Switch Installation

This chapter contains these topics:

Safety Warnings

Warning To reduce the risk of electric shock, disconnect all power cords before servicing.

Warning The switch is to be connected only to PoE networks without routing to the outside plant.

This section includes the warning statements relating to basic installation. Read this section before you start the installation procedure.

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 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**

Warning Connect USB Device to a Certified USB Port. **Statement 388**

Warning To avoid or reduce the risk of personal injury, do not use the product if the product has been exposed to irregular environmental conditions, if the product has been misused or if parts of the product have been damaged. Consult qualified service personnel. Never try to service the product yourself. **Statement 0416**

Warning To reduce the risk of electric shock, fire or personal injury, do not place power cables in areas where they may be walked on or damaged by items placed upon or against it. **Statement 0417**

Warning This product is intended for use in a normal environment based on the standard IEC60950-1 and IEC62368-1. Do not use the product in vehicles, on board ships, in aircrafts or in medical applications with physical connection to the patient, nor in environments with exposure to moisture, dust, vibration or ingress of water. **Statement 0418**

Warning Equipment is intended for installation in Information Technology Equipment Rooms. Suitable for installation in Information Technology Rooms in accordance with Article 645 of the National ElectricalCode and NFPA 75. **Statement 0444**

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 Class 1 laser product. **Statement 1008**

Warning There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions. **Statement 1015**

Warning This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. **Statement 1017**

Warning Take care when connecting units to the supply circuit so that wiring is not overloaded. **Statement 1018**

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 Class 1 LED product. **Statement 1027**

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

Warning To prevent the system from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of: <122°F (50°C).**Statement 1047**

Warning Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments. **Statement 1051**

Warning Invisible laser radiation may be emitted from the end of the unterminated fiber cable or connector. Do not view directly with optical instruments. Viewing the laser output with certain optical instruments (for example, eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard.

Fiber type and Core diameter (µm)	Wavelength (nm)	Max. Power (mW)
SM 11	1200 - 1400	39 - 50
MM 62.5	1200 - 1400	150
MM 50	1200 - 1400	135
SM 11	1400 - 1600	112 - 145

Statement 1056

Warning 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**

Warning Voltages that present a shock hazard may exist on Power over Ethernet (PoE) circuits if interconnections are made using uninsulated exposed metal contacts, conductors, or terminals. Avoid using such interconnection methods, unless the exposed metal parts are located within a restricted access location and users and service people who are authorized within the restricted access location are made aware of the hazard. A restricted access area can be accessed only through the use of a special tool, lock and key or other means of security. **Statement 1072**

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**

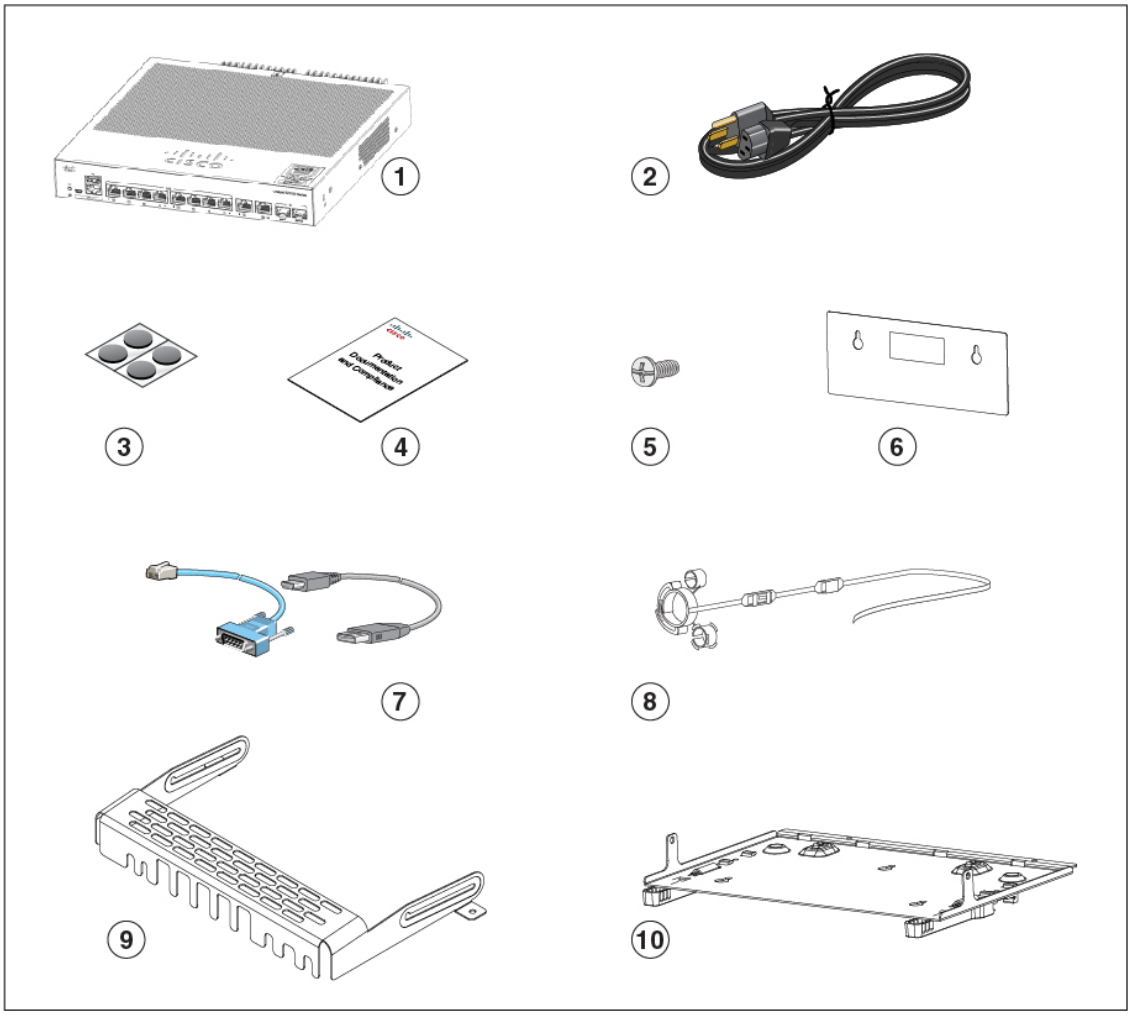
Warning To prevent airflow restriction, allow clearance around the ventilation openings to be at least: 3 inches (7.6 cm). **Statement 1076**

Warning Hot surface. **Statement 1079**

Box Contents

This section lists the contents of the shipping box for an 8-port and 16-port Cisco Catalyst 1000 switch.

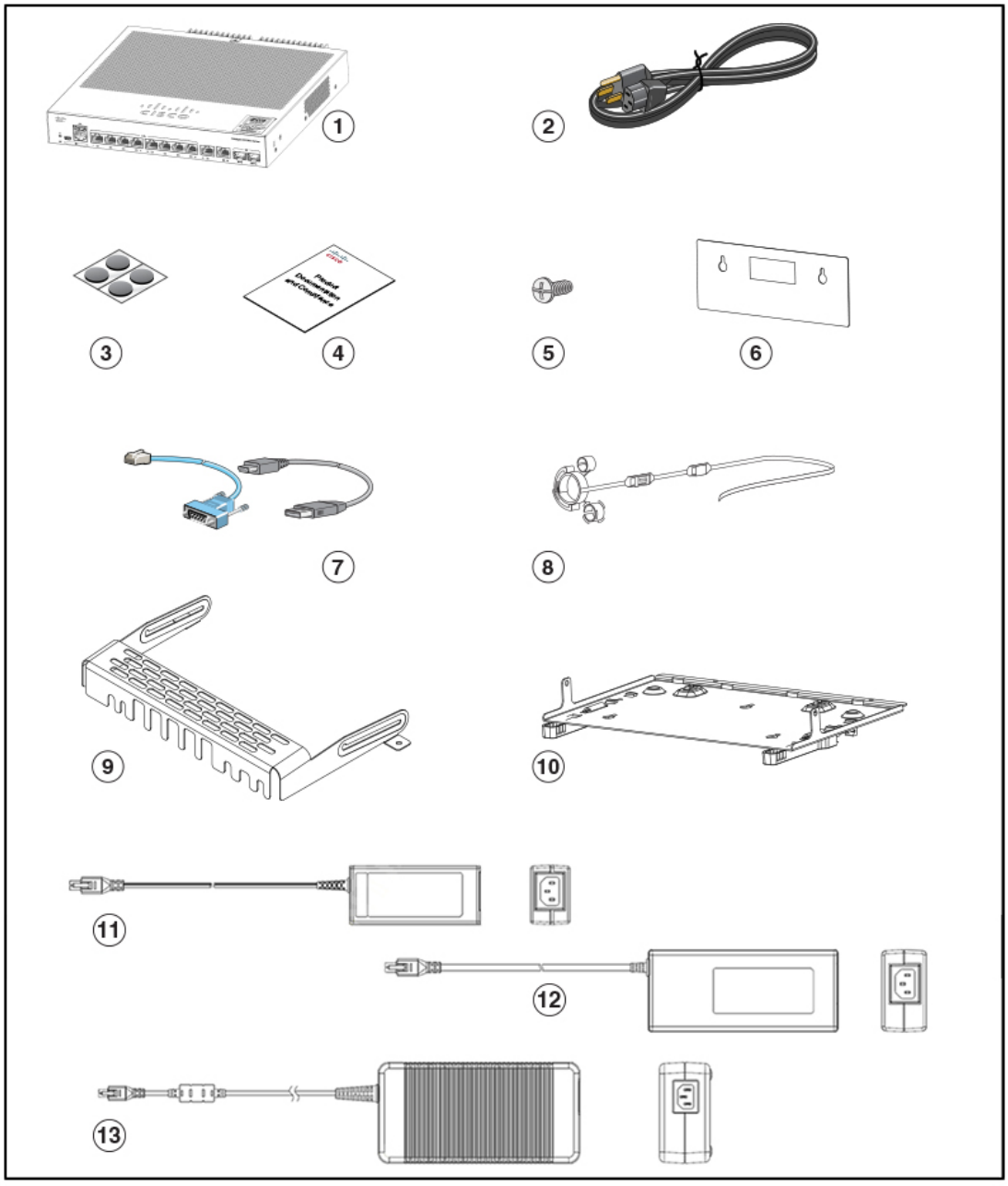
Figure 1: Box Contents of an 8-Port and 16-Port Cisco Catalyst 1000 Switch



