



# Connecting Cisco Gigabit Ethernet Network Modules to the Network

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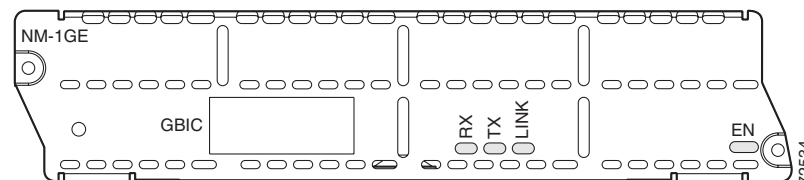
This guide describes how to connect Cisco Gigabit Ethernet network modules to your network. It contains the following sections:

- [Gigabit Ethernet Network Modules, page 1](#)
- [Gigabit Ethernet Network Module LEDs, page 4](#)
- [Related Documents, page 5](#)
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## Gigabit Ethernet Network Modules

The Gigabit Ethernet network module provides single-port Gigabit Ethernet connectivity through an installed Gigabit interface converter (GBIC). The GBIC determines the type of connectivity available to the network module. (See [Figure 1](#).)

**Figure 1** Gigabit Ethernet Network Module Faceplate



See [Table 1](#) for information on connection types supported by each GBIC.



**Note**

1000BASE-T ports cannot be looped back through use of an external loopback cable.



**Americas Headquarters:**  
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

**Table 1**      **Gigabit Ethernet Connection and Cable Types Supported on Gigabit Ethernet Network Modules**

GBIC Part Number	GBIC Description	Required Cable Specifications
GBIC-ZX=	Extended distance 1000BASE-ZX	10-micron SMF cable (yellow) with SC connectors <sup>1</sup>
GBIC-LX/LH=	Long-wavelength or long-haul 1000BASE-LX/LH	10-micron SMF cable (yellow) with SC connectors <sup>1</sup>  <b>Tip</b> If using an MMF cable, install a mode-conditioning patch cord (CAB-GELX-625).
GBIC-SX=	Short-wavelength 1000BASE-SX	62.5-micron MMF cable (orange) with SC connectors
GBIC-T=	UTP Category 5 or 6 1000BASE-T	Category 5 or 6 UTP cable with RJ-45 connectors
CWDM-GBIC-1470=	1000BASE-CWDM GBIC 1470 nm	10-micron SMF cable (yellow) with SC connectors <sup>1</sup>
CWDM-GBIC-1490=	1000BASE-CWDM GBIC 1490 nm	10-micron SMF cable (yellow) with SC connectors <sup>1</sup>
CWDM-GBIC-1510=	1000BASE-CWDM GBIC 1510 nm	10-micron SMF cable (yellow) with SC connectors <sup>1</sup>
CWDM-GBIC-1530=	1000BASE-CWDM GBIC 1530 nm	10-micron SMF cable (yellow) with SC connectors <sup>1</sup>
CWDM-GBIC-1550=	1000BASE-CWDM GBIC 1550 nm	10-micron SMF cable (yellow) with SC connectors <sup>1</sup>
CWDM-GBIC-1570=	1000BASE-CWDM GBIC 1570 nm	10-micron SMF cable (yellow) with SC connectors <sup>1</sup>
CWDM-GBIC-1590=	1000BASE-CWDM GBIC 1590 nm	10-micron SMF cable (yellow) with SC connector <sup>1</sup> s
CWDM-GBIC-1610=	1000BASE-CWDM GBIC 1610 nm	10-micron SMF cable (yellow) with SC connectors <sup>1</sup>

1. 10-dB SMF optical attenuators with SC connectors (two per duplex cable) are required for distances less than 25 km (15.5 miles). Install the attenuators between the male SC connector on the cable and the female SC connector on the network module.

## Installing and Removing GBICs

Gigabit Ethernet network modules support GBIC hot-swapping. To save time, do not power down the router and network module before installing or removing the GBIC.



