

Cisco 8200 Secure Router Node Installation and Service Guide

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Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
http://www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

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Preface

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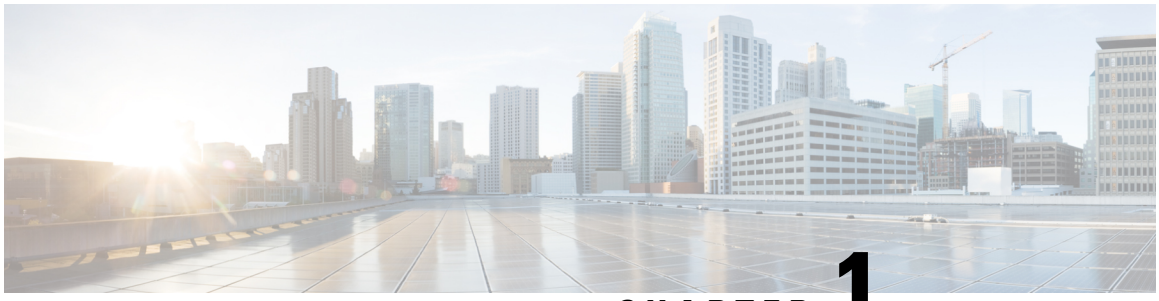
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CHAPTER 1

Router Node Overview

This chapter contains the following topics:

- Cisco 8200 Secure Router Node Overview, on page 1

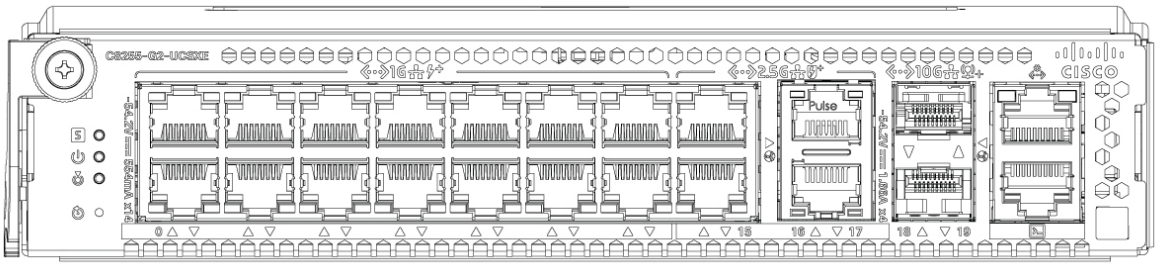
Cisco 8200 Secure Router Node Overview

The Cisco 8200 Secure Router Node (router node) is a single-slot routing and switching node for the Cisco Unified Edge computing platform.

Supported in the Cisco UCS XE9305, the router node features different Gigabit Ethernet and multi-Gigabit Ethernet (mGig) ports to provide Local Area Networking and Software Defined Wide Area Networking (SD-WAN) functionality for the Cisco Unified Edge solution.

Zero, one, or two router nodes are supported in each Cisco UCS XE9305 chassis. If zero router nodes are installed, network connectivity must occur through another option, such as the uplink ports on the eCMC modules.

- Fourteen (14) individual 1Gbps ports through an RJ-45 connector. Each port carries traffic over CAT5 copper cables on the local area network. Each of these ports supports power through 30W PoE+.
- Four (4) individual 2.5Gbps mGig ports through an RJ-45 connector. Each port carries traffic on CAT6A copper cables on either the LAN or Software Defined Wide Area Network (SD-WAN). Each of these ports supports power through 90W UPoE+.
- Two (2) individual 10Gbps ports through SFP ports. Each port carries LAN/WAN traffic over a copper cable.
- One 1Gbps Console port through an RS232 port. This port handles the local console connection over a CAT5 copper cable.
- One 10/100/1000Gbps Management port through an RJ-45 port. This port handles the out-of-band management traffic over a CAT5 copper cable.

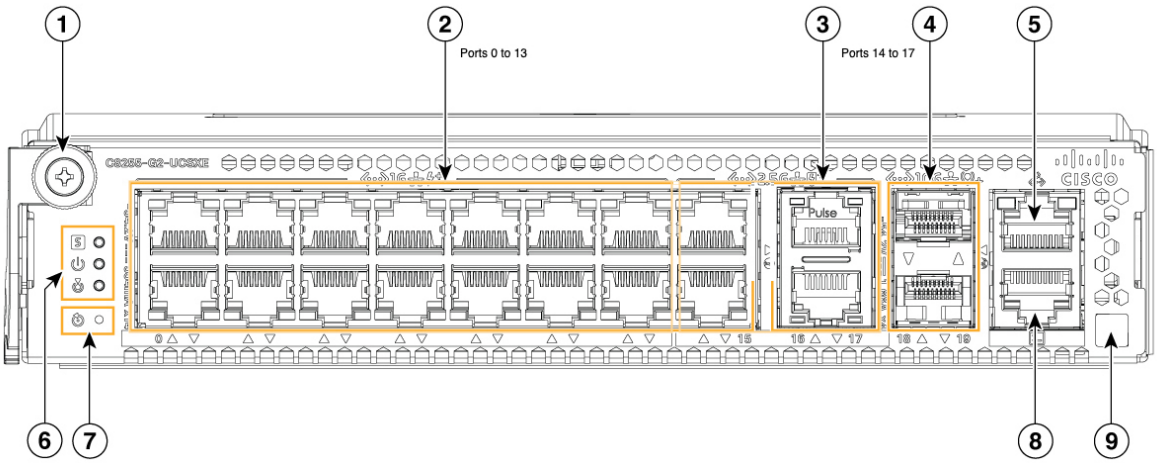


For additional information about the Cisco UCS XE9305 chassis that hosts the router node, see the Cisco UCS XE9305 Chassis Installation and Service Guide.

Router Node Front Panel

The Cisco 8200 Secure Router Node is installed into the Cisco UCS XE9305 Chassis from the front of the chassis. All routing/switching features are easily accessible from the front of the node. The rear of the node inserts into the chassis and contains the connections to the chassis data and management planes.

The router node front panel contains the following features.

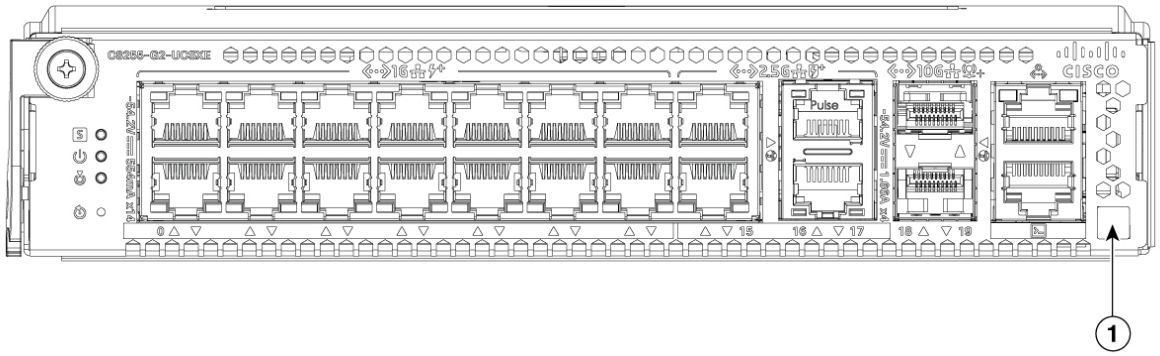


Callout Number	Component Description
1	Captive thumbscrew Supports securing the node into, or removing it from, the chassis slot by using either your fingers or a #2 Phillips screwdriver.
2	1G Ethernet Ports, Fourteen (Port 0 to Port 13) Supports 1 Gbps network connectivity through RJ-45 ports and CAT5 copper cables.
3	2.5G Ethernet Ports, Four (Port 14 - Port 17) Supports high-speed 2.5 Gbps LAN or WAN connectivity through RJ-45 ports and CAT6 copper cables.

Callout Number	Component Description
4	SFP+ Ports, Two (Port 18 and Port 19) Supports high-speed connectivity through SFP+ transceiver modules and copper or fiber cables.
5	Management Port, One (Port 20) Supports a dedicated RJ-45 port over a CAT5 copper cable for out-of-band management.
6	Node Status LEDs Indicators for Power, System Health, and Beacon (Locator) status.
7	Reset Button, One
8	Console Port, One (Port 21) Supports a serial interface for local management and troubleshooting.
9	Node Identification Label Supports a QR code for each node's specific information.

