



## **Cisco ME 1200 Series Carrier Ethernet Access Devices Hardware Installation Guide**

**June 2017**

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# Preface

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## Audience

This guide is for the person installing the Cisco ME 1200 Series Carrier Ethernet Access Devices, also known as Cisco ME 1200 NID.

## Purpose

This guide describes the hardware features of the Cisco ME 1200 NID. It describes the physical and performance characteristics of the switch, explains how to install it, and provides troubleshooting information.

This guide does not describe system messages that you might receive or how to configure your switch. For more information, see the switch Cisco NID Controller Guide on Cisco.com at:

<http://www.cisco.com/c/en/us/support/switches/me-1200-series-carrier-ethernet-access-devices/tsd-products-support-general-information.html>



---

### Note

Means *reader take note*. Notes contain helpful suggestions or references to materials not contained in this manual.

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### Caution

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

---

**Warning****IMPORTANT SAFETY INSTRUCTIONS**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. Statement 1071

**SAVE THESE INSTRUCTIONS**

The safety warnings for this product are translated into several languages in the *Cisco Regulatory Compliance and Safety Information for Cisco ME 1200 Series Carrier Ethernet Access Devices* on Cisco.com. The EMC regulatory statements are also included in that guide.

## Related Publications

These documents provide information about the switches and are available from this Cisco.com site:

<http://www.cisco.com/c/en/us/support/switches/me-1200-series-carrier-ethernet-access-devices/tsd-products-support-general-information.html>

- *Release Notes for the Cisco ME 1200 Series Carrier Ethernet Access Devices*



**Note** Before installing, configuring, or upgrading the switch, see the release notes on Cisco.com for the latest information.

- *Cisco ME 1200 Series Carrier Ethernet Access Devices Software Cisco NID Controller Guide*
- *Cisco Regulatory Compliance and Safety Information for Cisco ME 1200 Series Carrier Ethernet Access Devices*

## Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation* at: <http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>.

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# Product Overview

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The Cisco ME1200 NID Series of product is built and optimized for the Gigabit Ethernet Demarcation. It provides a standard based demarcation as defined by the MEF ELINE and ELAN services with advanced clocking and Quality of Services. This chapter provides a functional overview of the Cisco ME1200 NID.

- [Setting Up the Switch, page 1-1](#)
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## Setting Up the Switch

This document covers switch management options, basic rack-mounting procedures, port and module connections, power connection procedures, and troubleshooting.

## Switch Models

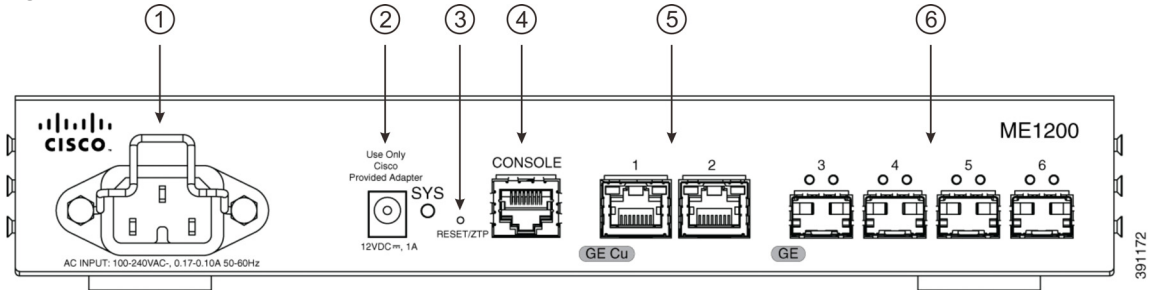
The Cisco ME1200 NID switches have fixed AC and DC power options. Each switch has 4 1GE SFP (Small Form factor Pluggable) ports and two RJ-45 copper Ethernet ports. All the variants support power redundancy using an external AC-DC power adapter.

*Table 1-1 Cisco ME1200 NID Model*

| Switch Model | Description  |
|--------------|--|
| ME1200-4S-A  | AC power input: Between 100 and 240VAC<br>12VDC adapter (optional) |
| ME1200-4S-D  | DC power input: -20.5 to -72 VDC<br>12VDC adapter (optional)       |

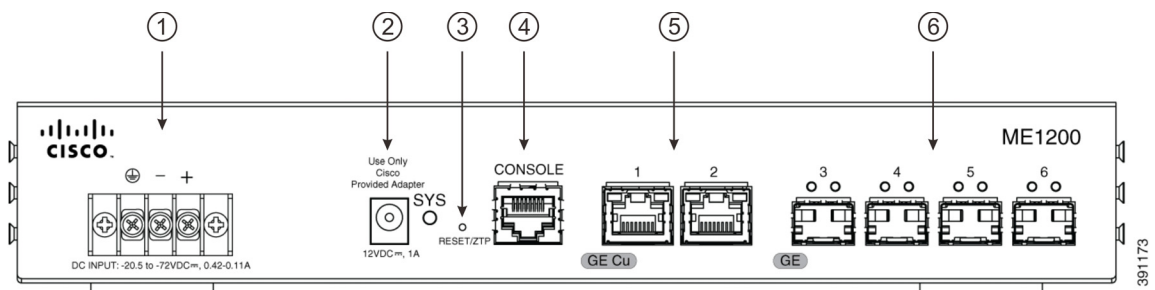
# Front Panel

Figure 1-1 Cisco ME1200-4S-A Front Panel



|   |                             |   |                                      |
|---|-----------------------------|---|--------------------------------------|
| 1 | AC 100V to 240V Power input | 4 | Console port                         |
| 2 | DC 12 VDC Power input       | 5 | 10/100/1000Base-T RJ-45 Port         |
| 3 | RESET/ZTP                   | 6 | 100Base-FX/1000Base-X SFP Fiber Port |

Figure 1-2 Cisco ME1200-4S-D Front Panel



|   |                               |   |                                      |
|---|-------------------------------|---|--------------------------------------|
| 1 | DC -20.5V to -72V Power input | 4 | Console port                         |
| 2 | DC 12 VDC Power input         | 5 | 10/100/1000Base-T RJ-45 Port         |
| 3 | RESET/ZTP                     | 6 | 100Base-FX/1000Base-X SFP Fiber Port |

## Console Port

The console port is used in display-only mode to output debug information. Console operation is not supported.

The serial port's configuration requirements are as follows:

- Default Baud rate—115,200 bps
- Parity—None
- Stop bit—One
- Data bits—8
- Flow control—none



## 10/100/1000 Gigabit Ethernet Ports

The 10/100/1000 Ethernet ports use standard RJ-45 connectors with Ethernet pin-outs. The maximum cable length is 328 feet (100 meters). The 100BASE-TX and 1000BASE-T traffic requires Category 5, Category 5e, or Category 6 unshielded twisted pair (UTP) cable. The 10BASE-T traffic can use Category 3 or Category 4 UTP cable.

The auto-negotiation feature is enabled by default. The switch ports configure themselves to operate at the speed of attached devices. If the attached device does not support auto-negotiation, you can explicitly set the switch port speed and the duplex parameters. To maximize performance, either let the ports auto-negotiate both speed and duplex, or set the port speed and duplex parameters on both ends of the connection.

For simplified cabling, the automatic medium-dependent interface crossover (auto-MDIX) feature is enabled by default. The switch detects the required cable type for copper Ethernet connections and configures the interface accordingly. You can use either a crossover or a straight-through cable for connections to a switch 10/100/1000 Ethernet port, regardless of the type of device on the other end of the connection.

## SFP Modules

The SFPs listed in Table 1-2 are supported in Cisco ME1200 NID. Please contact Cisco for details on support of additional Cisco optical modules.

**Table 1-2 SFP Module Support**

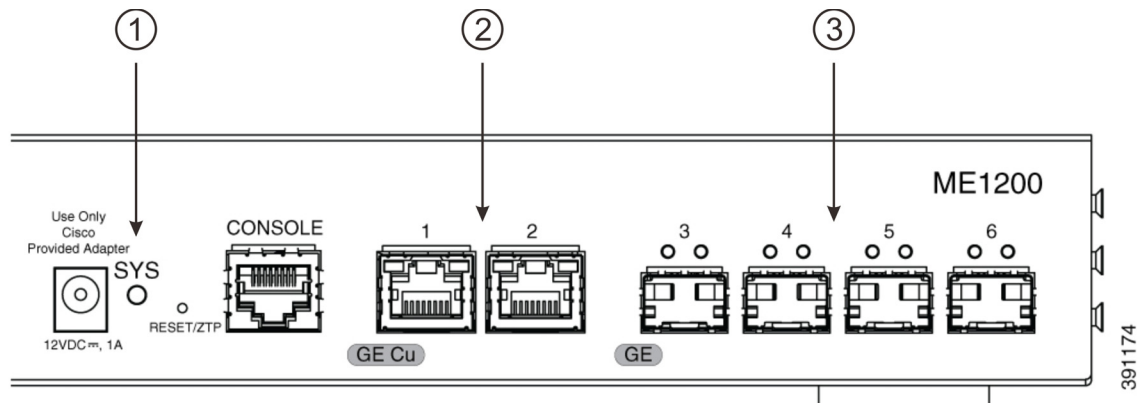
| Type      | Cisco PIDs       |
|-----------|------------------|
| 100M SFP  | GLC-FE-100FX     |
| 100M SFP  | GLC-FE-100FX-RGD |
| 100M SFP  | GLC-FE-100EX     |
| 100M SFP  | GLC-FE-100ZX     |
| 100M SFP  | GLC-FE-100LX     |
| 100M SFP  | GLC-FE-100LX-RGD |
| 100M SFP  | GLC-FE-100BX-U   |
| 100M SFP  | GLC-FE-100BX-D   |
| 1000M SFP | GLC-LH-SM        |
| 1000M SFP | GLC-LH-SMD       |
| 1000M SFP | GLC-LH-SM-RGD    |
| 1000M SFP | GLC-SX-MM        |
| 1000M SFP | GLC-SX-MMD       |
| 1000M SFP | GLC-SX-MM-RGD    |
| 1000M SFP | GLC-EX-SM        |
| 1000M SFP | GLC-EX-SMD       |
| 1000M SFP | GLC-EX-SM-RGD    |
| 1000M SFP | GLC-ZX-SM        |
| 1000M SFP | GLC-ZX-SMD       |

**Table 1-2 SFP Module Support**

|           |                                |
|-----------|--------------------------------|
| 1000M SFP | GLC-ZX-SM-RGD                  |
| 1000M SFP | GLC-T <sup>1</sup>             |
| 1000M SFP | CWDM-SFP-xxxx (8 colors)       |
| 1000M SFP | GLC-BX-U                       |
| 1000M SFP | GLC-BX-D                       |
| 1000M SFP | SFP-GE-L                       |
| 1000M SFP | SFP-GE-S                       |
| 1000M SFP | SFP-GE-Z                       |
| 1000M SFP | SFP-GE-T                       |
| 1000M SFP | GLC-TE                         |
| 1000M SFP | DWDM-SFP-xxxx (40 wavelengths) |

1. The system can support a lower operating ambient temperature of -5°C with GLC-T. However, cold boot with this module is supported only from 0°C.

## LEDs

**Figure 1-3 Cisco ME1200-4S-A and ME1200-4S-D Switch LEDs**

|          |                  |          |                |
|----------|------------------|----------|----------------|
| <b>1</b> | SYS (system) LED | <b>3</b> | Port LED (SFP) |
| <b>2</b> | Port LED (RJ-45) |          |                |

## System LED

*Table 1-3 System LED*

| Function      | Color state             | Description  |
|---------------|-------------------------|--|
| System Status | Off                     | No Power   |
|               | Solid Green             | System Healthy (POST in progress/normal operation) |
|               | Alternating Green/Off   | ZTP downloading                                    |
|               | Alternating Red/Off     | ZTP failed   |
|               | Alternating Amber/Off   | ZTP configuring                                    |
|               | Solid Red               | Software error                                     |
|               | Solid Amber             | System healthy, working with redundant PSU         |
|               | Alternating Green/Amber | POST in progress                                   |

## Port LEDs

Each port has two LEDs. These port LEDs display information about the individual ports.

