GETTING STARTED GUIDE

Catalyst 2960 Switch Getting Started Guide (8-Port Switches)

INCLUDING LICENSE AND WARRANTY

1 About This Guide

This document describes information specific to the Catalyst 2960-8TC, Catalyst 2960G-8TC, and Catalyst 2960PD-8TT-L switches. For information applicable to the other Catalyst 2960 switches, see the *Catalyst 2960 Switch Hardware Installation Guide* on Cisco.com.

This guide provides instructions on how to use Express Setup to configure your Catalyst switch. Also covered are switch management options, basic installation procedures, port and module connections, power connection procedures, and troubleshooting help.

For additional installation and configuration information for Catalyst 2960 switches, see the Catalyst 2960 documentation on Cisco.com. For system requirements, important notes, limitations, open and resolved bugs, and last-minute documentation updates, see the release notes, also on Cisco.com.

When you use the online publications, refer to the documents that match the Cisco IOS software version running on the switch. You can use the **show version** command to display software version information.

For translations of the warnings that appear in this publication, see the *Regulatory Compliance and Safety Information for the Catalyst 2960 Switch* that accompanies this guide.

2 Taking Out What You Need

Follow these steps:

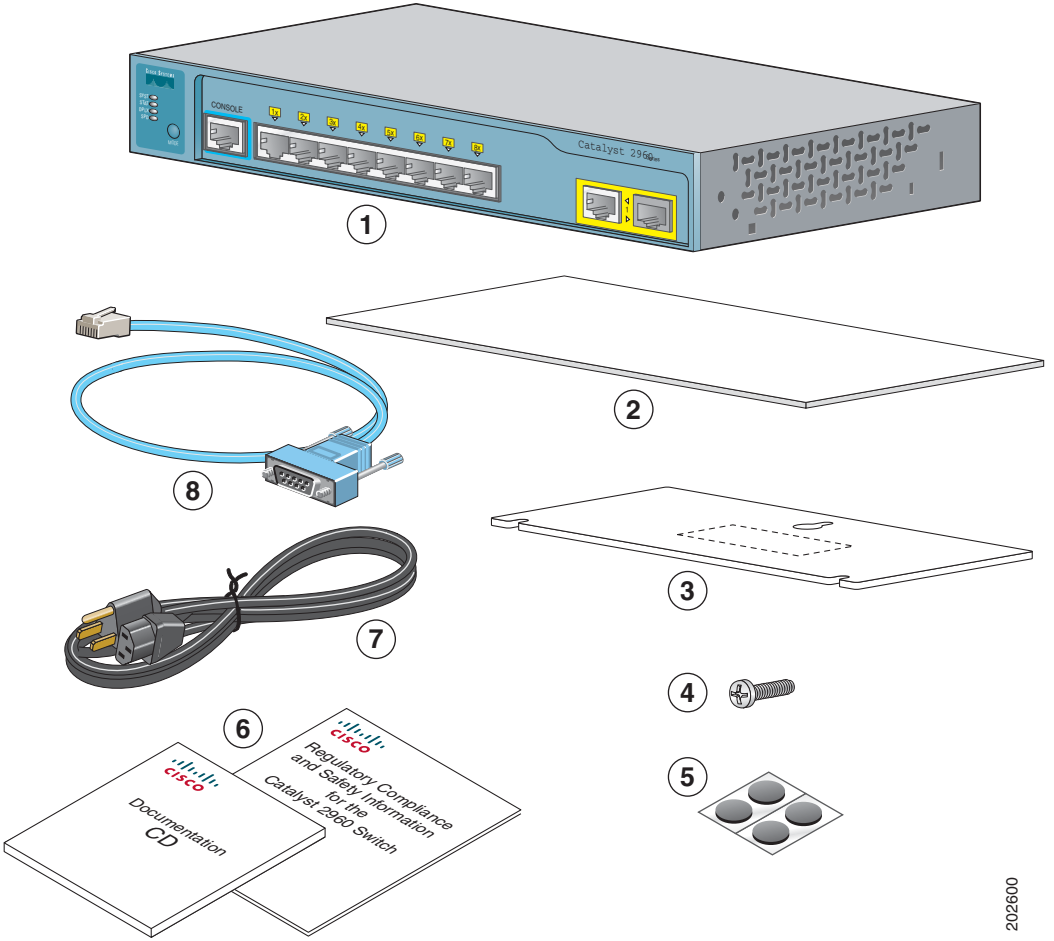
1. Unpack and remove the switch and the accessory kit from the shipping box.
2. Return the packing material to the shipping container, and save it for future use.
3. Verify that you have received the items shown in the “Shipping Box Contents” section. If any item is missing or damaged, contact your Cisco representative or reseller for instructions. Some switch models might include additional items that are not shown. Your switch might be a different model from the one that is shown in this illustration