Router Node Identification

Each Cisco 8200 Secure Router Node features a node identification tag at the lower-right corner of the node's faceplate.



The node identification tag (denoted as **1** in the image) is a QR code that contains information that uniquely identifies the product, such as:

- The Cisco product identifier (PID) or virtual identifier (VID)
- The product serial number

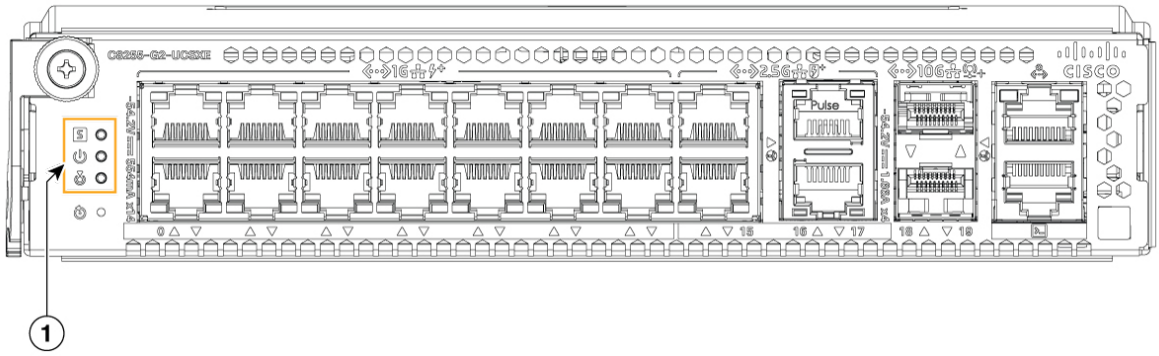
The product identification tag applies to the entire router node. Additional information, such as PIDs or serial numbers might be applied to individual components.

You will find it helpful to scan the QR code so that the information is available if you need to contact Cisco personnel.

Node Status LEDs

The Cisco 8200 Secure Router Node has an LED cluster that displays various operational and performance states. The LEDs are for the overall node.

Note Status LEDs for individual ports are also available. For more information, see Port LEDs, on page 9.

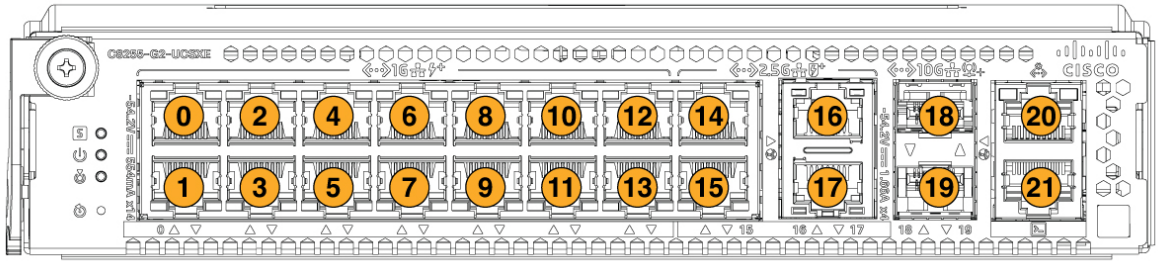


LED Icon	LED Color	Status
System Status	Off	No power
	Red	Blinking: Hardware integrity error
	Orange	• Blinking: Power on to rommon • Steady: Rommon has completed booting and the system is a ROMMON prompt or booting IOS
	Green	Steady: Normal system operation, IOS is loaded
	White	• Steady • Blink
Power OK Status	Off	No -53.5V POE power
	Green	Steady: -53.5V POE power connected and all powered ports are operating normally
	Amber	Steady: -53.5V POE power connected, but one or more POE ports have a fault
Beacon/Locator	Off	Beacon not activated
	Blue	Blinking: Beacon activated

Port Numbering

Ports on the Cisco 8200 Secure Router Node are numbered sequentially, top-down and left to right starting with port zero (0) at the top left corner of the node. Port numbers are silk screened onto the faceplate for easy identification.

The following image shows the port numbering for the router node.

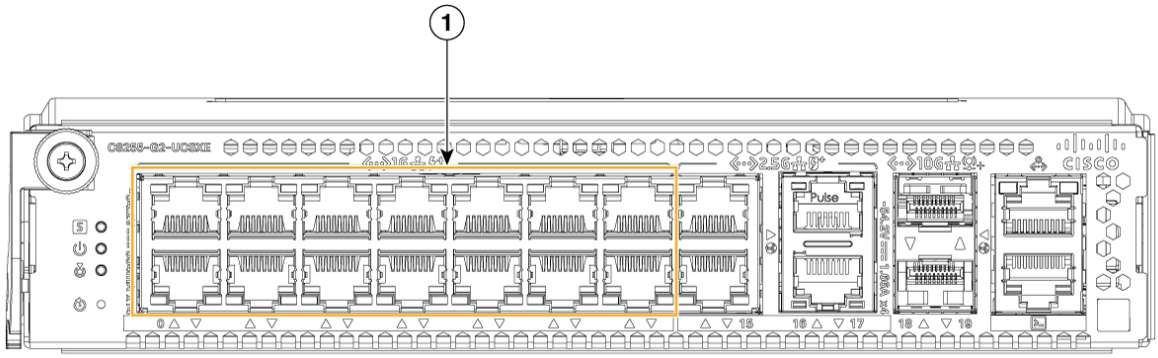


Port Number	Port Function
0-13	1G Ethernet LAN Ports
14-17	2.5G Ethernet LAN/WAN Ports
18-19	SFP+ Ports
20	Management Port
21	Console Port

Gigabit Ethernet Ports

Overview

The Cisco 8200 Secure Router Node features fourteen (14) Gigabit Ethernet (1GE) copper ports designed for LAN connectivity. These ports provide high-density access for local network infrastructure.



Physical Interface and Cabling

The 1GE LAN ports utilize standard RJ-45 connectors and support the following physical requirements:

- **Cabling:** Standard copper Ethernet cabling (CAT5 or higher) is required for connectivity.
- **PHY Technology:** Connectivity is managed by two Marvell 88E1780 Ethernet PHY devices, each supporting eight ports.
- **Power over Ethernet (PoE):** Each of the 14 GE LAN ports is capable of providing up to 30W of PoE+ power (802.3at, 2-pair PSE), allowing the node to power connected peer devices.

Typical Usage

The 1GE LAN ports are dedicated to LAN-side connectivity and are distinct from the Multi-Gigabit WAN or SFP+ interfaces. Typical roles include:

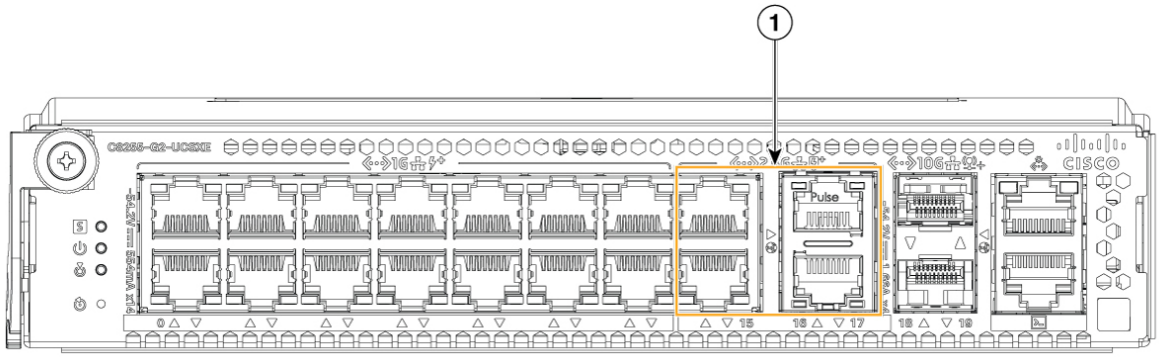
- **LAN Downlinks:** Providing network access to end-user devices, including workstations, printers, and other local endpoints within a corporate or branch environment.
- **Internal Network Segments:** Facilitating traffic within internal corporate intranets or private local clusters.
- **Peer Device Connectivity:** Supporting east-west traffic between local network devices that do not require the higher bandwidth of the 2.5G or SFP+ interfaces.

