Cisco NX-OS Software Release 5.0(2)N1(1) for Cisco Nexus 5000 Series Switches and Nexus 2000 Series Fabric Extenders

PB627144

Cisco® NX-OS Software is a data center-class operating system built with modularity, resiliency, and serviceability at its foundation. Based on the industry-proven Cisco MDS 9000 SAN-OS Software, Cisco NX-OS helps ensure continuous availability and sets the standard for mission-critical data center environments. The self-healing and highly modular design of Cisco NX-OS makes zero-effect operations a reality and enables exceptional operational flexibility.

New Features

Cisco NX-OS Software Release 5.0(2)N1(1) introduces the Cisco Nexus® 5548P Switch, extending the industry-leading versatility of the purpose-built 10 Gigabit Ethernet data-center class Cisco Nexus 5000 Series Switches and providing innovative advances toward higher density, lower latency, multilayer services. With this software release, the Cisco Nexus 5548P will support up to 16 Cisco Nexus 2000 Series Fabric Extenders.

In addition, several new software features are introduced to improve the performance, scalability, and management of the product line. Cisco NX-OS 5.0 also supports all hardware and software supported in Cisco NX-OS Software Release 4.2.

The combination of the Cisco Nexus 2000 Series and Cisco Nexus 5000 Series offers a highly cost-effective access layer architecture for 100 Megabit Ethernet; Gigabit Ethernet; 10 Gigabit Ethernet; mixed Gigabit Ethernet; 10 Gigabit Ethernet server, Ethernet or unified fabric, physical, or virtual server environments.

Hardware Support

Cisco NX-OS 5.0(2)N1(1) supports all the hardware for the Cisco Nexus 5000 and 2000 Series previously supported up through Cisco NX-OS 4.2(1)N2(1). Release 5.0 adds new hardware support for the Cisco Nexus 5548P (Figure 1), which is the first of the Cisco Nexus 5500 Platform. The Cisco Nexus 5548P is a one-rack-unit (1RU) 10 Gigabit Ethernet and Fibre Channel over Ethernet (FCoE) switch offering up to 960-Gbps throughput and up to 48 ports. The switch has 32 1/10-Gbps fixed Small Form-Factor Pluggable Plus (SFP+) Ethernet and FCoE ports and one expansion slot.

Figure 1. Cisco Nexus 5548P Switch

Expansion Module Options for the Cisco Nexus 5548P

The Cisco Nexus 5500 Platform is equipped with expansion modules that can be used to increase the number of 10 Gigabit Ethernet and FCoE ports or connect to Fibre Channel SANs with 1/2/4/8-Gbps Fibre Channel switch ports, or both.

The Cisco Nexus 5548P supports one expansion module from the following offerings (Figure 2):

- Ethernet module that provides 16 1 and 10 Gigabit Ethernet and FCoE ports using the SFP+ interface
- Fibre Channel plus Ethernet module that provides 8 1 and 10 Gigabit Ethernet and FCoE ports using the SFP+ interface, and 8 ports of 8/4/2/1-Gbps native Fibre Channel connectivity using the SFP interface

Figure 2. From Left to Right: 16-Port 1 and 10 Gigabit Ethernet and FCoE Module; and 8-Port Fibre Channel plus 8-Port 1 and 10 Gigabit Ethernet and FCoE Module

Software Support

Cisco NX-OS 5.0(2)N1(1) supports all the software features previously supported on the Cisco Nexus 5000 Series up through Cisco NX-OS4.2(1)N2(1). Cisco NX-OS 5.0(2)N1(1) is compatible with the In-Service Software Upgrade (ISSU) feature supported on Cisco NX-OS 4.2. In addition, Cisco NX-OS 5.0(2)N1(1) supports the new software features described in Table 1.

Table 1. New Software Features in Cisco NX-OS 5.0(2)N1(1)

Software Feature	Description
Scalability	For the Cisco Nexus 5548P, Cisco NX-OS 5.0(2)N1(1) adds significant improvement for network scalability such as support for up to: • 16 Cisco Nexus 2000 Series Fabric Extenders • 32,000 MAC addresses (upto 25,000 can be used for unicast, and upto 4000 can be used for multicast) • 4000 VLANs • 4000 ternary content addressable memory (TCAM) entries for ACLs and QoS • 4 active Switched-Port Analyzer (SPAN) sessions • 48 PortChannels • 4000 Internet Group Management Protocol (IGMP) groups
Configuration synchronization (config-sync)	Config-sync mode allows users to create switch profiles to synchronize local and peer switches. Config-sync allows administrators to make configuration changes on one switch and have the system automatically synchronize the switch's peers. This feature eliminates user errors and reduces the administrative overhead of having to configure both members of a virtual PortChannel (vPC) simultaneously.
Module preprovisioning	Module preprovisioning allows users to preconfigure interfaces before inserting or attaching a module to a Cisco Nexus 5000 Series Switch. If a module goes offline, users can also use preprovisioning to make changes to the interface configurations for the offline module. In some vPC topologies, preprovisioning is required for the config-sync feature. Preprovisioning allows users to synchronize the configuration for an interface that is online with one peer but offline with another peer.
Configuration rollback (config-rollback)	Config-rollback allows users to create a snapshot, or user checkpoint, of the Cisco NX-OS configuration and then reapply that configuration to the switch at any time without having to reload the switch. Config-rollback allows any authorized administrator to apply this checkpoint configuration without the need for expert knowledge of the features configured in the checkpoint.
Quality of service (QoS)	Enhancements include the capability to: • Mark traffic with a differentiated services code point (DSCP) • Use QoS group 1 for purposes other than FCoE, increasing the number of user-configurable QoS groups from 5 to 6 • Spread multiple multicast fanouts across 120 virtual output queues (VOQs)

Software Feature	Description
Authentication, authorization, and accounting (AAA) enhancements	Enhancements include the capability to: • Enable per-command authorization with roles for AAA • Enable or disable fallback to local authentication if remote authentication fails • Configure test parameters at the AAA group level instead of having to set parameters individually for each server in the AAA group • Disable username accounts
Port profiles	A port profile is a container used to define a common set of network configuration commands for multiple interfaces. This feature enables network administrators to define port configurations across a large number of ports. Port profiles can be applied to the following interface types: • Ethernet • VLAN • PortChannel
Secure Shell (SSH) enhancements	Enhancements include support for: • SSH command in boot mode • OpenSSH Version 3.0
Access control list (ACL) on virtual terminal (VTY)	This feature allows configuration of access control for the switch for a VTY, regardless of where the connection is established (mgmt0 or an external interface).

For More Information

For more information about Cisco Nexus switches, please visit http://www.cisco.com/go/nexus5000 and http://www.cisco.com/go/nexus2000.

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at **www.cisco.com/go/offices.**

Printed in USA C25-627144-00 10/10