Equipment That You Supply to Run Express Setup

You need to supply this equipment to run Express Setup:

- PC
- Ethernet (Category 5) straight-through cable (as shown)

Shipping Box Contents



1	Catalyst 2960 switch	**5**	Four rubber mounting feet
2	Mounting magnet	**6**	Documentation
3	Screw template	**7**	AC power cord (AC-powered switches only)
4	Three number-8 Phillips pan-head screws	**8**	Console cable

3 Running Express Setup

When you first set up the switch, you should use Express Setup to enter the initial IP information. This enables the switch to connect to local routers and the Internet. You can then access the switch through the IP address for further configuration.

To run Express Setup:

Step 1 Make sure that nothing is connected to the switch.

During Express Setup, the switch acts as a DHCP server. If your PC has a static IP address, change your PC settings before you begin to temporarily use DHCP.

Step 2 Power the switch as follows:

- Catalyst 2960-8TC and 2960G-8TC switches: Connect the AC power cord to the switch power connector and to a grounded AC outlet.
- Catalyst 2960PD-8TT-L switches: Use the power adapter, or connect to a 10/100 or 10/100/1000 port from a Power-over-Ethernet (PoE) switch, such as a Catalyst 3560 PoE switch.

Step 3 When the switch powers on, it begins the power-on self-test (POST). During POST, the LEDs blink while tests verify that the switch functions properly.

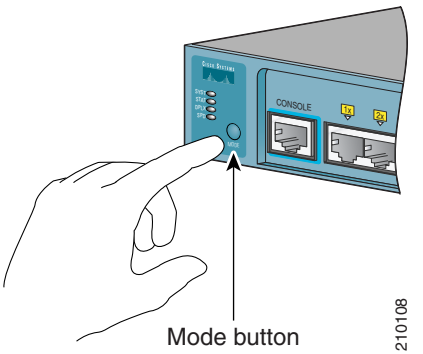
Wait for the switch to complete POST, which can take several minutes.

Step 4 Verify that POST has completed by confirming that the SYST LED remains green. If the switch fails POST, the SYST LED turns amber.

POST errors are usually fatal. Contact your Cisco technical support representative if your switch fails POST.

Step 5 Press and hold the Mode button for 3 seconds. When all of the LEDs left of the Mode button turn green, release the Mode button.

If the LEDs left of the Mode button begin to blink after you press the button, release it. Blinking LEDs mean that the switch has already been configured and cannot go into Express Setup mode. For more information, see the “Resetting the Switch” section on page 18.



Step 6 Verify that the switch is in Express Setup mode by confirming that all LEDs left of the Mode button are green.

Step 7 Connect a Category 5 Ethernet cable to any 10/100 or 10/100/1000 Ethernet port on the switch front panel.

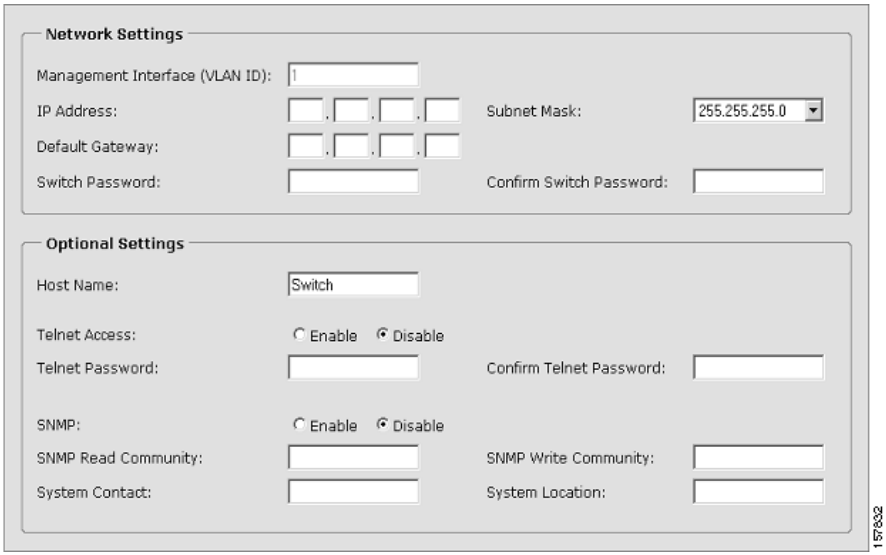
Connect the other end of the cable to the Ethernet port on your PC.