Note The 1GE LAN ports are not intended for primary public cloud or WAN uplink traffic. These types of traffic are handled by the router node's dedicated Multi-Gigabit WAN and SFP+ interfaces.

Multi-Gigabit Ethernet Ports

Overview

The Cisco 8200 Secure Router Node provides four (4) 2.5 Gbps Multi-Gigabit (mGig) Ethernet WAN ports. These ports deliver high-bandwidth, flexible WAN connectivity for modern enterprise edge deployments.



Physical Interface and Cabling

The mGig WAN ports utilize RJ-45 connectors and are engineered for high-performance data transmission over copper media:

- **Cabling:** Supports Category 5e (CAT5e) or higher copper cabling for cable routes up to 100 meters on CAT5e for 2.5G and 5G modes. However, CAT6 copper is recommended.
- **Media Type:** These ports support copper UTP cabling only. Fiber optic connectivity is not supported on these interfaces; fiber requirements are handled by the dedicated SFP+ ports on the node.
- **Data Rates:** The ports are IEEE 802.3bz/NBASE-T compliant, supporting auto-negotiated data rates of 10 Mbps, 100 Mbps, 1 Gbps, and 2.5 Gbps.
- **Power over Ethernet (PoE):** Each of the four mGig ports supports 802.3bt UPOE+ (Type 4), capable of delivering up to 90W of power per port.

  Each of 1 Gbps port supports 802.3 at (PoE+) standard (Type 2).

  Total POE power available is 360W.

Typical Usage

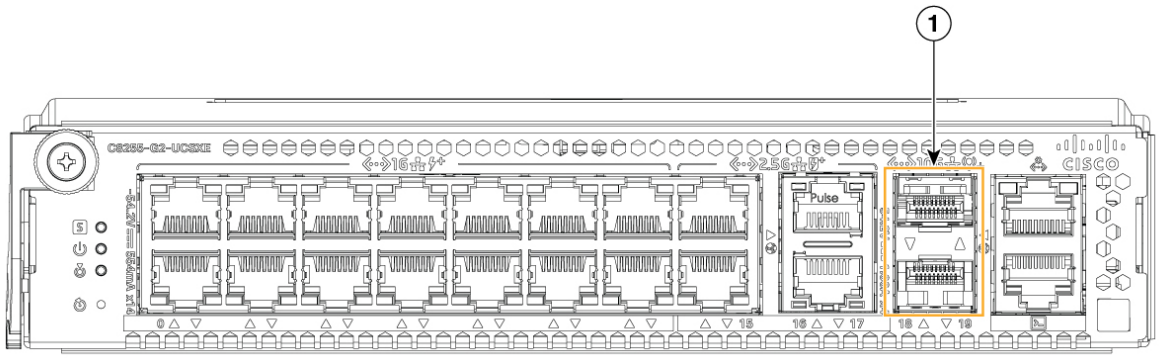
The mGig ports are optimized for WAN-side uplinks and high-bandwidth service delivery. Typical deployment roles include:

- **WAN Uplinks:** Connecting to high-speed broadband services, including cable, fiber-to-the-premises (FTTP), or other carrier-grade ethernet services that exceed standard 1 Gbps limitations.
- **Public/Private Cloud Access:** Providing the necessary throughput for latency-sensitive applications requiring access to public cloud resources or private data centers.
- **High-Bandwidth Branch Connectivity:** Serving as the primary uplink for branch offices that require multi-gigabit throughput to handle increased traffic from cloud-based SaaS applications and unified communications.

SFP Plus Ports

SFP+ Ports Overview

The Cisco 8200 Secure Router Node features two (2) high-speed SFP+ ports, designated as SFP0 and SFP1. These ports provide flexible, high-bandwidth connectivity for fiber or copper transceiver modules, supporting 10 Gbps data rates.



Physical Interface and Power

The SFP+ ports have the following power and signaling characteristic.

- **Power Delivery:** Each SFP+ socket is capable of providing up to 2.5W of power at 3.3V, supporting a wide range of optical and copper transceiver modules.

Typical Usage

The SFP+ ports are intended for high-speed uplink or interconnect scenarios.

- **Fiber Uplinks:** Connecting to high-speed fiber-optic WAN services or long-distance inter-switch links using 10GBASE-SR, 10GBASE-LR, or 10GBASE-ER transceivers.
- **High-Speed Interconnects:** Providing 10 Gbps connectivity to core network switches or aggregation devices within the data center or enterprise campus.
- **Future-Proofing:** The power and signal specifications allow for the potential support of specialized modules, such as XGPON or DSL SFPs, depending on software and transceiver qualification.

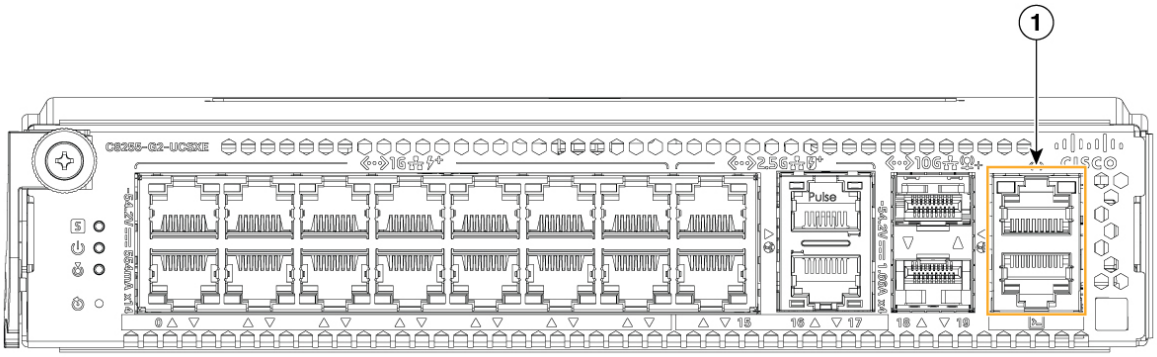
Management and Console Ports

Overview

The Cisco 8200 Secure Router Node includes a dedicated Management port and Console port for direct connection to the router node.

Management (MGMT) Port

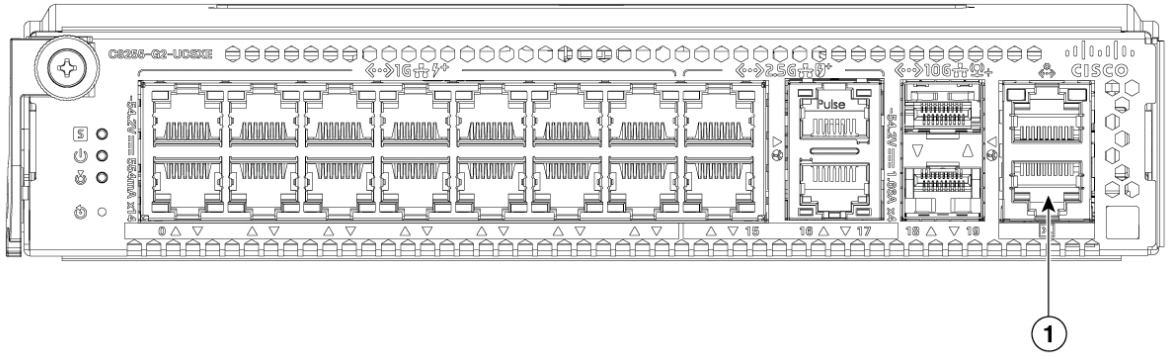
The Cisco 8200 Secure Router Node includes a dedicated Ethernet management port. This port is designed for out-of-band (OOB) management, allowing administrators to access and configure the device independently of the data plane traffic.



- **Connectivity:** Supports 10/100/1000 Mbps auto-negotiation through a standard RJ-45 copper interface over a CAT5 cable.
- **Management Features:** Supports a comprehensive suite of management tools, including Express Setup, Network Assistant, Secure Shell (SSH), Telnet, TFTP, SNMP, and DHCP-based auto-configuration.
- **Protocol Support:** Fully compliant with IPv4/IPv6 stacks, Cisco Discovery Protocol, and DHCP relay agent functionality.
- **Isolation:** The management port is logically isolated from the network data ports; it does not support routing packets from the management interface to the network ports, ensuring secure administrative access.