1	8-port or 16-port Cisco Catalyst 1000 switch	6	Screw template (47-100996-02)
2	AC power cord	7	(Optional) Console cable or USB cable
3	Four rubber mounting feet (51-0089)	8	(Optional) Power cord retainer
4	Compliance documentation (78-101287-01)	9	(Optional) Cable guard
5	Three number-8 screws (48-1689-01)	10	(Optional) DIN rail mount (only with Cisco Catalyst 1000 16-port switch models)

This section lists the contents of the shipping box for an externally powered 8-port and 16-port Cisco Catalyst 1000 switch.

Figure 2: Box Contents of an Externally Powered 8-Port and 16-Port Cisco Catalyst 1000 Switch



1	Externally powered 8-port or 16-port Cisco Catalyst 1000 switch	8	(Optional) Power cord retainer
2	AC power cord	9	(Optional) Cable guard

3	Four rubber mounting feet (51-0089)	10	(Optional) DIN rail mount (only with Cisco Catalyst 1000 16-port switch models)
4	Compliance documentation (78-101287-01)	11	Power Adaptor - PWR-ADPT-18W[1]
5	Three number-8 screws (48-1689-01)	12	Power Adaptor - PWR-ADPT-85W[2]
6	Screw template (47-100996-02)	13	Power Adaptor - PWR-ADPT-150W[3]
7	(Optional) Console cable or USB cable		

[1] for C1000-8T-E-2G-L and C1000-16T-E-2G-L switch models
[2] for C1000-8P-E-2G-L switch models
[3] for C1000-8FP-E-2G-L and C1000-16P-E-2G-L switch models

Tools and Equipment

Obtain these necessary tools:

- A Number-2 Phillips screwdriver.
- Drill with #27 drill bit (0.144-inch [3.7 mm]) for mounting an 8-port and 16-port switch.

Installation Guidelines

When determining where to install the switch, verify that these guidelines are met:

- Clearance to the switch's front and rear panel should meet these conditions:
  - Front-panel LEDs can be easily read.
  - Access to ports is sufficient for unrestricted cabling.
  - AC power cord can reach from the AC power outlet to the connector on the switch's rear panel.
- 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. To avoid any flow blockage, we strongly recommend these guidelines:
  - Allow at least 3 in. (7.6 cm) of clearance from the left and the right sides, and the front and rear of the switch.
  - Allow at least 1.75 in. (4 cm) of clearance from the top cover, if you are installing the switch in upright position.
  - Allow at least 3 in. (7.6 cm) of clearance from the top cover, if you are installing the switch.

- Temperature around the unit does not exceed 122°F (50°C). If the switch is installed in a closed or multirack assembly, the temperature around it might be greater than normal room temperature.
- Humidity around the switch does not exceed 95 percent.
- Altitude at the installation site is not greater than 10,000 feet.
- For 10/100/1000 fixed ports, the cable length from a switch to a connected device cannot exceed 328 feet (100 meters).
- Cooling mechanisms, such as fans and blowers in the switch, can draw dust and other particles causing contaminant build-up inside the chassis, which can result in system malfunction. You must install this equipment in an environment as free from dust and foreign conductive material (such as metal flakes from construction activities) as is possible.
- None of the switch models can be deployed outside of the wiring closet. These switches can only be deployed indoors.

Verifying Switch Operation

Before you install the switch on a wall, or on a table or shelf, power on the switch and verify that it passes POST.

To power on the switch, plug one end of the AC power cord into the switch AC power connector, and plug the other end into an AC power outlet.

As the switch powers on, it begins the POST, a series of tests that runs automatically to ensure that the switch functions properly. LEDs can blink during the test. The SYST LED blinks green.

When the switch completes POST successfully, the SYST LED remains green.If a switch fails POST, the SYST LED turns amber.

POST failures are usually fatal. Call Cisco technical support representative if your switch fails POST.

After a successful POST, unplug the power cord from the switch and install the switch on a wall, on a table, or on a shelf.

Warning Attach only the following Cisco external power system to the switch: Cisco XPS 2200 Statement 387

Mounting the Switch

Mounting on a Desk or Shelf Without Mounting Screws

Procedure

Step 1 Locate the adhesive strip with the rubber feet in the accessory kit.

Step 2 Remove the four rubber feet from the adhesive strip, and attach them to the recessed areas at the bottom of the unit. This prevents the switch from sliding on the desk or shelf.

Note We strongly recommend that you attach the rubber feet. Doing so also helps prevent airflow restriction and overheating.

Step 3 Place the switch on the desk or shelf.

On a Desk, Shelf, or Wall (with Mounting Screws)

Desk- or Shelf-Mounting

Procedure

Step 1 Use the screw template to align the mounting screw holes and also as a guide to make sure that you install the screws into the desk or shelf with proper clearance.

Step 2 Position the screw template on top of the desk or shelf so that the edge that is marked as CABLE SIDE ENTRY faces the front of the desk or shelf. This ensures that the power cord faces the rear of the desk or shelf after the switch is installed.

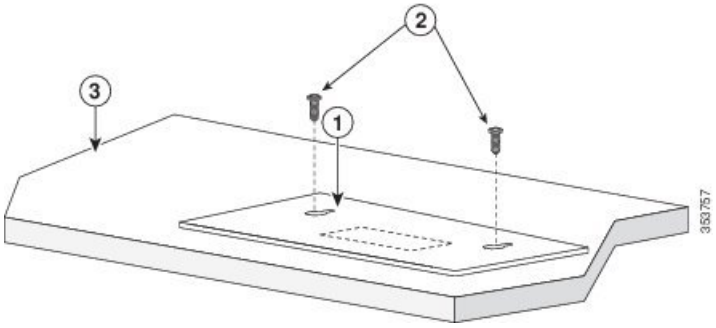
Note Wait before you attach the screw template to the desk or shelf.

Step 3 Peel the adhesive strip off the bottom of the screw template, and attach it to the top of the desk or shelf.

Step 4 Use a 0.144-inch (3.7 mm) or a #27 drill bit to drill a 1/2-inch (12.7 mm) hole in the two screw template slots.

Step 5 Insert two screws in the slots on the screw template, and tighten them until they touch the top of the screw template.