*Table 1-4 Port LEDs*

|                | Color          | Port Status   |
|----------------|----------------|---|
| Left side LED  | OFF            | RJ-45/SFP no link   |
|                | Green          | RJ-45/SFP link on 1000Mbps  |
|                | Blinking Green | RJ-45 /SFP activity link on 1Gbps                                 |
| Right side LED | Amber          | RJ-45 link on 100Mbps/10Mbps<br>SFP link on 100Mbps               |
|                | Blinking Amber | RJ-45 activity link on 10/100Mbps<br>SFP activity link on 100Mbps |

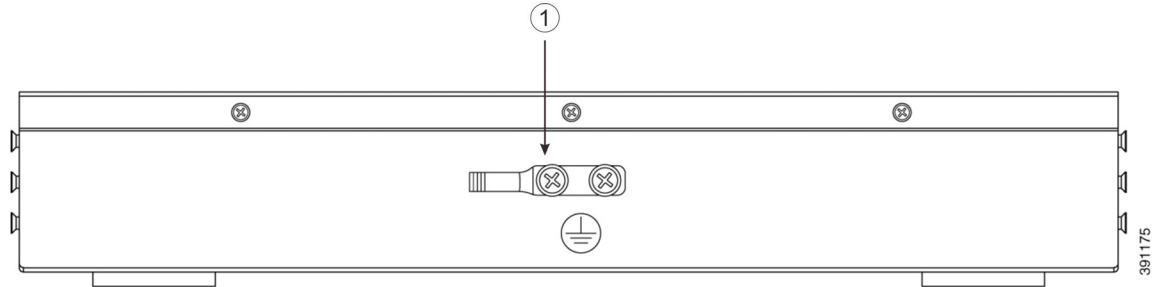
# Rear Panel



Note

The rear panel is the same for the Cisco ME1200-4S-A and ME1200-4S-D switches.

Figure 1-4 Back of the Cisco ME1200 NID

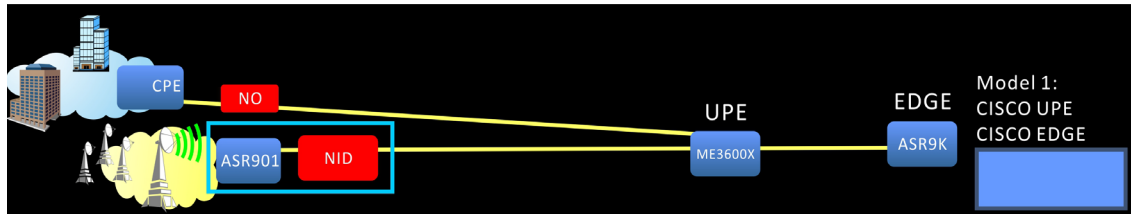


|   |                           |
|---|---------------------------|
| 1 | Chassis Ground connection |
|---|---------------------------|

## Management Options

There are multiple options to manage the Cisco ME1200 NID.

### Management Option 1

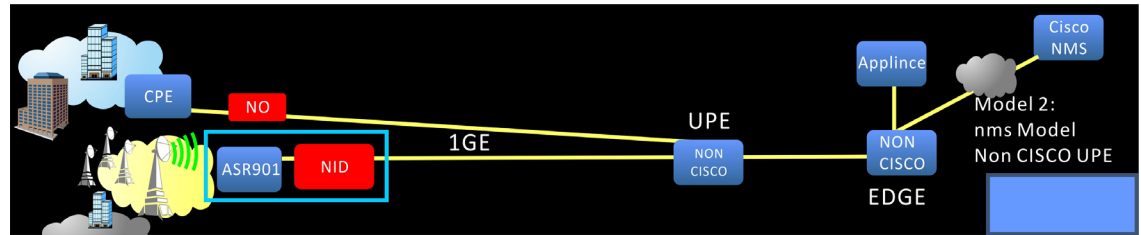


In this model, there will be a Cisco UPE and a Cisco Edge device. The NID will be downstream device, on the Cisco UPE. A UPE NID Controller software subsystem on the ME3600 UPE will be used to manage the NID. Refer to the UPE NID Controller configuration guide for the ME3600.

### Management Option 2

In this model, the UPE is not a Cisco device. The NID could be managed by Cisco PRIME. Refer to the

PRIME reference guide.



### Management Option 3

In this model, another Cisco edge router like ASR -9K directly connects to the NID. There is no UPE, and there is unlikely to be a UPE NID Controller subsystem in the ASR 9K. Such customers may use PRIME or a 3rd party NMS.



### Network Configurations

See the switch software configuration guide on Cisco.com for an explanation of network configuration concepts. The software configuration guide also provides examples of network configurations that use the switch to create dedicated network segments that are interconnected through Ethernet connections.





# Installing the Cisco ME 1200 NID

- [Warnings, page 2-1](#)
- [Installation Guidelines, page 2-3](#)
- [Installation the Switch, page 2-4](#)
- [Installing and Removing SFP Modules, page 2-9](#)
- [Connecting to the 10/100/1000 Ports, page 2-11](#)
- [Initial Configuration, page 2-12](#)

## Warnings

These warnings are translated into several languages in the Regulatory Compliance and Safety Information for the Cisco ME1200 NID Switches document that is available online.



**Warning**

**Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.** Statement 43



**Warning**

**Do not stack the chassis on any other equipment. If the chassis falls, it can cause severe bodily injury and equipment damage.** Statement 48



**Warning**

**Ethernet cables must be shielded when used in a non-central office environment.**



**Note**

Ethernet cables must be shielded and grounded at both ends when they are used in a non-central office environment.



**Warning**

**Do not work on the system or connect or disconnect cables during periods of lightning activity.** Statement 1001

**Warning**

**Read the installation instructions before connecting the system to the power source. Statement 1004**

**Warning**

**To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:**

**This unit should be mounted at the bottom of the rack if it is the only unit in the rack**

- **When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.**
- **If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack. Statement 1006**

**Warning**

**The plug-socket combination must be accessible at all times, because it serves as the main disconnecting device. Statement 1019**

**Warning**

**This equipment must be grounded. 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. Statement 1024**

**Warning**

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

**Warning**

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

**Warning**

**For connections outside the building where the equipment is installed, the following ports must be connected through an approved network termination unit with integral circuit protection. 10/100/1000 Ethernet Statement 1044**

**Warning**

**When installing or replacing the unit, the ground connection must always be made first and disconnected last. Statement 1046**

**Warning**

**No user-serviceable parts inside. Do not open. Statement 1073**

**Warning**

**Installation of the equipment must comply with local and national electrical codes. Statement 1074**



**Caution**

The intra-building port(s) of the equipment or subassembly is suitable for connection to intra-building or unexposed wiring or cabling only. The intra-building port(s) of the equipment or subassembly **MUST NOT** be metalically connected to interfaces which connect to the OSP or its wiring. These interfaces are designed for use as intra-building interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE, Issue 5) and require isolation from the exposed OSP cabling. The addition of Primary Protectors is not sufficient protection in order to connect these interfaces metalically to OSP wiring.

You can use the grounding lug to attach a wrist strap for ESD protection during servicing.

**Warning**

**To prevent the system from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of: 149°F (65°C) Statement 1047**

**Warning**

**This unit might have more than one power supply connection. All connections must be removed to de-energize the unit. Statement 1028**

## Installation Guidelines

Before installing the switch, verify that these guidelines are met:

- For Ethernet ports and 1000BASE-T SFP module ports, cable lengths from the switch to connected devices can be up to 328 feet (100 meters).
- For cable requirements for 1000BASE-T SFP module connections, see the “Cable Pin-outs” section on figure B-7.
- Operating environment is within the ranges listed in [Appendix A, "Technical Specifications"](#)
- Front-panel indicators can be easily read, and access to ports is sufficient for unrestricted cabling
- AC power cord reaches from the power outlet to the connector.
- Cabling is away from sources of electrical noise, such as radios, power lines, and fluorescent lighting fixtures. Make sure that the cabling is safely away from other devices that might damage the cables.
- Airflow around the switch and through the vents is unrestricted.
- For an outside plant installation (cell site cabinet, hut etc.), it is required that the ME 1200 switch be protected against airborne contaminants, dust, moisture, insects, pests, corrosive gases, polluted air or other reactive elements present in the outside air. To achieve this level of protection, we recommend that the unit be installed in a fully sealed enclosure or cabinet. Examples of such cabinets include IP65 cabinets with heat exchanger complying with Telecordia GR487. Temperature must be maintained within -40°C to 65°C.

**Note**

If the switch is installed in a closed or multi-rack assembly, the temperature around it might be greater than normal room temperature.

- Before you connect the switch to a power source, note the power consumption specifications in [Appendix A, "Technical Specifications"](#)

## Verifying Switch Operation

Before installing the switch in a rack, on a wall, or on a table or shelf, you should power the switch and verify that the switch passes POST.

- To power on the AC switch, connect one end of the AC power cord to the AC power connector on the switch, and connect the other end of the power cord to an AC power outlet.
- To power on a DC switch, see [Chapter 3, "Wiring the DC Input Power Source"](#)

When the switch powers on, it automatically begins the POST, a series of tests that verifies that the switch functions properly. When the switch begins POST. When POST completes successfully, the system LED solid green.

## Installation the Switch

- [Rack-Mounting, page 2-4](#)
- [Mounting the Switch on a Wall, page 2-7](#)
- [Desktop Mounting, page 2-8](#)