Console (CONSOLE) Port

The router node features a console port that provides a direct serial interface for local management, troubleshooting, and initial system bring-up. The CONSOLE port utilizes a standard Cisco RS-232 RJ-45 interface over a CAT5 copper cable.



- **Physical Interface:** Uses a standard RJ-45 jack with Cisco-defined RS-232 pinout (TXD, RXD, CTS, and RTS).
- **Connectivity:** The port is connected to the Host SOC via a 4-pin UART interface.
- **Usage:** Intended for direct local access by technicians to the Command Line Interface (CLI), providing a reliable path for system recovery and low-level diagnostic monitoring.

Port LEDs

Gigabit Ethernet Port LEDs

1GE Port LED Indicators

Each 1GE Ethernet port is equipped with two integrated LEDs that provide real-time operation and performance status for the port. The LEDs are at the top left and top right corners of the port.

- The left LED provides a visual indication of the presence of transmit and receive network traffic that is ingressing or egressing the port.
- The right LED provides a visual indication of the physical link status and alerts the user to any Power over Ethernet (PoE) faults.

LED Type	LED Color Codes
Left LED (Activity)	• Off: No data • Green Blink: Tx/Rx Data • Amber: Unused

LED Type	LED Color Codes
Right LED (Link / POE Fault)	• Off: No link • Green Steady On: Link up • Amber Steady On: POE Fault

Multi-Gigabit Ethernet Port LEDs

Multi-Gigabit Ethernet Port LED Indicators

Each Multi-Gigabit Ethernet (mGig) port is equipped with two integrated LEDs that provide real-time operation and performance status for the port. The LEDs are at the top left and top right corners of the port.

- The left LED provides a visual indication of the presence of transmit and receive network traffic that is ingressing or egressing the port.
- The right LED provides a visual indication of the physical link status and alerts the user to any Power over Ethernet (PoE) faults.

LED Type	LED Color Codes
Left LED (Activity)	• Off: No data • Green Blink: Tx/Rx Data • Amber: Unused
Right LED (Link / POE Fault)	• Off: No link • Green Steady On: Link up • Amber Steady On: POE Fault

SFP Plus Port LEDs

The Cisco UCS XE9305 SDWAN SLED features two (2) high-speed SFP+ ports, designated as SFP0 and SFP1. These ports are designed for flexible, high-bandwidth uplink or interconnect scenarios, supporting 10 Gbps data rates for fiber or copper transceiver modules.

Each SFP+ port is equipped with one dedicated status LED to provide a visual indication of link integrity and SFP+ transceiver health.

LED Type	LED Color Codes
Link / Fault Status	• Off: No link (or transceiver not present) • Green: Link up • Amber: The transceiver is not supported or it is in a fault state

Management and Console Port LEDs

Management Port LED

The dedicated Ethernet management port is an RJ-45 port that supports administrative access for tasks such as local management and firmware updates. The port features two integrated LEDs located at the top left and right corners of the port.

The LEDs provide visual indicators of performance and operational status of out-of-band (OOB) network management traffic that is isolated from typical network traffic.

LED Type	LED Color Codes
Left LED (Activity)	• Off: No data • Green Blink: Tx/Rx Data • Amber: Unused
Right LED (Link)	• Off: No link • Green Steady On: Link up • Amber: Unused

Console Port LED

The Console port is a passive serial (RS-232) interface to the router node. The Console port has no status LED.

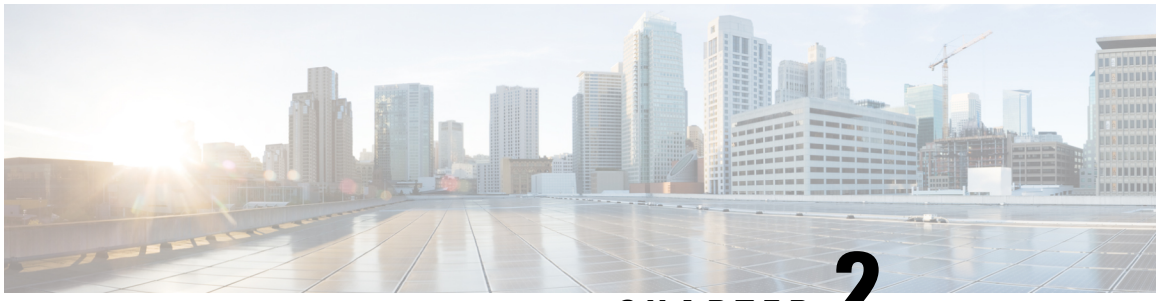
Node Reset Button

Reset Button

The Cisco 8200 Secure Router Node features a recessed, pin-hole Reset button on the node's faceplate. The Reset button is located on the node's faceplate below the Beacon or Locator LED.

Because the Reset button is recessed, this design feature prevents the node from being reset unintentionally. To activate the Reset button, you must use a small tool, for example, a paper clip to press the switch and cause the reset.

After pressing the Reset button, the node will perform a warm restart, in which main power is maintained to the node.



CHAPTER 2

Installing the Router Node

This chapter contains the following topics:

- Installation Prerequisites, on page 13
- Node Installation and Removal, on page 16
- Console Port Connection Parameters, on page 19
- Router Node Configuration, on page 20

Installation Prerequisites

To install the Cisco 8200 Secure Router Node, be aware of the following prerequisites.

Note **For indoor use only.** Connect PoE ports only to PoE networks that are not routed to outside plant. Per IEC TR 62101, PoE is considered Network Environment 0; interconnected ITE circuits may therefore be considered SELV.

General Safety Warnings

Take note of the following general safety warnings.

Warning IMPORTANT SAFETY INSTRUCTIONS

Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Read the installation instructions before using, installing, or connecting the system to the power source. Use the statement number at the beginning of each warning statement to locate its translation in the translated safety warnings for this device.

SAVE THESE INSTRUCTIONS



Note You are strongly advised to read the safety instruction before using the product.

https://www.cisco.com/web/JP/techdoc/pldoc/pldoc.html

When installing the product, use the provided or designated connection cables/power cables/AC adapters.

〈製品使用における安全上の注意〉

www.cisco.com/web/JP/techdoc/index.html

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Warning **Statement 1015**—Battery Handling

To reduce risk of fire, explosion or leakage of flammable liquid or gas:

- Replace the battery only with the same or equivalent type recommended by the manufacturer.
- Do not dismantle, crush, puncture, use sharp tool to remove, short external contacts, or dispose of in fire.
- Do not use if battery is warped or swollen.

Warning To reduce risk of electric shock or fire, installation of the equipment must comply with local and national electrical codes.

Note An instructed person is someone who has been instructed and trained by a skilled person and takes the necessary precautions when working with equipment.

A skilled person or qualified personnel is someone who has training or experience in the equipment technology and understands potential hazards when working with equipment.

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

Equipment Installation to Power Warnings

Take note of the following power safety warnings.



Warning To reduce risk of electric shock or personal injury, disconnect DC power before removing or replacing components or performing upgrades.



Warning This unit is intended for installation in restricted access areas. Only skilled, instructed, or qualified personnel can access a restricted access area.



Warning To reduce the risk of electric shock and fire, a readily accessible disconnect device must be incorporated in the fixed wiring.



Warning To reduce risk of electric shock, when installing or replacing the unit, the ground connection must always be made first and disconnected last.

If your unit has modules, secure them with the provided screws.

Ground Connection Warnings

Take note of the following ground connection warnings.



Warning This equipment must be grounded. To reduce the risk of electric shock, never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.



Warning In the Scandinavian countries (Denmark, Finland, Iceland, Norway, and Sweden) the appliance must be connected to a grounded outlet.

Optical Connection Warnings

Take note of the following optical connection warnings.



Warning Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.

Warning Invisible laser radiation is present. Do not expose to users of telescopic optics. This applies to Class 1/1M laser products.



Warning **Laser Safety:** Ensure all unused ports are capped to maintain eye safety and prevent signal contamination.

General Node and Component Replacement Warnings

Take note of the following component replacement warning.

Warning **Electrostatic Discharge (ESD):** The Cisco 8200 Secure Router Node contains high-density integrated circuits. Always utilize an ESD-preventive wrist strap during handling to avoid permanent hardware damage.

Additional Information

The router node installs into the Cisco UCS XE9305 Chassis. Installation information for the secure router node is contained in this installation and service guide. However, to get complete information about the secure router node and the chassis that contains it, consult the following documents.