DHCP-enabled PC

Step 8 Verify that the LEDs on both Ethernet ports are green. Wait 30 seconds.

Step 9 Start a web browser on your PC. Enter the IP address **10.0.0.1** in the web browser, and press **Enter**.

The Express Setup page appears. If it does not appear, see the "In Case of Difficulty" section on page 16 for help. Your entries should be in English.



Step 10 Enter this information in the **Network Settings** fields:

- In the **Management Interface (VLAN ID)** field, the default is **1**. Enter a new VLAN ID only if you want to change the management interface through which you manage the switch. The VLAN ID range is 1 to 1001.
- In the **IP Address** field, enter the IP address of the switch. The IP address is also assigned to the management VLAN. In the **IP Subnet Mask** field, click the drop-down arrow, and select an **IP Subnet Mask**.
- In the **Default Gateway** field, enter the IP address for the default gateway (router).
- Enter your password in the **Switch Password** field. The password can be from 1 to 25 alphanumeric characters, can start with a number, is case sensitive, allows embedded spaces, but does not allow spaces at the beginning or end. In the **Confirm Switch Password** field, enter your password again.

Step 11 (Optional) You can enter the **Optional Settings** information now or enter it later by using the device manager interface:

- In the **Host Name** field, enter a name for the switch. The host name is limited to 31 characters. Embedded spaces are not allowed.
- In the **System Contact** field, enter the name of the person responsible for the switch. In the **System Location** field, enter the wiring closet, floor, or building where the switch is located.
- In the **Telnet Access** field, click **Enable** if you are going to use Telnet to manage the switch by using the command-line interface (CLI). If you enable Telnet access, you must enter a Telnet password.
- In the **Telnet Password** field, enter a password. The Telnet password can be from 1 to 25 alphanumeric characters, is case sensitive, allows embedded spaces, but does not allow spaces at the beginning or end. In the **Confirm Telnet Password** field, enter the Telnet password again.
- In the **SNMP** field, click **Enable** to enable Simple Network Management Protocol (SNMP). Enable SNMP only if you plan to manage switches by using CiscoWorks 2000 or another SNMP-based network-management system.

  If you enable SNMP, you must enter a community string in the **SNMP Read Community** field, the **SNMP Write Community** field, or both. SNMP community strings authenticate access to MIB objects. Embedded spaces are not allowed in SNMP community strings. When you set the SNMP read community, you can access SNMP information, but cannot modify it. When you set the SNMP write community, you can access and modify SNMP information.

Step 12	Click **Submit** to save your settings, or click **Cancel** to clear your settings. When you click **Submit**, the switch is configured and exits Express Setup mode. The PC displays a warning message and tries to connect with the new switch IP address. If you configured the switch with an IP address that is in a different subnet from the PC, connectivity between the PC and the switch is lost.
Step 13	Disconnect the switch from the PC, and install the switch in your network. See the "Managing the Switch" section on page 7 for information about configuring and managing the switch. If you need to rerun Express Setup, see the "Resetting the Switch" section on page 18.

Refreshing the PC IP Address

After you complete Express Setup, you should refresh the PC IP address.

For a dynamically assigned IP address, disconnect the PC from the switch, and reconnect it to the network. The network DHCP server assigns a new IP address to the PC.

For a statically assigned IP address, change it to the previously configured IP address.

4 Managing the Switch

After completing Express Setup and installing the switch in your network, use the device manager, Cisco Network Assistant, or another of the management options described in this section for further configuration.