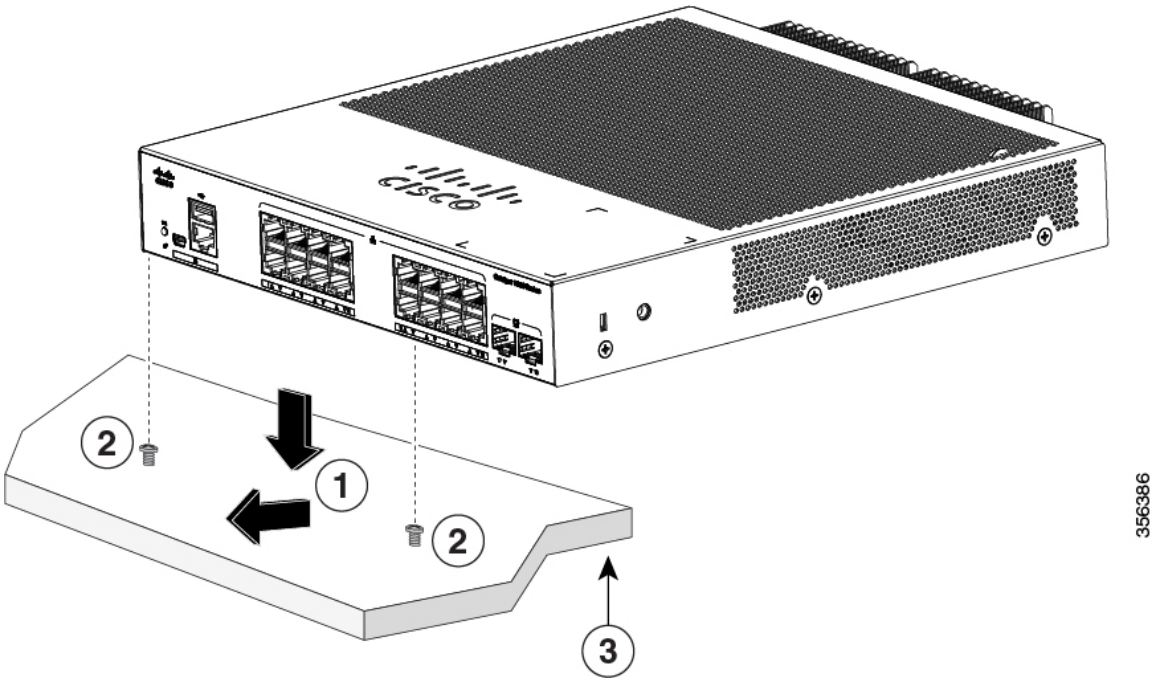
Figure 3: Installing the Mounting Screws on Top of a Desk or a Shelf



Step 6 Remove the screw template from the desk or shelf.

Step 7 Place the switch onto the mounting screws, and slide it forward until it locks in place.

Figure 4: Mounting the Switch on Top of a Desk or Shelf



Warning To prevent airflow restriction, allow clearance around the ventilation openings to be at least: 3 in. (7.6 cm) Statement 1076

Wall-Mounting

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

Caution Do not wall-mount the switch with its front panel facing up. Following safety regulations, wall-mount the switch with its front panel facing down or to the side to prevent airflow restriction and to provide easier access to the cables

Procedure

Step 1 Locate the screw template. The template is used to align the mounting screw holes.

Step 2 Position the screw template so that the edge that is marked as CABLE SIDE ENTRY faces toward the floor.

Note For the best support of the switch and cables, make sure that you attach the switch securely to a wall stud or to a firmly attached plywood mounting backboard

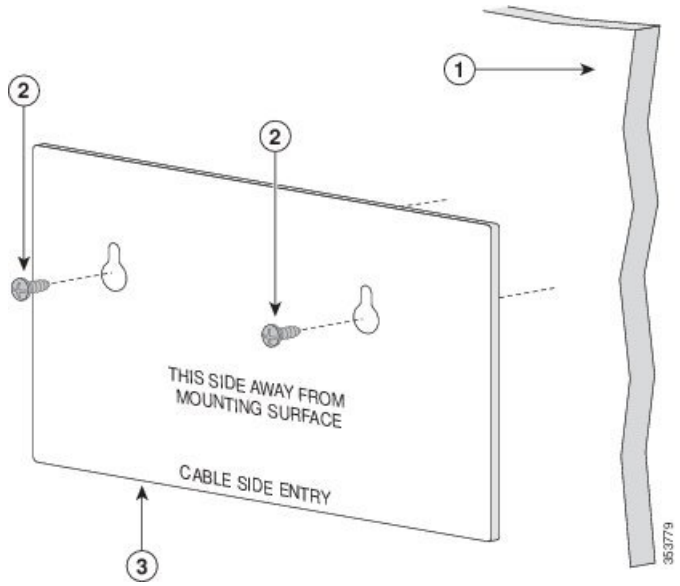
Step 3 Peel the adhesive strip off the bottom of the screw template.

Step 4 Attach the screw template to the wall.

Step 5 Use a 0.144-inch (3.7 mm) or a #27 drill bit to drill a 1/2-inch (12.7 mm) hole in the two screw template slots.

Step 6 Insert two screws in the slots on the screw template, and tighten them until they touch the top of the screw template.

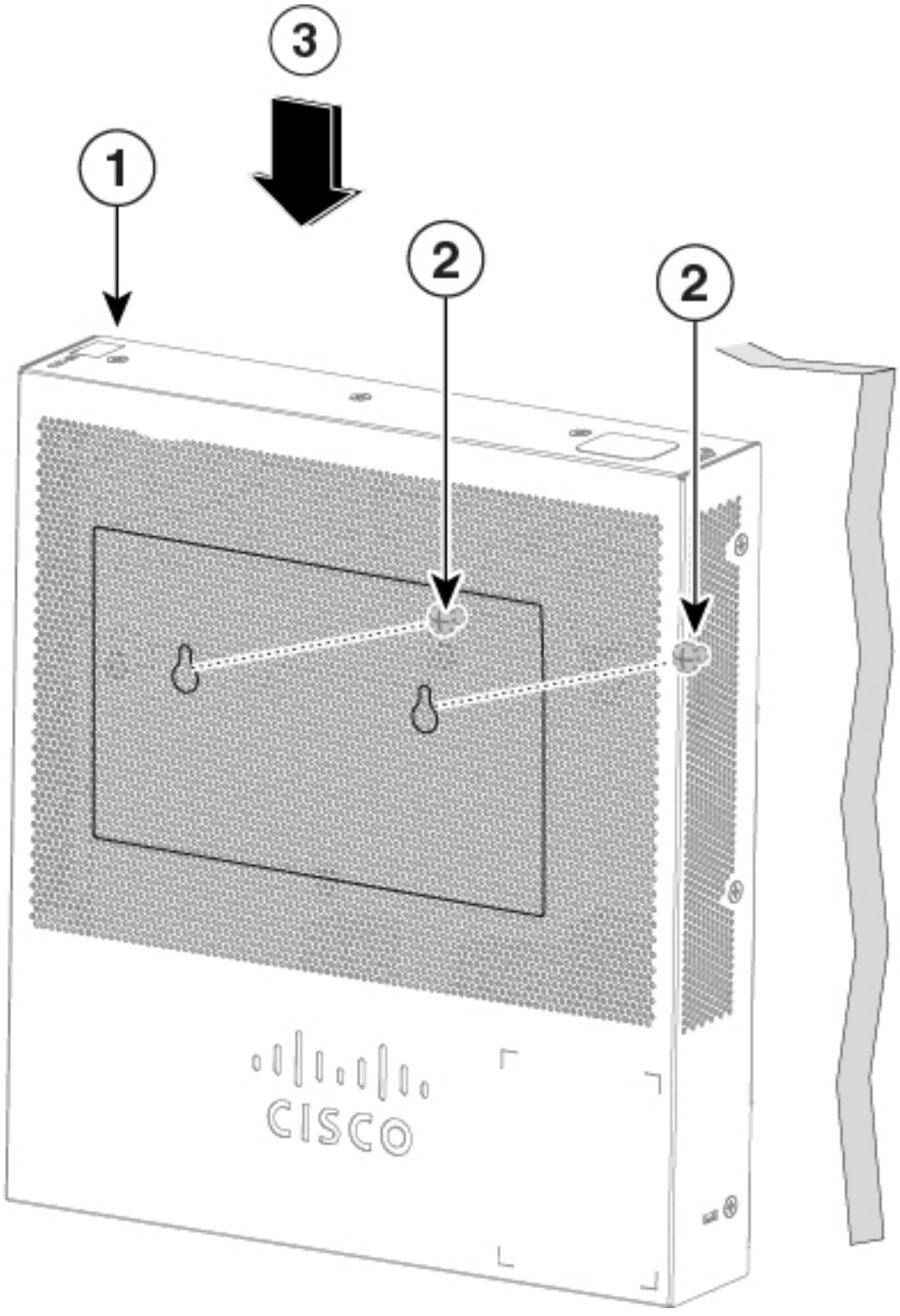
Figure 5: Installing the Mounting Screws on the Wall



Step 7 Remove the screw template from the wall.

Step 8 Place the switch onto the mounting screws, and slide it down until it locks in place.

