

CISCO GIGABIT ETHERNET NETWORK MODULE

The Cisco Gigabit Ethernet Network Module brings Gigabit Ethernet to the Cisco 2691, Cisco 3660, Cisco 3725, Cisco 3745, Cisco 3825 and Cisco 3845.

Figure 1. Cisco Gigabit Ethernet Network Module



OVERVIEW

The single-port Cisco Gigabit Ethernet Network Module (part number NM-1GE) provides Gigabit Ethernet optical and copper connectivity for access routers. The module is supported by the Cisco 2691, Cisco 3660, Cisco 3725, Cisco 3745, Cisco 3825, and Cisco 3845 series routers. This network module has one gigabit interface converter (GBIC) slot to carry any standard copper or optical Cisco GBIC (see Table 1 for details). The flexibility to use different GBICs allows for making a choice depending on various factors, such as distance, cost, existing infrastructure, future expansion plans, and requirements.

The Cisco Gigabit Ethernet Network Module enables branch offices to cost-effectively utilize high-speed uplinks in a variety of environments (refer to Figure 1). The enhanced performance allows customers to enable new applications and services as well as providing greater capacity for existing inter-VLAN routing and bridging capabilities. Additionally, branch offices will now have the opportunity to connect to metropolitan-area networks (MANs). Cisco IOS® Software provides enhanced capabilities such as quality of service (QoS), network-based application recognition (NBAR), IP Security (IPSec), and Layer 3 virtual private networks (VPNs).

PRODUCT SUMMARY

Table 1. Cisco Gigabit Ethernet Network Module Product Numbers

Product Number	Product Description
NM-1GE	One-port Cisco Gigabit Ethernet Network Module
GBICs	
WS-G5483	Copper GBIC (1000BASE-T, Category 5 cabling, up to 100 meters)
WS-G5484	Short-wavelength GBIC (1000BASE-SX, up to 550 meters)
WS-G5486	Long-wavelength, long-haul GBIC (1000BASE-LX/LH, up to 10 km)
WS-G5487	Extended-distance GBIC (1000BASE-ZX, up to 100 km)
Coarse Wavelength Division Multiplexing (CWDM) GBICs	

Product Number	Product Description
CWDM-GBIC-1470	1000BASE-CWDM GBIC 1470 nm (gray)
CWDM-GBIC-1490	1000BASE-CWDM GBIC 1490 nm (violet)
CWDM-GBIC-1510	1000BASE-CWDM GBIC 1510 nm (blue)
CWDM-GBIC-1530	1000BASE-CWDM GBIC 1530 nm (green)
CWDM-GBIC-1550	1000BASE-CWDM GBIC 1550 nm (yellow)
CWDM-GBIC-1570	1000BASE-CWDM GBIC 1570 nm (orange)
CWDM-GBIC-1590	1000BASE-CWDM GBIC 1590 nm (red)
CWDM-GBIC-1610	1000BASE-CWDM GBIC 1610 nm (brown)

Note: WS-G5482= (1000BASE-T GBIC) is not supported.

KEY FEATURES

Ethernet and VLAN Features

- IEEE802.3 with IEEE802.2 Service Advertising Protocol (SAP)
- IEEE802.3 with IEEE802.2 and Subnetwork Access Protocol (SNAP)
- IEEE 802.1Q virtual LAN (VLAN) tagging
- Cisco Inter-Switch Link (ISL) support
- Flow control (802.3x)

Network Management-Related Features

- CiscoView
- Simple Network Management Protocol (SNMP) support
- Remote Monitoring (RMON) support
- Cisco's NetFlow accounting

QoS Features

- Weighted Random Early Detection
- Precedence setting and mapping (802.1p)
- Committed Access Rate (CAR)
- Access control list (ACL)
- Extended ACLs
- Voice and remaining QoS features, per platform and Cisco IOS Software version

