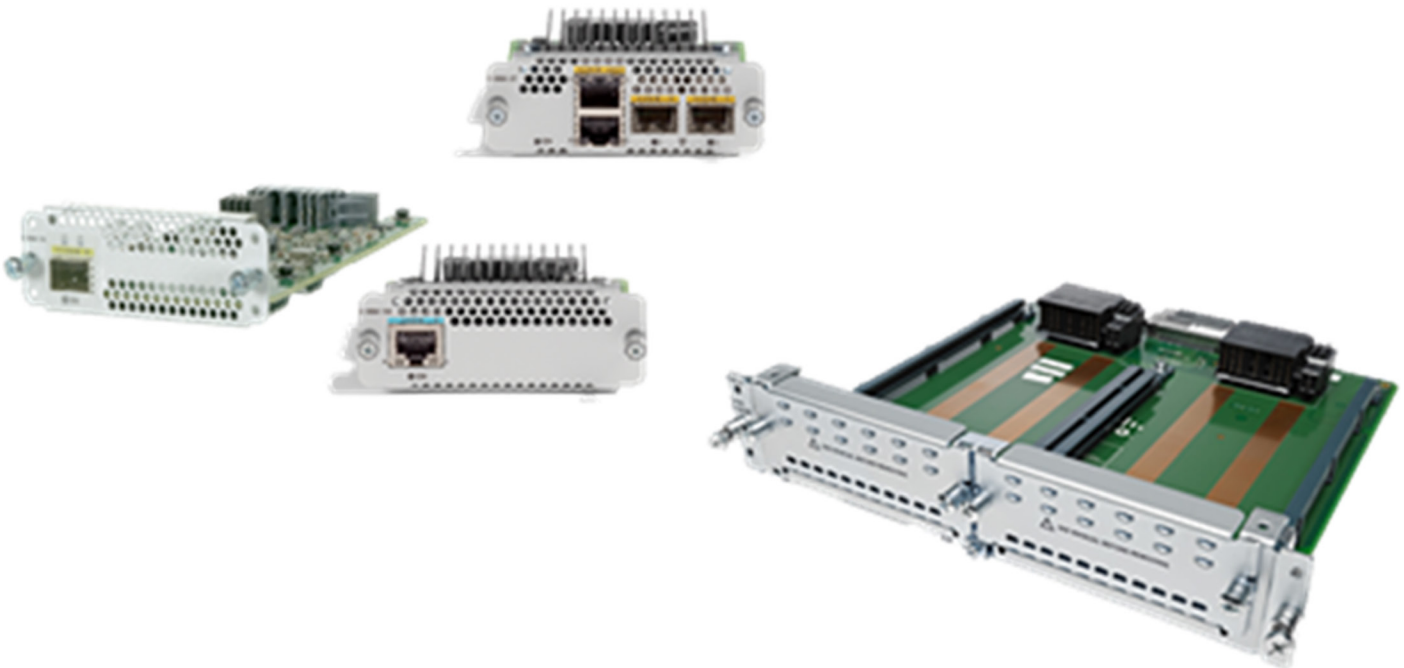
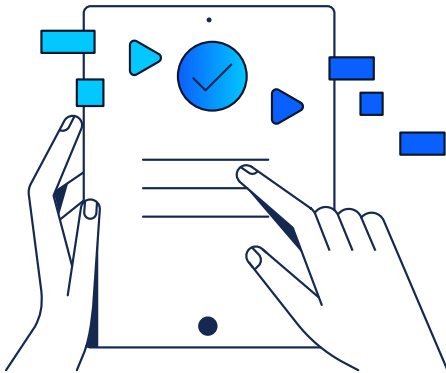