Figure 6: Installing the Switch on a Wall



In A Rack

Installing the switch in a rack requires an optional bracket kit that is not included with the switch. You can order these kits from your Cisco representative:

- 19-inch rack-mounting brackets (RCKMNT-19-CMPCT=)
- 23- and 24-inch rack-mounting brackets (RCKMNT-23-CMPCT=)

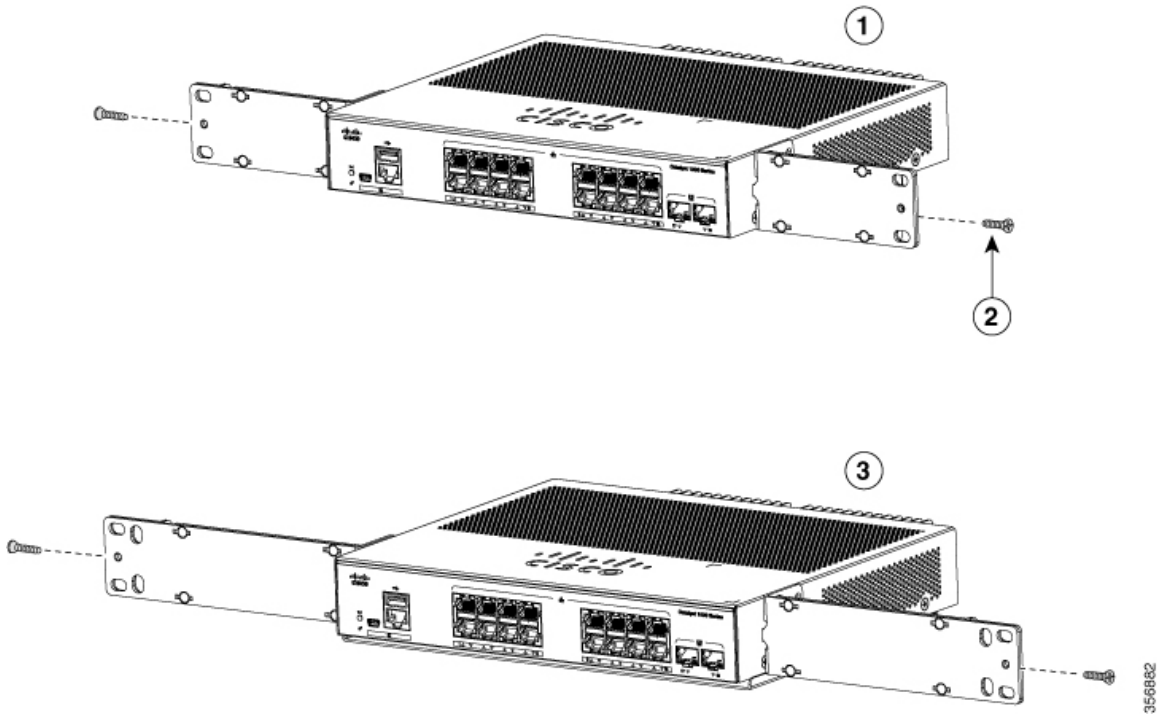
Warning To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- 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

Attach a bracket to one side of the switch. Follow the same steps to attach the second bracket to the opposite side. The following figure show how to attach the 19-inch rack-mounting bracket and the 23-inch rack-mounting bracket.

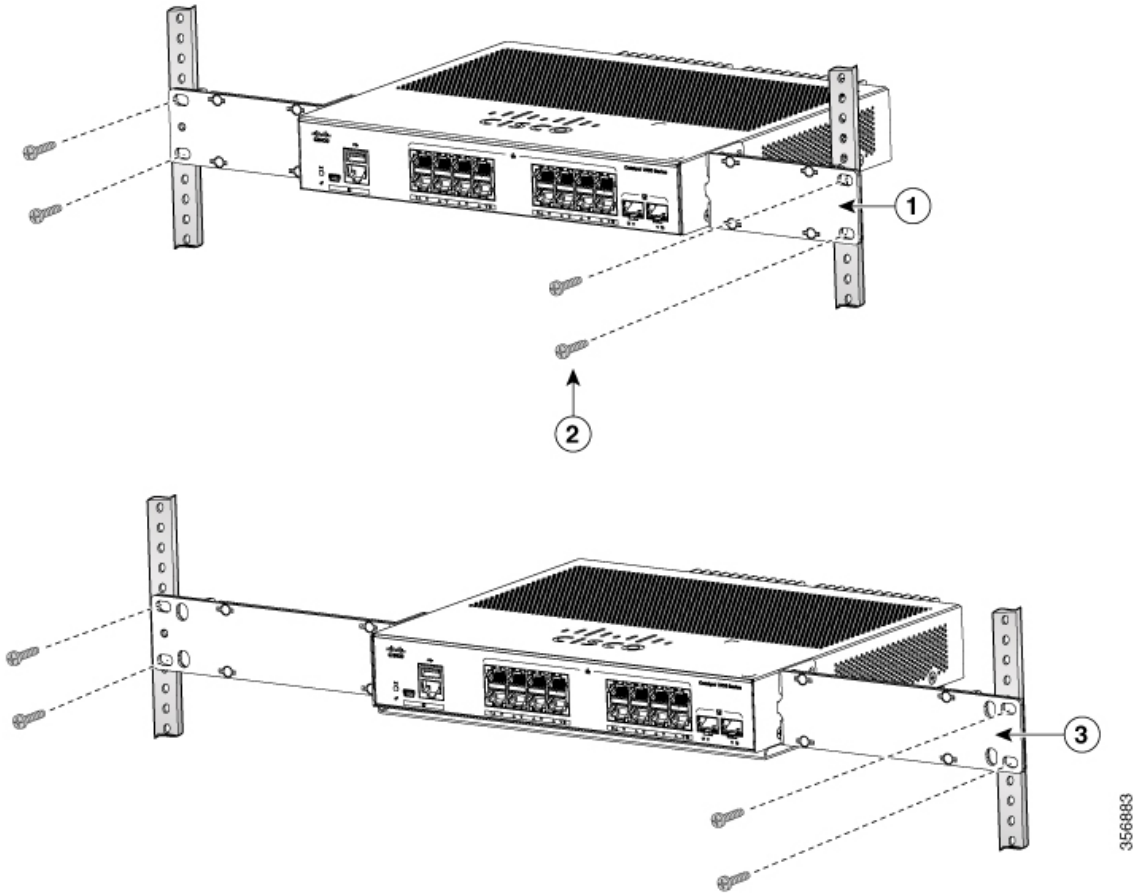
Figure 7: Attaching the 19-inch and 23-inch Brackets for Rack-Mounting



Insert the switch into the rack and align the bracket in the rack. Use either the number-12 or number-10 Phillips machine screws to secure the switch in the rack.

Warning To prevent airflow restriction, allow clearance around the ventilation openings to be at least: 3 in. (7.6 cm) Statement 1076

Figure 8: Mounting the Switch in a Rack



On a DIN Rail

The DIN-mount kit (part number CMPCT-DIN-MNT=) is optional only with Cisco Catalyst 1000 16-port switch models. You can order it when you order your switch.

The DIN-mount kit contains:

- Two number-10 Phillips pan-head screws
- DIN rail mount

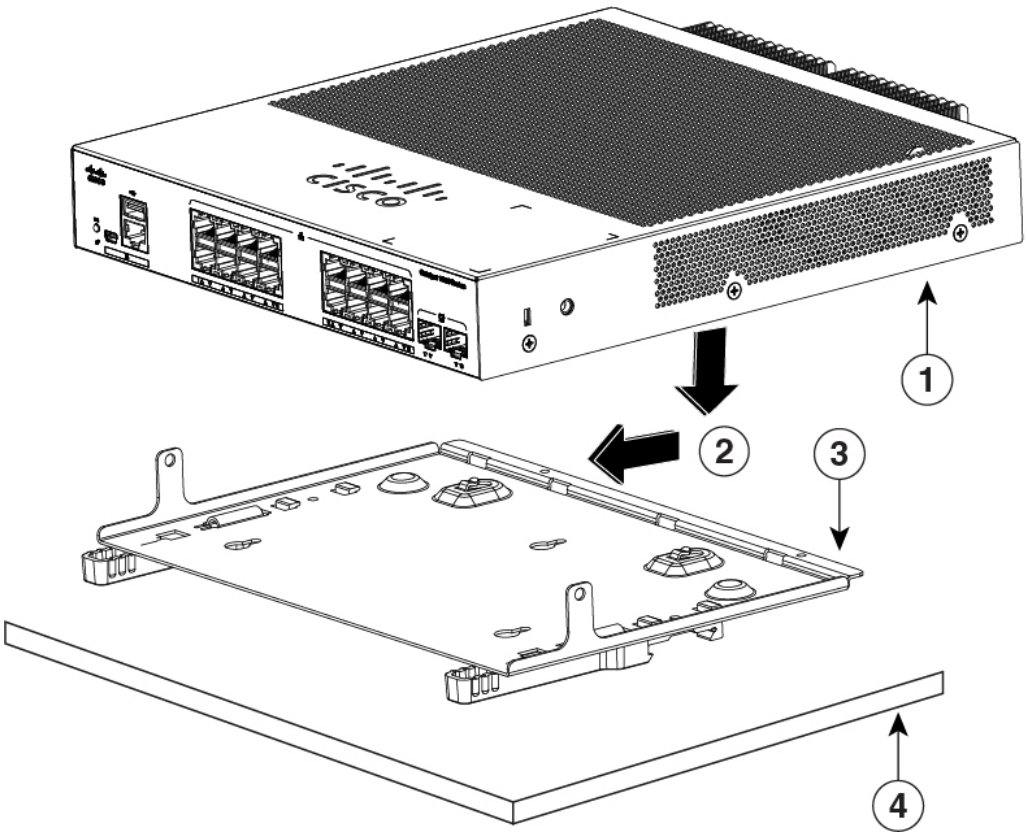
To install the switch on a DIN rail, follow the instructions described in these sections:

Attaching the DIN-Mount Tray to the Switch

Procedure

Step 1 Place the switch on the DIN rail mount.

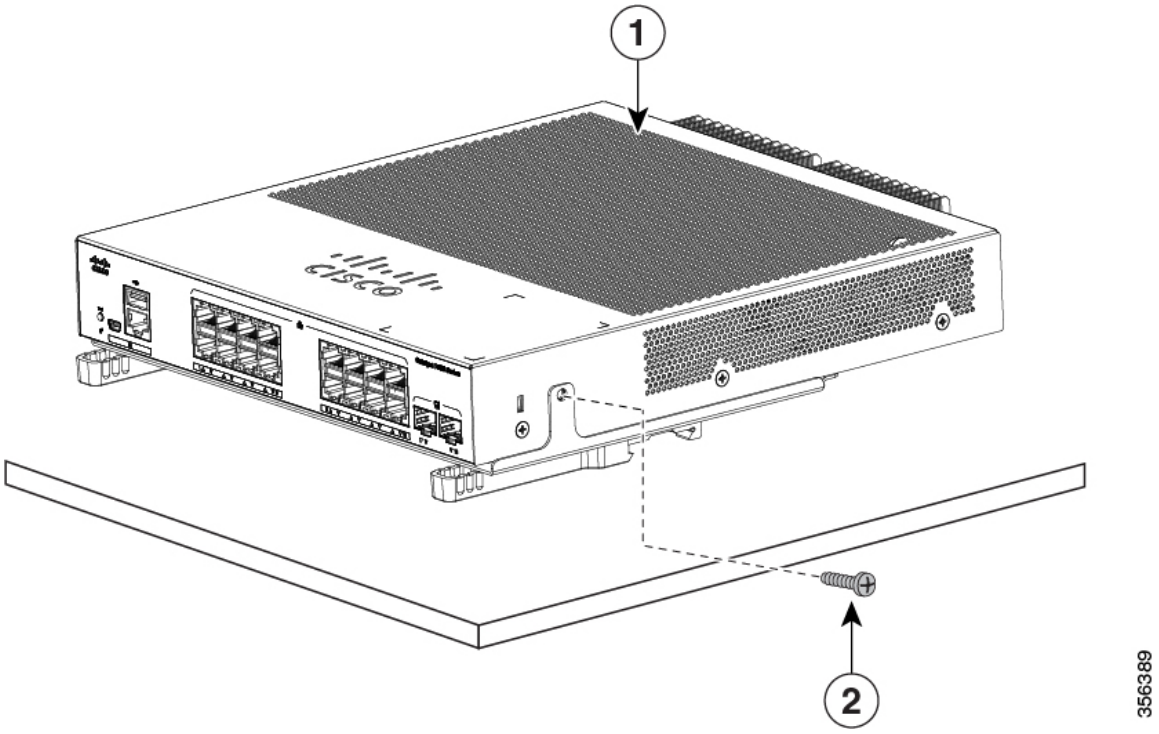
Figure 9: Placing the Switch on the DIN-Mount Tray



1	Switch	2	DIN rail mount

Step 2 Use the two number-10 Phillips pan-head screws to secure the DIN rail mount to the switch.

Figure 10: Securing the DIN-Mount Tray to the Switch



1	Switch	2	Number-10 Phillips pan-head screws

Mounting the Switch on a DIN Rail

Caution Do not install the switch with its front panel facing up. Following safety regulations, install the switch with its front panel facing down, to allow sufficient airflow and to provide easier access to the cables.

Warning To prevent airflow restriction, allow clearance around the ventilation openings to be at least: 3 in. (7.6 cm) **Statement 1076**

Procedure

Step 1 Position the switch directly in front of the DIN rail, making sure that the top of the DIN rail mount clip hooks over the top of the DIN rail.

Figure 11: Mounting the Switch on a DIN Rail

Step 2 Rotate the switch down toward the DIN rail until the release tabs on the DIN rail mount clicks.

Step 3 Lift lightly on the bottom of the switch to ensure that it is firmly locked in place.

Removing the Switch from a DIN Rail

Procedure

Step 1 Ensure that power is removed from the switch, and disconnect all cables and connectors from the front panel of the switch.

Step 2 Pull down on the DIN rail mount release tabs. As the clips release, lift the bottom of the switch.

Figure 12: Switch Removal

Installing the Power Cord Retainer (Optional)

Note This section applies to switches with an AC power connector.

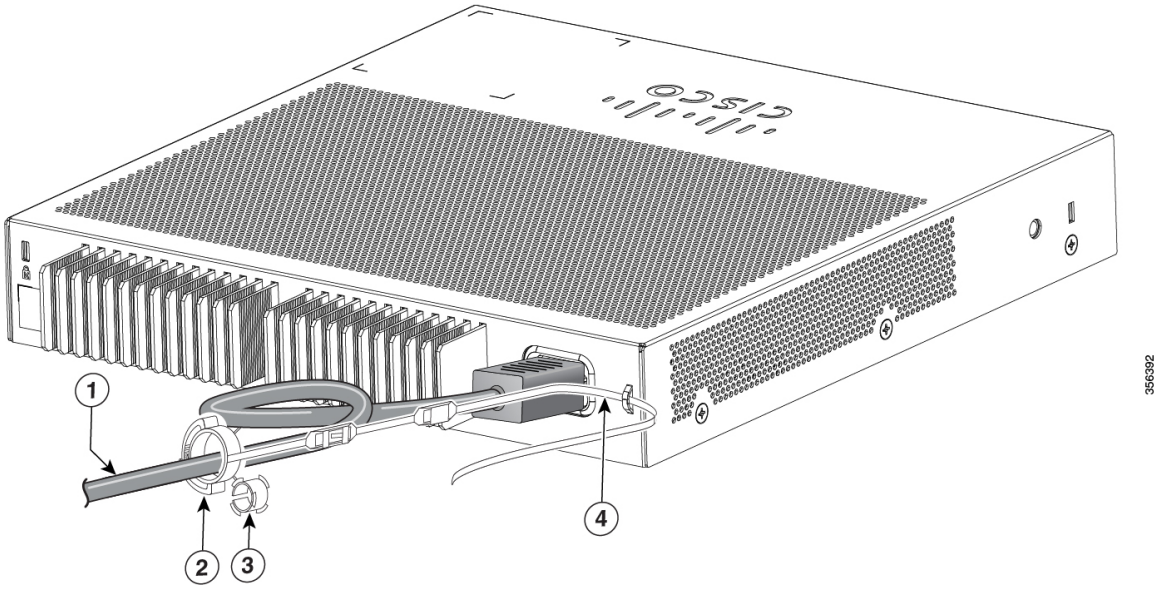
The power cord retainer (PWR-CLP=) is optional. You can order it when you order your switch.

Procedure

Step 1 Choose the sleeve size of the power cord retainer based on the thickness of the cord. The smaller sleeve can be snapped off and used for thin cords.

Step 2 Slide the retainer around the AC power cord, and pass it around the loop on the switch.