Miscellaneous

- Jumbo frame support, up to 16 KB
- Cisco Group Management Protocol (GMP), Internet Group Management Protocol (IGMP) for multicasting
- Hot Standby Router Protocol (HSRP)
- Online insertion and removal (OIR)—network module OIR supported on Cisco 3660 and Cisco 3745
- Hot insertion and removal for GBICs on all platforms
- Media type or GBIC type display—`show interface` displays GBIC, media type

GIGABIT ETHERNET APPLICATIONS

Gigabit Ethernet in the Branch Office

In a branch office, the Cisco Gigabit Ethernet Network Module can provide a high-speed uplink. Figure 2 shows the module being used to bridge non-routable protocols while simultaneously providing Layer 3 connectivity. The module is also useful in situations that require inter-VLAN routing with an ISL or IEEE 802.1q trunk, and in any LAN requiring fiber connectivity.

Figure 2. Gigabit Ethernet in LANs

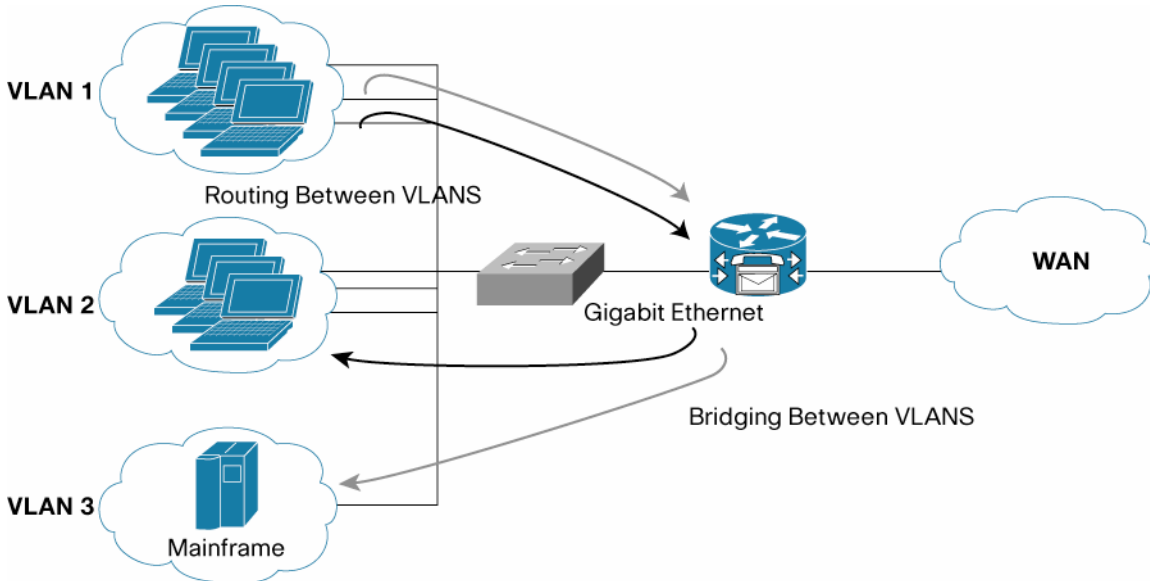
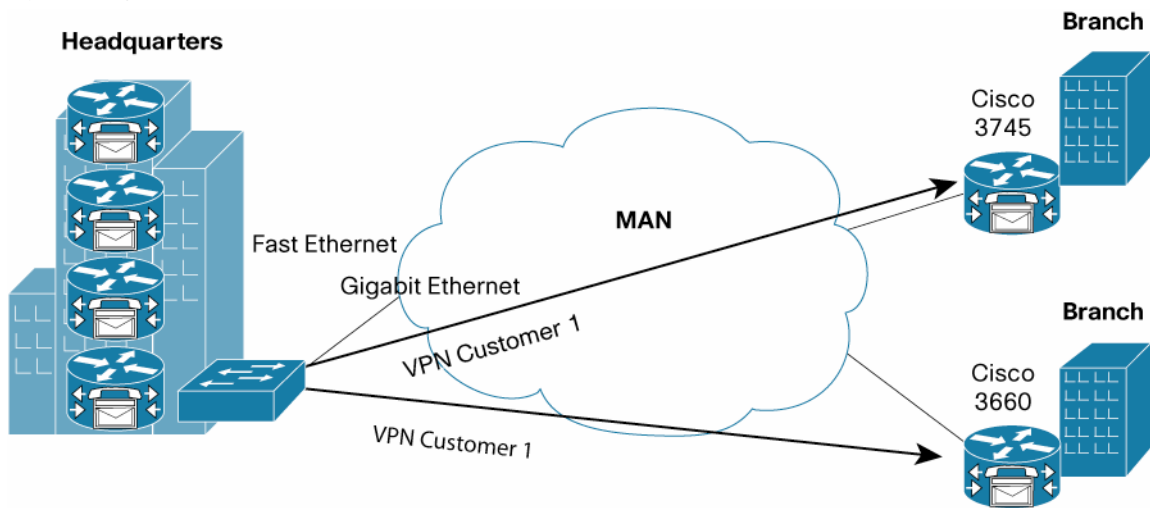