### Warning

**Because invisible laser radiation may be emitted from the aperture of the port when no fiber cable is connected, avoid exposure to laser radiation and do not stare into open apertures.** Statement 240

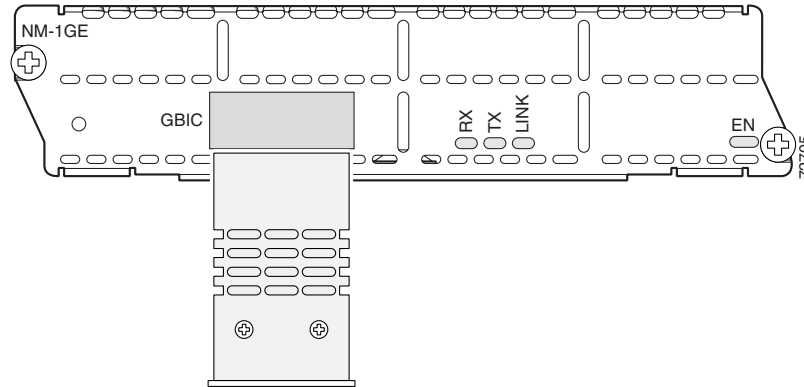


### Note

GBICs from other vendors are not supported by the Cisco Gigabit Ethernet network module.

- Step 1** Hold down the clips on the side of the GBIC while inserting the GBIC into the GBIC slot in the network module faceplate. (See [Figure 2](#).)

**Figure 2** *Installing a GBIC into a Network Module*



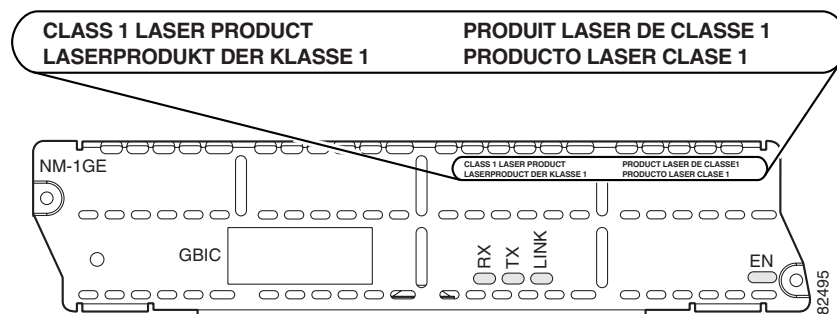
- Step 2** Release the side clips on the GBIC.
- Step 3** Connect the Gigabit Ethernet network module to the network. (See [Figure 4](#).) If installing the GBIC in an uninstalled network module, install the network module before connecting the network module to the network.

## Laser Safety Guidelines

Optical GBICs use a small laser to generate the fiber-optic signal. Keep the transmit port covered whenever a cable is not connected to the port.

The module faceplate carries a Class 1 laser warning label. (See [Figure 3](#).)

