

## New Modules for Cisco Nexus 7000 Series Switches

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As part of Cisco® NX-OS Software Release 5.0, Cisco is expanding the Cisco Nexus® 7000 Series Switches portfolio with the introduction of the Cisco Nexus 7000 Series 8-Port 10 Gigabit Ethernet Module with XL Option (X2 optics) and the Cisco Nexus 48-Port Gigabit Ethernet Module with XL Option (Small Form-Factor Pluggable [SFP] optics).

The Cisco Nexus 7000 Series Switches are a modular data center-class product line designed for highly scalable 10 Gigabit Ethernet networks, with a fabric architecture that scales beyond 15 terabits per second (Tbps), providing support for future 40 and 100 Gigabit Ethernet interfaces. Designed to meet the requirements of the most mission-critical network environments, it delivers continuous system operation and virtualized pervasive services. The Cisco Nexus 7000 Series is powered by the proven Cisco NX-OS operating system, with enhanced features to deliver real-time system upgrades with exceptional manageability and serviceability. Its innovative unified fabric design is purpose-built to support consolidation of IP, storage, and interprocess communication networks on a single Ethernet fabric.

### Cisco Nexus 7000 Series Hardware Features

The Cisco Nexus 7000 Series (Figure 1) provides integrated resilience combined with features optimized specifically for the data center for availability, reliability, scalability, and ease of management.

**Figure 1.** Cisco Nexus 7000 Series



Cisco NX-OS 5.0 includes the following new hardware:

- A new 8-port 10 Gigabit Ethernet Module with XL Option (X2 optics) compatible with both the 18-slot and the 10-slot chassis
- A new 48-port Gigabit Ethernet Module with XL Option (SFP optics) compatible with both the 18-slot and the 10-slot chassis

#### **Cisco Nexus 7000 Series 8-Port 10 Gigabit Ethernet Module with XL Option (X2 Optics)**

The Cisco Nexus 7000 8-Port 10 Gigabit Ethernet Module with XL Option (Figure 2) is a cost-effective, highly scalable module designed for performance-driven, mission-critical Ethernet networks. The module uses two M1-XL forwarding engines, providing a throughput of up to 120 million packets per seconds (Mpps), eight nonoversubscribed 10 Gigabit Ethernet ports and a larger forwarding information base (FIB) table, making it ideal for deployment at an Internet Exchange Point (IXP), a service provider, or a large enterprise. The module supports a broad range of X2 optics, allowing deployment in various types of situations, from long-reach intersite over single-mode fiber to short and medium reaches over multimode fiber for data center and campus environments. The 8-port 10 Gigabit Ethernet module is supported by both the 18-slot and the 10-slot chassis (Cisco NX-OS 5.0 and later).

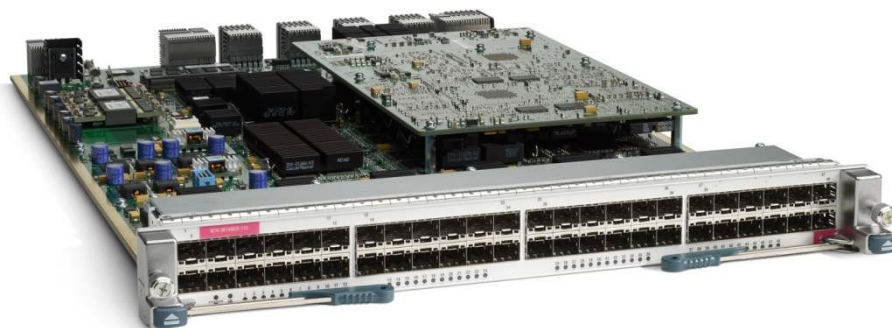
**Figure 2.** Cisco Nexus 7000 Series 8-Port 10 Gigabit Ethernet Module with XL Option



#### **Cisco Nexus 7000 Series 48-Port Gigabit Ethernet Module with XL Option**

The Cisco Nexus 7000 Series 48-Port Gigabit Ethernet Module with XL Option (Figure 3) is a highly scalable module designed for performance-driven, mission-critical Ethernet networks. The module uses the M1-XL forwarding engines, providing a throughput of up to 60 Mpps; 48 high-density Gigabit Ethernet ports; and a larger FIB table. The module supports a broad range of SFP optics, allowing deployment in various types of situations, from long-reach intersite over single-mode fiber to short and medium reaches over multimode fiber for data center and campus environments. The 48-port Gigabit Ethernet module is supported by both the 18-slot and the 10-slot chassis (Cisco NX-OS 5.0 and later).

**Figure 3.** Cisco Nexus 7000 Series 48-Port Gigabit Ethernet Module with XL Option



The M1-XL forwarding engine on the Cisco Nexus 7000 Series 8-Port 10 Gigabit Ethernet and 48-Port Gigabit Ethernet Modules with XL Option is part of the Cisco Nexus 7000 M1-Series of forwarding engines. The M1-XL forwarding engine is based on the M1 engine, incorporating larger FIB and access control list (ACL) tables. The module offers full compatibility and feature consistency with all existing M1 modules. Table 1 provides the performance specifications for the Cisco Nexus 7000 Series 8-Port 10 Gigabit Ethernet and 48-Port Gigabit Ethernet Modules with XL Option operating in non-XL and XL modes.