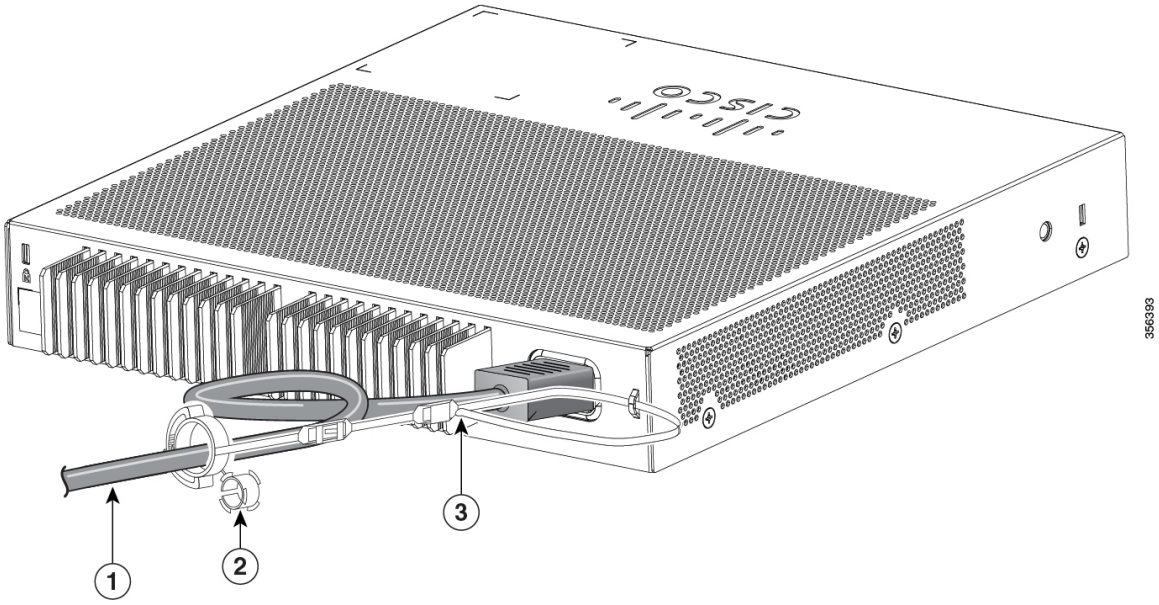
Figure 13: Inserting the Retainer through the Lanced Loop



1	AC power cord	3	Sleeve for thinner power cords
2	Power cord retainer	4	Loop

Step 3 Slide the retainer through the first latch.

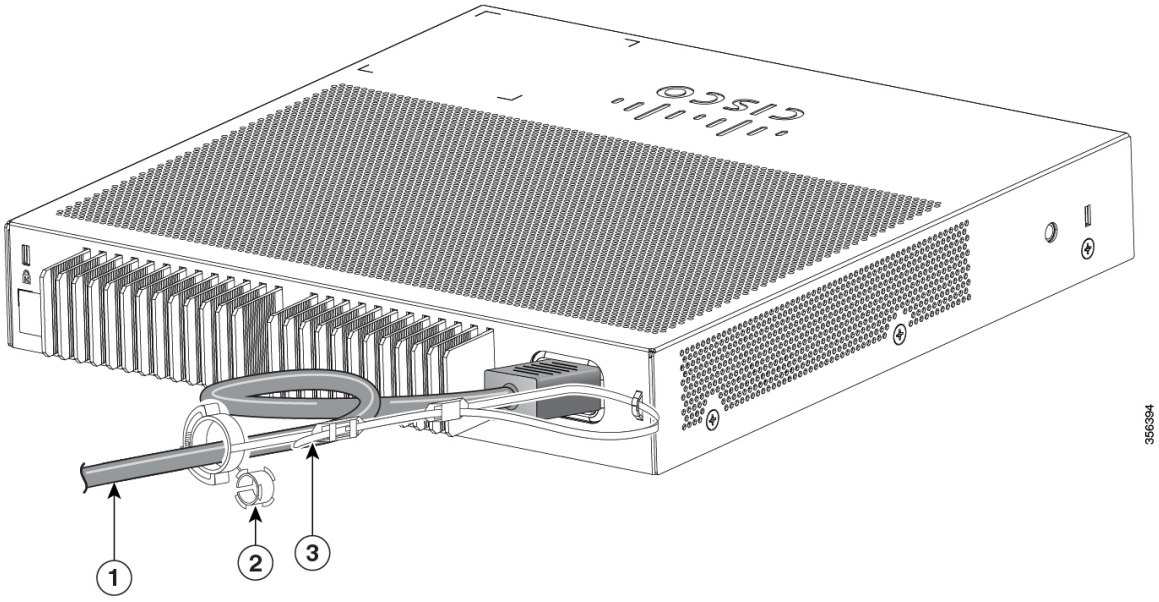
Figure 14: Sliding the Retainer Through the Latch



1	AC power cord	3	Latch
2	Smaller sleeve for thin power cords		

Step 4 Slide the retainer through the other latches to lock it.

Figure 15: Locking the Retainer

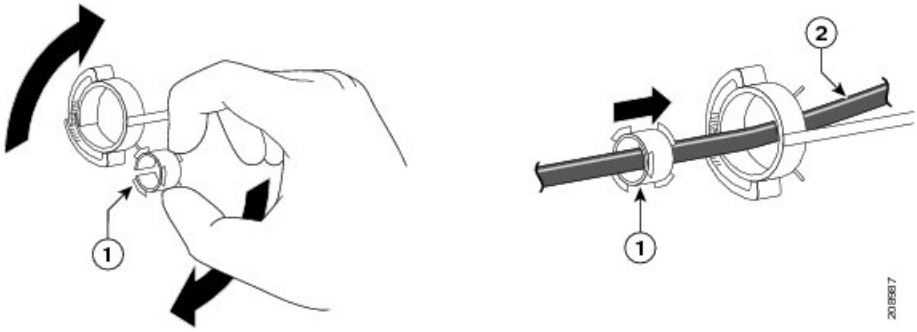


1	AC power cord	3	Latches

2	Smaller sleeve for thin power cords		

Step 5 (Optional) Use the small sleeve for thin power cords. Use the small sleeve to provide greater stability for thin cords. Detach the sleeve, and slide it over the power cord.

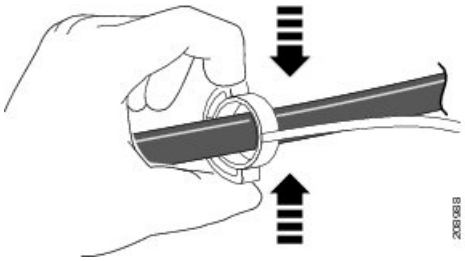
Figure 16: Sleeve Around the Power Cord



1	Smaller sleeve for thin power cords	2	AC power cord

Step 6 Secure the AC power cord by pressing on the retainer.

Figure 17: Securing the Power Cord in the Retainer



Installing the Cable Guard (Optional)

The cable guard prevents tampering with the cables after the cables are installed. The cable guard (CMPCT-CBLE-GRD=) is optional. You can order it when you order your switch.

Note You can use the cable guard when the switch is mounted on a desk, under a desk, or on a wall.

The cable guard is shipped with these items:

- Two 0.5 in. (12.7 mm) number-8 Phillips wood screws
- Two number-10 Phillips pan-head screws

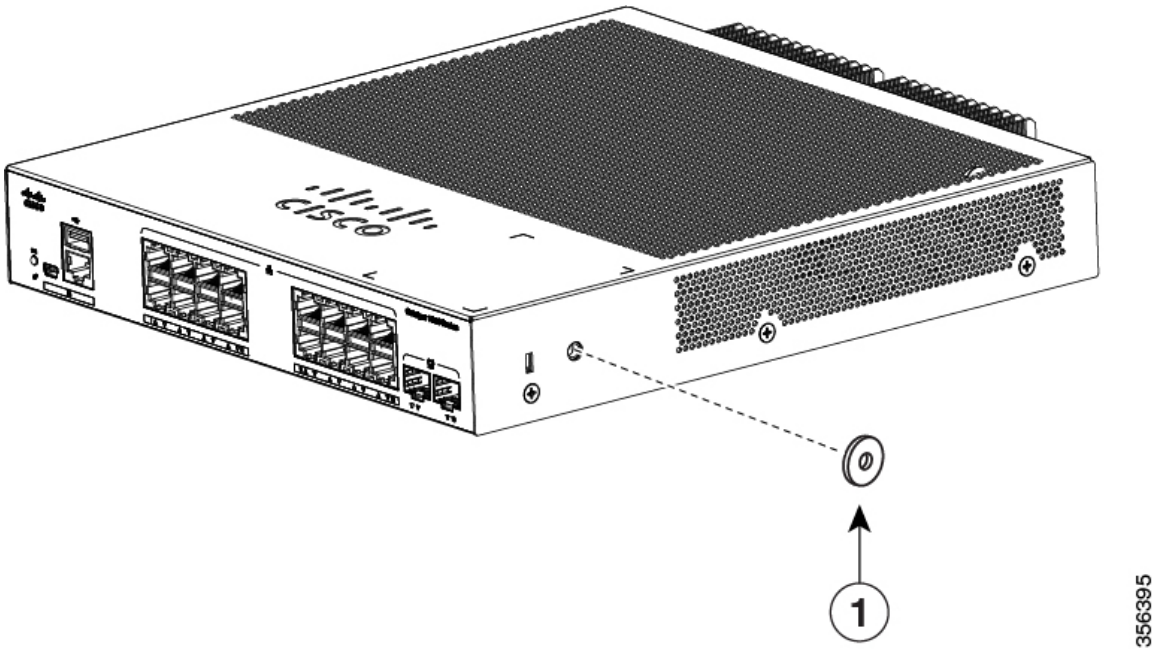
- Two washers

Procedure

Step 1 (Optional) Attach the supplied washers before you install the cable guard.

