

# Cisco Prime Data Center Network Manager 6.2

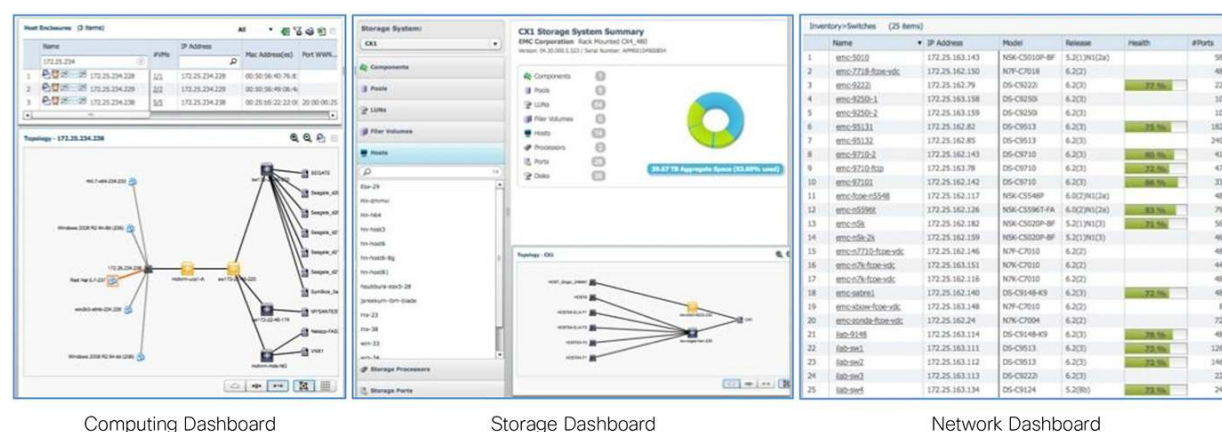
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## Product Overview

Modern data centers are becoming increasingly massive and complex. Proliferation of new technologies such as virtualization is adding yet another level of complexity while enabling higher workloads to be placed on the network. Innovations such as Cisco® Unified Fabric unify storage and data networking to deliver convergence, scalability, and intelligence with reduced total cost of ownership (TCO) and faster return on investment (ROI). IT departments today are challenged to look beyond traditional silos of networking and storage to manage this converged, virtualized data center as a service. Meeting this challenge calls for unification of the management plane to enable holistic management of the data center infrastructure.

Cisco Prime™ Data Center Network Manager (DCNM) provides centralized management of both Ethernet and Fibre Channel networks (Figure 1). The converged view enables network and storage administrators to analyze health and performance across the range of platforms running the Cisco NX-OS Software operating system for Cisco Nexus® and Cisco MDS 9000 Family platforms, regardless of protocol type. Supported protocols and overlays include Fibre Channel, Fibre Channel over Ethernet (FCoE), Ethernet, IBM Fibre Connection (FICON), Small Computer System Interface over IP (iSCSI), Cisco FabricPath, and Cisco Overlay Transport Virtualization (OTV). Cisco Prime DCNM simplifies deployment of SAN and LAN components through wizard- and template-based provisioning and configuration. Role-based access control (RBAC) helps separate configuration of LAN and SAN networks on converged network switches. Support for TACACS+, RADIUS, and Lightweight Directory Access Protocol (LDAP) remote authentication helps organizations control user access to the switches and track changes made by users.

**Figure 1.** Multidomain Dashboards for Computing, Storage, and Network Visibility



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## Summary of New Features and Enhancements

The following lists provide an overview of the new features and enhancements in Cisco Prime DCNM 6.2.

- Common SAN and LAN features
  - Highly available scale-out federated architecture
  - VMware vCenter plug-in for monitoring the Cisco Unified Computing System™ (Cisco UCS®), Cisco Nexus, and Cisco MDS 9000 Family platforms
  - On-board TFTP server to enhance archiving and backup
  - Enhanced event forwarding based on syslog description
  - Deletion from Cisco Prime DCNM of switches that have been decommissioned (LAN and SAN)
  - Enhanced performance export based on a consistent unit of measure
  - FCoE discovery over fabric extenders
  - Multiswitch terminal access through single or multiple commands from a Cisco Prime DCNM Unified Web client
  - Enhancement of computing and storage dashboards for multidevice selection
  - Cisco UCS blade inventory view
  - Event notification snooze
- SAN-specific features
  - Heterogeneous storage array discovery
  - Host path redundancy analysis
  - Redundant SAN fabrics traffic comparison report
  - Fibre Channel flow wizard enhancement based on end-port traffic utilization
  - Enhanced inactive path report that adds a device-alias log-in check
  - Enhanced zone and alias discrepancy report that suggests how to fix the identified discrepancy
  - VSAN traffic enhancement that enables only the host device report
- LAN-specific features
  - Cisco Nexus 3500 platform active buffer use charts and tabular data for microburst monitoring
  - Visualization, monitoring, and configuration of Cisco Nexus 1000V Switch for Microsoft Hyper-V
  - Report on traffic by VLAN
  - LAN discovery enhancement
- New platform support
  - Cisco Nexus 7700 platform switches
  - Cisco MDS 9700 Series Switch
  - Cisco Nexus 6000 Series Switches
  - Cisco Nexus 3500 Series Switches
  - Cisco Nexus 1000V Switch for Microsoft Hyper-V

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## Detailed Summary of Key Main New Features and Enhancements

This section describes the main new features and enhancements in Cisco Prime DCMN 6.2 in detail.