**Table 1.** Performance Specification for Non-XL and XL Mode Operation

Item	Non-XL Mode	XL Mode
MAC address entries	128K	128K
IPv4 routes	128K	Up to 1M*
IPv6 routes	64K	Up to 350K*
NetFlow entries	512K	512K
ACL entries	64K	128K

\* Actual limit depends on prefix distribution

All Cisco Nexus 7000 Series I/O modules incorporate a dedicated forwarding engine, helping ensure that all data plane processing resides on the I/O modules. This high-availability architecture scales and isolates the control plane and data plane, delivering continuous operation even during upgrades. The forwarding engine also delivers ACL filtering, marking, rate limiting, and NetFlow without degrading performance.

The Cisco Nexus 7000 Series modules offer exceptional security, with integrated hardware support for Cisco TrustSec. Security features include line-rate data confidentiality, data integrity, and ACL processing for security group tags (SGTs). Data confidentiality and integrity conform to the IEEE MAC address security standard (IEEE 802.1AE [MACsec]). All ports on the module support the Advanced Encryption Standard (AES) cipher using a 128-bit key. New security ACLs are enhanced through hardware support for Cisco metadata headers capable of carrying SGTs. Security group ACLs (SGACLs) use SGT information to provide hardware-based enforcement of security policies. This approach removes dependencies on IP addresses, thus improving scalability and simplifying manageability.

## Availability

The Cisco Nexus 7000 Series 8-Port 10 Gigabit Ethernet and 48-Port Gigabit Ethernet Modules with XL Option are now available for ordering and will be shipping in the first quarter of calendar year 2010 (Q1CY10).

## Ordering Information

To place an order, visit the [Cisco Ordering homepage](#). To download software, visit the [Cisco Software Center](#). Table 2 provides ordering information.

**Table 2.** Ordering Information

Product Name	Part Number
<b>I/O Modules</b>	
Cisco Nexus 7000 Series 8-port 10 Gigabit Ethernet Module with XL Option (requires X2)	N7K-M108X2-12L
Cisco Nexus 7000 Series 48-port Gigabit Ethernet Module with XL Option (req. SFP)	N7K-M148GS-11L
<b>Cisco Nexus 7000 Spares</b>	
Cisco Nexus 7000 Series 8-port 10 Gigabit Ethernet Module with XL Option (requires X2)	N7K-M108X2-12L=
Cisco Nexus 7000 Series 48-port Gigabit Ethernet Module with XL Option (req. SFP)	N7K-M148GS-11L=
<b>SFP Optics</b>	
1000BASE-SX SFP (DOM)	SFP-GE-S

<b>1000BASE-LX/LH SFP (DOM)</b>	SFP-GE-L
<b>1000BASE-ZX Gigabit Ethernet SFP (DOM)</b>	SFP-GE-Z
<b>1000BASE-T SFP (NEBS 3 ESD)</b>	SFP-GE-T
<b>GE SFP, LC connector SX transceiver</b>	GLC-SX-MM
<b>GE SFP, LC connector LX/LH transceiver</b>	GLC-LH-SM
<b>1000BASE-ZX SFP</b>	GLC-ZX-SM
<b>1000BASE-T SFP</b>	GLC-T
<b>Coarse Wavelength-Division Multiplexing (CWDM) SFP</b>	CWDM-SFP-1470=*
<b>Dense Wavelength-Division Multiplexing (DWDM) SFP</b>	DWDM-SFP-3033=**
<b>X2 Optics</b>	
<b>10GBASE-SR X2 Module</b>	X2-10GB-SR=
<b>10GBASE-LR X2 Module</b>	X2-10GB-LR=
<b>10GBASE-LRM X2 Module</b>	X2-10GB-LRM=
<b>10GBASE-ER X2 Module</b>	X2-10GB-ER=
<b>Dense Wavelength-Division Multiplexing (DWDM) X2 Module</b>	DWDM-X2-60.61=***

\* Also offered in other wavelengths; see CWDM SFP data sheet for additional product number and information

\*\* Also offered in other wavelengths; see DWDM SFP data sheet for additional product number and information

\*\*\* Also offered in other wavelengths; see DWDM X2 data sheet for additional product number and information

## Service and Support

Cisco offers a wide range of services to help accelerate your success in deploying and optimizing Cisco Nexus 7000 Series Switches in your data center. Our innovative services are delivered through a unique combination of people, processes, tools, and partners and are focused on helping you increase operational efficiency and improve your data center network. Cisco Advanced Services uses an architecture-led approach to help you align your data center infrastructure to your business goals and provide long-term value. Cisco SMARTnet<sup>®</sup> Service helps you resolve mission-critical problems with direct access anytime to Cisco network experts and award-winning resources. With this service, you can take advantage of the Smart Call Home service capability that offers proactive diagnostics and real-time alerts on your Cisco Nexus 7000 Series Switches. Spanning the entire network lifecycle, Cisco Services helps maximize investment protection, optimize network operations, provide migration support, and strengthen your IT expertise. For more information about Cisco Data Center Services, visit: <http://www.cisco.com/go/dcservices>.

## For More Information

For more information about the Cisco Nexus 7000 Series, visit the product homepage at <http://www.cisco.com/go/nexus7000> or contact your local account representative.



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