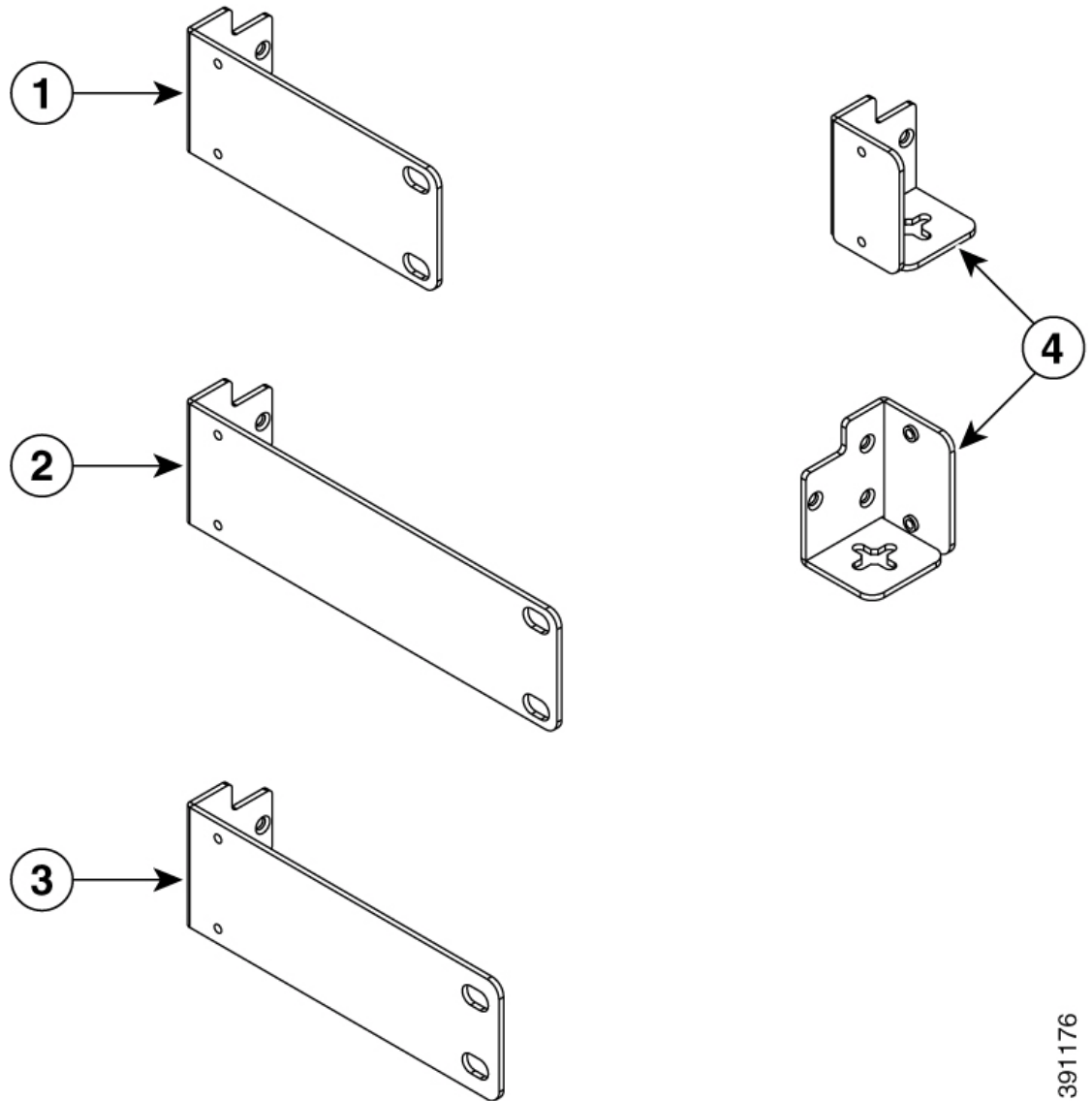
## Rack-Mounting

To install the switch in a 19-inch, 23-inch, or a European Telecommunications Standards Institute (ETSI) rack, follow these instructions.

## Attaching Brackets to the Switch

The bracket orientation and the brackets that you use depend on whether you are attaching the brackets for a 19-inch, 23-inch, ETSI rack, or Wall mount. Figure 2-1 shows the types of mounting brackets.

Figure 2-1 Rack-Mounting Brackets and Wall mount kit



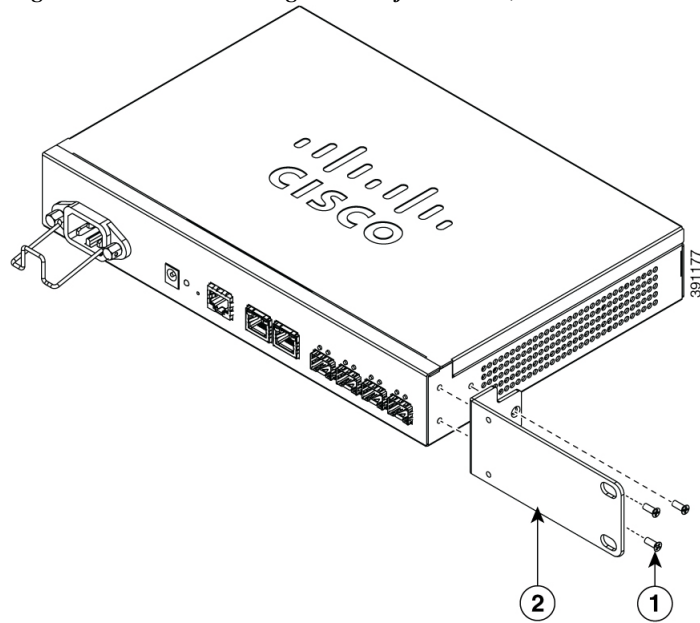
|          |                  |          |                    |
|----------|------------------|----------|--------------------|
| <b>1</b> | 19-inch brackets | <b>3</b> | ETSI-rack brackets |
| <b>2</b> | 23-inch brackets | <b>4</b> | Wall mount         |

- For 19-inch brackets, use part number RCKMNT-ME12-19IN
- For 23-inch brackets, use part number RCKMNT-ME12-23IN
- For ETSI-racks brackets, use part number RCKMNT-ME12-ETSI
- For Wall mount, use part number RCKMNT-ME12-WALL

391176

## Attaching Brackets to the Switch

Figure 2-2 Attaching Brackets for 19-Inch, 23-Inch and ETSI Racks



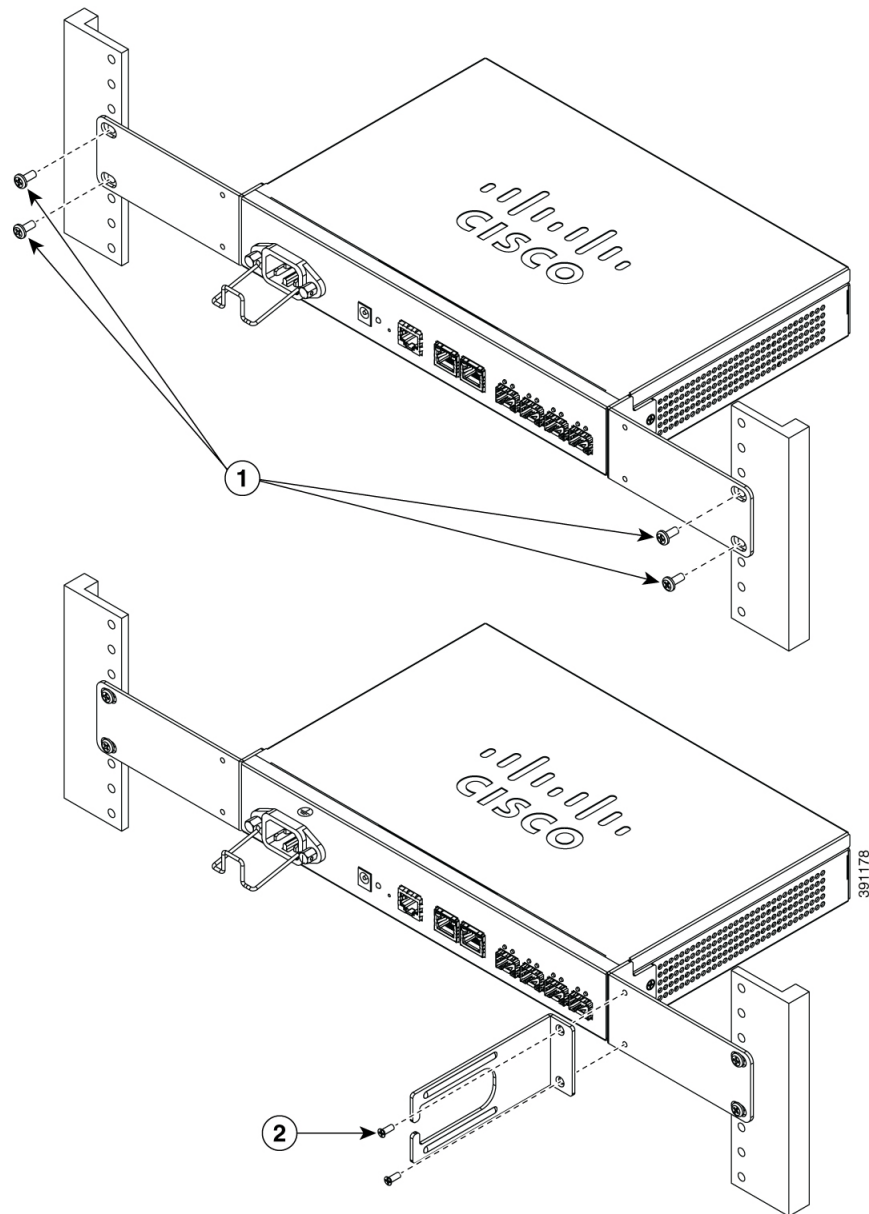
|   |                           |   |                         |
|---|---------------------------|---|-------------------------|
| 1 | Phillips flat-head screws | 2 | Front-mounting position |
|---|---------------------------|---|-------------------------|

## Mounting in a Rack

After the brackets are attached on the switch, use the four supplied number-12 Phillips machine screws to securely attach the brackets to the rack. See Figure 2-3 for standard rack-mounting using the 19-inch, 23-inch, and ETSI brackets.

## Mounting the Switch using 19-inch, 23-inch, and ETSI Brackets

Figure 2-3 Mounting the Switch



|   |                           |   |                       |
|---|---------------------------|---|-----------------------|
| 1 | Phillips flat-head screws | 2 | Cable guide and screw |
|---|---------------------------|---|-----------------------|

- For Cable manager, use part number ME1200-CAB-MNGT

## Mounting the Switch on a Wall



Note The wall mounting screws are user-supplied.

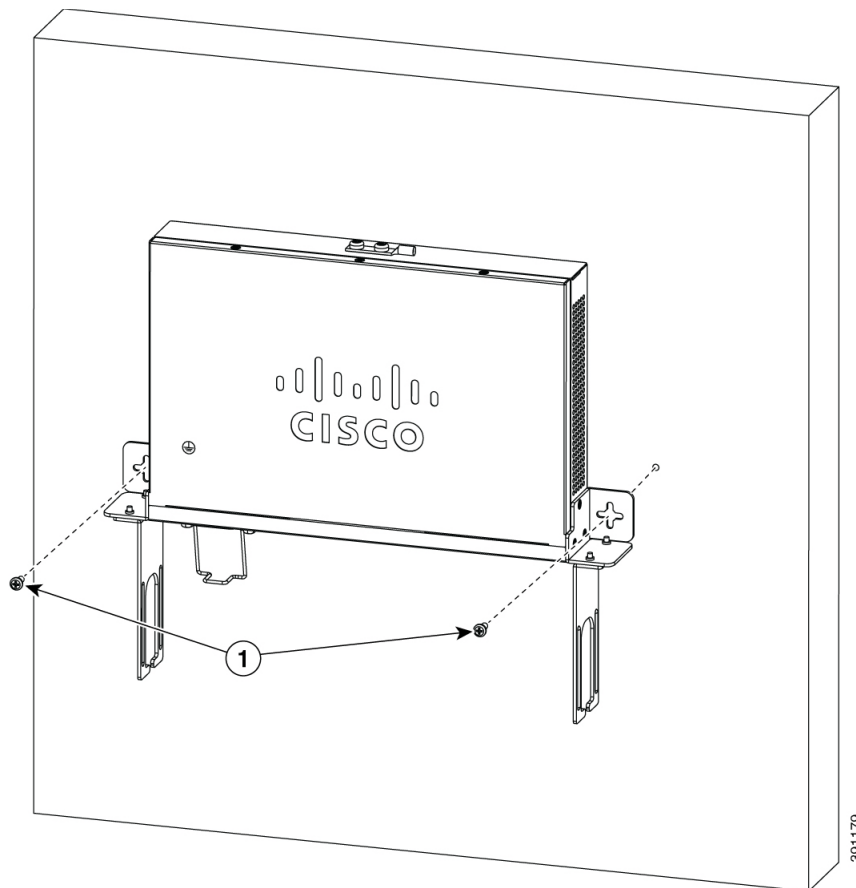
For the best support of the switch and cables, make sure that the switch is attached securely to wall studs or to a firmly attached plywood mounting backboard.