Cisco 8000 Series Secure Router Ethernet WAN Modules



Contents

Product overview	3
Features and benefits.....	4
Product specifications.....	5
NIM density with C-SM-NIM-ADPT.....	5
Module LED indicator	6
Installation.....	6
Configuration	7
Cisco Support	7
Cisco Support – Standard.....	7
Cisco RMA upgrade	7
Cisco Support – Enhanced.....	7
Cisco Support for Routing standalone offers.....	8
Cisco Professional Services	8
Where can I get more details on support?	8
Cisco Capital.....	8



Product overview

The Ethernet WAN modules for the Cisco® 8000 Series Secure Routers bring high-density Small Form-Factor Pluggable (SFP+ and SFP) connectivity, supporting 100-Mbps, 1-Gbps, and 10-Gbps Ethernet, to the 8000 Series. These modules provide robust, high-performance WAN connectivity, enabling secure and versatile network deployments for enterprises, small businesses, and service providers. With a strong focus on Layer 3 routing capabilities, these modules are ideal for extending secure WAN and Metro Ethernet links and are fully integrated with Cisco's SD-WAN solutions.

Moreover, Layer 3 ports available on these Network Interface Modules (NIMs) have complete feature parity with the router's embedded WAN ports.

Cisco has introduced two new Ethernet WAN modules designed specifically for the Cisco 8000 Series Secure Routers:

- C-NIM-WAN-2X: Cisco 2-port 10-Gbps/1-Gbps WAN with 256-bit WAN MACsec (Figure 1)
- C-NIM-WAN-4S: Cisco 4-port 100-Mbps/1-Gbps WAN with 256-bit WAN MACsec (Figure 2)

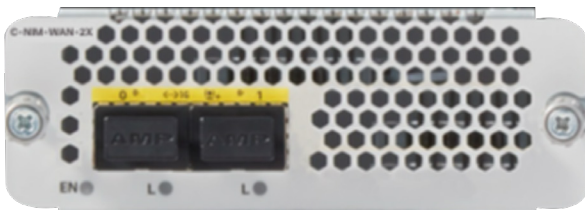


Figure 1. C-NIM-WAN-2X: 2-port 1-Gbps/10-Gbps WAN NIM

The C-NIM-WAN-2X offers two 10 Gigabit Ethernet (10GE) SFP+ WAN ports, providing flexible 1 Gigabit Ethernet (1GE) or 10GE speeds. It provides a price-effective option to instantly expand your WAN capabilities with two high-performance interfaces. This NIM helps future-proof your network by allowing scalable capacity while boosting performance and reliability for critical applications through enhanced connectivity and redundancy. Designed for seamless integration, the C-NIM-WAN-2X leverages your router's advanced security and SD-WAN intelligence, delivering agile, secure, and optimized connectivity for your enterprise.

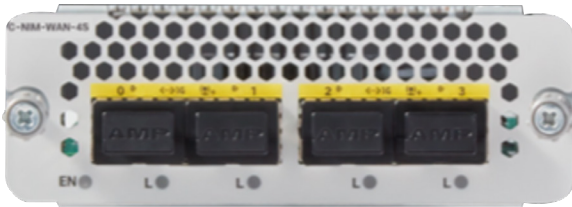


Figure 2. C-NIM-WAN-4S: 4-port 100-Mbps/1-Gbps WAN

The C-NIM-WAN-4S offers four SFP ports supporting 100BASE-FX and 1000BASE-X fiber connections. The module supports 256-bit WAN MACsec and MAC filtering. It is designed to significantly expand your router's capacity, allowing for diverse connections, increased bandwidth aggregation, or robust link redundancy. The four 100-Mbps/1-Gbps WAN ports help ensure that your critical applications run smoothly and your network remains agile, all while seamlessly integrating with the 8000 Series' advanced security and SD-WAN intelligence for optimized and secure enterprise connectivity.

Features and benefits

These Ethernet WAN modules are based on the technology of the onboard Gigabit Ethernet and SFP/SFP+ ports of the Cisco 8000 Series Secure Router platforms. Feature support will be identical to that of the onboard ports.