Document	Topics	Link
Cisco Unified Edge XE9305 Chassis Installation and Service Guide	• Safety Warnings • General Installation Guidelines and Restrictions	Cisco Unified Edge XE9305 Chassis Installation and Service Guide
Regulatory Compliance and Safety Information (downloadable PDF)	--	Regulatory Compliance and Safety Information – Cisco UCS XE9305 Modular System

Node Installation and Removal

Installing a Router Node

Use this procedure to install a Cisco UCS 8200 Secure Router Node into the chassis.

Before you begin

The Cisco 8200 Secure Router Node installs into a node slot on the front of the Cisco UCS XE9305 Chassis.

The router node features a captive thumbscrew that you can manipulate with your fingers or a #2 Phillips screwdriver. If you want to use the screwdriver, gather it now.

Procedure

Step 1 Prepare the node for installation.

a) If needed, remove any blank (filler panel) that covers the chassis slot, or remove any existing node that is in the slot.
b) Ensure the node's ejector lever is in the open position (approximately a 45-degree angle).
c) Align the router node with the chassis slot, ensuring the top cover is facing up.

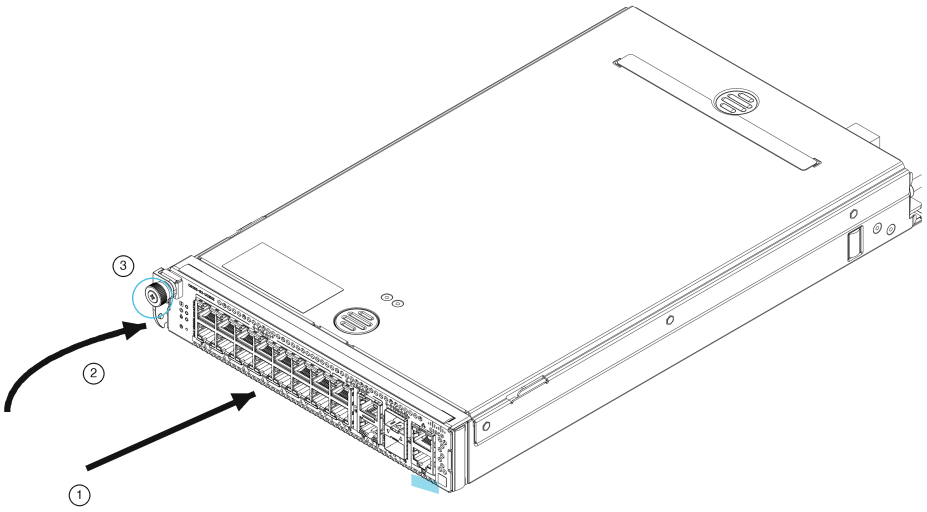
The ejector lever must not be flush with the faceplate prior to inserting the node into the chassis.

Step 2 Support the underside of the node and slide it into the slot.

Expect some resistance as the rear connector engages with the chassis socket.

Step 3 Secure the node into the chassis.

Gently swing the ejector lever in an upward arc (to the closed position) until it clicks. Start threading the captive thumbscrew by hand, then use the screwdriver to tighten it to between 4.2 in-lbs and 5.9 in-lbs (5.1 kg-cm to 6.9 kg-cm).



Note Once installed, the node will automatically power on after connecting to the power backplane.

Step 4 Complete post-installation tasks:

a) If needed, use a Cisco management tool, such as Cisco IOS, to configure the router node.
b) Connect, or reconnect, network and management cables as needed.

Note For PoE connections, connect only to PoE networks that are not routed to outside plant.

Removing a Router Node

Use this procedure to remove a Cisco UCS 8200 Secure Router Node from the chassis.

Caution Do not operate the Cisco UCS XE9305 Chassis with any uncovered or open node slots. If you remove a router node, you must insert another node or a node blank.

Before you begin

The Cisco 8200 Secure Router Node is located in one of the chassis slots on the front of the Cisco UCS XE9305 Chassis.

The router node features a captive thumbscrew that you can manipulate with your fingers or a #2 Phillips screwdriver. If you want to use the screwdriver, gather it now.

In normal runtime operation, the router node is connected to peer devices, such as top of rack (ToR) switches. Before removing a router node, you will find it helpful to note how the cables are connected so that, when needed, you can reconnect the router node to the same physical topology that it had before you removed the router node.

Caution When handling the router node, make sure to follow all appropriate ESD safety guidelines, such as wearing an ESD wristband and using grounded or rubberized mats.

Procedure

Step 1 Using a Cisco management tool, such as Cisco IOS, gracefully power down the router node.

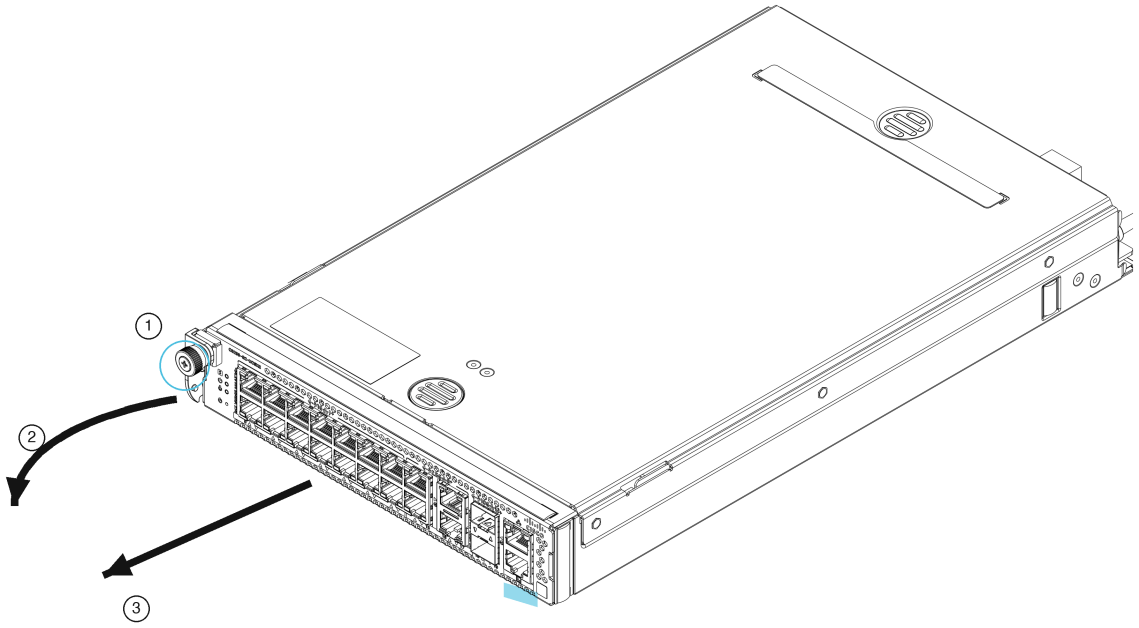
Step 2 Disconnect any cables from the router node.

If you will be reinserting a router node, you can leave the other end of the cables attached to the peer devices.

Step 3 Using your fingers or a #2 Phillips screwdriver, loosen the captive thumbscrew on the front panel of the router node.

Step 4 Pull the release handle in a downward arc (to the open position) to disengage the node from the backplane, then slide the router node out of the chassis.

Note Make sure to support the underside of the router node while you are sliding it out of the chassis.



What to do next

Choose the appropriate option:

- If you are reseating the same router node, or installing a new router node, go to Installing a Router Node, on page 16.
- If you will be servicing the router node, go to Servicing the Router Node, on page 21.
- If you will not be reinstalling any node, cover the empty chassis slot with a blank filler panel.

Console Port Connection Parameters

Console Port Configuration

The Console port (CONSOLE) on the Cisco 8200 Secure Router Node provides a direct serial interface for local management.