Using the Device Manager

You can manage the switch by using the device manager that is in the switch memory. This is a web interface that offers quick configuration and monitoring. You can access the device manager from anywhere in your network through a web browser.

Follow these steps:

1. Start a web browser on your PC or workstation.
2. Enter the switch IP address in the web browser, and press **Enter**. The device manager page appears.
3. Use the device manager to perform basic switch configuration and monitoring. Refer to the device manager online help for more information.
4. For a more advanced configuration, install Cisco Network Assistant as described in the next section.

Downloading Cisco Network Assistant

Cisco Network Assistant is a free software program that you download from Cisco.com and run on your PC. Network Assistant offers advanced options for configuring and monitoring multiple devices, including switches, switch clusters, switch stacks, routers, and access points. Network Assistant is free—there is no charge to download, install, or use it.

Follow these steps:

1. Go to this Web address: http://www.cisco.com/go/NetworkAssistant

   You must be a registered Cisco.com user, but you need no other access privileges.
2. Find the Network Assistant installer.
3. Download the Network Assistant installer, and run it. (You can run it directly from the Web if your browser offers this choice.)
4. When you run the installer, follow the displayed instructions. In the final panel, click **Finish** to complete the Network Assistant installation.

   Refer to the Network Assistant online help and the getting started guide for more information.

Command-Line Interface

You can enter Cisco IOS commands and parameters through the CLI. Access the CLI either by connecting your PC directly to the switch console port or through a Telnet session from a remote PC or workstation.

Follow these steps:

1. Connect the supplied RJ-45-to DB-9 adapter cable to the 9-pin serial port on the PC. Connect the other end of the cable to the console port on the switch.
   a. Start a terminal-emulation program on the PC.
   a. Configure the PC terminal emulation software for 9600 baud, 8 data bits, no parity, 1 stop bit, and no flow control.
   a. Use the CLI to enter commands to configure the switch. See the software configuration guide and the command reference for more information.

Other Management Options

You can use SNMP management applications such as CiscoWorks LAN Management Solution (LMS) and HP OpenView to configure and manage the switch. You also can manage it from an SNMP-compatible workstation that is running platforms such as HP OpenView or SunNet Manager.

The Cisco Configuration Engine is a network management device that works with embedded CNS agents in the switch software. You can use Cisco Configuration Engine to automate initial configurations and configuration updates on the switch.

See the “Accessing Help Online” section on page 18 for a list of supporting documentation.

5 Installing the Switch

This section describes installation information specific to the Catalyst 2960-8TC, Catalyst 2960G-8TC, and Catalyst 2960PD-8TT-L switches. For information applicable to the other Catalyst 2960 switches, see the *Catalyst 2960 Switch Hardware Installation Guide* on Cisco.com, which includes installation instructions for all Catalyst 2960 switch models.

This section covers desk-, shelf-, and magnet-mounting. As an example, all the illustrations show the Catalyst 2960-8TC switch. For alternate mounting procedures, such as installing the switch in a rack or on a wall, see the *Catalyst 2960 Switch Hardware Installation Guide* on Cisco.com.

Equipment That You Supply

You need this equipment to install the switch:

- Number-2 Phillips screwdriver
- Drill with a #27 drill bit (0.144-inch [3.7 mm])

Before You Begin

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

- Airflow around the switch and through the vents is unrestricted.

Note We strongly recommend that you allow at least 3 inches (7.6 cm) of clearance around the ventilation openings.

- Temperature around the switch does not exceed 113°F (45°C).
- Humidity around the switch does not exceed 85 percent.
- Altitude at the installation site is not greater than 10,000 feet (3,049 meters).
- Do not place any items on the top of the switch.
- The bottom of the switch might be hot to the touch if the switch is operating at its maximum temperature 113°F (45°C) and is in an environment that exceeds normal room temperature (such as in a closet, in a cabinet, or in a closed or multirack assembly).
- Allow at least 1.75 inches (4 cm) of clearance above each switch in the rack.
- When placing the switch on a flat horizontal surface without the magnet, we strongly recommend that you attach the rubber feet to the switch. Doing so helps prevent airflow restriction and overheating.
- Do not stack switches or place switches side-by-side, unless they are separated all around by at least 3 inches (7.6 cm) of clearance from each other.
- Do not wall-mount the switch with its front panel facing up or to the side. We recommend wall-mounting the switch with its front panel facing down to prevent airflow restriction and to provide easier access to the cables.
- Clearance to the switch front and rear panels meets 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 rear panel.
- Cabling is away from sources of electrical noise, such as radios, power lines, and fluorescent lighting fixtures.
- For 10/100 and 10/100/1000 ports, the cable length from a switch to an attached device cannot exceed 328 feet (100 meters).
- For cable lengths for small form-factor pluggable (SFP) modules, see the documentation that shipped with the module.