**Warning**

**Read the wall-mounting instructions carefully before beginning installation. Failure to use the correct hardware or to follow the correct procedures could result in a hazardous situation to people and damage to the system.** Statement 378

*Figure 2-4 Mounting Cisco ME1200 NID on a Wall*



**1** User-supplied screws

You need to do these tasks to complete the installation:

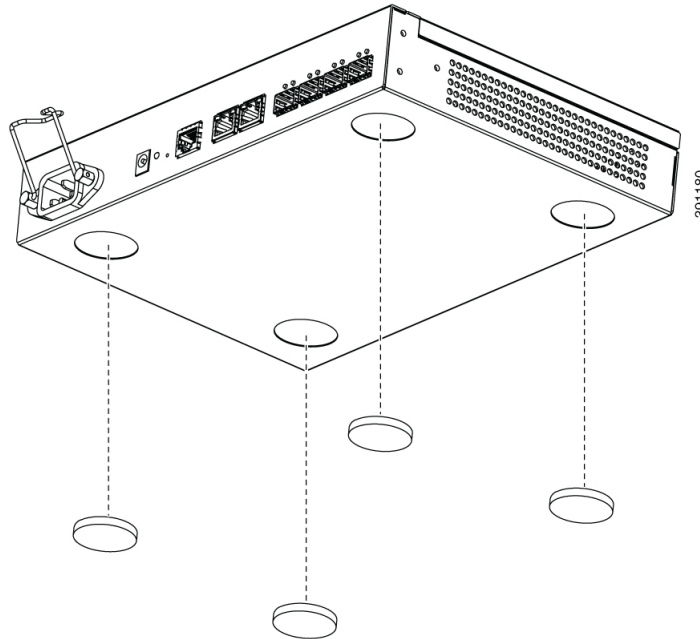
- Power on the switch. See the “[Verifying Switch Operation](#)” section on page 2-4
- Connect to the console port, and run the initial configuration. See the *Cisco NID Controller Guide* for instructions.
- Connect to the front-panel ports. See the “[Connecting to the 10/100/1000 Ports](#)” and the “[Connecting to Fiber-Optic SFP Modules](#)”.

## Desktop Mounting

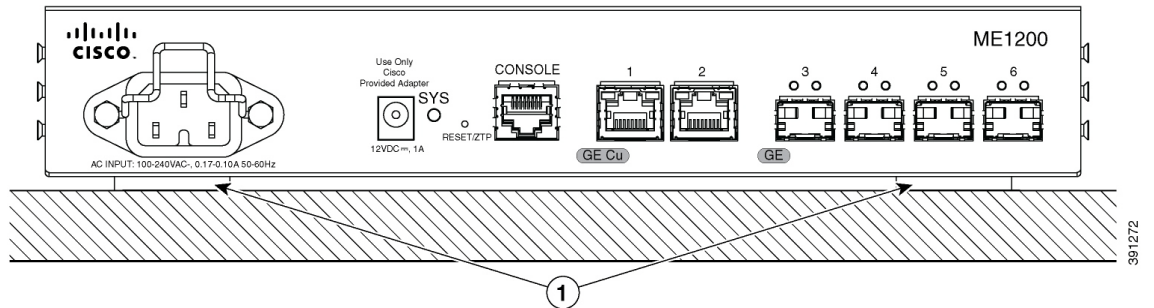
Follow these steps to install the switch on a table or a shelf:

- Step 1** The rubber feet are included in the accessory kit. Attach the four adhesive rubber feet to the bottom of the switch

*Figure 2-5 Attaching the adhesive rubber feet*



*Figure 2-6 On Table Reference*



- |          |             |
|----------|-------------|
| <b>1</b> | Rubber feet |
|----------|-------------|

- Step 2** Set the device on a flat surface near a power source, making sure there are at least two inches of space on all sides for proper air flow.

## Installing and Removing SFP Modules

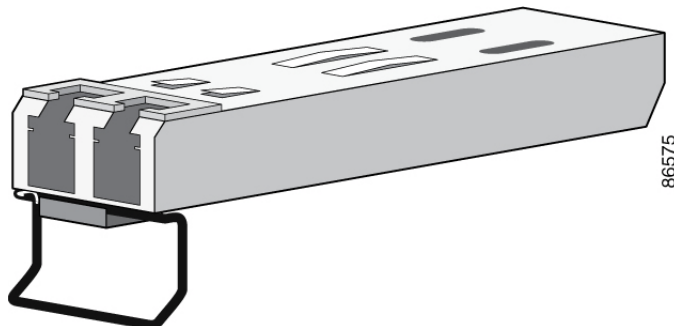
### Installing SFP Modules

Figure 2-7 shows a SFP module that has a bale-clasp latch.

**Note**

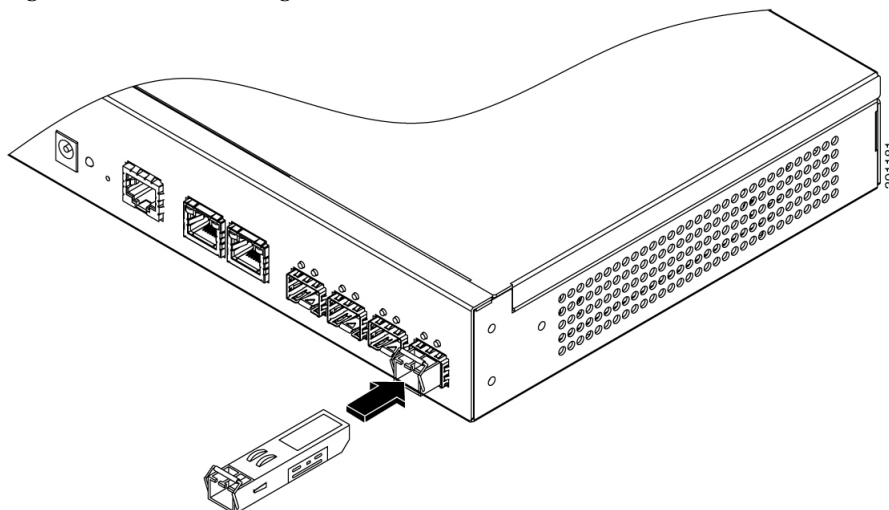
We strongly recommend that you do not install or remove fiber-optic SFP modules with cables attached because of the potential damage to the cables, the cable connector, or the optical interfaces in the SFP module. Disconnect all cables before removing or installing an SFP module. Removing and installing an SFP module can shorten its useful life. Do not remove and insert SFP modules more often than is absolutely necessary.

**Figure 2-7** SFP Module with a Bale-clasp Latch



- Step 1** Attach an ESD-preventive wrist strap to your wrist and to a bare metal surface. Find the send (TX) and receive (RX) markings that identify the top side of the SFP module.
- Step 2** On some SFP modules, the send and receive (TX and RX) markings might be replaced by arrows that show the direction of the connection, either send or receive (TX or RX).
- Step 3** Align the SFP module in front of the slot opening and push until you feel the connector on the module snap into place in the rear of the slot (see Figure 2-8).

**Figure 2-8** Installing a SFP Module into a SFP Module Slot



- Step 4** For fiber-optic SFP modules, remove the dust plugs from the optical ports, and store them for later use.

**Note**

Do not remove the dust plugs from the fiber-optic SFP module port or the rubber caps from the fiber-optic cable until you are ready to connect the cable. The plugs and caps protect the SFP module ports and cables from contamination and ambient light.

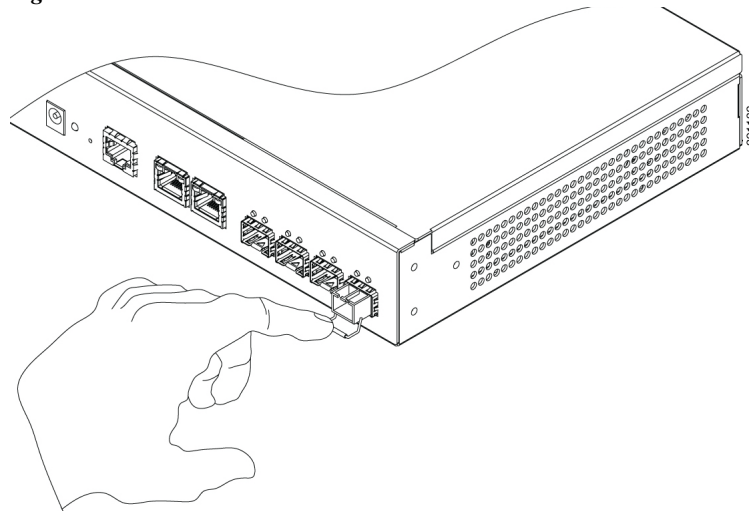


- Step 5** Insert the LC cable connector into the SFP module.

## Removing SFP Modules

- Step 1** Attach an ESD-preventive wrist strap to your wrist and to a bare metal surface.
- Step 2** Disconnect the cable from the SFP 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 SFP module to keep the optical interfaces clean.
- Step 4** Pull the bale out and down to eject the module.

*Figure 2-9*



- Step 5** Grasp the SFP module, and carefully remove it from the module slot.
- Step 6** For fiber-optic SFP modules, insert a dust plug into the optical ports of the SFP module to keep the optical interfaces clean.
- Step 7** Place the removed SFP module in an antistatic bag or other protective environment.

## Connecting to the 10/100/1000 Ports

The switch 10/100/1000 ports configure themselves to operate at the speed of attached devices. If the attached ports do not support auto-negotiation, you can explicitly set the speed and duplex parameters. Connecting devices that do not auto-negotiate or that have their speed and duplex parameters manually set can reduce performance or result in no linkage.

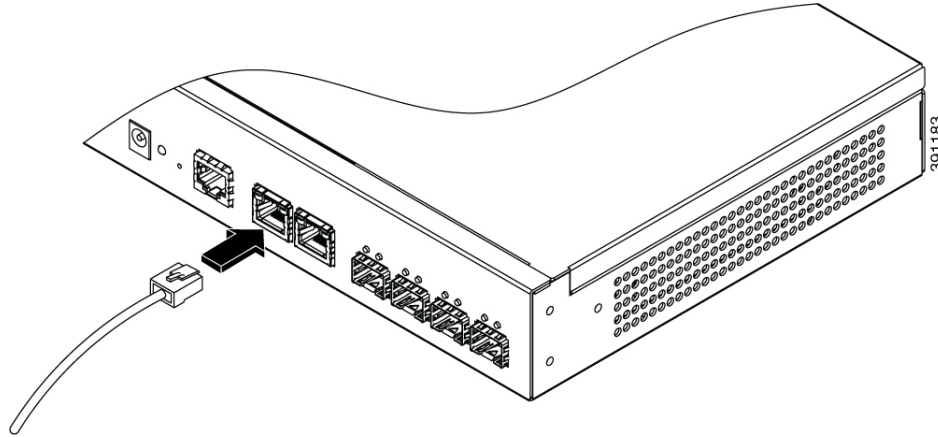
To maximize performance, choose one of these methods for configuring the Ethernet ports:

- Let the ports auto-negotiate both speed and duplex.
- Set the port speed and duplex parameters on both ends of the connection.

Follow these steps to connect to 10BASE-T, 100BASE-TX, or 1000-BASE-T devices:

- Step 1** When connecting to workstations, servers, and routers, connect a straight-through cable to an RJ-45 connector on the front panel. (See Figure 2-10) When connecting to switches or repeaters, use a crossover cable. (See the “Cables and Adapters” section on page B-4 for cable-pin-out descriptions.)
- Step 2** Connect the other end of the cable to an RJ-45 connector on the other device. The port LED turns on when both devices have established link. (See Figure 2-10.)

Figure 2-10



## Initial Configuration

### Scenario 1 - Zero Touch Provisioning

Refer to the ZTP section in the Cisco NID Controller Guide.

