

## Cisco Catalyst 6500 Series 16-Port 10 Gigabit Ethernet Module

PB451702

Cisco® announces a new 16-port 10 Gigabit Ethernet module (Figure 1) for the Cisco Catalyst® 6500 Series. The 16-port 10 Gigabit Ethernet module doubles the 10 Gigabit Ethernet density on the Cisco Catalyst 6500 Series, providing up to 130 ports of 10 Gigabit Ethernet in a single Cisco Catalyst 6500 chassis. It is ideal for deployment in the LAN campus aggregation or data center access, where fanout and port density are important. The new 16-port 10 Gigabit Ethernet module complements the existing integrated services on the Cisco Catalyst 6500 Series, enabling customers to build a scalable, resilient, and manageable data center to meet their growing business needs to consolidate and virtualize servers and storage to maximize resource utilization and reduce capital expenses.

**Figure 1.** Cisco Catalyst 6500 Series 16-Port 10 Gigabit Ethernet Module



### Product Overview

There are two versions of the Cisco Catalyst 6500 16-port 10 Gigabit Ethernet module:

- 16-port 10 Gigabit Ethernet module with Distributed Forwarding Card 3C (DFC3C)
- 16-port 10 Gigabit Ethernet module with Distributed Forwarding Card 3CXL (DFC3CXL)

Both modules contain the WS-X6716-10GE base board and a distributed forwarding card. See Table 1 for the differences between the DFC3C version and the DFC3CXL version. The base module supports up to 16 pluggable X2 optics and has a 40-Gbps connection to the fabric and is therefore 4:1 oversubscribed. The distributed forwarding card provides hardware-based multicast replication, NetFlow, and MAC learning and forwards traffic at 48 Mpps. Besides increased port density, the 16-port 10 Gigabit Ethernet module has reduced power consumption. It uses half the power consumption per port compared to the 8-port 10 Gigabit Ethernet module, providing substantial power savings to the customer. The 16-port 10 Gigabit Ethernet module can operate in a mix of oversubscription mode and performance mode, providing maximum flexibility for the customer to connect some ports to servers and some ports to wiring closet uplinks. When

operating in performance mode, the 10 Gigabit Ethernet ports can also be used to create a virtual switch link in a Cisco Catalyst 6500 virtual switching system (VSS).<sup>1</sup>

**Table 1.** Differences Between DFC3C and DFC3CXL

Feature	DFC3C	DFC3CXL
IPv4 Routes	256,000	1,000,000
IPv6 Routes	128,000	500,000
NetFlow Entries	128,000	256,000
Reflexive Access Control Lists (ACLs)	128,000	256,000

The 16-port 10 Gigabit Ethernet module is supported in the Cisco Catalyst 6500 Series chassis. When operating in an E-Series chassis (6503-E, 6504-E, 6506-E, 6509-E, 6509-V-E), the 6509-NEB-A chassis with dual fan tray, the configuration is NEBS 3 compliant (supports operating temperatures up to 55°C). When operating in a non-E-Series chassis (6506, 6509, 6513) or 6509-NEB-A with single fan tray, fan tray 2 and 2500W or higher power supplies are required, and the configuration is not NEBS 3 compliant (supports operating temperatures up to 40°C only). The module can be deployed in all slots of a 3/4/6/9-slot chassis. When operating in a 13-slot chassis, it must be deployed in slots 9–13. It is not supported in the 6503 non-E Series chassis or Cisco 7600 Series Routers.

The 16-port 10 Gigabit Ethernet module is interoperable with all models of the Cisco Catalyst 6500 Series Virtual Switching Supervisor Engine 720 with 10 Gigabit Ethernet uplinks or Cisco Catalyst 6500 Series Supervisor Engine 720, including VS-S720-10G-3C, VS-S720-10G-3CXL, WS-Sup720, WS-Sup720-3B, and WS-Sup720-3BXL. When mixing DFCs in the same chassis, the chassis will operate in the mode of the lowest common denominator.

The following optics will be supported on the 16-port 10 Gigabit Ethernet module at first customer ship (FCS): X2-10GB-LRM, X2-10GB-SR, X2-10GB-LR, X2-10GB-ER, X2-10GB-LX4, and X2-10GB-CX4. To meet EMI compliance, SR and CX4 requires version -02 or above; ER requires version -03 or above; LR and LX4 requires version -04 or above. There is no restriction on LRM. The above versions of these optics will be shipping when WS-X6716-10G-3C and WS-X6716-10G-3CXL FCS. The LRM optics provide 220m over multimode fiber and are ideal for deployment in campus LAN uplinks and in data centers.