Installation Warning Statements

This section includes the basic installation warning statements. Translations of these warning statements appear in the *Regulatory Compliance and Safety Information for the Catalyst 2960 Switch* document that shipped with the switch.

Warning **To prevent the switch from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of 113°F (45°C). To prevent airflow restriction, allow at least 3 inches (7.6 cm) of clearance around the ventilation openings.** Statement 17B

Warning **This equipment is intended to be grounded. Ensure that the host is connected to earth ground during normal use.** Statement 39

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

Secure the Switch on a Desk or Shelf

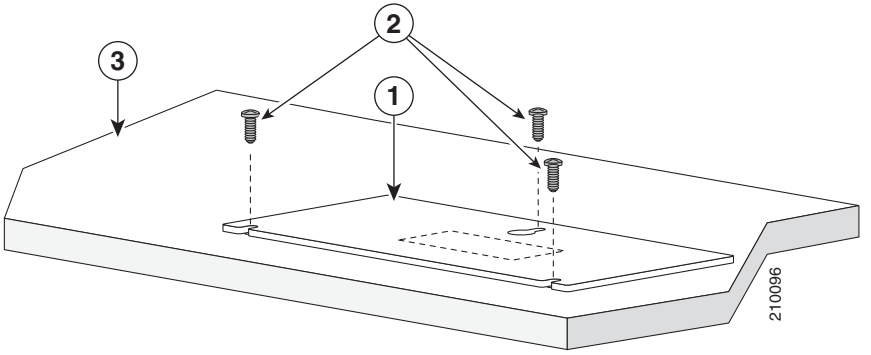
This section describes installation information specific to the Catalyst 2960-8TC and Catalyst 2960G-8TC switches. For information applicable to the other Catalyst 2960 switches, see the *Catalyst 2960 Switch Hardware Installation Guide* on Cisco.com.

To place the switch on a desk without using the mounting screws, simply attach the four rubber feet on the bottom panel of the switch.

To secure the switch on top of or under a desk or a shelf or on a wall, use the mounting template and three mounting screws. Follow these steps:

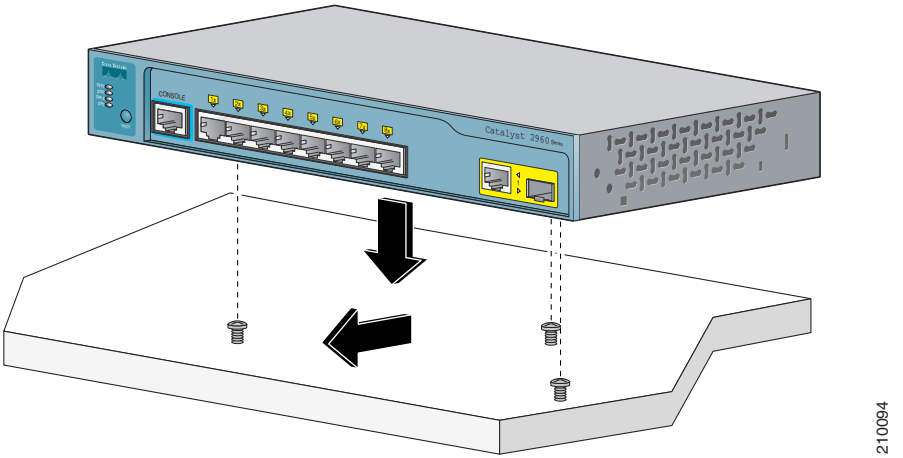
1. Position the screw template on the mounting surface with the two side-by-side slots forward. Peel the adhesive strip off the bottom, and attach the template (see Figure 1).
2. Use a 0.144-inch (3.7 mm) or a #27 drill bit to drill a 1/2-inch (12.7 mm) hole in the three template screw slot positions.
3. Insert the screws in the slots on the template, and tighten until they touch the template. Remove the template from the mounting surface (see Figure 1).