- **Highly available scale-out federated architecture:** Cisco Prime DCMN adds automatic fabric failover to the scale-out federated architecture, which enables failover from the primary Cisco Prime DCMN federated server to the standby Cisco Prime DCMN server with no loss of fabric visibility. The highly available architecture calls for deployment of a two-node Oracle RAC database on the remote servers along with a shared file system exported to both federated servers. This architecture allows the IT administrator to continuously monitor the network without losing the visibility that is essential to diagnosis of connectivity problems and management of resources.
- **VMware vCenter plug-in:** The Cisco Prime DCMN plug-in for VMware vCenter adds a multihop view and monitoring of Ethernet and Fibre Channel Cisco Nexus and Cisco MDS 9000 Family topologies to VMware vCenter. The increased visibility into virtualized infrastructure helps IT administrators locate performance anomalies that may be causing service degradation as well as eliminate virtual computing and networking as a root cause of the problem.
- **Heterogeneous storage array support:** Heterogeneous array discovery provides visibility from the host down to the logical unit number (LUN) across block- and file-based storage through the storage dashboard. Cisco Prime DCMN also provides a snapshot of capacity utilization and array logical and physical inventory, and it maps the inventory to the hosts connected to the storage array. The feature shows the storage administrator the storage LUN and capacity that is allocated to the server and the access status of the LUN.
- **SAN host path redundancy analysis:** The SAN host redundancy feature checks against best-practices policy for path redundancy by taking into account configuration of the path, switch, and port status. In addition, Cisco Prime DCMN offers optional path redundancy checks to enhance redundancy correlation all the way down to the LUN by pulling information from the storage array. As a result of heterogeneous storage array discovery, Cisco Prime DCMN can correlate path redundancy down to the storage array LUN, helping ensure that Fabric A and Fabric B server paths are both seeing the same storage devices. Cisco Prime DCMN will list noncompliant hosts and recommend a solution to enable or restore redundancy.
- **Cisco Nexus 1000V Switch for Microsoft Hyper-V support:** Cisco Prime DCMN adds feature support for configuration, visualization, and monitoring of the Cisco Nexus 1000V Switch for Microsoft Hyper-V. Cisco Prime DCMN now supports Cisco Nexus 1000V Switches on both VMware and Microsoft hypervisors. The user can view the details of the logical networks, segment pools, network segments, and network uplinks as part of the topology and tabular views. The user also can monitor performance and create segments and port profiles on the Cisco Nexus 1000V in the context of Microsoft Hyper-V.
- **One-command multiswitch command-line interface (CLI) access:** The user can access a global CLI for multiple switches at the same time and view the output on those switches.
- **Cisco Nexus 3000 Series Switch buffer use charts and tabular data for microburst monitoring:** Cisco Prime DCMN can monitor active buffers on Cisco Nexus 3500 platform on a second-by-second basis and use the monitoring data to present statistics in histogram and tabular views. This feature uses statistics buckets on the switch to enable collection of detailed buffer use data from the low-latency Cisco Nexus 3000 Series Switches.

- On-board Trivial File Transfer Protocol (TFTP) server to enhance archiving and backup: Configuration files can be backed up using the built-in TFTP server rather than requiring installation of a separate Secure FTP (SFTP) server. The TFTP server is embedded in Cisco Prime DCNM.
- Fibre Channel flow wizard enhancement based on end-port traffic utilization: The enhancement to the Fibre Channel flow wizard enables the user to find source devices on the basis of the traffic utilization rate and to add the selected flows to the targets to which those devices are talking. This capability enables the user to customize the utilization threshold rate on the basis of peak rates or averages to identify Fibre Channel flows of interest and configure them for collection.
- Enhanced zone and alias discrepancy report: This report now provides a suggested resolution configuration to fix identified discrepancies. The suggested configuration is presented to the user through a shell script that can be run on the switch directly.
- Redundant SAN fabrics traffic comparison report: This report enables the user to see the distribution of traffic between two fabrics and their end devices. The report helps identify potential multipath software failures and unbalanced redundant links.
- Enhanced event forwarding based on syslog description: This feature allows the user to forward only certain events that match a specified description - for example, port-down events that match a particular interface (for instance, fc1/6) - using a description string or regular expression. A blank description is a wildcard. For example, this feature allows the user to specify event-forwarding rules for certain ports, failure types, and severity levels.
- Enhancement to compute and storage dashboards for multidevice selection: The user can select multiple hosts in compute dashboard or storage arrays in storage dashboard to view aggregate topology and performance for these devices. For example, the user can view the traffic and topology for a specific application cluster in a single view.

