



## Installing a Network Module

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## Network Modules Overview

The Cisco Catalyst 9300 Series Switches support the following optional network modules for uplink ports.

| Network Module                       | Description  |
|--------------------------------------|--|
| <b>C9300 Network Modules</b>         |  |
| C9300-NM-4G <sup>1, on page 2</sup>  | This module has four 1 GE SFP module slots. Any combination of standard SFP modules are supported. |
| C9300-NM-4M <sup>1, on page 2</sup>  | This module has four Multigigabit Ethernet (mGig) interfaces.                                      |
| C9300-NM-2Q <sup>1, on page 2</sup>  | This module has two 40 GE QSFP+ module slots.  |
| C9300-NM-8X <sup>1, on page 2</sup>  | This module has eight 10 GE SFP+ module slots.   |
| C9300-NM-2Y <sup>1, on page 2</sup>  | This module has two 25 GE SFP28 module slots.  |
| C9300-NM-BLANK                       | This is a blank module.  |
| <b>C9300X Network Modules</b>        |  |
| C9300X-NM-2C <sup>2, on page 2</sup> | This module has two 40 GE/100 GE slots with a QSFP+ connector in each slot.                        |
| C9300X-NM-4C <sup>3</sup>            | This module has four 40 GE/100 GE slots with a QSFP+ connector in each slot.                       |

| Network Module                       | Description   |
|--------------------------------------|---|
| C9300X-NM-8M <sup>2, on page 2</sup> | This module has eight Multigigabit Ethernet (mGig) module slots.              |
| C9300X-NM-8Y <sup>2, on page 2</sup> | This module has eight 25 GE/10 GE/1 GE slots with an SFP28 port in each slot. |
| C9300X-NM-BLANK                      | This is a blank module.   |



- Note**
1. Supported only on Cisco Catalyst 9300 Series Switches.
  2. Supported only on Cisco Catalyst 9300X Series Switches.
  3. Supported only on C9300X-24Y, C9300X-48HX, and C9300X-48TX models.

## Installing a Network Module in the Switch

### Safety Warnings

This section includes the installation cautions and warnings. Translations of the safety warnings are available in the *Regulatory Compliance and Safety Information for Cisco Catalyst 9300 Series Switches*.

Read this section before you install a network module.



**Caution** Proper ESD protection is required whenever you handle equipment. Installation and maintenance personnel should be properly grounded by grounding straps to eliminate the risk of ESD damage to the equipment. Equipment is subject to ESD damage whenever you remove it.



**Warning** Only trained and qualified personnel should be allowed to install, replace, or service this equipment. Statement 1030



**Warning** Do not reach into a vacant slot or chassis while you install or remove a module. Exposed circuitry could constitute an energy hazard. Statement 206

## Installing a Network Module



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**Note** The switch can operate without a network module, but a blank module (with no ports or SFP slots) is available and should be installed when uplink ports are not required.

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**Note** The switch generates logs when you insert or remove a network module with SFP/SFP+/SFP28/QSFP+ slots.

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Use only supported network modules and Cisco pluggable transceivers. Each module has an internal serial EEPROM that is encoded with security information.

The network module is hot-swappable. If you remove a module, replace it with another network module or a blank module.



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**Note** The switch complies with EMC, safety, and thermal specifications when a network module is present. If no uplink ports are required, install a blank network module.

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### Before you begin

When installing network modules, observe these precautions:

- Do not remove the blank module from the slot unless you are installing a network module. A module must be in the uplink slot at all times.
- Do not remove the dust plugs from the pluggable transceivers or the rubber caps from the fiber-optic cable until you connect the cable. The plugs and caps protect the module ports and cables from contamination and ambient light.
- Removing and installing a network module can shorten its useful life. Do not remove and insert a network module more often than is necessary.
- To prevent ESD damage, follow your normal board and component handling procedures when connecting cables to the switch and other devices.