Figure 1 Positioning the Template and Inserting the Screws



4. Place the switch onto the mounting screws, and slide it forward until it locks in place (see Figure 2).

Figure 2 Placing the Switch on the Mounting Screws

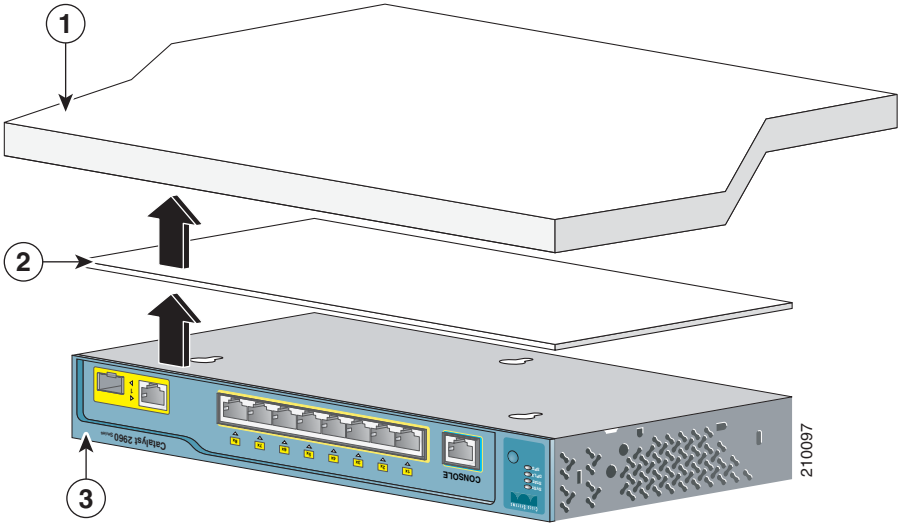


Mount the Switch with a Magnet Panel

Follow these steps:

1. Position the mounting magnet on the mounting surface (see Figure 3).
2. Place the bottom of the switch on the mounting magnet (see Figure 3).

Figure 3 Mounting the Switch with a Magnet Panel

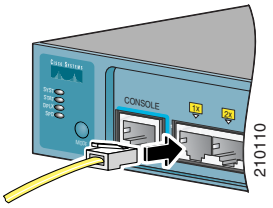


6 Connecting to the Switch Ports

This section describes how to connect to the switch ports, the SFP module ports, and to the dual-purpose ports. For additional cabling information, see the *Catalyst 2960 Switch Hardware Installation Guide* on Cisco.com.

Connect to the 10/100 and 10/100/1000 Ports

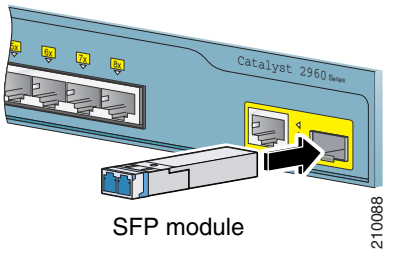
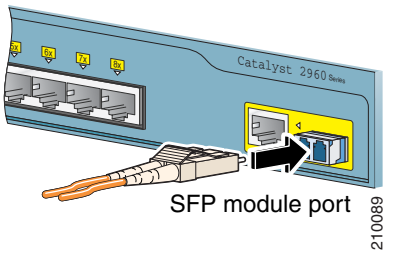
Follow these steps:

Step 1	When you connect to servers, workstations, IP phones, wireless access points, and routers, insert a straight-through, twisted four-pair, Category 5 cable in a switch 10/100 or 10/100/1000 port. Use a crossover, twisted four-pair, Category 5 cable when you connect to other switches, hubs, or repeaters.	 10/100 or 10/100/1000 ports
Step 2	Insert the other cable end into an RJ-45 connector on the other device.	