### Scenario 2 - Accessing Cisco ME1200 NID Through ME3600 UPE NID Controller Mode



**Note** All Cisco ME1200 NID will have 192.0.2.1 as factory installed default IP address.

- Step 1** In UPE NID Controller(ME3600) for interface VLAN 1, assign IP 192.0.2.2

```
Controller#configure t
Controller(config)#interface vlan 1
Controller(config-if)#ip address 192.0.2.2 255.255.0.0
```

- Step 2** Ping 192.0.2.1

- Step 3** Add Cisco ME1200 NID in UPE NID Controller, using ‘platform nid-controller add 192.0.2.1’

```
Controller#configure t
Controller(config)#platform nid-controller add 192.0.2.1
Controller(config)#end
```

**Step 4** Check if the Cisco ME1200 NID has been added to UPE NID Controller,

```
Controller#show platform nid-controller nids
NID_ID  MAC Address  IP Address  Lease  Physical Port  VLAN
TFTP Server  Type
1       n/a           192.0.2.1  n/a    n/a           n/a
n/a     static
```



**Note**

Step 1 to Step 4 are performed so that for the first time, we can access Cisco ME1200 NID through the UPE NID Controller ME3600 with the default factory IP address Cisco ME1200 NID comes with (192.0.2.1). The above steps 1 to 4 are mandatory and sufficient to establish the initial connectivity between the UPE NID Controller and Cisco ME1200 NID.

Below steps are performed in order to configure port as trunk and establish the connectivity on a different SVI. This also gives the provision to configure default IP route for reachability to various servers.



**Note**

Prerequisite :

1. UPE NID Controller should be configured with a different VLAN other than VLAN 1.
2. Below configs are assuming UPE NID Controller interface 0/1 is connected to Cisco ME1200 NID 1/1, change the interface configs as applicable.

**Step 5** Controller#**configure t**  
 Controller(config)#**interface vlan 2**  
 Controller(config-if)#**ip address 7.6.15.60 255.255.0.0**

**Step 6** The interface on UPE NID Controller which is connected to Cisco ME1200 NID needs to be configured trunk with the specified vlan allowed.

```
Controller#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Controller(config)#interface gigabitEthernet 0/1
Controller(config-if)#switchport mode trunk
Controller(config-if)#switchport trunk allowed vlan 2
```

**Step 7** Now, from the UPE NID Controller configure the desired management vlan on Cisco ME1200 NID using 'provisionportvlanType' template and assign svi for the desired vlan interface.

```
Controller#conf t
Controller(config)#controller nid 1/1
Controller(config-controller)#provisionportVlanPortType
Controller(config-controller-ProvisionPortVlanPortType)#createintVlan
createIntVlanReq vlan_id 2
Controller(config-controller-ProvisionPortVlanPortType)#createintVlan
createIntVlanReq address ipv4 ipv4_address address 7.6.15.59
Controller(config-controller-ProvisionPortVlanPortType)#createintVlan
createIntVlanReq address ipv4 ipv4_address mask 255.255.0.0
Controller(config-controller-ProvisionPortVlanPortType)#createintVlan
commit
```

**Step 8** Now add route using 'nidmanagemet' template.

```
Controller#conf t
Controller(config)#controller nid 1/1
```

```

Controller(config-controller) #ProvisionNIDMgmtType
Controller(config-controller-ProvisionNIDMgmtType) #setiproute
setIpRouteReq ??ipv4_address 0.0.0.0
Controller(config-controller-ProvisionNIDMgmtType) #setiproute
setIpRouteReq ipv4_mask 0.0.0.0
Controller(config-controller-ProvisionNIDMgmtType) #setiproute
setIpRouteReq gateway_ip 7.6.0.1
Controller(config-controller-ProvisionNIDMgmtType) #setiproute commit

```

**Step 9** Configure the connected Cisco ME1200 NID interface as trunk and allow the specified VLAN.

```

Controller#conf t
Controller(config) #controller nid 1/1
Controller(config-controller) #ProvisionPortVlanPortType
Controller(config-controller-ProvisionPortVlanPortType) # modifySwPort
modifySWPortConfig interface 1
Controller(config-controller-ProvisionPortVlanPortType) #modifySwPort
modifySWPortConfig mode trunk allowed vlan 2
Controller(config-controller-ProvisionPortVlanPortType) #modifySwPort
commit

```

**Step 10** After above steps, using ‘platform nid-controller’ add the NID with the desired IP.

```

Controller#conf t
Controller(config) #platform nid-controller add 7.6.15.59
Controller(config) #end

```

**Step 11** Check if the Cisco ME1200 NID has been added to UPE NID Controller,

```

Controller#show platform nid-controller nids

```

| NID_ID | MAC Address | IP Address | Lease | Physical Port | VLAN |
|--------|-------------|------------|-------|---------------|------|
| 1      | n/a         | 192.0.2.1  | n/a   | n/a           | n/a  |
| n/a    | static      |            |       |               |      |
| 2      | n/a         | 7.6.15.59  | n/a   | n/a           | n/a  |
| n/a    | static      |            |       |               |      |

**Step 12** Now, using ‘controller nid 1/2’ the Cisco ME1200 NID can be accessed on a different SVI.



## AC and DC Input Power

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This chapter provides the installation instructions for the AC and DC input power for the Cisco ME1200 NID switches

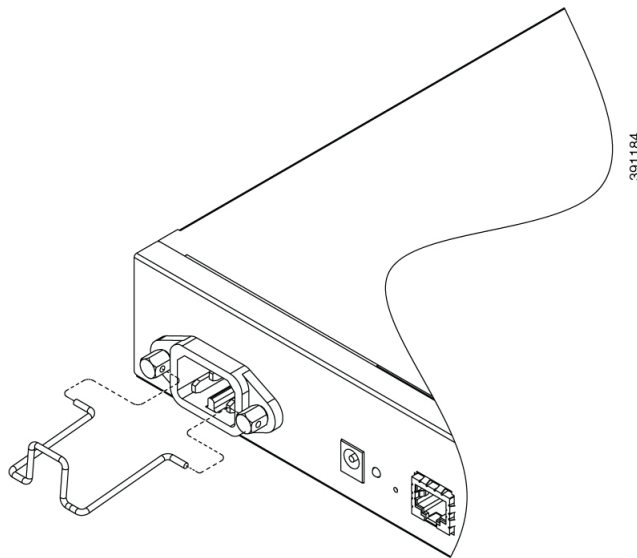
- [Installing an AC Power Cord Retainer Clip, page 3-1](#)
- [Installing an AC Power Cord, page 3-2](#)
- [Installing an AC-to-DC Power Adapter, page 3-2](#)
- [Wiring the DC Input Power Source, page 3-3](#)
- [Grounding the Switch, page 3-4](#)

### Installing an AC Power Cord Retainer Clip

Follow these steps to install a AC power cord retainer clip on the switch.

- 
- Step 1** Press the both side of the retainer clip and installing retainer clip through the hole on the hex screws.(see figure 3-1)

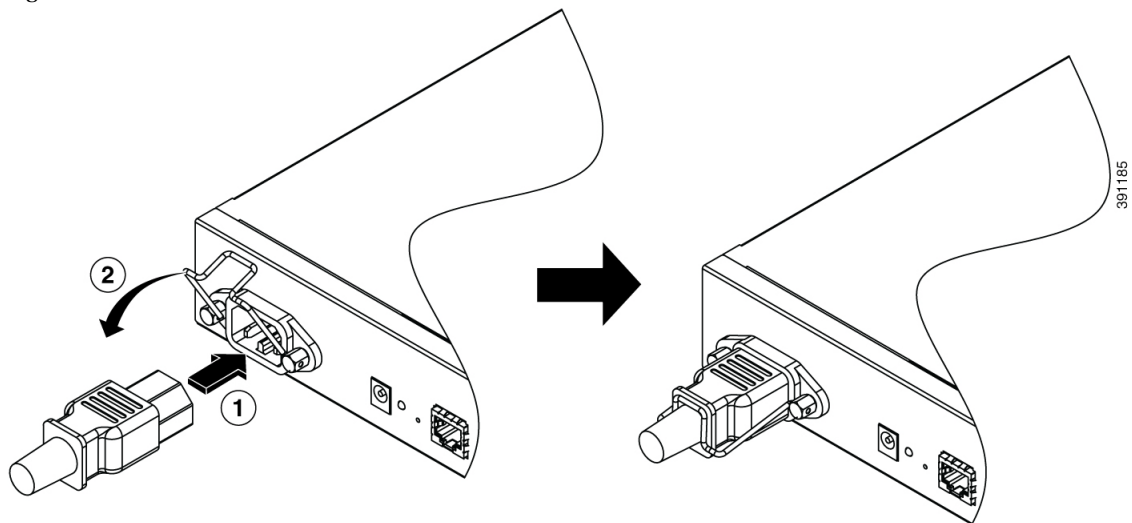
Figure 3-1 AC Power Retainer



## Installing an AC Power Cord

The AC input needs a power cord with IEC-C-15 type connector. Attach the power-cord retainer clip to the switch. (see Figure 3-2).

Figure 3-2 AC Power Cord and Retainer in a Switch



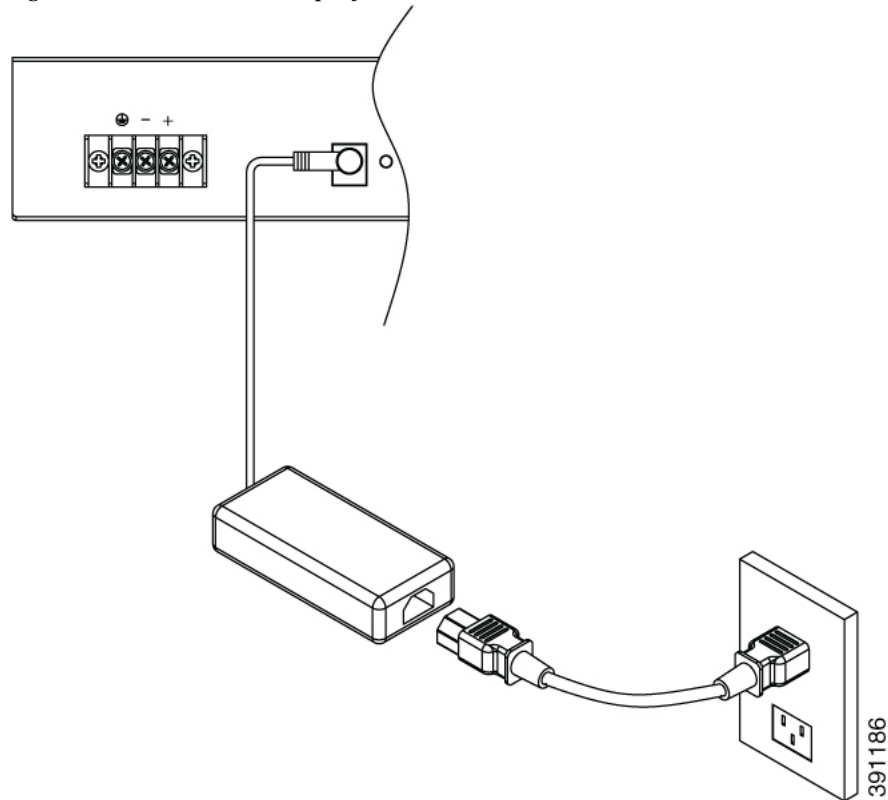
## Installing an AC-to-DC Power Adapter

The DC jack's central post is 2.5mm wide and conforms to the DC receptacle (2.5mm).