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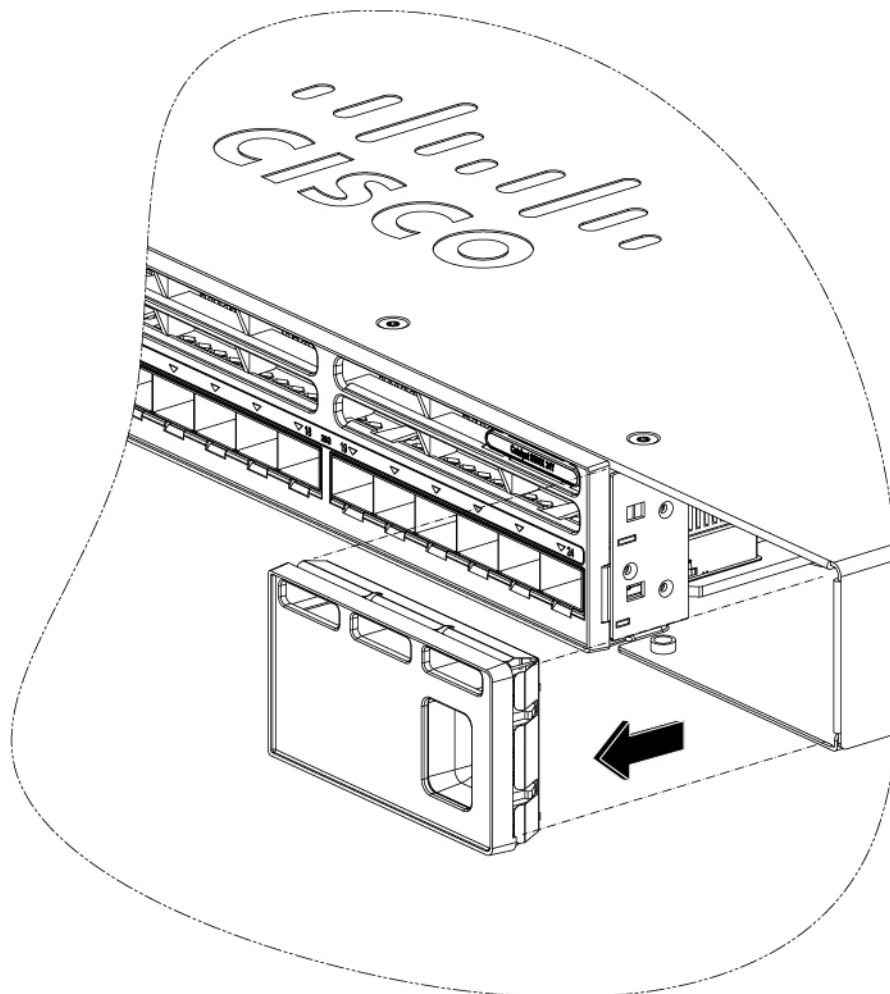
**Note** Unlike other network modules, the C9300-NM-8X cannot be fully inserted and secured until the jackscrew is properly tightened.

1. Push the module into the uplink slot until the jackscrew connects with the rightmost tab.
  2. You will feel some light resistance, because a spring-loaded tab inside the slot will push back against the C9300-NM-8X module
  3. Continue to tighten the jackscrew while gently pushing the front panel of the network module into the slot.
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## Procedure

- Step 1** Attach an ESD-preventive wrist strap to your wrist and to an earth ground surface.
- Step 2** Remove the module from the protective packaging.
- Step 3** Remove the blank module from the switch and save it.

*Figure 1: Removing the Blank Module*



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- Caution** Verify the correct orientation of your module before installing it. Incorrect installation can damage the module.
- Caution** Do not install the network module with connected cables or installed pluggable transceivers. Always remove any cables and transceiver modules before you install the network module.
- Caution** A module interface might become error-disabled when a network module with connected fiber-optic cables is installed or removed. If an interface is error-disabled, you can reenble the interface by using the **shutdown** and **no shutdown** interface configuration commands.