Use the following recommended settings for initial connection to the Console port:

- **Baud Rate:** 9600 bps (default hardware setting).
- **Data Bits:** 8
- **Parity:** None
- **Stop Bits:** 1
- **Flow Control:** None

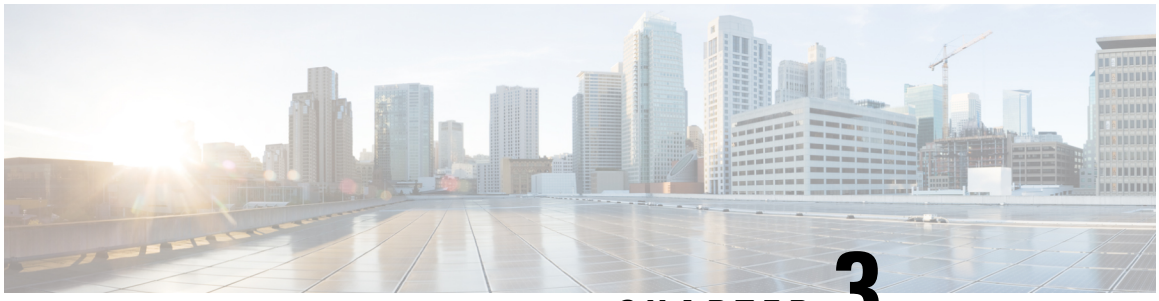
Note These parameters reflect the default hardware configuration. Please refer to the appropriate Cisco IOS Configuration Guide for your specific software version to confirm the operational settings or to modify the port configuration for your environment.

Router Node Configuration

The Cisco 8200 Secure Router Node boots from a Cisco IOS image stored in the router node's flash memory.

After the router node is installed and the initial bootup is complete, the router node can be configured through the Cisco IOS Routing management platform.

For additional information, see the appropriate Cisco IOS Configuration Guide for your software version.



CHAPTER 3

Servicing the Router Node

This chapter contains the following topics:

- Servicing the Node, on page 21

Servicing the Node

The Cisco 8200 Secure Router Node contains components that can be serviced after the node is removed from the Cisco UCS XE9305 chassis. The sheet-metal top cover protects the internal components and maintains the airflow path. Remove the cover only when servicing an internal component, and reinstall the cover before returning the node to service.

The procedures in this chapter cover the top cover, the internal M.2 card, and the system battery. The Power over Ethernet (PoE) daughter board is removed temporarily to access the battery.

Important Only trained personnel should remove the router node or service its internal components.

Serviceable Component Locations

The following components are covered by the service procedures in this chapter.

Table 1: Serviceable Component Locations

Component	Location	Access	Tool
Top cover	Top of router node	Release button and retention pins	No tool required
M.2 card	Internal motherboard	Remove top cover	#1 Phillips; retaining screw: 2.8–3.7 in-lb
System battery	Below the PoE daughter board	Remove top cover and PoE daughter board	#1 Phillips; PoE-board screws: 2.8–3.7 in-lb

Pre-Installation Requirements and Considerations

Site Preparation Requirements

Before installing the router node, be aware of the following:

- **Power Infrastructure:** Ensure the Cisco UCS XE9305 Chassis is properly connected to a stable power source compatible with the 12 to 54 VDC input requirements. Verify that the total PoE power budget (up to 360W) is accounted for in your power planning.
- **Grounding:** The Cisco UCS XE9305 Chassis must be properly grounded to prevent electrostatic discharge (ESD) damage to the high-density ARM v9 SOC and FPGA components.

Installation Caveats and Considerations

Datacenter administrators should be aware of the following operational considerations:

- **Hot-Swap:** The Cisco 8200 Secure Router Node supports hot-swap functionality. However, ensure the host chassis is powered and stable before engaging the node.
- **ESD Precautions:** When you handle the router node, especially when the top cover is removed and the motherboard, PoE daughter card, and their components are accessible, always wear an ESD-preventive wrist strap during installation or removal.

Component Replacement Warnings

For component replacement, be aware of the following.

Note An instructed person is someone who has been instructed and trained by a skilled person and takes the necessary precautions when working with equipment.

A skilled person or qualified personnel is someone who has training or experience in the equipment technology and understands potential hazards when working with equipment.

Warning Only an instructed person or skilled person should be allowed to install, replace, or service this equipment. See statement 1089 for the definition of an instructed person or skilled person.

Removing the Router Node Top Cover

Each Cisco 8200 Secure Router Node in the chassis has a sheet metal top cover to protect components and provide optimal airflow. The top cover must be removed to access any field-serviceable components.

The top cover is held in place by the following features.

- Release button that locks and unlocks the latch for the top cover.
- Retention pins that insert into grooves on the top of the node.

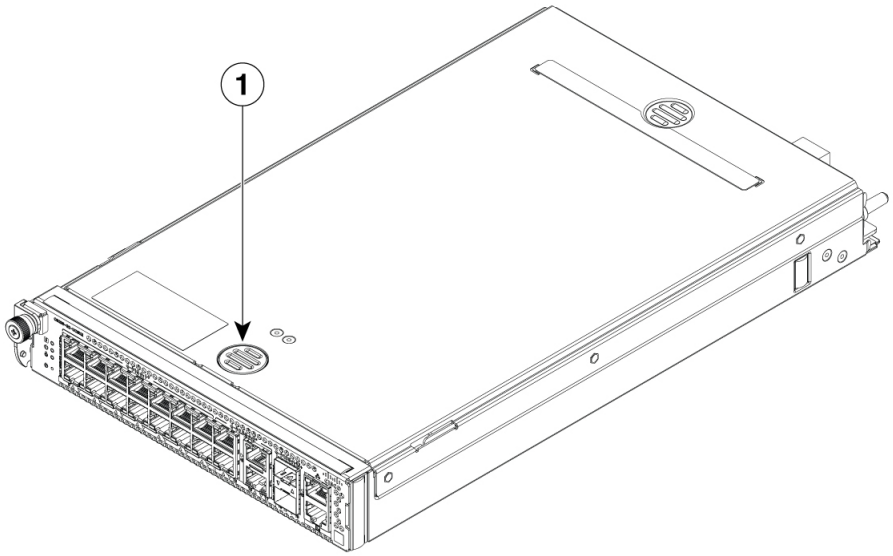
Use this procedure to remove the top cover before servicing an internal component.

Before you begin

- Shut down the router node, disconnect all cables, and remove the node from the chassis. See Removing a Router Node, on page 18.
- Place the router node top-side up on a grounded, static-safe work surface.

Procedure

Step 1 Press the top-cover release button to disengage the cover latch.



Step 2 While holding the release button down, slide the cover toward the back of the node.

Step 3 Lift the back end of the cover until the retention pins clear the chassis grooves, then remove the cover.

Installing the Router Node Top Cover

Install the router node's top cover after all service procedures are complete and before re-installing the router node into the chassis. The top cover must be installed to ensure optimal airflow and protect the Cisco 8200 Secure Router Node's internal components.

Use this procedure to install the router node's top cover after performing maintenance or replacing field-serviceable components.

Before you begin

Be aware that when the router node is re-installed, it will power on after successfully connecting to the power backplane.

Procedure

Step 1 Align the retention pins on the top cover with the corresponding grooves on the top of the node.

Step 2 Lower the cover onto the node and ensure that the retention pins are seated correctly in the grooves.

Step 3 Slide the cover toward the front of the node while guiding the leading edge under the sheet-metal lip above the faceplate.

Step 4 Continue sliding the cover until the release button clicks and the cover locks into place. Gently try to slide the cover backward to verify that it is secure.

The router node powers on after it is fully inserted into the chassis and connects to the power backplane.

What to do next

Choose the appropriate option:

- If you will return the router node to service, insert it back into the chassis and connect cables.

  Go to Installing a Router Node, on page 16.

- If you will not install any node in the slot previously occupied by the router node, install a blank filler panel.

Removing the M.2 Card

Use this procedure to remove the M.2 card from the router node.

Before you begin

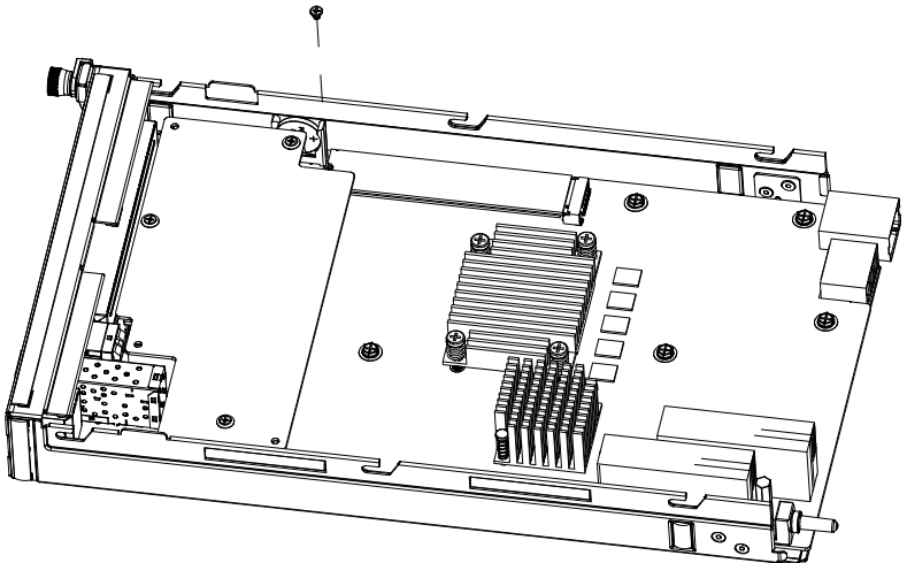
- Remove the router node from the chassis and place it on a grounded, static-safe work surface.
- Gather a #1 Phillips screwdriver and an ESD-safe container for the M.2 card.