Note This is only required if you are not installing the wall-mount brackets.

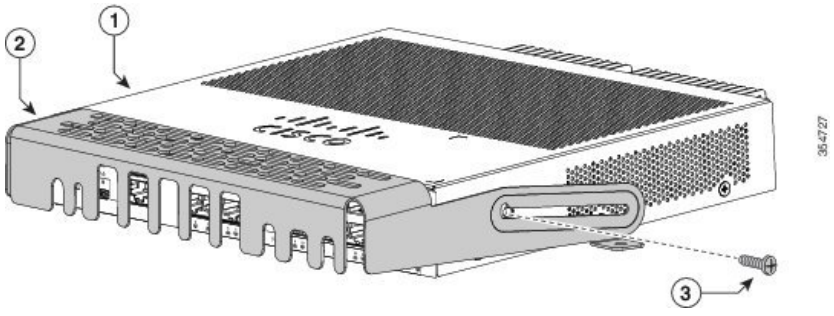
Figure 18: Using the Washer



1	Washer

Step 2 Use the supplied number-10 pan-head screws to attach the cable guard to the switch.

Figure 19: Attaching the Cable Guard to the Switch

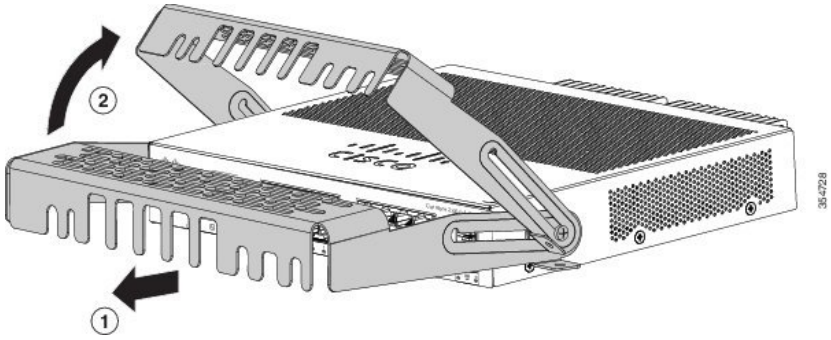


1	Switch	3	Two number-10 Phillips pan-head screws

2	Cable Guard		

Step 3 Loosen the number-10 Phillips pan-head screws, slide the cable guide out, and pivot it upwards so that you can install the cables.

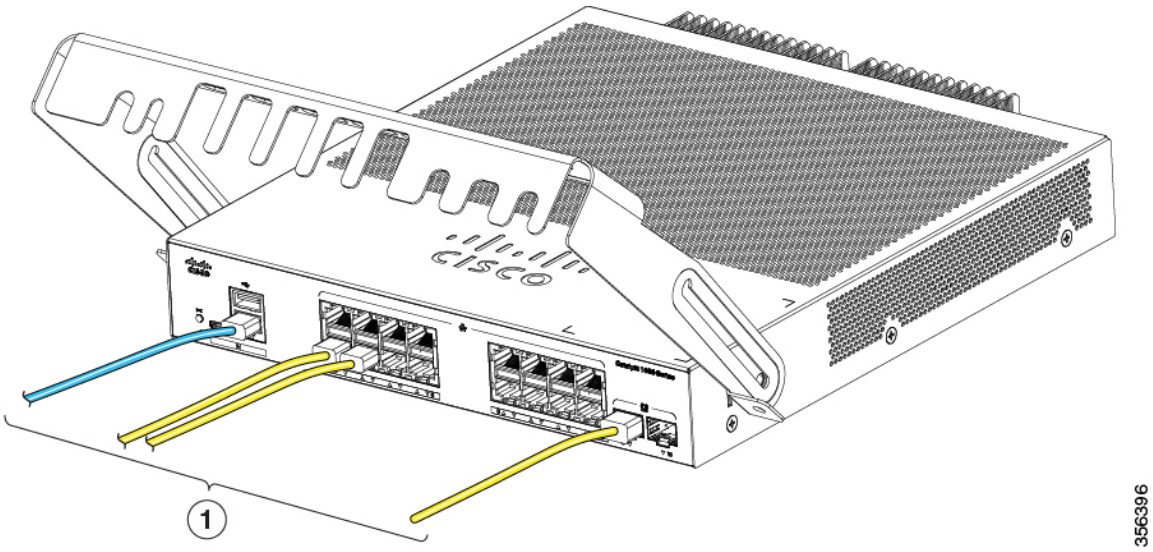
Figure 20: Pivoting the Cable Guard Upwards



1	Cable guard	2	Pivot direction for cable guard pivots

Step 4 Attach the cables to the switch.

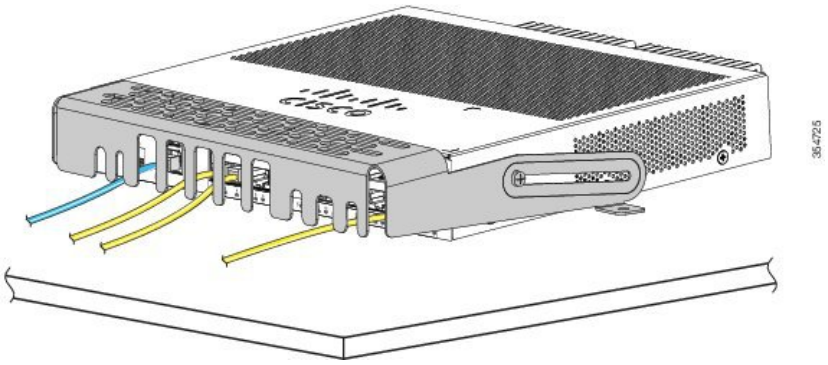
Figure 21: Attaching the Cables to the Switch



1	Cables	2	Pivot direction for cable guard pivots

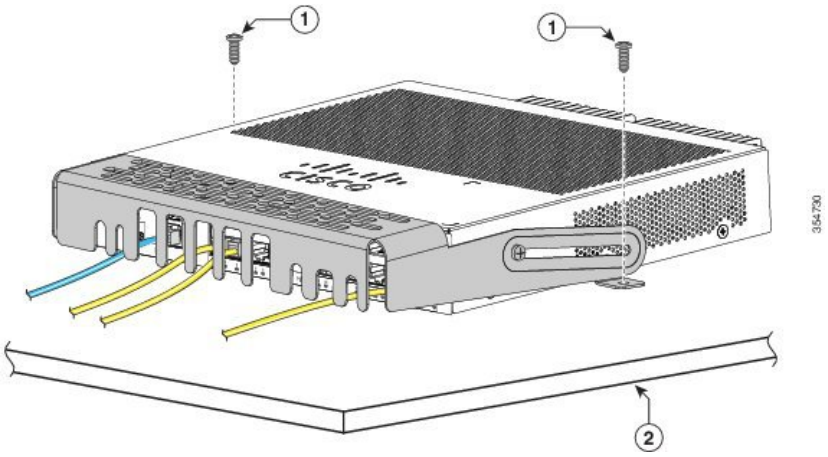
Step 5 Guide the connected cables through the slots in the front of the cable guard. Slide the cable guide in as shown in the following figure. Tighten the screws.

Figure 22: Guiding the Cables through the Guard



Step 6 (Optional) To attach the cable guard to the desk or wall, use a 0.144-inch (3.7 mm) or a #27 drill bit to drill 1/2-inch (12.7 mm) holes at each of the two mounting locations. Insert the supplied 0.5 in. (12.7 mm) number-8 Phillips wood screws and tighten them.

Figure 23: Securing the Cable Guard to the Desk



1	Number-8 Phillips wood screws	2	Desk or shelf

Installing SFP Modules

See the switch release notes on Cisco.com for the list of supported SFP modules. Use only Cisco SFP modules on the switch. Each Cisco module has an internal serial EEPROM that is encoded with security information.