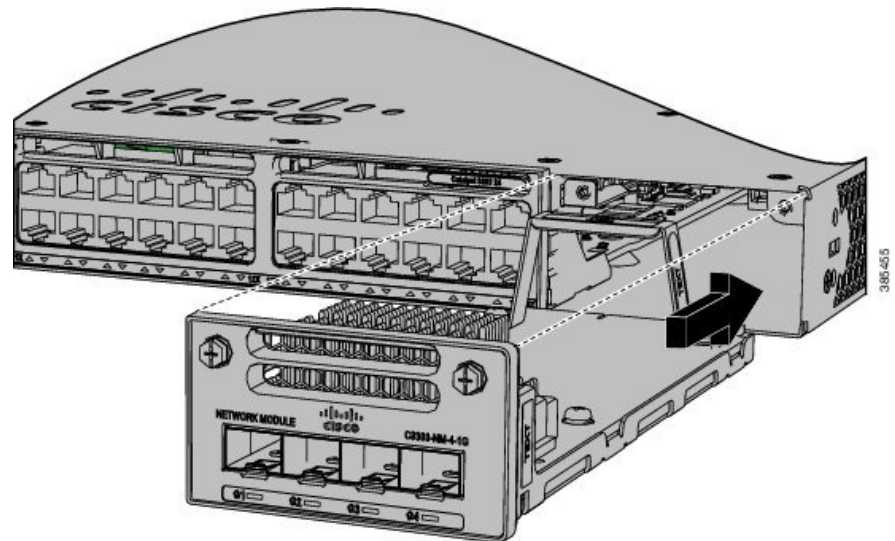
- Step 4** Position the module face up to install it in the module slot. Slide the module into the slot until the screw makes contact with the chassis. Fasten the captive screws to secure the network module in place.

*Figure 2: Installing the Network Module in the Switch*

- Step 5** Do one of the following:

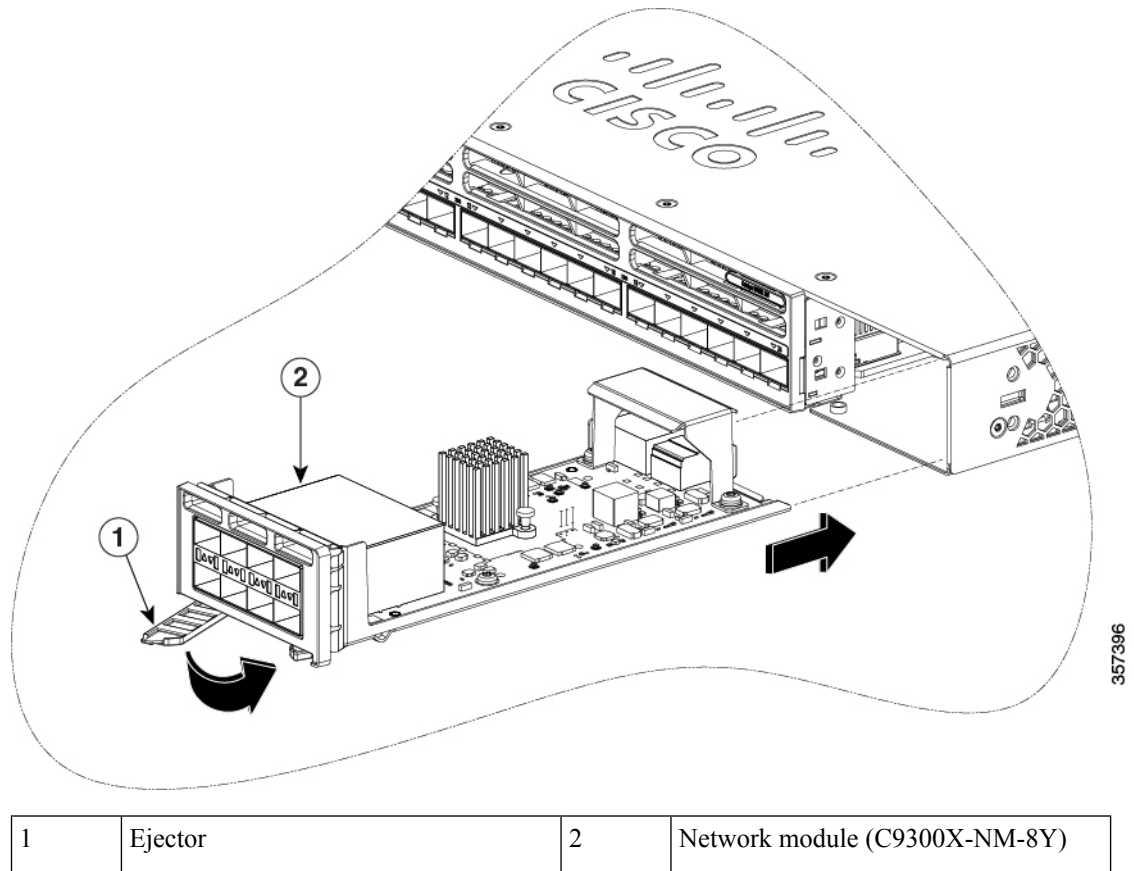
- While installing C9300 network modules, position the module face up to install it in the module slot. Slide the module into the slot until the screw makes contact with the chassis. Fasten the captive screws to secure the network module in place.