- **Dedicated Layer 3 WAN functionality:** Both modules are designed exclusively for Layer 3 routing, helping ensure optimal performance and maintaining clear WAN-only positioning. L3 feature parity aligns with FPGE/ FTPE.
- **Secure WAN connectivity with MACsec:** Integrated WAN MACsec (256-bit) provides robust encryption for secure WAN and Metro Ethernet links, protecting data integrity and confidentiality across the network.
- Versatile port speeds and density:
 - **C-NIM-WAN-2X:** Features two SFP+ ports supporting flexible 1-Gbps or 10-Gbps speeds, ideal for high-bandwidth applications.
 - **C-NIM-WAN-4S:** Offers four SFP ports supporting 100-Mbps or 1-Gbps speeds, providing higher port density for diverse WAN access requirements.
- **SD-WAN ready:** Both modules are fully compatible with Cisco's SD-WAN solutions, allowing for simplified management, optimized application performance, and enhanced network agility.
- **High-performance internal uplink:** A 10GE internal uplink helps ensure high-speed data transfer within the router, minimizing bottlenecks and maximizing overall system performance.
- **Flexible deployment:** As NIMs, they offer modularity and can be installed in compatible Cisco 8000 Series Secure Routers. Up to three NIMs can be installed on the Cisco C8375-E-G2 router using the C-SM-NIM-ADPT adapter.
- **Extensive transceiver support:** The modules support a wide range of SFP and SFP+ transceivers for compatibility with various fiber types and distances. For supported SFP transceivers refer to the [Cisco Optics-to-Device Compatibility Matrix](#).
- **Advanced features:** Include MAC filtering capabilities for enhanced network control and security.

Product specifications

Table 1. Specifications

Attribute	Cisco 2-port 1-Gbps/10-Gbps WAN NIM C-NIM-WAN-2X	Cisco 4-port 100-Mbps/1-Gbps WAN C-NIM-WAN-4S
Form factor	NIM	NIM
Platforms supported	C8375-E-G2 C8235-E-G2 C8231-E-G2	C8375-E-G2 C8235-E-G2 C8231-E-G2
Required Cisco IOS® Release	17.18.1 or later	17.18.1 or later
WAN connection	1000BASE-X SFP	100/1000M BASE-T
Ports	2x SFP+ WAN ports	4x SFP WAN ports
Power over Ethernet	No	No
MACsec support (IEEE 802.1AE)	256-bit	256-bit
Online insertion and removal	Yes	Yes
10GE backplane connection to forwarding engine	Yes	Yes

NIM density with C-SM-NIM-ADPT

The Gigabit Ethernet WAN modules are supported on the Cisco 8000 Series Secure Routers with an available NIM slot, specifically the C8231-E-G2, C8235-E-G2, and C8375-E-G2. You may deploy as many modules as the platform slot density allows. Table 2 shows the maximum NIM density possible per platform.

Table 2. NIM density for 8000 Series Secure Routers

Platform	NIM and Service Module (SM) slots	Maximum supported NIMs with C-SM-NIM-ADPT
C8231-E-G2	1 NIM	SM adapter not supported
C8235-E-G2	1 NIM	SM adapter not supported
C8375-E-G2	1 NIM, 1 SM	3x NIMs

Module LED indicator

The Gigabit Ethernet WAN modules have several EN (Enabled) or L (link) LEDs located around the SFP and SFP+ ports. The LEDs indicate that the module has passed its self-test and is available to the router.

Table 3. LED status indicators

LED	Color	Description
EN (All C-NIM-WAN)	Green/amber	System status Off: No power. Green steady on: The module is powered on and is functioning correctly. Green blink: Boot-up phase or in ROM monitor mode. Amber steady on: The module has some failure.
SFP ports (C-NIM-WAN-4S)	Green/amber	LED L Off: Not present. Green steady on: Link up. Amber steady on: SFP is not supported or is in a fault state.
SFP+ ports (C-NIM-WAN-2X)	Green/amber	SFP+ status Off: No SFP detected or inserted. Green steady on: SFP is powered up and enabled, no activity. Green blink: SFP is powered up and enabled, active. Amber steady on: The module has some failure.