**Step 1** Connect the DC jack cable between ME1200-4S-A/D and adapter

**Step 2** Connect the AC Power Cord between adapter and power source (see Figure 3-3).

*Figure 3-3 DC +12V input jack*



## Wiring the DC Input Power Source

Before you wire the DC input power source, review these warnings and the information:

  
**Warning**

**A readily accessible two-poled disconnect device must be incorporated in the fixed wiring.** Statement 1022

  
**Warning**

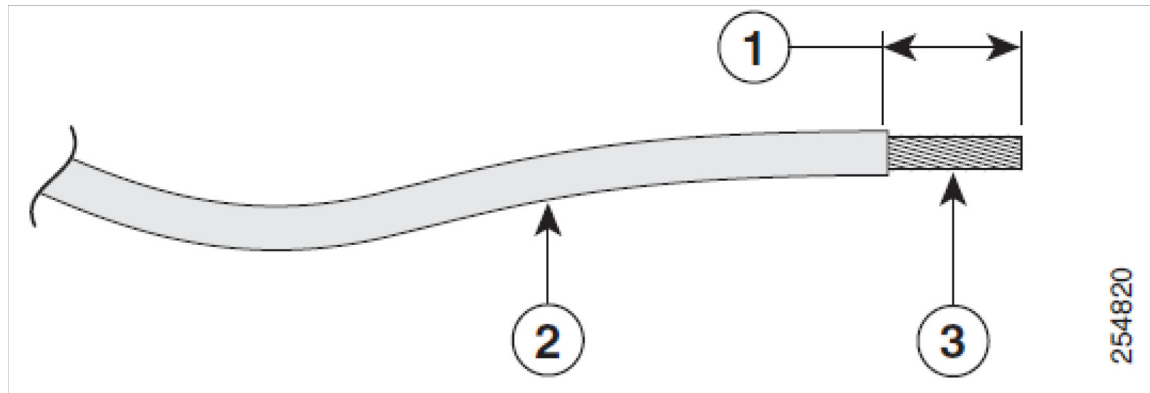
**Only trained and qualified personnel should be allowed to install, replace, or service this equipment.** Statement 1030

  
**Caution**

The ME1200-4S-D DC input power voltage should be within -20.5 to -72 VDC. If the supply voltage is not in this range, the switch might not operate properly or might be damaged.

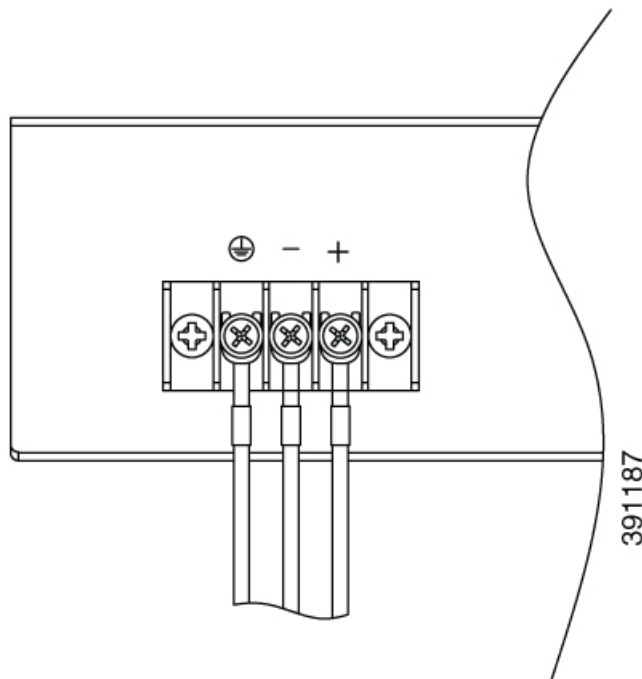
**Step 1** Using a wire-stripping tool, strip each of the wires coming from the DC input power source to 0.350 inch (8.9 mm) ± 0.02 inch (0.5 mm).

Figure 3-4 Stripping the DC Input Power Source Wire



- Step 2** Crimp the fork-type terminals to the 14 or 16 AWG DC power input wires.
- Step 3** Connect the wires to the DC input power terminals as shown in Figure 3-4. Make sure to match the polarity (negative to negative, positive to positive) when connecting the wires to the terminal.

Figure 3-5 Connecting the DC Input Power Terminal Blocks



- Step 4** Use a ratcheting torque Phillips-head screwdriver to torque the terminal-block screw to 14 in-lb.

**Caution**

Do not over-torque the terminal-block screws. The recommended maximum torque is 14 in-lb.

## Grounding the Switch

Follow the grounding procedure instructions and observe these warnings.

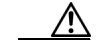


**Warning**

**This equipment must be grounded. 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.**  
Statement 1024

**Warning**

**When installing or replacing the unit, the ground connection must always be made first and disconnected last.** Statement 1046

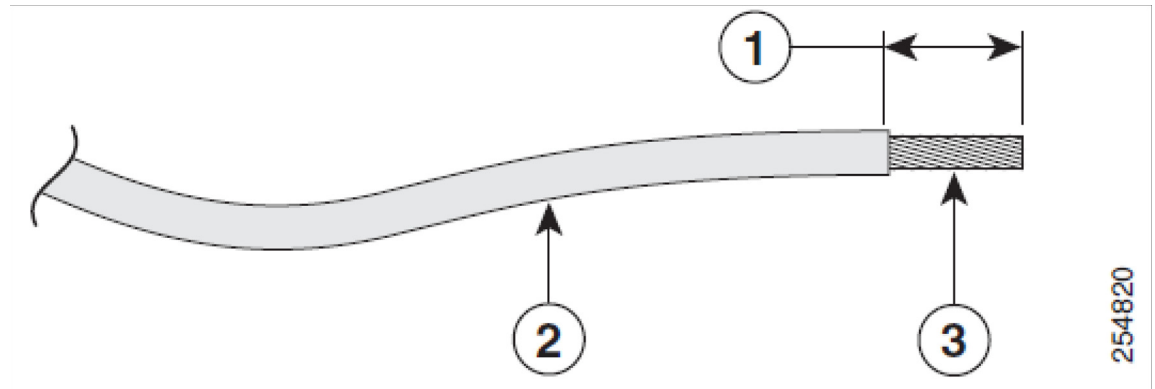
**Caution**

To make sure that the equipment is reliably connected to earth ground, follow the grounding procedure instructions, and use a UL-listed lug suitable for number-6 AWG wire and two number-10-32 ground-lug screws.

Follow these steps to install a dual-hole ground lug on the switch. Make sure to follow any grounding requirements at your site.

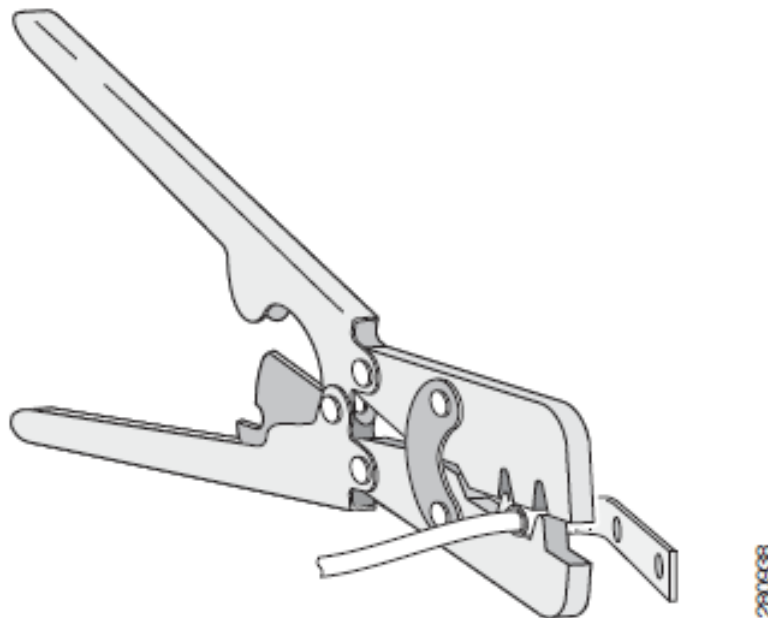
- Step 1** Locate the dual-hole lug that ships with the switch. (The grounding lug is included in the packaging accessories.)
- Step 2** If your ground wire is insulated, use a wire stripping tool to strip the 6 AWG ground wire to 0.875 inch (12.7 mm)  $\pm$  0.02 inch (0.5 mm)

*Figure 3-6 Stripping the Ground Wire*



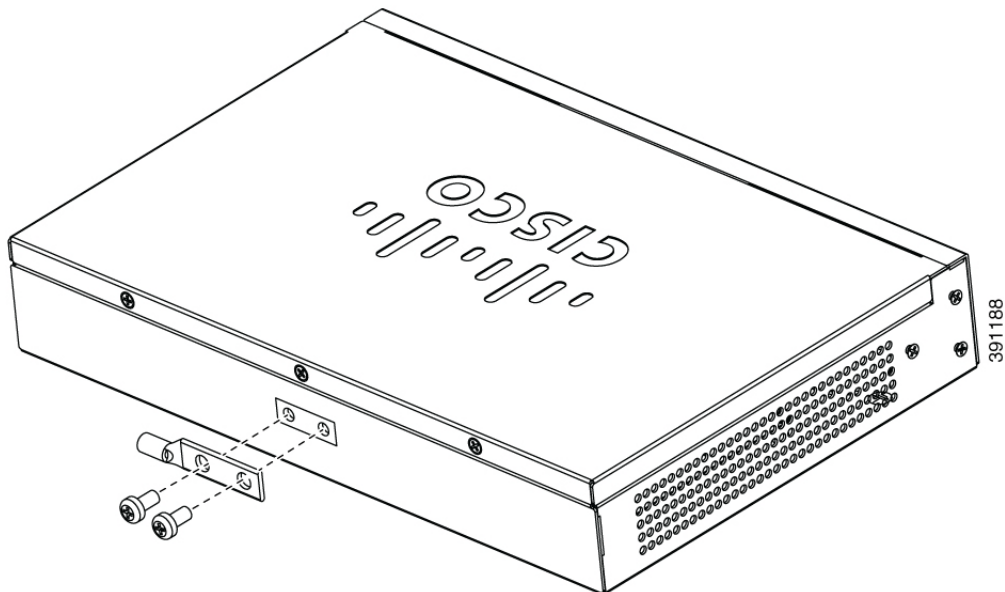
- Step 3** Slide the open end of the ground lug over the exposed area of the wire.
- Step 4** Crimp the ground lug to the wire (see Figure 3-7).

**Figure 3-7** Crimping the Ground Lug



- Step 5** Attach the dual-hole lug and the wire assembly to the chassis ground connection with the supplied screws (see Figure 3-8).

**Figure 3-8** Attaching the Ground Lug and Wire Assembly



- Step 6** Use a ratcheting torque Phillips-head screwdriver to torque the ground-lug screws to 32 in.-lb.
- Step 7** Connect the other end of the grounding wire to an appropriate grounding point at your site or to the rack.



# Troubleshooting

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- [Diagnosing Problems, page 4-1](#)
- [Switch Performance, page 4-1](#)
- [Finding the Switch Serial Number, page 4-2](#)

## Diagnosing Problems

The LEDs on the front panel provide troubleshooting information about the switch. They show power-on self-test (POST) failures, port-connectivity problems, and overall switch performance. You can also get statistics from the CLI on the UPE NID Controller. See the Cisco NID Controller guide on Cisco.com for more information.

## Switch Performance

### Speed, Duplex, and Auto-negotiation

If the port statistics show a large amount of alignment errors, frame check sequence (FCS), or late-collisions errors, this might mean a speed or duplex mismatch.

A common issue with speed and duplex is when the duplex settings are mismatched between two switches, between a switch and a router, or between the switch and a workstation or server. Mismatches can happen when manually setting the speed and duplex or from auto-negotiation issues between the two devices. To maximize switch performance and to ensure a link, follow one of these guidelines when changing the duplex or speed settings.