*Figure 3: Installing the C9300 Network Module in the Switch*



- While installing C9300X network modules, position the module face up to install it in the module slot. Slide the module into the slot until the back of the module faceplate is flush with the switch faceplate. Secure the network module in place by the ejector and the latch.

Figure 4: Installing the C9300X Network Module in the Switch



## Network Module Port Configurations

### C9300-NM-2Q Module

If you use a 40G QSFP module, the ports default to 40G interfaces. In this case, the 10G interfaces are displayed but not used.

Table 1: C9300-NM-2Q Module with 40G QSFP Module

| Interface                 | Action                   |
|---------------------------|--------------------------|
| FortyGigabitEthernet1/1/1 | Configure this interface |
| FortyGigabitEthernet1/1/2 | Configure this interface |
| TenGigabitEthernet1/1/1   | Disregard                |
| TenGigabitEthernet1/1/2   | Disregard                |
| TenGigabitEthernet1/1/3   | Disregard                |

| Interface               | Action    |
|-------------------------|-----------|
| TenGigabitEthernet1/1/4 | Disregard |
| TenGigabitEthernet1/1/5 | Disregard |
| TenGigabitEthernet1/1/6 | Disregard |
| TenGigabitEthernet1/1/7 | Disregard |
| TenGigabitEthernet1/1/8 | Disregard |

## C9300-NM-4G Module

All ports in the C9300-NM-4G module are natively GigabitEthernet and are configured GigabitEthernet1/1/1 through GigabitEthernet1/1/4. There are only four interfaces that are valid, and the other four should not be used even though they are available in the CLI.

**Table 2: C9300-NM-4G Module**

| Interface               | Action                   |
|-------------------------|--------------------------|
| GigabitEthernet1/1/1    | Configure this interface |
| GigabitEthernet1/1/2    | Configure this interface |
| GigabitEthernet1/1/3    | Configure this interface |
| GigabitEthernet1/1/4    | Configure this interface |
| TenGigabitEthernet1/1/1 | Disregard                |
| TenGigabitEthernet1/1/2 | Disregard                |
| TenGigabitEthernet1/1/3 | Disregard                |
| TenGigabitEthernet1/1/4 | Disregard                |

