

New M3-Series I/O Modules for Cisco Nexus 7000 Series and 7700 Platform Switches

PB736584

In Cisco® NX-OS Software Release 8.0, Cisco is expanding the Cisco Nexus® 7000 Series and 7700 platform switching portfolio (Figure 1) with the introduction of new Cisco Nexus 7000 and 7700 M3-Series I/O modules. These are in addition to the Cisco Nexus 7700 M3-Series 1 and 10 Gigabit Ethernet and 40 Gigabit Ethernet I/O modules that were introduced in Cisco NX-OS Software Release 7.3.

The Cisco Nexus 7000 M3-Series modules are powered by Cisco Nexus M3-Series switch-on-a-chip (SoC) application-specific integrated circuit (ASICs). The M3-Series SoC is an innovative ASIC designed by Cisco that provides a power-efficient, flexible, high-performance packet engine, making it an excellent choice for building I/O modules that power the network infrastructure for public and private cloud environments. Each I/O module uses multiple M3-Series ASICs, and each M3-Series ASIC powers a set of 1 and 10 Gigabit Ethernet ports, 40 Gigabit Ethernet ports, or 100 Gigabit Ethernet ports, called port groups.

Figure 1. Cisco Nexus 7700 Platform Sw itches



The Cisco Nexus 7000 M3-Series I/O modules provide enhanced security and scalability capabilities such as these:

- MAC Security (MACsec) at wire rate with 128- and 256-bit encryption on all ports at all speeds, supporting both key agreement protocols (Security Association Protocol [SAP] and MACsec Key Agreement [MKA]) in hardware: This feature provides line-rate data confidentiality and data integrity conforming to the IEEE MAC address security standard (IEEE 802.1AE [MACsec]), enabling customers to secure virtual port-channel (vPC) and Cisco Overlay Transport Virtualization (OTV) data center interconnect links and vPC and Cisco FabricPath links within a data center. It also lets customers securely uplink data centers to either their campus or Multiprotocol Label Switching (MPLS) cores.

- Integrated hardware capability for Cisco TrustSec® security, which enhances security access control lists (SACLs) through hardware support for Cisco metadata headers capable of carrying security-group tags (SGTs): SGTs enable security-group ACLs (SGACLs) to provide hardware-based enforcement of security policies, which eliminates dependency on IP addresses, enhances scalability, and simplifies management.
- High-performance onboard fabric services accelerator (FSA): This feature enables distributed services such as Bidirectional Forwarding Detection (BFD) and Cisco NetFlow to operate at scale with high performance.
- Larger IPv4 and IPv6 forwarding tables and ACL tables and more quality-of-service (QoS) entries: The increased sizes provide greater flexibility for various deployment scenarios.
- Virtual device context (VDC) capability: This feature enables users to partition one I/O module into multiple virtual switches. Each port group powered by one M3-Series ASIC can be part of one VDC.

Cisco Nexus 7700 M3-Series 48-Port 1 and 10 Gigabit Ethernet Module

The Cisco Nexus 7700 M3-Series 48-Port 1 and 10 Gigabit Ethernet Module (Figure 2) is a high-performance, high-density 1 and 10 Gigabit Ethernet module designed for the Cisco Nexus 7700 platform. It can be used with any of the Cisco Nexus 7700 platform switches.

This Cisco Nexus 7700 M3-Series module is powered by two M3-Series ASICs to provide 480 Gbps of data throughput through forty-eight 10 Gigabit Ethernet ports.

Figure 2 Cisco Nexus 7700 M3-Series 48-Port 1 and 10 Gigabit Ethernet Module



Cisco Nexus 7700 M3-Series 24-Port 40 Gigabit Ethernet Module

The Cisco Nexus 7700 M3-Series 24-Port 40 Gigabit Ethernet Module (Figure 3) is a high-performance, high-density 40 Gigabit Ethernet module designed for the Cisco Nexus 7700 platform. It can be used with any of the Cisco Nexus 7700 platform switches. This module allows a physical 40 Gigabit Ethernet port to be split into 4 logical and independent 10 Gigabit Ethernet ports. Up to 23 of the 24 physical 40 Gigabit Ethernet ports can be configured in breakout mode without the need to reload the module. Any port that is not configured in breakout mode remains available for establishing 40 Gigabit Ethernet links.

This Cisco Nexus 7700 M3-Series module is powered by four M3-Series ASICs to provide 960 Gbps of data throughput through twenty-four 40 Gigabit Ethernet ports.

Figure 3. Cisco Nexus 7700 M3-Series 24-Port 40 Gigabit Ethernet Module



Cisco Nexus 7700 M3-Series 12-Port 100 Gigabit Ethernet Module

The Cisco Nexus 7700 M3-Series 12-Port 100 Gigabit Ethernet Module (Figure 4) is a high-performance, high-density 100 Gigabit Ethernet module designed for the Cisco Nexus 7700 platform. It can be used with any of the Cisco Nexus 7700 platform switches. This module supports Quad Small Form-Factor Pluggable 28 (QSFP28) optics, so this module also can run each 100 Gigabit Ethernet port at 40 Gigabit Ethernet speeds using 40 Gigabit Ethernet QSFP optics.

This Cisco Nexus 7700 M3-Series module is powered by six M3-Series ASICs to provide 1.2 terabits per second (Tbps) of data throughput through twelve 100 Gigabit Ethernet ports.

