

## Cisco NX-OS Software Release 4.1(3)N2(1) for Cisco Nexus 5000 Series Switches

PB569037

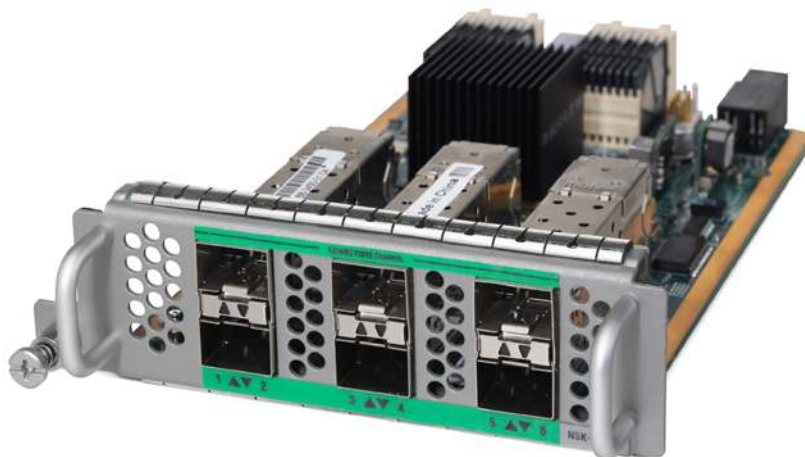
Cisco® NX-OS Software is a data center–class operating system built with modularity, resiliency, and serviceability at its foundation. Based on the industry-proven Cisco MDS 9000 SAN-OS Software, Cisco NX-OS helps ensure continuous availability and sets the standard for mission-critical data center environments.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

Cisco NX-OS Software Release 4.1(3)N2(1) is a Cisco NX-OS Software release on the Cisco Nexus® 5000 Series Switches and 2000 Series Fabric Extenders. This software release introduces the Cisco Nexus 5000 Series expansion module for 1/2/4/8-Gbps Fibre Channel connectivity (product number N5K-M1060) with support for 4-Gbps and 8-Gbps Fibre Channel optics. In addition, several new software features have been introduced to improve performance, scalability, and management for the product line. This software release will be available for download from <http://www.cisco.com> beginning end of November 2009.

### Support for 8Gbps Fibre Channel Nexus 5000 Expansion Module

4.1(3)N2(1) supports the new N5K-M1060 generic expansion module (Figure 1) extends Cisco connectivity options in the data center to include INCITS T11 standards–compatible 8-Gbps Fibre Channel port capability. The N5K-M1060 module is packaged as an expansion module on the Cisco Nexus 5000 Series platform and is hot-swappable similar to the N5K-M1600, N5K-M1404, and N5K-M1008 modules. It is plug compatible with all Cisco Nexus 5000 Series products.

**Figure 1.** Cisco Nexus 5000 Series Expansion Module for 1/2/4/8-Gbps Fibre Channel Connectivity (Product Number N5K-M1060)



## Cisco Nexus 5000 Series Generic Expansion Module Features

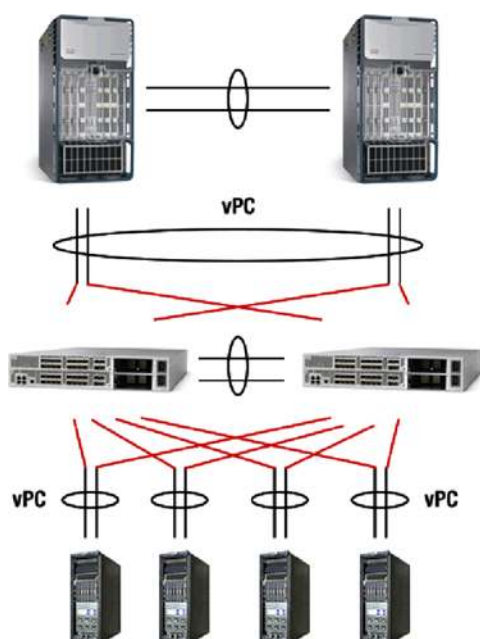
- Six 8-Gbps Fibre Channel-compatible ports are provided.
- Full 8Gbps line rate, non-oversubscribed.
- Port autonegotiates among 8-, 4-, 2- or 1-Gbps Fibre Channel.