## C9300-NM-4M Module

**Table 3: C9300-NM-4M Module with 4 Multigigabit Ethernet (mGig) Module**

| Interface               | Action                   |
|-------------------------|--------------------------|
| TenGigabitEthernet1/1/1 | Configure this interface |
| TenGigabitEthernet1/1/2 | Configure this interface |
| TenGigabitEthernet1/1/3 | Configure this interface |
| TenGigabitEthernet1/1/4 | Configure this interface |

## C9300-NM-2Y Module

*Table 4: C9300-NM-2Y Module with 25G SFP28 Module*

| Interface                      | Action                   |
|--------------------------------|--------------------------|
| TwentyFiveGigabitEthernet1/1/1 | Configure this interface |
| TwentyFiveGigabitEthernet1/1/2 | Configure this interface |

## C9300-NM-8X Module

All ports in the C9300-NM-8X module default to 10 G and should be configured as TenGigabitEthernet1/1/1 through TenGigabitEthernet1/1/8, even when you are operating them as 1 G using SFP.

*Table 5: C9300-NM-8-10X Module*

| Interface               | Action                   |
|-------------------------|--------------------------|
| TenGigabitEthernet1/1/1 | Configure this interface |
| TenGigabitEthernet1/1/2 | Configure this interface |
| TenGigabitEthernet1/1/3 | Configure this interface |
| TenGigabitEthernet1/1/4 | Configure this interface |
| TenGigabitEthernet1/1/5 | Configure this interface |
| TenGigabitEthernet1/1/6 | Configure this interface |
| TenGigabitEthernet1/1/7 | Configure this interface |
| TenGigabitEthernet1/1/8 | Configure this interface |

## C9300X-NM-2C Module

*Table 6: C9300X-NM-2C Module*

| Interface        | Action                   |
|------------------|--------------------------|
| HundredGigE1/1/1 | Configure this interface |
| HundredGigE1/1/2 | Configure this interface |

## C9300X-NM-4C Module

*Table 7: C9300X-NM-4C Module*

| Interface        | Action                   |
|------------------|--------------------------|
| HundredGigE1/1/1 | Configure this interface |
| HundredGigE1/1/2 | Configure this interface |



| Interface        | Action                   |
|------------------|--------------------------|
| HundredGigE1/1/3 | Configure this interface |
| HundredGigE1/1/4 | Configure this interface |

## C9300X-NM-8M Module

*Table 8: C9300X-NM-8M Module*

| Interface               | Action                   |
|-------------------------|--------------------------|
| TenGigabitEthernet1/1/1 | Configure this interface |
| TenGigabitEthernet1/1/2 | Configure this interface |
| TenGigabitEthernet1/1/3 | Configure this interface |
| TenGigabitEthernet1/1/4 | Configure this interface |
| TenGigabitEthernet1/1/5 | Configure this interface |
| TenGigabitEthernet1/1/6 | Configure this interface |
| TenGigabitEthernet1/1/7 | Configure this interface |
| TenGigabitEthernet1/1/8 | Configure this interface |

## C9300X-NM-8Y Module

*Table 9: C9300X-NM-8Y Module*

| Interface           | Action                   |
|---------------------|--------------------------|
| TwentyFiveGigE1/1/1 | Configure this interface |
| TwentyFiveGigE1/1/2 | Configure this interface |
| TwentyFiveGigE1/1/3 | Configure this interface |
| TwentyFiveGigE1/1/4 | Configure this interface |
| TwentyFiveGigE1/1/5 | Configure this interface |
| TwentyFiveGigE1/1/6 | Configure this interface |
| TwentyFiveGigE1/1/7 | Configure this interface |
| TwentyFiveGigE1/1/8 | Configure this interface |

# Removing a Network Module



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**Note** The switch complies with EMC, safety, and thermal specifications when a network module is present. If no uplink ports are required, install a blank network module.

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**Note** To avoid authentication failure and non-detection of modules, wait for a minimum of 6-8 seconds between the online insertion and removal (OIR) of network modules.