## Upgrade Paths

Customers can upgrade their Cisco Prime DCNM server software as shown in Table 1.

**Table 1.** Cisco Prime DCNM Server Upgrade Paths

<b>Customers using Cisco Prime DCNM 6.x releases with Cisco Prime DCNM switch licenses under valid service contract</b>	Users can upgrade to Cisco Prime DCNM 6.2 at no additional cost by downloading the release software image. Cisco Prime DCNM switch licenses are installed on the Cisco Prime DCNM server.
<b>Customers using Cisco Prime DCNM 5.2 or earlier servers with Cisco Prime DCNM switch licenses under valid service contract, other than Cisco Prime DCNM Nexus Access (NXACC) switch license</b>	Users can upgrade to Cisco Prime DCNM 6.2 at no additional cost by downloading the release software image. To retain existing data, this upgrade may require intermediate upgrades as described in Cisco DCNM Installation and Licensing Guide, Release 6.x. <a href="http://www.cisco.com/en/US/products/ps9369/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps9369/prod_installation_guides_list.html</a> Cisco Prime DCNM switch licenses are installed on the Cisco Prime DCNM server.
<b>Customers using Cisco Fabric Manager server software with Cisco Fabric Manager licenses under valid service contract</b>	Users can upgrade to Cisco Prime DCNM 6.2 at no additional cost by downloading the release software image. To retain existing data, this upgrade may require intermediate upgrades to the latest edition of Cisco Fabric Manager and then to Cisco Prime DCNM 5.2 prior to the upgrade to Cisco Prime DCNM 6.2, as described in Cisco DCNM Installation and Licensing Guide, Release 6.x. <a href="http://www.cisco.com/en/US/products/ps9369/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps9369/prod_installation_guides_list.html</a> Cisco Fabric Manager switch licenses are installed on the managed switches, not on the Cisco Prime DCNM server.

Customers with the Cisco Prime DCNM NXACC switch license under a valid service contract should follow the additional guidance in Table 2.

**Table 2.** Customers Upgrading with Cisco Nexus Access Switch License

<p>Customers with Cisco Prime DCNM NXACC switch license under valid service contract:</p> <ul style="list-style-type: none"> <li>• DCNM-L-NXACCCK9</li> <li>• DCNM-NXACC-100-K9</li> <li>• DCNM-NXACC-250-K9</li> </ul>	<p>The Cisco Prime DCNM NXACC advanced feature licenses are neither recognized nor supported by Cisco Prime DCNM 6.x releases. No license is required in Cisco Prime DCNM 6.xx for management of the Cisco Nexus 2000 Series Fabric Extenders and 4000 Series Switches or Cisco Nexus 1000V Series Switches, but users must upgrade to replacement Cisco Prime DCNM LAN Cisco 5000 Series Switch licenses to use Cisco Prime DCNM 6.x to manage Cisco Nexus 5000 Series Switches.</p> <p>For a limited time, Cisco is offering an exchange migration option to customers with Cisco Prime DCNM NXACC licenses. This limited-time offer replaces Cisco Prime DCNM NXACC with an alternative set of Cisco Prime DCNM and Cisco Nexus 5000 Series Switch licenses at no additional cost. To take advantage of this offer, the customer must email <a href="mailto:licensing@cisco.com">licensing@cisco.com</a> with a valid Cisco Prime DCNM License PAK and Cisco sales order information for the originally acquired Cisco Prime DCNM NXACC licenses.</p>
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## Ordering Information

Cisco Prime DCNM can be licensed for SAN and LAN environments separately or together. Most Cisco Prime DCNM features used for provisioning and discovery are available for free with the base image (Essentials Edition); advanced features require a license to unlock them (Table 3). Cisco Prime DCNM is priced by switch platform and licensed per number of switches on the platform. In addition, a yearly service contract is required to upgrade from one major release to another. For information about free and licensed features, please see the Cisco Prime DCNM Installation and Licensing Guide, Release 6.0 at [http://www.cisco.com/en/US/products/ps9369/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps9369/prod_installation_guides_list.html).