- Let both ports auto-negotiate both speed and duplex.
- Manually set the speed and duplex parameters for the ports on both ends of the connection.
- If a remote device does not auto-negotiate, set the same duplex settings on the two ports. The speed parameter adjusts itself even if the connected port does not auto-negotiate.

## Auto-negotiation and NICs

Problems sometimes occur between the switch and third-party network interface cards (NICs). By default, the switch ports and interfaces are set to auto-negotiate. Devices like laptops or other devices are commonly set to auto-negotiate, yet sometimes auto-negotiation issues occur.

To troubleshoot auto-negotiation problems, try manually setting both sides of the connection. If this does not solve the problem, there could be a problem with the firmware or software on your NIC. You can resolve this by upgrading the NIC driver to the latest available version.

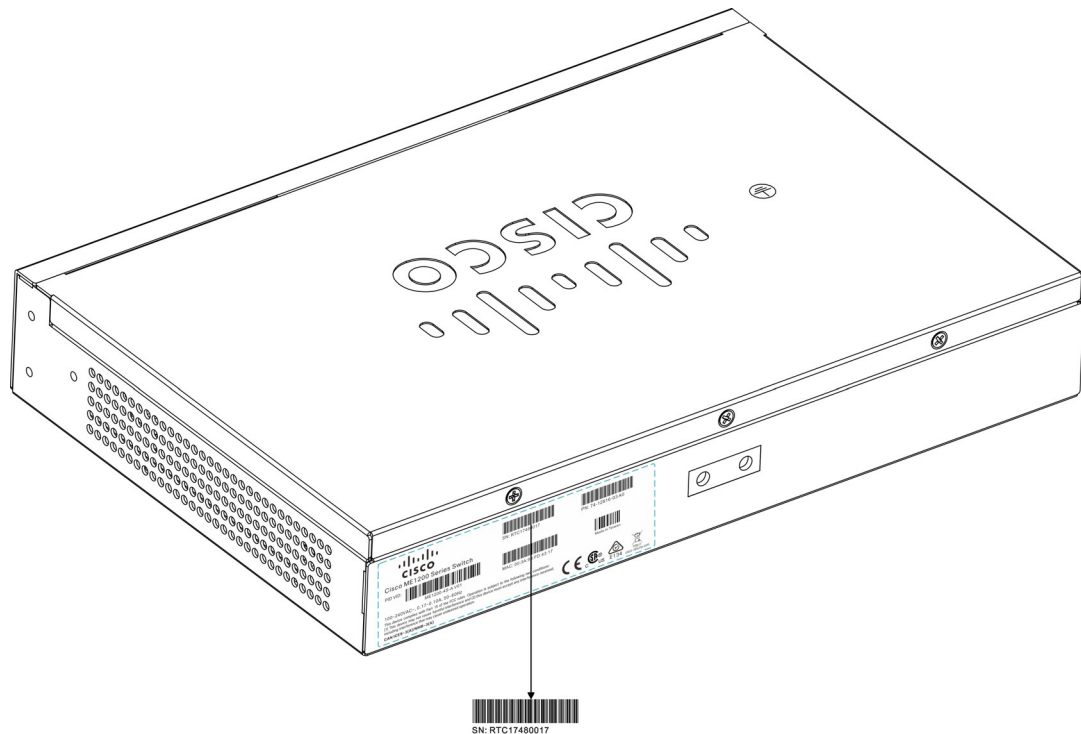
## Cabling Distance

If the port statistics show excessive FCS, late-collision, or alignment errors, verify that the cable distance from the switch to the connected device meets the recommended guidelines. See the “[Connector and Cable Specifications](#)” for cabling guidelines.

## Finding the Switch Serial Number

If you contact Cisco Technical Assistance, you need to know the serial number of your switch. Use the following figure to locate the serial number location. You can also use the show inventory user EXEC command to get the serial number.

*Figure 4-1 Serial Number location on the Cisco ME1200-4S-A and ME1200-4S-D*





# Technical Specifications

- [Environmental and Technical Specifications for the Switch, page A-1](#)
- [Environmental and Technical Specifications for the Power Adapter, page A-2](#)

## Environmental and Technical Specifications for the Switch

*Table A-1 Environmental Ranges for the Switch*

| <b>Environmental Ranges</b> |   |
|-----------------------------|---|
| Relative humidity           | 5 to 95% (non condensing)   |
| Operating temperature       | -40° to 149°F(-40° to 65°C)   |
| Storage temperature         | -49° to 185°F(-45° to 85°C)   |
| Operating altitude          | Up to 4,000m (without external adapter)<br>Up to 2,000m (with external adapter) |
| Storage altitude            | Up to 15,000 ft (4570 m)  |

*Table A-2 Technical Specifications ME1200-4S-A*

| <b>Physical Dimensions</b>   |   |
|--|---|
| weight   | 2.84 lb (1.29 kg)   |
| Dimensions( H x W x D)   | 1.73 x 10.59 x 7.09 in. (4.4 x 26.9 x 18.0 cm)  |
| <b>AC Power Requirements</b>   |   |
| Power consumption with 1 AC internal power supply installed              | Total:30.30 BTUs per hour (maximum).<br>Maximum: 8.88 W (worst-case SFPs, 100% traffic).<br>Typical: 8.74 W (4 SFPs with 1000BASE-SX, 100% traffic).<br>Minimum: 5.71 W (no cables or SFP modules installed).<br>Power rating: 120 V (0.018 KVA), 230 V (0.023KVA). |
| Power consumption with 1 AC-to-DC 12VDC external power adapter installed | Total: 30.61 BTUs per hour (maximum).<br>Maximum:8.97 W (worst-case SFPs, 100% traffic).<br>Typical:8.58 W (4 SFPs with 1000BASE-SX, 100% traffic).<br>Minimum: 5.54 W (no cables or SFP modules installed).<br>Power rating: 120 V (0.018 KVA), 230 V (0.023 KVA). |

Table A-3 Technical Specifications ME1200-4S-D

| <b>Physical Dimensions</b>   |   |
|--|---|
| weight   | 3.13 lb (1.42 kg)   |
| Dimensions( H x W x D)   | 1.73 x 10.59 x 7.09 in. (4.4 x 26.9 x 18.0 cm)  |
| <b>DC Power Requirements</b>   |   |
| Input voltage  | -20.5 to -72 VDC.   |
| Power consumption with 1 DC internal power supply installed              | Total: 30.78 BTUs per hour (maximum).<br>Maximum: 9.02 W (-20.5VDC input, worst-case SFPs, 100% traffic).<br>Typical-1: 8.4 W (24 VDC, 4 SFPs with 1000BASE-SX, 100% traffic).<br>Typical-2: 8.64 W (48 VDC, 4 SFPs with 1000BASE-SX, 100% traffic).<br>Minimum: 5.76 W (72 VDC, no cables or SFP modules installed). |
| Power consumption with 1 AC-to-DC 12VDC external power adapter installed | Total: 28.53 BTUs per hour (maximum).<br>Maximum: 8.36 W (worst-case SFPs, 100% traffic).<br>Typical:8.00 W (4 SFPs with 1000BASE-SX, 100% traffic).<br>Minimum:5.54 W (no cables or SFP modules installed).<br>Power rating: 120 V (0.0168 KVA), 230 V (0.0207 KVA).   |

## Environmental and Technical Specifications for the Power Adapter

Table A-4 External Power Adapter Technical Specifications

| <b>Power Specifications</b>       |  |
|-----------------------------------|--|
| Maximum output power              | 40W  |
| Input voltage range and frequency | 100 to 240 VAC $\pm$ 10% (auto-ranging), 50 to 60 Hz           |
| Input current                     | 0.9A MAX<br><br>Note For AC input, a 3.15A fuse is recommended |
| Maximum output ratings            | 12 V @ 3.33 A  |
| Total input BTU                   | 655BTUs per hour   |



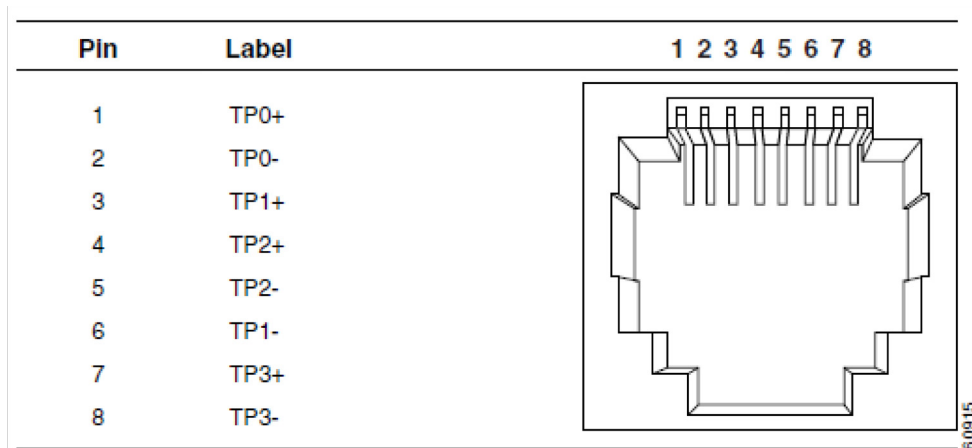
# Connector and Cable Specifications

- [10/100/1000](#), page B-1
- [SFP Module Connectors](#), page B-1
- [SFP Module Cabling](#), page B-2
- [Console Port Adapter Pin-outs](#), page B-5

## 10/100/1000

The 10/100/1000 Ethernet ports use standard RJ-45 connectors and Ethernet pin-outs.

*Figure B-1 10/100/1000 Port Pin-out*



## SFP Module Connectors

Figure B-2, Figure B-3, and Figure B-4 show the SFP module connectors.

Figure B-2 Duplex LC Cable Connector

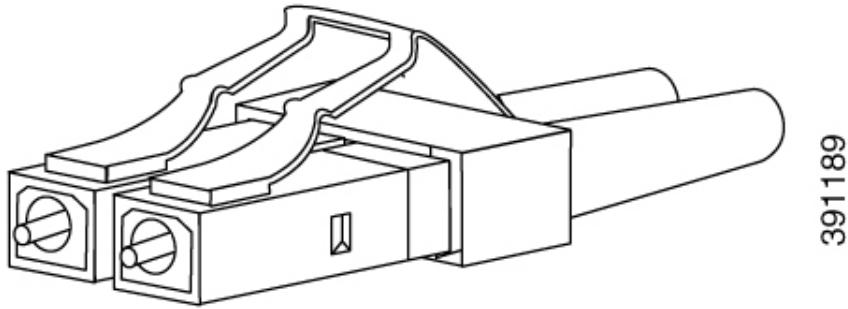


Figure B-3 Simplex LC Cable Connector

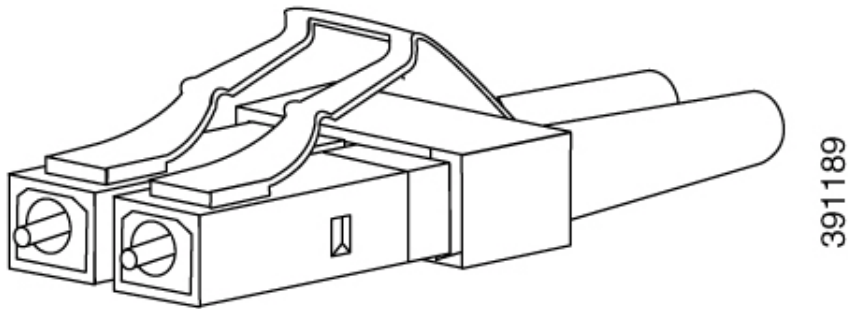


Figure B-4 Copper SFP Module RJ-45 Connector

| Pin | Label | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-----|-------|---|---|---|---|---|---|---|---|
| 1   | TP0+  |   |   |   |   |   |   |   |   |
| 2   | TP0-  |   |   |   |   |   |   |   |   |
| 3   | TP1+  |   |   |   |   |   |   |   |   |
| 4   | TP2+  |   |   |   |   |   |   |   |   |
| 5   | TP2-  |   |   |   |   |   |   |   |   |
| 6   | TP1-  |   |   |   |   |   |   |   |   |
| 7   | TP3+  |   |   |   |   |   |   |   |   |
| 8   | TP3-  |   |   |   |   |   |   |   |   |

## SFP Module Cabling

Each port must match the wave-length specifications on the other end of the cable, and for reliable communications, the cable must not exceed the required cable length. Copper 1000BASE-T SFP transceivers use standard four twisted-pair, Category 5 (or greater) cable at lengths up to 328 feet (100meters).