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## Procedure

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**Step 1** Attach an ESD-preventive wrist strap to your wrist and to an earth ground surface

**Caution** Do not remove the network module with connected cables or installed pluggable transceiver modules. Always remove any cables and modules before you remove the network module.

**Caution** A module interface might become error-disabled when a network module with connected fiber-optic cables is installed or removed. If an interface is error-disabled, you can reenable the interface by using the **shutdown** and **no shutdown** interface configuration commands.

**Step 2** Disconnect the cables from the pluggable transceiver module.

**Step 3** Remove the pluggable transceiver module from the network module.

**Step 4** Loosen the captive screws that hold the network module in place until it completely disengages from the chassis.

**Note** The C9300-NM-8X module is secured in the switch by only one jackscrew. This screw also helps to eject the module from its connector interface. Before the module can be removed completely, the screw must be unscrewed completely. When removing the screw, a spring pushes the module out when the screw is completely disengaged. Ensure that you hold the module securely until it is completely removed.

**Step 5** Carefully slide the network module out of the slot.

**Step 6** Install a replacement network module or a blank module in the slot.

**Step 7** Place the module that you removed in an antistatic bag or other protective environment.

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# Installing and Removing Cisco Transceiver Modules

## Installing a Cisco Pluggable Transceiver Module

### Before you begin

You must have an installed network module to use the transceiver modules. See the switch release notes on Cisco.com for the list of supported pluggable transceiver modules. Use only supported pluggable transceivers on the switch. For the latest information about supported transceiver modules, refer to the [Cisco Transceiver Modules Compatibility Information](#).

For information about installing, removing, cabling, and troubleshooting pluggable transceiver modules, see the module documentation that shipped with your device.

Observe these precautions:



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**Warning** Class 1 laser product. Statement 1008

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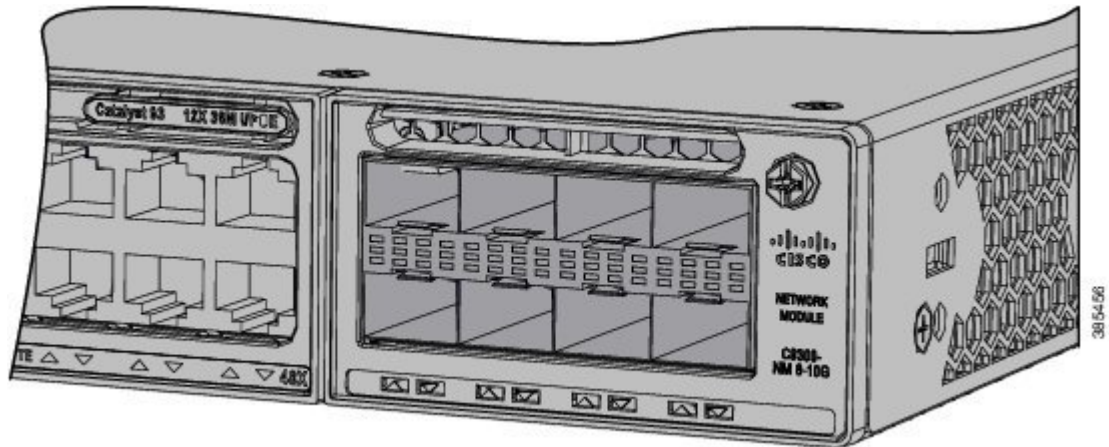
- Do not remove the dust plugs from the pluggable transceiver modules or the rubber caps from the fiber-optic cable until you are ready to connect the cable. The plugs and caps protect the module ports and cables from contamination and ambient light.
- Removing and installing a pluggable transceiver module can shorten its useful life. Do not remove and insert any module more often than is necessary.
- To prevent ESD damage, follow your normal board and component handling procedures when connecting cables to the switch and other devices.
- When you insert several pluggable transceiver modules in multiple switch ports, wait for 5 seconds between inserting each module. This will prevent the ports from going into error disabled mode. Similarly, when you remove a pluggable transceiver module from a port, wait for 5 seconds before reinserting it.