Procedure

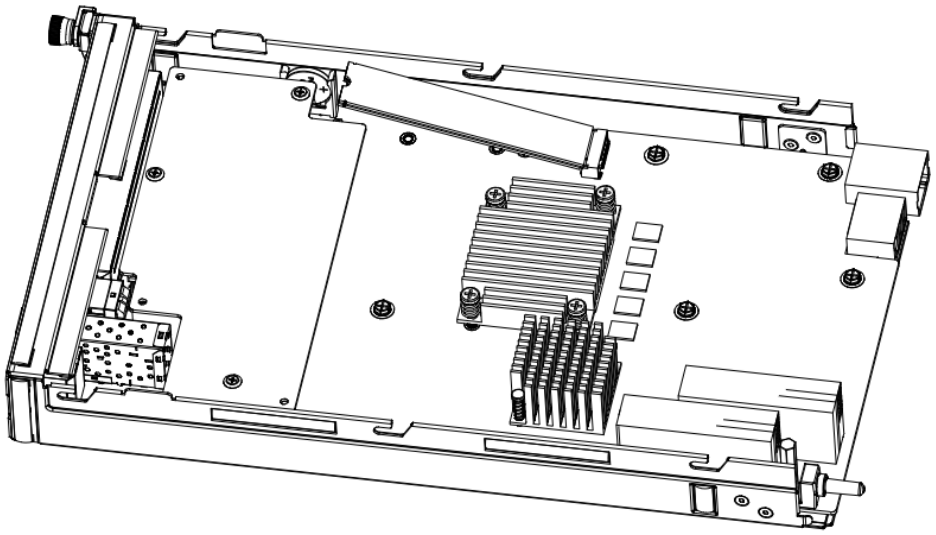
Step 1 Remove the top cover. See Removing the Router Node Top Cover.

Step 2 Locate the M.2 card and its retaining screw.

Step 3 Loosen and remove the retaining screw with the #1 Phillips screwdriver. Keep the screw for installation.



Step 4 Lift the free end of the M.2 card slightly, slide the card out of the motherboard connector, and place it in an ESD-safe container.



What to do next

Install the replacement M.2 card. See Installing the M.2 Card.

Installing the M.2 Card

Use this procedure to install an M.2 card in the router node.

Before you begin

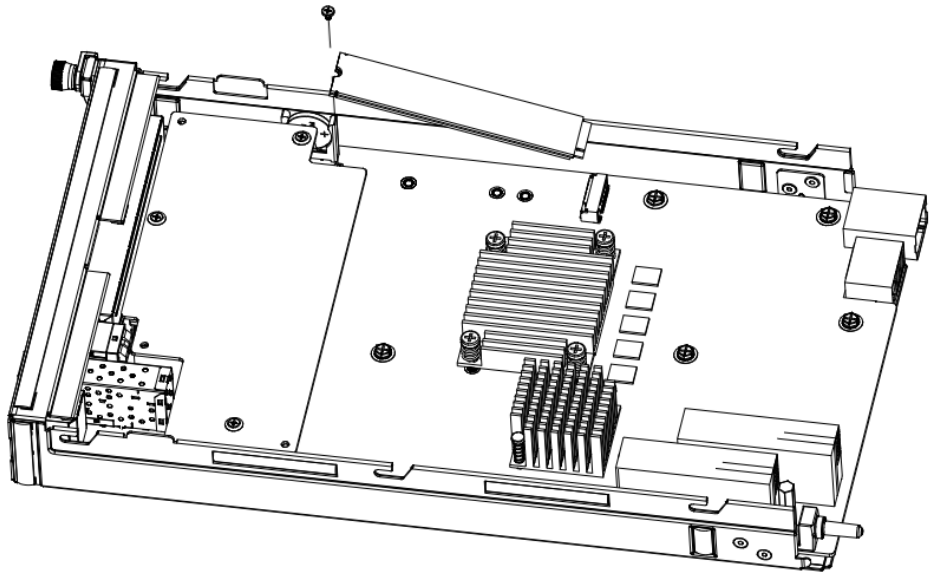
- Verify that the replacement M.2 card is supported for the router node.
- Inspect the motherboard connector and retaining screw location for damage or debris.

Procedure

Step 1 Align the keyed edge connector on the M.2 card with the motherboard connector.

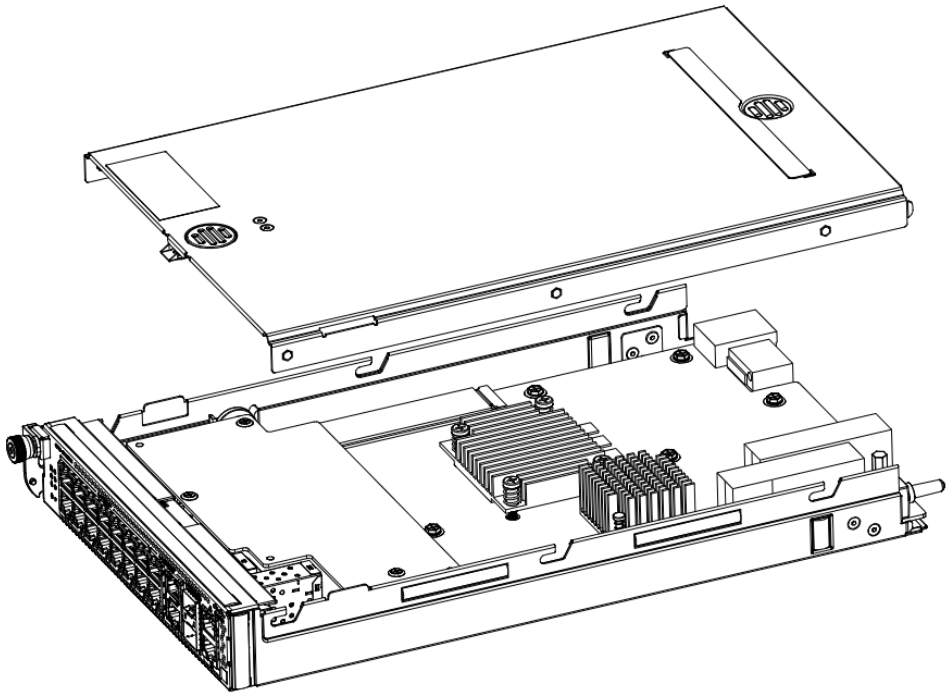
Step 2 Insert the card into the connector at a slight angle until it is fully seated.

Step 3 Lower the free end of the card to the retaining point.



Step 4 Install the retaining screw with the #1 Phillips screwdriver and tighten it to 2.8–3.7 in-lb (0.32–0.42 N·m).

Step 5 Install the top cover. See Installing the Router Node Top Cover.



Step 6 Return the router node to service. Install it in the chassis, reconnect the cables, and verify normal boot and status-LED operation.

Removing the Battery

The router node has an internal coin-cell battery beneath the PoE daughter board. The PoE daughter board must be removed temporarily to access the battery.

Warning Use only the manufacturer-approved replacement battery. Installing an incorrect battery type or installing the battery with reversed polarity can create a risk of fire, explosion, or leakage.

Use this procedure to remove the battery from the router node.