## New Software Features

- **Enhancement to virtual PortChannel (vPC) function:** Cisco NX-OS Software Release 4.1.3N1(1) introduced vPC technology on the Cisco Nexus 5000 Series platform. vPC allows formation of PortChannels across two Cisco Nexus 5000 Series and/or 2000 Series platforms. This capability allows formation of scalable Layer 2 topologies that do not depend on Spanning Tree Protocol for redundancy and loop avoidance and at the same time provides higher cross-sectional bandwidth by using all physical links that interconnect the devices, whether they be networking equipment, Cisco Nexus 2000 Series Fabric Extenders, or end host systems such as servers (Figure 2).

Cisco NX-OS 4.1(3)N2(1) enables addition and deletion of server interfaces in the event of any disruption on the vPC peer link interface.

**Figure 2.** Sample VPC Topology



- **Access control list (ACL) support on the management interface:** Cisco NX-OS 4.1(3)N2(1) enables users to apply an ACL on the ethernet out-of-band management interface. This capability gives users greater flexibility: for instance, telnet and Secure Shell (SSH) sessions can be restricted on a per-port basis.
- **Support for logging option with virtual route forwarding (VRF):** In the previous release of Cisco NX-OS, users could obtain logging information only through the management VRF. Logging capability has been enhanced to allow users to use the default VRF instance for transmission of in-band logging system information.

- **Authentication, authorization, and accounting (AAA) command authorization:** The AAA authorization and authentication cache feature allows users to cache authorization and authentication responses for a configured set of users or service profiles. This feature also provides a failover mechanism so that if a network RADIUS or TACACS+ server is unable to provide authorization and authentication responses, network users and administrators can still access the network.

Cisco NX-OS 4.1(3)N2(1) will add native support for command authorization by a server outside the switch. Role-based access control (RBAC) will be added in a subsequent release.

## For More Information

<http://www.cisco.com/go/nexus5000>



Americas Headquarters  
Cisco Systems, Inc.  
San Jose, CA

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

Europe Headquarters  
Cisco Systems (Europe) B.V.  
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](http://www.cisco.com/go/offices).

CCDE, CCENT, CCSP, Cisco IaaS, Cisco HealthPresence, Cisco IronPort, the Cisco logo, Cisco Nexus Connect, Cisco Prime, Cisco Security, Cisco StackPower, Cisco StadiumVision, Cisco TelePresence, Cisco Unified Computing System, Cisco WebEx, DCE, Flip Channels, Hio for Coda, Hio Mind, HioShare (Design), Hio Ultra, Hio Video, Hio Video (Design), Indent Broadband, and Welcome to the Human Network are trademarks. Changing the Way We Work, Live, Play and Learn, Cisco Capital, Cisco Capital (Design), Cisco Financial (Stylized), Cisco Store, Flip Gift Card, and One Million Acts of Green are service marks, and Access Register, Almond, All built, AsyncOS, Bringing the Meeting to You, Catalyst, CCDA, CCDE, CCIE, CCIP, CCNA, CCNP, CCS, CCVP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco ICB, Cisco Link, Cisco Nexus, Cisco Press, Cisco Systems, Cisco Systems Goals, the Cisco Systems logo, Cisco Unity, Collaboration Without Limitation, Continuum, Ethernet, EtherSwitch, Event Center, Explorer, Follow Me Browsing, GainMedia, IYX, OS, iPhone, IronPort, the IronPort logo, LaserLink, LightStream, Linksys, MeetingPlace, MeetingPlace Online Sound, MGX, Network, Networking Academy, PCNow, PX, PowerKEY, PowerPanel, PowerTV, PowerTV (Design), PowerVu, Prism, ProConnect, ROA, Solderless, SMI, TNet, Spectrum Expert, StackWise, WebEx, and the WebEx logo are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0910)