This encoding provides a way for Cisco to identify and validate that the module meets the requirements for the switch.

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

Installing an SFP Module

Before you begin

When installing SFP modules, observe these guidelines:

- Do not remove the dust plugs from the 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.
- To prevent ESD damage, follow your normal board and component handling procedures when connecting cables to the switch and other devices.

Caution Removing and installing an SFP module can shorten its useful life. Do not remove and insert any module more often than is absolutely necessary.

Procedure

Step 1 Attach an ESD-preventive wrist strap to your wrist and to a bare metal surface.

Step 2 Find the send (TX) and receive (RX) markings on the module top.

On some SFP modules, the send and receive (TX and RX) markings might be replaced by arrows that show the direction of the connection.

Step 3 If the module has a bale-clasp latch, move it to the open, unlocked position.

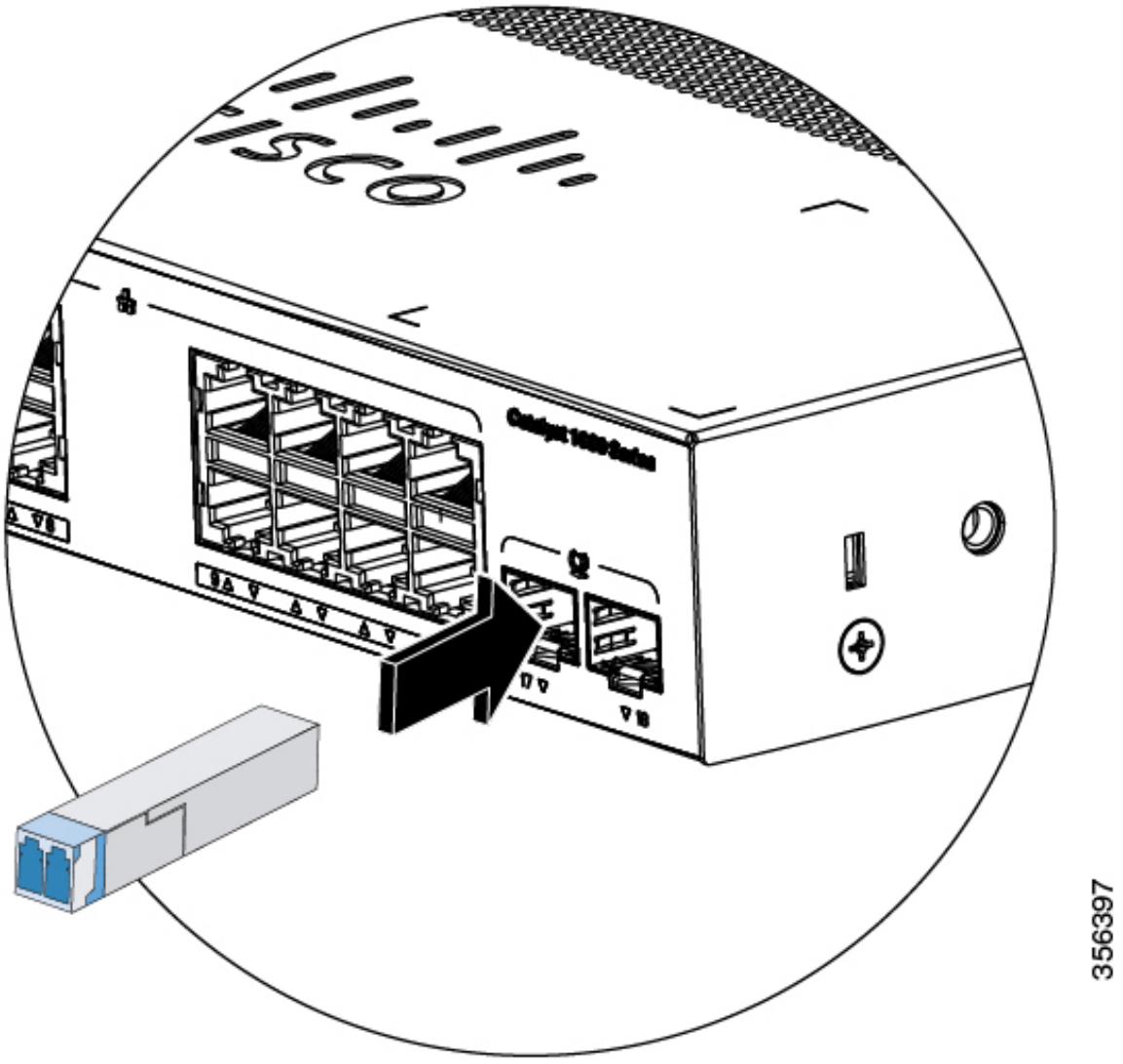
Step 4 Align the module in front of the slot opening, and push until you feel the connector snap into place.

Step 5 If the module has a bale-clasp latch, close it.

Step 6 For fiber-optic SFP modules, remove the dust plugs and save.

Step 7 Connect the SFP cables.

Figure 24: Installing an SFP Module



Removing an SFP Module

Procedure

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 If the module has a bale-clasp latch, pull the bale out and down to eject the module. If the latch is obstructed and you cannot use your finger, use a small, flat-blade screwdriver or other long, narrow instrument to open the latch.

Step 5 Grasp the SFP module, and carefully remove it from the module slot.

Step 6 Place the module in an antistatic bag or other protective environment.

10/100/1000 PoE and PoE+Port Connections

The ports provide PoE support for devices compliant with IEEE 802.3af and 802.3at (PoE+), and also provide Cisco prestandard PoE support for Cisco IP Phones and Cisco Aironet Access Points.

On a per-port basis, you can control whether or not a port automatically provides power when an IP phone or an access point is connected.

To access an advanced PoE planning tool, use the Cisco Power Calculator available on Cisco.com at this URL: http://tools.cisco.com/cpc/launch.jsp

You can use this application to calculate the power supply requirements for a specific PoE configuration. The results show output current, output power, and system heat dissipation.

Warning Voltages that present a shock hazard may exist on Power over Ethernet (PoE) circuits if interconnections are made using uninsulated exposed metal contacts, conductors, or terminals. Avoid using such interconnection methods, unless the exposed metal parts are located within a restricted access location and users and service people who are authorized within the restricted access location are made aware of the hazard. A restricted access area can be accessed only through the use of a special tool, lock and key or other means of security. Statement 1072

Caution Category 5e and Category 6 cables can store high levels of static electricity. Always ground the cables to a suitable and safe earth ground before connecting them to the switch or other devices.

Caution Noncompliant cabling or powered devices can cause a PoE port fault. Use only standard-compliant cabling to connect Cisco prestandard IP Phones and wireless access points, IEEE 802.3af, or 802.3at (PoE+) compliant devices. You must remove any cable or device that causes a PoE fault.

Procedure

Step 1 Connect one end of the cable to the switch PoE port.

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.

The port LED is amber while STP discovers the topology and searches for loops. This process takes about 30 seconds, and then the port LED turns green. If the LED is off, the other device might not be turned on, there might be a cable problem, or there might be a problem with the adapter in the other device.

Step 3 Reconfigure and reboot the connected device, if needed.

Step 4 Repeat Steps 1 through 3 to connect each device.

Note Many legacy powered devices, including older Cisco IP phones and access points that do not fully support IEEE 802.3af, might not support PoE when connected to the switches by a crossover cable.

10/100/1000 Ethernet Port Connections

The switch 10/100/1000 Ethernet port configuration changes to operate at the speed of the attached device. If the attached ports do not support autonegotiation, you can manually set the speed and duplex parameters. Connecting devices that do not autonegotiate or that have the 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 autonegotiate both speed and duplex.
- Set the interface speed and duplex parameters on both ends of the connection.

Auto-MDIX Connections

The autonegotiation and the auto-MDIX features are enabled by default on the switch.

With autonegotiation, the switch port configurations change to operate at the speed of the attached device. If the attached device does not support autonegotiation, you can manually set the switch interface speed and duplex parameters.

With auto-MDIX, the switch detects the required cable type for copper Ethernet connections and configures the interface accordingly.

If auto-MDIX is disabled, use the guidelines in this table to select the correct cable.

Table 1: Recommended Ethernet Cables (When Auto-MDIX is Disabled)

Device	Crossover Cable	Straight-Through Cable
Switch to switch	Yes	No
Switch to hub	Yes	No
Switch to computer or server	No	Yes
Switch to router	No	Yes
Switch to IP phone	No	Yes

[4] 100BASE-TX and 1000BASE-T traffic requires twisted four-pair, Category 5 or higher. 10BASE-T traffic can use Category 3 cable or higher.