Before you begin

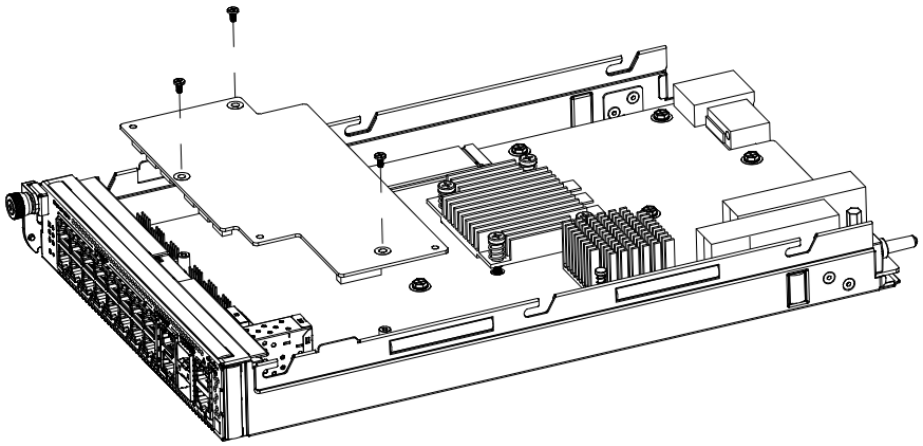
- Shut down the router node.
- Remove the router node from the chassis and place it on a grounded, static-safe work surface.
- Gather a #1 Phillips screwdriver and the approved replacement battery.

Procedure

Step 1 Remove the top cover. See Removing the Router Node Top Cover.

Step 2 Locate the PoE daughter board that covers the battery area.

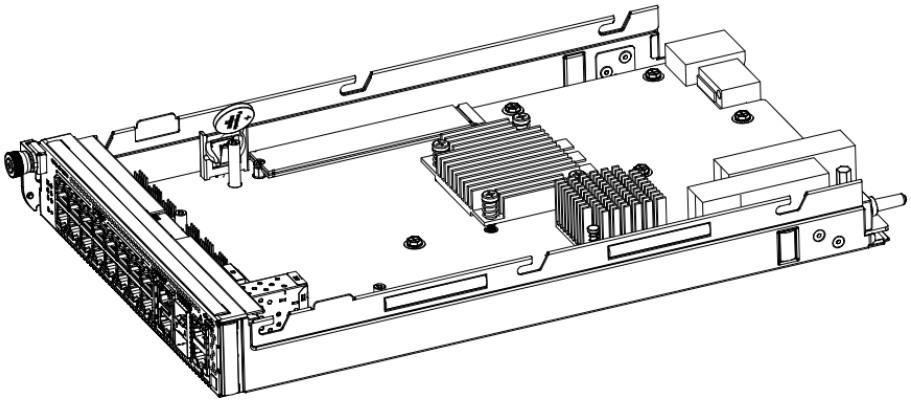
Step 3 Loosen and remove the PoE-board securing screws with the #1 Phillips screwdriver. Retain the screws.



Step 4 Lift the PoE daughter board from the node and place it on an ESD-safe surface.

Step 5 Note the battery polarity and its orientation in the holder.

Step 6 Release the battery from the holder with your fingers and remove it. Do not use a sharp or conductive tool.



What to do next

Install the replacement battery. See Installing the Battery.

Installing the Battery

Use this procedure to install the replacement battery and reassemble the router node.

Before you begin

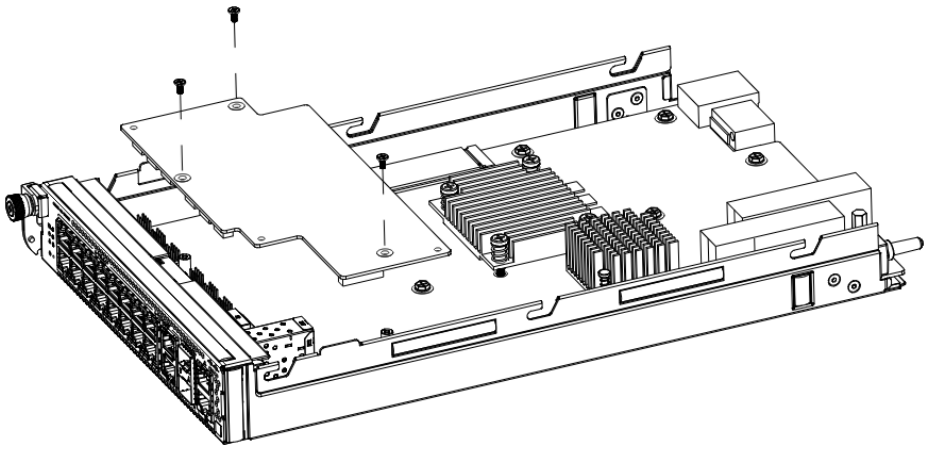
- Confirm that the replacement battery type is approved for the router node.
- Confirm the polarity and orientation recorded during removal.

Procedure

Step 1 Insert the replacement battery into the holder in the same orientation as the removed battery. Press until the battery is fully retained.

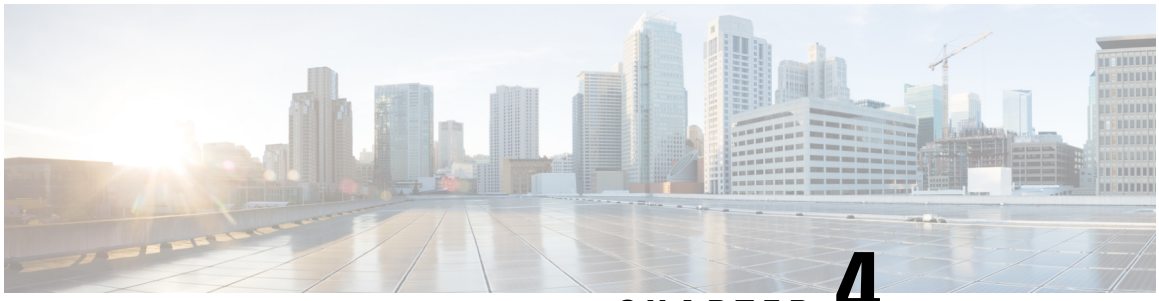
Step 2 Position the PoE daughter board over its connectors, alignment features, and screw holes, then lower it evenly into place.

Step 3 Install the PoE-board securing screws with the #1 Phillips screwdriver and tighten them to 2.8–3.7 in-lb (0.32–0.42 N·m).



Step 4 Install the top cover. See Installing the Router Node Top Cover.

Step 5 Return the router node to service. Install it in the chassis, reconnect the cables, and verify normal boot and status-LED operation.



CHAPTER 4

Router Node Technical Specifications

This chapter contains the following topics:

- Router Node Technical Specifications, on page 31

Router Node Technical Specifications

The Cisco 8200 Secure Router Node has the following specifications.

- Router Node Physical Specifications, on page 31
- Router Node Environmental Specifications, on page 31
- Router Node Power Specifications, on page 32

Router Node Physical Specifications

The Cisco 8200 Secure Router Node is designed for deployment within the Cisco UCS XE9305 Chassis. The router node is designed only for this chassis.

The router node can be installed into any of the chassis slots and is accessible from the front of the chassis.

Table 2: Physical information of the Router Node

Specification	Value
Height (in Inches)	1.62"
Width (in Inches)	8.23"
Depth (in Inches)	13.82"
Weight (in Kilograms)	2.63 kg

Router Node Environmental Specifications

The Cisco 8200 Secure Router Node operates within the following environmental specifications.

Table 3: Router Node Environmental Specifications

Specification	Value
Temperature (Operational)	0°C to 40°C (32°F to 104°F)
Temperature (Non-operational)	-30°C to 60°C (-22°F to 140°F)
Humidity (Operational)	5% to 85% (non-condensing)
Humidity (Non-operational)	5% to 95% (non-condensing)
Altitude (Operational)	Sea level to 3,048 meters (10,000 feet)
Altitude (Non-operational)	Up to 12,192 meters (40,000 feet)

Router Node Power Specifications

The Cisco 8200 Secure Router Node utilizes main power from the Cisco UCS XE9305 Chassis power supplies (PSUs). That power is then conditioned by a 12 to 54V power brick for the secure router node's power requirements.

Table 4: Router Node Power Specifications

Specification	Value
Total PoE Budget	360 W (14 ports at 30W, 4 ports at 90W)
Input Voltage	12 to 54 VDC
Power Sequencing	Integrated Hot-Swap Controller (TPS259827ONRGER / LTC4215CUFD-3)
Typical Power Consumption	Not specified; dependent on configuration



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