Both versions of the 16-port 10 Gigabit Ethernet module are supported in Cisco IOS<sup>®</sup> Software and Cisco IOS Software Modularity Release 12.2(33)SXH2 or later.

Table 2 provides orderability and shipping date information. Table 3 describes minimum software requirements. Table 4 provides ordering information.

## Availability

**Table 2.** Orderability and Shipping Dates for the 16-Port 10 Gigabit Ethernet Module and Optics

Part Number	Orderability	FCS
<b>Cisco Catalyst 6500 16-Port 10 Gigabit Ethernet Modules</b>		
WS-X6716-10G-3C	March 2008	April 2008
WS-X6716-10G-3CXL	March 2008	April 2008

<sup>1</sup> Cisco Catalyst 6500 16-port 10 Gigabit Ethernet module support in a Virtual Switching System is in 12.2(33)SXH2. Virtual Switch Link support on the Cisco Catalyst 6500 16-port 10 Gigabit Ethernet module will come in 12.2(33)SXI.

Part Number	Orderability	FCS
WS-F6700-DFC3CXL=	Now	Shipping
<b>Optics</b>		
X2-10GB-LRM	Now	Shipping
X2-10GB-SR*	Now	Shipping
X2-10GB-LR*	Now	Shipping
X2-10GB-ER*	Now	Shipping
X2-10GB-LX4*	Now	Shipping
X2-10GB-CX4*	Now	Shipping

\* To meet EMI compliance, SR and CX4 requires version -02 or above; ER requires version -03 or above; LR and LX4 requires version -04 or above. There is no restriction on LRM. The above versions of these optics will be shipping when WS-X6716-10G-3C and WS-X6716-10G-3CXL FCS. See the Cisco Catalyst 6500 16-port 10 Gigabit Ethernet Q&A for more details.

More transceivers will be supported over time. Refer to the data sheet or release notes for the latest list of supported transceivers.

### Minimum Software Requirements

**Table 3.** Minimum Software Requirements for the 16-Port 10 Gigabit Ethernet Module

Part Number	Minimum Software
WS-X6716-10G-3C	Cisco IOS Software Release 12.2(33)SXH2
WS-X6716-10G-3CXL	Cisco IOS Software Release 12.2(33)SXH2

### Ordering Information

**Table 4.** Ordering Information for Cisco Catalyst 6500 16-Port 10 Gigabit Ethernet Module and Optics

Part Number	Description
<b>Cisco Catalyst 6500 16-Port 10 Gigabit Ethernet Modules</b>	
WS-X6716-10G-3C	Cisco Catalyst 6500 16-Port 10 Gigabit Ethernet Module with DFC3C, requires X2
WS-X6716-10G-3CXL	Cisco Catalyst 6500 16-Port 10 Gigabit Ethernet Module with DFC3CXL, requires X2
WS-F6700-DFC3CXL=	Cisco Catalyst 6500 Distributed Forwarding Card 3CXL
<b>Optics</b>	
X2-10GB-LRM	10GBASE-LRM X2; 220m over multimode fiber
X2-10GB-SR	10GBASE-SR X2; 26m over FDDI-grade multimode fiber and 300m over 50um 2000 MHz*km multimode fiber
X2-10GB-LR	10GBASE-LR X2; 10 km over single-mode fiber
X2-10GB-ER	10GBASE-ER X2; 40 km over single-mode fiber
X2-10GB-LX4	10GBASE-LX4 X2; 300m over multimode fiber
X2-10GB-CX4	10GBASE-CX4 X2; 15m over copper InfiniBand cable
<b>Cabling for CX4 Transceiver</b>	
CAB-INF-28G-1=	Cisco 1m CX4 patch cable for XENPAK-10GB-CX4
CAB-INF-28G-5=	Cisco 5m CX4 patch cable for XENPAK-10GB-CX4
CAB-INF-28G-10=	Cisco 10m CX4 patch cable for XENPAK-10GB-CX4
CAB-INF-26G-15=	Cisco 15m CX4 patch cable for XENPAK-10GB-CX4

## For More Information

For more information about Cisco Catalyst 6500 Series Switches, visit <http://www.cisco.com/en/US/products/hw/switches/ps708/index.html> or contact your local account representative.



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