**Table 3.** Cisco Prime DCNM Ordering Information

Product Name	Electronic Part Numbers	Physical Part Numbers	Chassis Part Numbers
DCNM for SAN Advanced Edition for MDS 9100	L-DCNM-S-M91-K9=	DCNM-SAN-M91-K9=	DCNM-SAN-M91-K9
DCNM for SAN Advanced Edition for MDS 9200	L-DCNM-S-M92-K9=	DCNM-SAN-M92-K9=	DCNM-SAN-M92-K9
DCNM for SAN Advanced Edition for MDS 9500	L-DCNM-S-M95-K9=	DCNM-SAN-M95-K9=	DCNM-SAN-M95-K9
DCNM for SAN Advanced Edition for MDS 9700 [New]	L-DCNM-S-M97-K9=	DCNM-SAN-M97-K9=	DCNM-SAN-M97-K9
DCNM for SAN Advanced Edition for Nexus 5000	L-DCNM-S-N5K-K9=	DCNM-SAN-N5K-K9=	DCNM-SAN-N5K-K9
DCNM for SAN Advanced Edition for Nexus 6001 [New]	L-DCNM-S-N61-K9=	DCNM-SAN-N61-K9=	DCNM-SAN-N61-K9
DCNM for SAN Advanced Edition for Nexus 6004 [New]	L-DCNM-S-N64-K9=	DCNM-SAN-N64-K9=	DCNM-SAN-N64-K9
DCNM for SAN Advanced Edition for Nexus 7000	L-DCNM-S-N7K-K9=	DCNM-SAN-N7K-K9=	DCNM-SAN-N7K-K9
DCNM for SAN Advanced Edition for Nexus 7700 [New]	L-DCNM-S-N77-K9=	DCNM-SAN-N77-K9=	DCNM-SAN-N77-K9
DCNM for LAN Advanced Edition for Nexus 3000 [New]	L-DCNM-L-N3K-K9=	DCNM-LAN-N3K-K9=	DCNM-LAN-N3K-K9
DCNM for LAN Advanced Edition for Nexus 5000	L-DCNM-L-N5K-K9=	DCNM-LAN-N5K-K9=	DCNM-LAN-N5K-K9
DCNM for LAN Advanced Edition for Nexus 6001 [New]	L-DCNM-L-N61-K9=	DCNM-LAN-N61-K9=	DCNM-LAN-N61-K9
DCNM for LAN Advanced Edition for Nexus 6004 [New]	L-DCNM-L-N64-K9=	DCNM-LAN-N64-K9=	DCNM-LAN-N64-K9
DCNM for LAN Advanced Edition for Nexus 7000	L-DCNM-L-N7K-K9=	DCNM-LAN-N7K-K9=	DCNM-LAN-N7K-K9
DCNM for LAN Advanced Edition for Nexus 7700 [New]	L-DCNM-L-N77-K9=	DCNM-LAN-N77-K9=	DCNM-LAN-N77-K9
DCNM SAN & LAN Advanced Edition for Nexus 5000	NA	DCNM-LS-N5K-K9=	DCNM-LS-N5K-K9
DCNM SAN & LAN Advanced Edition for Nexus 6001 [New]	L-DCNM-LS-N61K9=	DCNM-LS-N61-K9=	DCNM-LS-N61-K9
DCNM SAN & LAN Advanced Edition for Nexus 6004 [New]	L-DCNM-LS-N64K9=	DCNM-LS-N64-K9=	DCNM-LS-N64-K9
DCNM SAN & LAN Advanced Edition for Nexus 7700 [New]	L-DCNM-LS-N77K9=	DCNM-LS-N77-K9=	DCNM-LS-N77-K9

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## Supported Technologies and Platforms

Cisco Prime DCNM is designed to help customers efficiently implement and manage next-generation virtualized data centers. Cisco Prime DCNM provides support for Cisco Nexus and MDS 9000 Family hardware and the common operating system, Cisco NX-OS.

Cisco Prime DCNM supports the following Cisco hardware platforms:

- Cisco MDS 9100 and 9200 Series Fabric Switches
- Cisco MDS 9500 and 9700 Series Multilayer Directors
- Cisco Nexus 1000V Series Switches for VMware and Microsoft hypervisors
- Cisco Nexus 2000 Series Fabric Extenders and 4000 Series Switches
- Cisco Nexus 3000 Series Switches
- Cisco Nexus 5000 and 6000 Series Switches
- Cisco Nexus 7000 Series Switches

Cisco Prime DCNM provides limited support for the following Cisco platforms:

- Cisco Catalyst® 6500 Series Switches
- Cisco Catalyst 6500 Series Firewall Services Module (FWSM)
- Cisco UCS fabric interconnects

## Service and Support

Using the Cisco Lifecycle Services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and ROI. This approach defines the minimum set of activities needed, by technology and by network complexity, to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

## For More Information

For more information about the Cisco Prime DCNM software, send an email to [ask-dcnm@cisco.com](mailto:ask-dcnm@cisco.com), visit the product homepage at <http://www.cisco.com/go/dcnm>, or contact your local account representative.



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