Table B-1 Fiber-Optic SFP Module Port Cabling Specification

| SFP Module                                       | Wavelength (nanometers)                                 | Fiber Type                  | Core Size/ Cladding Size(micron)                   | Modal Bandwidth (MHx/km) <sup>1</sup> | Cable Distance  |
|--|---|-----------------------------|--|---------------------------------------|---|
| 100Base-BX<br>(GLC-FE-100BX-D<br>GLC-FE-100BX-U) | 1310 TX<br>1550 RX                                      | SMF                         | G.652 <sup>2</sup>                                 | —                                     | 32,810 feet (10 km)   |
| 100Base-EX                                       | 1310  | SMF                         | G.652 <sup>2</sup>                                 | —                                     | 131,240ft (40km)  |
| 100Base-FX<br>(GLC-GE-100FX)                     | 1310  | MMF                         | 50/125<br>62.5/125                                 | 500<br>500                            | 6,562 feet (2 km)<br>6,562 feet (2 km)  |
| 100Base-FX<br>(GLC-FE-100FX)                     | 1310  | MMF                         | 50/125<br>62.5/125                                 | 500<br>500                            | 6,562 feet (2 km)<br>6,562 feet (2 km)  |
| 100BASE-LX<br>(100BASE-LX10)                     | 1310  | SMF                         | G.652 <sup>2</sup>                                 | —                                     | 32,810 feet(10 km)  |
| 100BASE-ZX                                       | 1550  | SMF                         | G.652  | —                                     | 262,480 feet (80km)   |
| 1000BASE-BX10-D<br>(GLC-BX-D)                    | 1490TX<br>1310RX  | SMF                         | G.652 <sup>2</sup>                                 | —                                     | 32,810 feet(10 km)  |
| 1000BASE-BX10-U<br>(GLC-BX-D)                    | 1310TX<br>1490RX  | SMF                         | G.652 <sup>2</sup>                                 | —                                     | 32,810 feet(10 km)  |
| 1000BASE-SX<br>(GLC-SX-MM)                       | 850   | MMF                         | 62.5/125<br>62.5/125<br>50/125<br>50/125           | 160<br>200<br>400<br>500              | 722 feet (220m)<br>902 feet (275m)<br>1640 feet (500m)<br>1804 feet (550m)    |
| 1000BASE-LX/LH<br>(GLC-LH-SM)                    | 1310  | MMF <sup>3</sup><br><br>SMF | 62.5/125<br>50/125<br>50/125<br>G.652 <sup>2</sup> | 500<br>400<br>500<br>—                | 1804 feet (550m)<br>1804 feet (550m)<br>1804 feet (550m)<br>32,810 feet(10km) |
| 1000BASE-ZX<br>(GLC-ZX-SM)                       | 1550  | SMF                         | G.652 <sup>2</sup>                                 | —                                     | 43.4 to 62 miles<br>(70 to 100 km) <sup>4</sup>                               |
| CWDM   | 1470, 1490,<br>1510, 1530,<br>1550, 1570,<br>1590, 1610 | SMF                         | G.652 <sup>2</sup>                                 | —                                     | 62 miles (100 km)   |

# Cable Pin-outs

Figure B-5 Two Twisted-Pair Straight-Through Cable Schematic

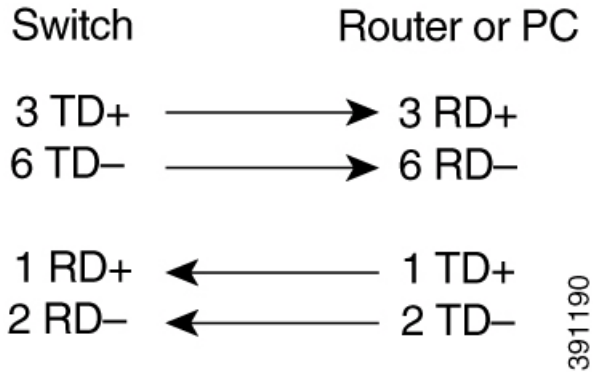


Figure B-6 Two Twisted-Pair Crossover Cable Schematic

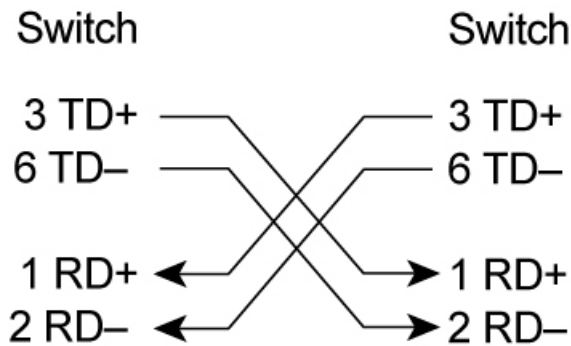


Figure B-7 Four Twisted-Pair Straight-Through Cable Schematic for 1000 Base-T Ports

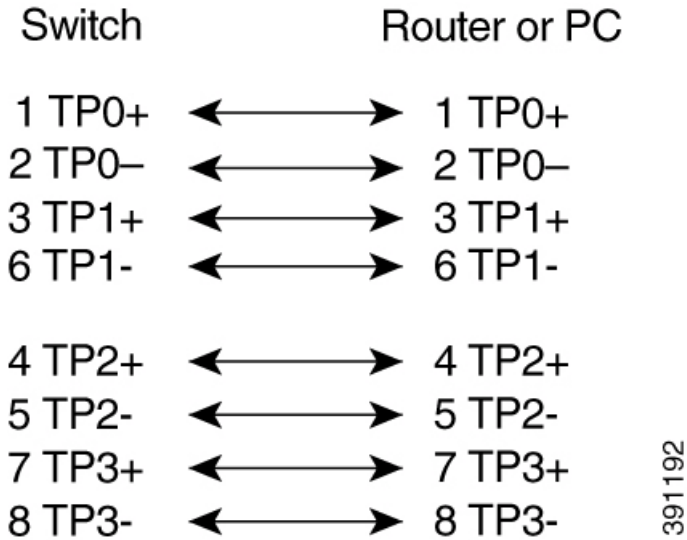
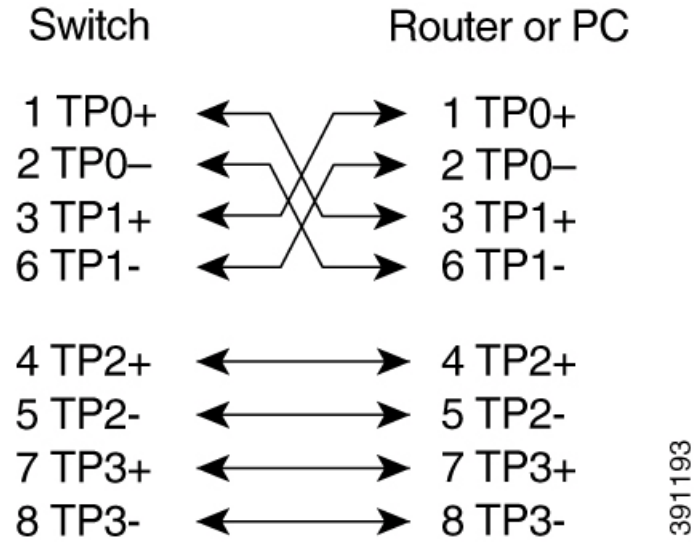
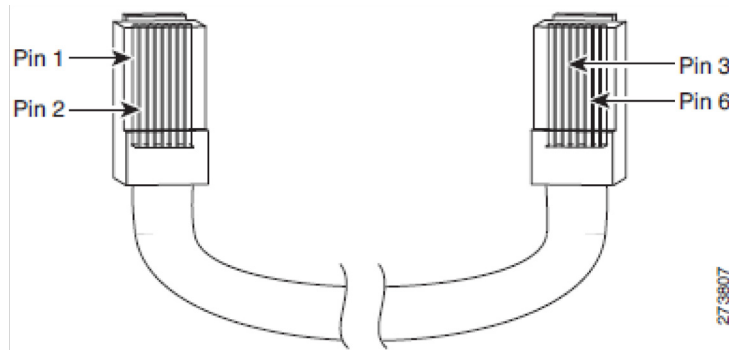


Figure B-8 Four Twisted-Pair Crossover Cable Schematics for 1000 Base-T Ports



To identify a crossover cable, compare the two modular ends of the cable. Hold the cable ends side-by-side, with the tab at the back. The wire connected to pin 1 on the left plug should be the same color as the wire connected to pin 3 on the right plug. The wire connected to pin 2 on the left plug should be the same color as the wire connected to pin 6 on the right plug.

Figure B-9 Identifying a Crossover Cable



## Console Port Adapter Pin-outs

The console port uses an 8-pin RJ-45 connector, which is described in Table B-3 and Table B-4. If you did not order a console cable with your switch, you need to provide an RJ-45-to-DB-9 adapter cable to connect the console port of the switch to a console PC. You need to provide an RJ-45-to-DB-25 female DTE adapter if you want to connect the switch console port to a terminal. You can order a kit (part number ACS-DSBUASYN=) containing that adapter from Cisco. For console port and adapter pin-out information, see Table B-2 and Table B-3.

Table B-2 lists the pin-outs for the console port, the RJ-45-to-DB-9 adapter cable, and the console device.

**Table B-2** Console Port Signaling Using a DB-9 Adapter

| Switch Console Port (DTE) | RJ-45-to-DB-9 Terminal Adapter | Console Device |
|---------------------------|--------------------------------|----------------|
| Signal                    | DB-9 Pin                       | Signal         |
| RTS                       | 8                              | CTS            |
| DTR                       | 6                              | DSR            |
| TxD                       | 2                              | RxD            |
| GND                       | 5                              | GND            |
| GND                       | 5                              | GND            |
| RxD                       | 3                              | TxD            |
| DSR                       | 4                              | DTR            |
| CTS                       | 7                              | RTS            |

Table B-3 lists the pin-outs for the console port, RJ-45-to-DB-25 female DTE adapter, and the console device.

**Note**

The RJ-45-to-DB-25 female DTE adapter is not supplied with the switch. You can order a kit (part number ACS-DSBUASYN=) containing this adapter from Cisco.

**Table B-3** Console Port Signaling Using a DB-25 Adapter

| Switch Console Port (DTE) | RJ-45-to-DB-25 Terminal Adapter | Console Device |
|---------------------------|---------------------------------|----------------|
| Signal                    | DB-9 Pin                        | Signal         |
| RTS                       | 5                               | CTS            |
| DTR                       | 6                               | DSR            |
| TxD                       | 3                               | RxD            |
| GND                       | 7                               | GND            |
| GND                       | 7                               | GND            |
| RxD                       | 2                               | TxD            |
| DSR                       | 20                              | DTR            |
| CTS                       | 4                               | RTS            |