**Figure 3** *Class 1 Laser Warning Label*



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**Warning**

**Ultimate disposal of this product should be handled according to all national laws and regulations.**  
Statement 1040

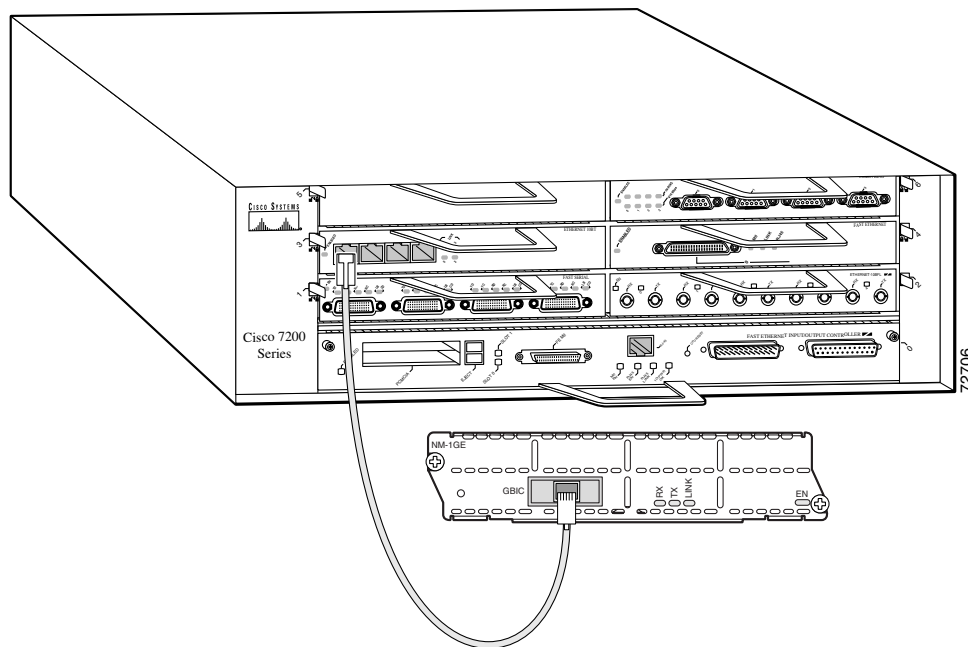
## Connecting Gigabit Ethernet Network Modules to the Network

**Warning**

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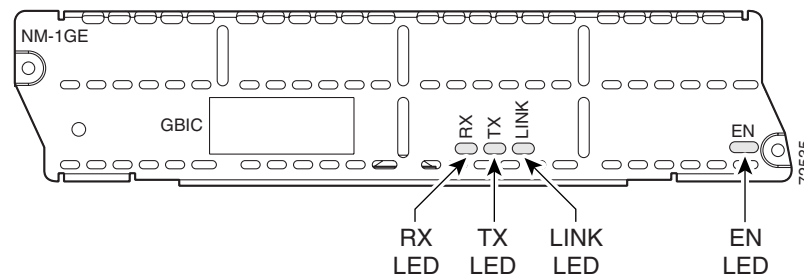
Use the cables listed in [Table 1](#) to connect the GBIC connectors on the network module to a networking device. (See [Figure 4](#).)

**Figure 4** Connecting a Gigabit Ethernet Network Module to a Cisco 7200 Series Router



## Gigabit Ethernet Network Module LEDs

All network modules have an enable (EN) LED. This LED indicates that the module has passed its self-tests and is available to the router. See [Figure 5](#) and [Table 2](#) for LEDs specific to the Gigabit Ethernet network module.

**Figure 5** Gigabit Ethernet Network Module LEDs**Table 2** Gigabit Ethernet Network Module LEDs

LED	Meaning
LINK	Green indicates that a link has been established between the network module and another networking device.
TX	Flashing green indicates transmit activity.
RX	Flashing green indicates receive activity.
EN	Green indicates that the network module has passed its self-test and is available to the router.

## Related Documents

For additional information, see the following documents and resources.

Related Topic	Document Title
CWDM passive optical system documentation	<i>Cisco 1000BASE-CWDM Series Passive Optical System Installation Note</i> <a href="http://www.cisco.com/en/US/products/hw/modules/ps4999/prod_module_installation_guide09186a0080161813.html">http://www.cisco.com/en/US/products/hw/modules/ps4999/prod_module_installation_guide09186a0080161813.html</a>
Regulatory compliance and safety information	<i>Cisco Network Modules and Interface Cards Regulatory Compliance and Safety Information</i> <a href="http://www.cisco.com/en/US/docs/routers/access/interfaces/rcsi/IOHrcsi.html">http://www.cisco.com/en/US/docs/routers/access/interfaces/rcsi/IOHrcsi.html</a>
Cisco IOS software website and reference documentation	<i>Cisco IOS Software</i> <a href="http://www.cisco.com/web/psa/products/index.html?c=268438303">http://www.cisco.com/web/psa/products/index.html?c=268438303</a>

# Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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