Series Switches with FC-NPV mode after FC-NPV mode is enabled on the switches.