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

Install the SFP Modules and Connect to the Ports

Follow these steps:

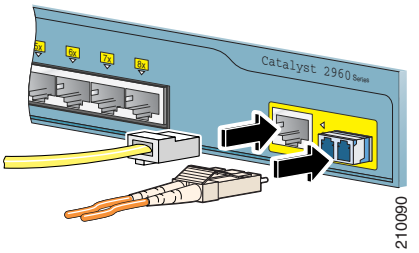
Step 1	Grasp the module on the sides, and insert it into the switch slot until you feel the connector snap into place.	
Step 2	Insert an appropriate cable into the module port.	
Step 3	Insert the other cable end into the other device.	

For a list of supported modules, see the release notes on Cisco.com. For detailed instructions on installing, removing, and connecting to SFP modules, see the documentation that came with the SFP module.

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

Connect to the Dual-Purpose Ports

Follow these steps:

Step 1	Insert either an RJ-45 connector to the 10/100/1000 port, or install an SFP module into the SFP module slot, and connect a cable to the SFP module port. Only one port can be active at a time. If both ports are connected, the SFP module port has priority. The priority setting is not configurable.	
Step 2	Insert the other cable end into the other device.	

Verify Port Connectivity

After you connect to the switch port and another device, the port LED turns amber while the switch establishes a link. This process takes about 30 seconds, and then the LED turns green when the switch and the target device have an established link. If the LED is off, the target device might not be turned on, there might be a cable problem, or there might be a problem with the adapter installed in the target device. See the “In Case of Difficulty” section on page 16 for information about online assistance.

7 In Case of Difficulty

If you experience difficulty, help is available here and on Cisco.com. This section includes Express Setup troubleshooting, how to reset the switch, how to access help online, and where to find more information.

Troubleshooting Express Setup

If Express Setup does not run, or if the Express Setup page does not appear in your browser:

• Did you verify that POST successfully ran before starting Express Setup?	• If not, make sure that only the SYST and STAT LEDs are green before pressing the Mode button to enter the Express Setup mode.
• Did you press the Mode button while the switch was still running POST?	• If yes, wait until POST completes. Power cycle the switch. Wait until POST completes. Confirm that the SYST and STAT LEDs are green. Press the Mode button to enter Express Setup mode.
• Did you try to continue without confirming that the switch was in Express Setup mode?	• Verify that all LEDs left of the Mode button are green. If necessary, press the Mode button to enter Express Setup mode.
• Does your PC have a static IP address?	• If yes, change your PC settings to temporarily use DHCP before connecting to the switch.
• Did you connect a crossover cable instead of a straight-through Ethernet cable between a switch port and the Ethernet port of the PC?	• If yes, connect a straight-through cable to an Ethernet port on the switch and the PC. Wait 30 seconds before entering **10.0.0.1** in the browser.
• Did you connect the Ethernet cable to the console port instead of to a 10/100 or 10/100/1000 Ethernet port on the switch?	• If yes, disconnect from the console port. Connect to an Ethernet port on the switch and the PC. Wait 30 seconds before entering **10.0.0.1** in the browser.
• Did you wait 30 seconds after connecting the switch and the PC before entering the IP address in your browser?	• If not, wait 30 seconds, re-enter **10.0.0.1** in the browser, and press **Enter**.
• Did you enter the wrong address in the browser, or is there an error message?	• If yes, re-enter **10.0.0.1** in the browser, and press **Enter**.

Resetting the Switch

This section describes how to reset the switch by rerunning Express Setup. These are reasons why you might want to reset the switch:

- You installed the switch in your network and cannot connect to it because you assigned the wrong IP address.
- You want to clear all configurations from the switch and assign a new IP address.
- You are trying to enter Express Setup mode, and the switch LEDs start blinking when you press the Mode button, which means that the switch is already configured with IP information.

Caution Resetting the switch deletes the configuration and reboots the switch.

To reset the switch, press and hold the Mode button. The switch LEDs begin blinking after about 3 seconds. Continue holding down the Mode button. The LEDs stop blinking after 7 more seconds, and then the switch reboots.

The switch now behaves like an unconfigured switch. You can enter the switch IP information by using Express Setup as described in the "Running Express Setup" section on page 4.