Figure 4. Cisco Nexus 7700 M3-Series 12-Port 100 Gigabit Ethernet Module



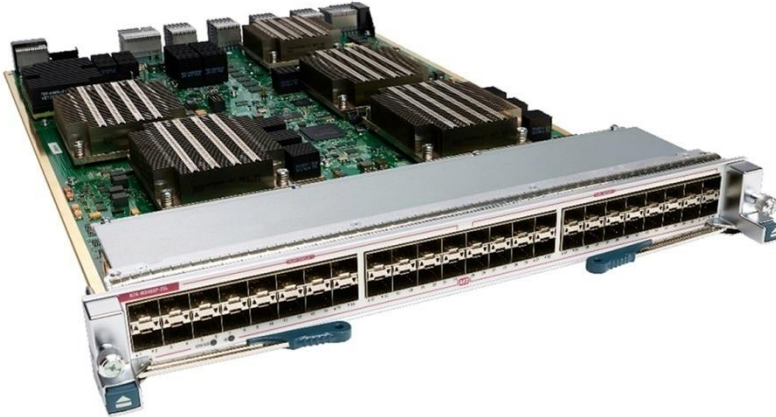
Cisco Nexus 7000 M3-Series 48-Port 1 and 10 Gigabit Ethernet Module

The Cisco Nexus 7000 M3-Series 48-Port 1 and 10 Gigabit Ethernet Module (Figure 5) is a high-performance, high-density 1 and 10 Gigabit Ethernet module designed for the Cisco Nexus 7000 Series. It can be used with any of the Cisco Nexus 7000 Series Switches¹.

This Cisco Nexus 7000 M3-Series module is powered by two M3-Series ASICs to provide 480 Gbps of data throughput through forty-eight 10 Gigabit Ethernet ports.

¹ Support for Cisco Nexus 7000 4-Slot Sw itch chassis will be available in a later Software Release.

Figure 5. Cisco Nexus 7000 M3-Series 48-Port 1 and 10 Gigabit Ethernet Module

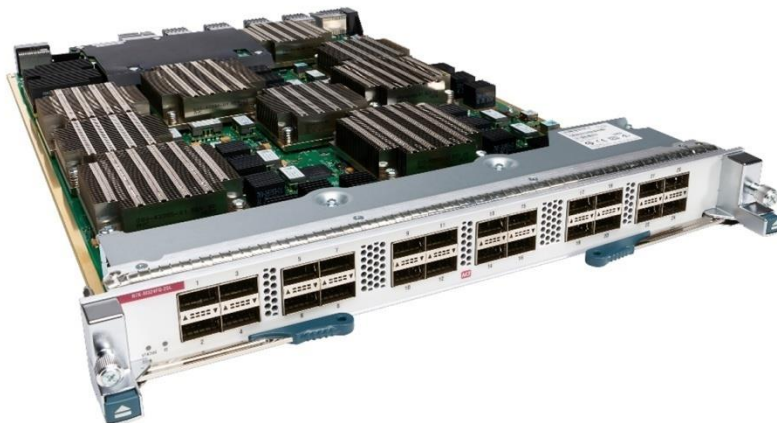


Cisco Nexus 7000 M3-Series 24-Port 40 Gigabit Ethernet Module

The Cisco Nexus 7000 M3-Series 24-Port 40 Gigabit Ethernet Module (Figure 6) is a high-performance, high-density 40 Gigabit Ethernet module designed for the Cisco Nexus 7000 Series. It can be used with any of the Cisco Nexus 7000 Series Switches². This module allows a physical 40 Gigabit Ethernet port to be split into 4 logical and independent 10 Gigabit Ethernet ports. The first 12 40 Gigabit Ethernet ports can be configured in breakout mode without the need to reload the module. Any port that is not configured in breakout mode remains available for establishing 40 Gigabit Ethernet links.

The Cisco Nexus 7000 M3-Series module is powered by four M3-Series ASICs. However, the maximum bandwidth capacity per slot on a Cisco Nexus 7000 Series Switch with Fabric-2 modules is 550 Gbps, so this module provides 550 Gbps of data throughput through twenty-four 40 Gigabit Ethernet ports.

Figure 6. Cisco Nexus 7000 M3-Series 24-Port 40 Gigabit Ethernet Module



² Support for Cisco Nexus 7000 4-Slot Switch chassis will be available in a later Software Release.

Ordering Information

To place an order, go to [How to Buy](#). You can download software [here](#). Table 1 provides ordering information.

Table 1. Ordering Information

| Product Name | Part Number |
|---|----------------|
| Cisco Nexus 7700 M3-Series 48-Port 1/10 Gigabit Ethernet Module | N77-M348XP-23L |
| Cisco Nexus 7700 M3-Series 24-Port 40 Gigabit Ethernet Module | N77-M324FQ-25L |
| Cisco Nexus 7700 M3-Series 12-Port 100 Gigabit Ethernet Module | N77-M312CQ-26L |
| Cisco Nexus 7000 M3-Series 48-Port 1/10 Gigabit Ethernet Module | N7K-M348XP-25L |
| Cisco Nexus 7000 M3-Series 24-Port 40 Gigabit Ethernet Module | N7K-M324FQ-25L |

Note: Please check the Cisco Nexus 7000 Series NX-OS [Release Notes](#) for features and capabilities supported in software or contact your Cisco representative.

Cisco Services

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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 with your business goals and provide long-term value.

Cisco SmartNet Total Care™ helps you resolve mission-critical problems with direct access at any time to Cisco network experts and award-winning resources. With this service, you can take advantage of the Cisco Smart Call Home service capability, which offers proactive diagnostics and real-time alerts on your Cisco Nexus 7000 Series Switches.

Spanning the entire network lifecycle, Cisco Services helps increase investment protection, optimize network operations, provide migration support, and strengthen your IT expertise. For more information about Cisco Data Center Services, visit <https://www.cisco.com/go/dcservices>.

For More Information

For more information about the Cisco Nexus 7700 platform, visit the product homepage at <https://www.cisco.com/go/nexus> or contact your local account representative.



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