### Procedure

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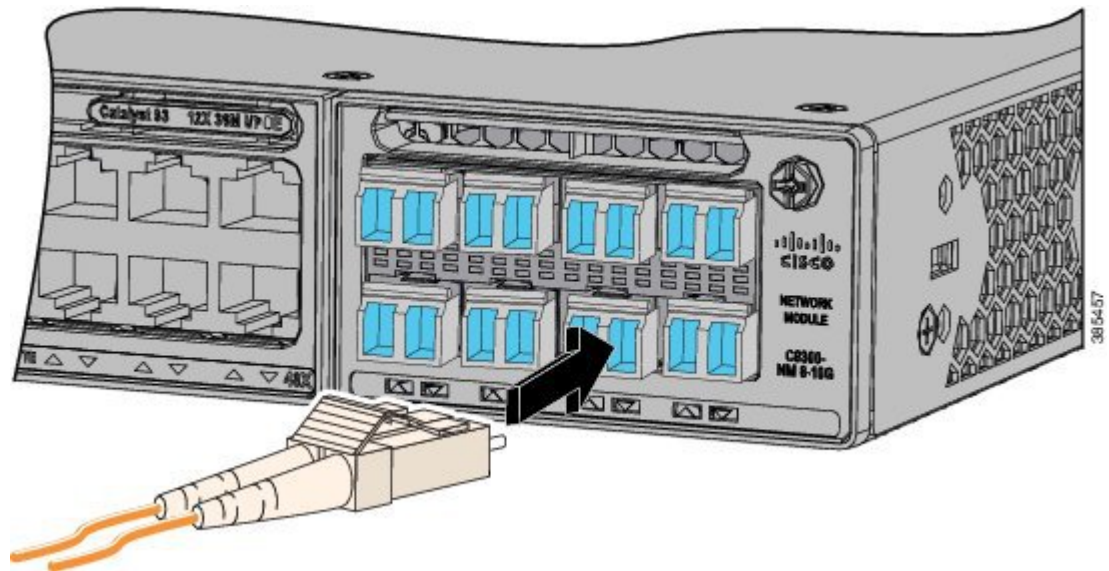
- Step 1** Attach an ESD-preventive wrist strap to your wrist and to an earth ground surface.
- Step 2** Find the send (TX) and receive (RX) markings that identify the top of the transceiver module. On some modules, the send and receive (TX and RX) markings might be shown by arrows that show the direction of the connection.
- Step 3** If the pluggable transceiver module has a bale-clasp latch, move it to the open, unlocked position.
- Step 4** Align the module in front of the slot opening, and push until you feel the connector snap into place.

Figure 5: Installing a Pluggable Transceiver Module in the Network Module



- Step 5** If the module has a bale-clasp latch, close it to lock the module in place.
- Step 6** Remove the dust plugs and save.
- Step 7** Connect the transceiver cables.

Figure 6: Network Module with Pluggable Transceiver Modules Installed



## Removing Cisco Pluggable Transceiver Modules

### Procedure

- Step 1** Attach an ESD-preventive wrist strap to your wrist and to an earth ground surface.

- Step 2** Disconnect the cable from the transceiver module. For reattachment, note which cable connector plug is send (TX) and which is receive (RX).
- Step 3** Insert a dust plug into the optical ports of the transceiver module to keep the optical interfaces clean.
- Step 4** If the transceiver module has a bale-clasp latch, pull the bale out and down to eject the module. If you cannot use your finger to open the latch, use a small, flat-blade screwdriver or other long, narrow instrument to open it.
- Step 5** Grasp the transceiver module, and carefully remove it from the slot.
- Step 6** Place the transceiver module in an antistatic bag or other protective environment.
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## Finding the Network Module Serial Number

If you contact Cisco Technical Assistance regarding a network module, you need to know its serial number.

*Figure 7: Network Module Serial Number Location*