Accessing Help Online

First look for a solution to your problem in the troubleshooting section of the *Catalyst 2960 Switch Hardware Installation Guide* or the *Catalyst 2960 Switch Software Configuration Guide* on Cisco.com. You can also access the Cisco Technical Support and Documentation website for a list of known hardware problems and extensive troubleshooting documentation, including:

- Factory defaults and password recovery
- Recovery from corrupted or missing software
- Switch port problems
- Network interface cards
- Troubleshooting tools
- Field notices and security advisories

Follow these steps:

1. Open your browser, and go to http://www.cisco.com/.
2. Click **Technical Support and Documentation**.
3. Under the Documentation section, click **Switches**.
4. Under the LAN Switches section, click **Cisco Catalyst 2960 Series Switches**.

For More Information

For more information about the switch, see these documents on Cisco.com:

- *Release Notes for the Catalyst 3750, 3560, 2970, and 2960 Switches*. Before you install, configure, or upgrade the switch, refer to the release notes on Cisco.com for the latest information.
- *Catalyst 2960 Switch Hardware Installation Guide*. This guide provides complete hardware descriptions and detailed installation procedures.
- *Regulatory Compliance and Safety Information for the Catalyst 2960 Switch* (ships with your product). This guide contains agency approvals, compliance information, and translated warning statements.
- *Catalyst 2960 Switch Software Configuration Guide*. This guide provides a product overview and detailed descriptions and procedures of the switch software features.
- *Catalyst 2960 Switch Command Reference*. This reference provides detailed descriptions of the Cisco IOS commands specifically created or modified for the switch.
- *Catalyst 3750, 3560, 3550, 2970, and 2960 Switch System Message Guide*. This guide provides descriptions of the system messages specifically created or modified for the switch.
- Device manager online help (available on the switch)
- Cisco Network Assistant online help (available on the switch)

8 Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

9 Cisco Limited Lifetime Hardware Terms

There are special terms applicable to your hardware warranty and various services that you can use during the warranty period. Your formal Warranty Statement, including the warranties and license agreements applicable to Cisco software, is available on Cisco.com. Follow these steps to access and download the *Cisco Information Packet* and your warranty and license agreements from Cisco.com.

1. Launch your browser, and go to this URL:

   http://www.cisco.com/univercd/cc/td/doc/es_inpck/cetrans.htm

   The Warranties and License Agreements page appears.

2. To read the *Cisco Information Packet*, follow these steps:

   a. Click the **Information Packet Number** field, and make sure that the part number 78-5235-03C0 is highlighted.

   b. Select the language in which you would like to read the document.

   c. Click **Go**.

      The Cisco Limited Warranty and Software License page from the Information Packet appears.

   d. Read the document online, or click the **PDF** icon to download and print the document in Adobe Portable Document Format (PDF).

   Note You must have Adobe Acrobat Reader to view and print PDF files. You can download the reader from Adobe's website: http://www.adobe.com

3. To read translated and localized warranty information about your product, follow these steps:

   a. Enter this part number in the Warranty Document Number field:

      78-6310-02C0

   b. Select the language in which you would like to view the document.

   c. Click **Go**.

      The Cisco warranty page appears.

   d. Read the document online, or click the **PDF** icon to download and print the document in Adobe Portable Document Format (PDF).

You can also contact the Cisco service and support website for assistance:

http://www.cisco.com/public/Support_root.shtml.

Duration of Hardware Warranty

A Cisco product hardware warranty is supported for as long as the original end user continues to own or use the product, provided that the fan and power supply warranty is limited to five (5) years. In the event of a discontinuance of product manufacture, the Cisco warranty support is limited to five (5) years from the announcement of the discontinuance.

Replacement, Repair, or Refund Policy for Hardware

Cisco or its service center will use commercially reasonable efforts to ship a replacement part within ten (10) working days after receipt of the Return Materials Authorization (RMA) request. Actual delivery times can vary, depending on the customer location.

Cisco reserves the right to refund the purchase price as its exclusive warranty remedy.

To Receive a Return Materials Authorization (RMA) Number

Contact the company from whom you purchased the product. If you purchased the product directly from Cisco, contact your Cisco Sales and Service Representative.

Complete the information below, and keep it for reference.

Company product purchased from	
Company telephone number	
Product model number	
Product serial number	
Maintenance contract number	

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Cisco Systems, Inc.
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