Installation

You can install service modules and network modules either before or after mounting the router. Key features to note:

Online insertion and removal: When installing in a NIM slot, both online insertion and online removal are supported.

Multiple NIMs supported per chassis: The C8375-E-G2 can support up to three units of C-NIM-WAN-2X/C-NIM-WAN-4S in any combination with the C-SM-NIM-ADPT.

Warning: To comply with the Telcordia GR-1089 Network Equipment Building Standards (NEBS) for electromagnetic compatibility and safety, connect the Gigabit Ethernet ports only to intrabuilding or unexposed wiring or cable. The intrabuilding cable must be shielded and the shield must be grounded at both ends. The intrabuilding port(s) of the equipment or subassembly must not be metallicly connected to interfaces that connect to the Outside Plant (OSP) or its wiring. These interfaces are designed for use as intrabuilding interfaces for Type 2 or Type 4 ports only, as described in Telcordia GR-1089-CORE, and they require isolation from the exposed OSP cabling. The addition of primary protectors is not sufficient protection to be able to connect these interfaces metallicly to OSP wiring.

Configuration

Hardware Installation Guide: <https://www.cisco.com/c/en/us/td/docs/routers/secure-routers/interface-modules/hardware-installation-guide/installing-the-cisco-nim-2x-4s-module.html>.

Software Configuration Guide: <https://www.cisco.com/c/en/us/td/docs/routers/secure-routers/interface-modules/software-config-guide/c-nim-2x-4s-scg-book.html>.

Cisco Support

Cisco Support (Standard and Enhanced) is a suite of AI-powered and expert-led support designed to maximize uptime, performance, and resiliency of your IT environment for the AI era. It combines trusted support, proactive insights, and tailored learning resources through a unified digital experience, delivering incremental value to meet every support need. See [Service Description](#) for more information.

Cisco Support – Standard

The Cisco Network Subscription includes support benefits consistent with Cisco Support – Standard. Each subscription, and devices linked to the subscription, are provided 24x7 TAC access, OS updates, and digital insights. The support included in the subscription does not include hardware RMA or replacement. If hardware RMA is needed, Cisco recommends the purchase of an RMA upgrade service level. See [Service Descriptions](#) for more information.

Cisco RMA upgrade

This advanced replacement hardware service option is available for Cisco Network Subscription products. There are multiple service levels to choose from. The RMA upgrade service, combined with support included in the Cisco Network Subscription provides full alignment to the Cisco Support – Standard service level. See [Service Descriptions](#) for further detail on the advanced replacement options.

Cisco Support – Enhanced

Cisco Support – Enhanced is the recommended support offer for the hardware. It includes centralized support for Cisco Solution Alliance Partner products in your infrastructure deployment to resolve complex issues faster, proactive digital insights, and RMA upgrade. This support offer is orderable on the hardware and provides coverage of both the hardware and associated Networking Subscription licenses Essentials and Advantage OS features.

Cisco Support for Routing standalone offers

Support services for Cisco Standalone Routing offers, which provide support coverage for the router hardware and associated Routing SW licenses is available for purchase on the router. Cisco Support - Standard and Enhanced offers can be purchased with the router, providing support coverage of the router, the Cisco Essentials OS SW license as well as the Cisco Advantage term license.

Cisco Professional Services

Cisco Professional Services provides expert guidance in optimizing and transforming your network infrastructure to get to business outcomes faster. Learn more at [Professional Services service description](#).

Where can I get more details on support?

You can find more information about support in the [Unified Support FAQ](#).

Cisco Capital

Cisco Capital® makes it easier to get the right technology to help you achieve your objectives, enable business transformation, and stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services, and complementary third-party equipment in easy, predictable payments. [Learn more](#).