Figure 3 shows the Cisco Gigabit Ethernet Network Module being used to connect Layer 3 VPNs over a MAN. Cisco IOS Software enables QoS applications such as traffic shaping and NBAR. Again, this is ideal for situations in which fiber connectivity is desirable.

Figure 3. Gigabit Ethernet in MANs



SPECIFICATIONS

Software Support

Table 2 gives the Cisco IOS Software requirements for the Cisco Gigabit Ethernet Network Module, and Table 3 lists the platforms supported.

Table 2. Minimum Cisco IOS Software Requirements for Cisco Gigabit Ethernet Network Module

Product Number	Minimum Cisco IOS Software Version
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Product Number	Minimum Cisco IOS Software Version
NM-1GE	12.2(11)YT

Table 3. Maximum Cisco Gigabit Ethernet Network Module Support Comparison

Supported Platforms	Maximum Number of Modules Supported
Cisco 2691	1
Cisco 3660	2
Cisco 3725	1
Cisco 3745	2
Cisco 3825	1
Cisco 3845	2

Minimum Memory Requirements

Refer to the IOS Upgrade Planner or the Cisco IOS release notes for information regarding memory requirements.

Ethernet Specifications

- IEEE 802.3 with 802.2 SAP
- IEEE 802.3 with 802.2 and SNAP
- IEEE 802.1p
- IEEE 802.1q VLAN
- Cisco ISL
- Gigabit Ethernet IEEE 802.3z, IEEE 802.3x, IEEE 802.3ab

Agency Approvals

- UL 1950 (United States)
- CSA-C22.2 #950 (Canada)
- EN60950 (Europe)
- TUV GS (Germany)
- IEC 950 (International)

Electromagnetic Interference (EMI)

- FCC Part 15 Class A (United States)
- ICES-003 Class A (Canada)
- VCCI Class 2 (Japan)
- EN55022 Class B (Europe)
- CISPR 22 Class B (International)
- CE mark (Europe)

Physical Specifications

- Single-wide network module, no slot restrictions
- Dimensions (H x W x D) 1.55 x 7.10 x 7.2 inches (3.9 x 18.0 x 18.3 centimeters)

Environmental Specifications

- Operating temperature: 32 to 104° F (0 to 40° C)

- Storage temperature: -4 to 149° F (-20 to 65° C)
- Relative humidity: 10 to 90%, noncondensing

Cisco 2600 Series Multiservice Platforms—Data Sheets

http://www.cisco.com/en/US/products/hw/routers/ps259/products_data_sheets_list.html

Cisco 3800 Series Integrated Services Routers—Data Sheets

http://www.cisco.com/en/US/products/ps5855/products_data_sheets_list.html

Cisco 3600 Series Multiservice Platforms—Data Sheets

http://www.cisco.com/en/US/products/hw/routers/ps274/products_data_sheets_list.html

Cisco 3700 Series Multiservice Platforms—Data Sheets

http://www.cisco.com/en/US/products/hw/routers/ps282/products_data_sheets_list.html



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