



# Get To Know Your Switch

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## Introduction

Thank you for purchasing the Cisco 250 Series Switch. The Cisco 250 Series Switches are the next generation of affordable smart switches that combine powerful network performance and reliability with a complete suite of network features that you need for a solid business network. These expandable Fast Ethernet or Gigabit Ethernet switches, with Gigabit or 10-Gigabit uplinks, provide multiple management options, rich security capabilities, and Layer-3 static routing features far beyond those of an unmanaged or consumer-grade switch, at a lower cost than fully managed switches. With an easy-to-use web user interface, Smart Network Application, and Power over Ethernet Plus capability, you can deploy and configure a complete business network in minutes.

### Before You Begin

Before you begin installing your device, ensure that the following items are available:

- RJ-45 Ethernet cables for connecting network devices. A category 6a and higher cable is required for 10G ports; a category 5e and higher cable is required for all other ports.
- Console cable for using the console port to manage your switch.
- Tools for installing the hardware.
  - The rack-mount kit packed with the switch contains four rubber feet for desktop placement, and two brackets and twelve screws for rackmounting.
  - If the supplied screws are lost, use replacement screws in the following size:
    - Diameter of the screw head: 6.9 mm

- Length of face of screw head to base of screw: 5.9 mm
- Shaft diameter: 3.94 mm
- Computer running on the following browsers: Microsoft Edge or Firefox (version 74 or 73 or higher), or Chrome (version 80 or 79 or higher), or Safari over MAC (version 12.1 and higher) for using the web-based interface or the console port to manage your switch.

**Warning**

Suitable for installation in information Technology Rooms in accordance with Article 645 of the national Electric Code and NFPA 75.

## Rack Mounting Switch

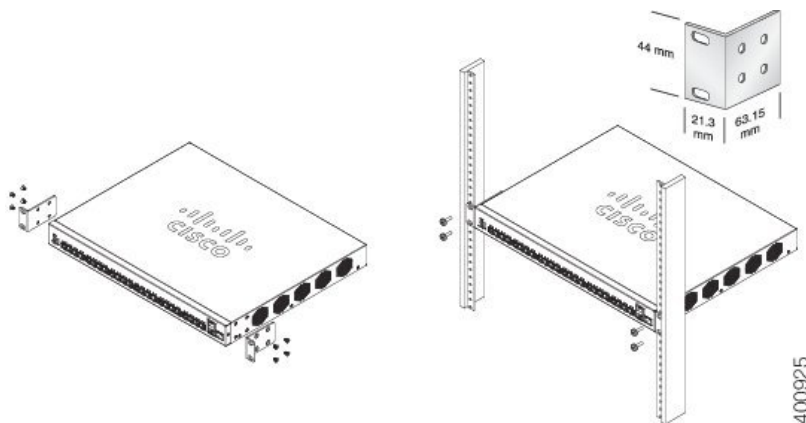
You can mount the switches on any standard size, 19-inch (about 48 cm) wide rack. The switch requires 1 rack unit (RU) of space, which is 1.75 inches (44.45 mm) high.

**Caution**

For stability, load the rack from the bottom to the top, with the heaviest devices on the bottom. A top-heavy rack is likely to be unstable and might tip over.

To install the switch into a 19-inch standard chassis:

- Step 1** Place one of the supplied brackets on the side of the switch so that the four holes of the brackets align to the screw holes, and then use the four supplied screws to secure it.
- Step 2** Repeat the previous step to attach the other bracket to the opposite side of the switch.
- Step 3** After the brackets are securely attached, the switch is now ready to be installed into a standard 19-inch rack.



# Power over Ethernet Considerations

Some switches support PoE while others do not. The switch models that support PoE have a P in their model number, such as: Sxxx-xxP-xx. If your switch is one of the Power over Ethernet (PoE) models, consider the following power requirement.



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

**Table 1: Switches with Power Over Ethernet**

| SKU Name   | Description  | PoE PD Chipset Type                  | PoE PSE Chipset Type                                  | PoE PD AF/AT/60W | PoE  |
|------------|--|--------------------------------------|---|------------------|------|
| SF250-24P  | SF250-24P 24-Port 10/100 PoE Smart Switch                          | N/A                                  | 3*69208M (0x4B42)                                     | N/A              | AF/A |
| SF250-48HP | SF250-48HP 48-Port 10/100 PoE Smart Switch                         | N/A                                  | 6* PD69208 (0x4AC2) / 6*69208M (0x4B42) (as of 2.2.7) | N/A              | AF/A |
| SG250-08HP | SG250-08HP 8-Port Gigabit PoE Smart Switch                         | N/A                                  | 1*69208M (0x4B42)                                     | N/A              | AF/A |
| SG250-10P  | SG250-10P 10-Port Gigabit PoE Smart Switch                         | 2x PD70210 + 2x PD70222 + 1?x LX7309 | 1* PD69208 (0x4AC2) / 1*69208M (0x4B42)               | AF/AT/60W        | AF/A |
| SG250-26HP | SG250-26HP 26-Port Gigabit PoE Smart Switch                        | N/A                                  | 3* PD69208 (0x4AC2) / 3*69208M (0x4B42)               | N/A              | AF/A |
| SG250-50HP | SG250-50HP 50-Port Gigabit PoE Smart Switch                        | N/A                                  | 6*69208M (0x4B42)                                     | N/A              | AF/A |
| SG250-50P  | SG250-50P 50-Port Gigabit PoE Smart Switch                         | N/A                                  | 6*69208M (0x4B42)                                     | N/A              | AF/A |
| SG250X-24P | SG250X-24P 24-Port Gigabit PoE with 4-Port 10-Gigabit Smart Switch | NA                                   | 3*69208M (0x4B42)                                     | NA               | AF/A |
| SG250X-48P | SG250X-48P 48-Port Gigabit PoE with 4-Port 10-Gigabit Smart Switch | NA                                   | 6*69208M (0x4B42)                                     | NA               | AF/A |

**Caution**

Consider the following when connecting a PoE switch. The PoE switches are PSE (Power Sourcing Equipment) that are capable of supplying DC power to attaching powered devices (PD). These devices include VoIP phones, IP cameras, and wireless access points. The PoE switches can detect and supply power to pre-standard legacy PoE PD. Due to the PoE legacy support, it is possible that a PoE switch acting as a PSE may mistakenly detect and supply power to an attaching PSE, including other PoE switches, as a legacy PD. Even though PoE switches are PSE, and as such should be powered by AC, they could be powered up as a legacy PD by another PSE due to false detection. When this happens, the PoE switch may not operate properly and may not be able to properly supply power to its attaching PDs.

To prevent false detection, you should disable PoE on the ports on the PoE switches that are used to connect to PSEs. You should also first power up a PSE device before connecting it to a PoE switch. When a device is being falsely detected as a PD, you should disconnect the device from the PoE port and power recycle the device with AC power before reconnecting its PoE ports.

## Front Panel

The following components are found on the front panel of the device:

- **USB Port**—The USB port connects the switch to a USB device so that you can save and restore the configuration files, firmware images, and SYSLOG files through the connected USB device. The USB port supports the FAT32 file system.
- **RJ-45 Ethernet Ports**—The RJ-45 Ethernet ports connect network devices, such as computers, printers, and access points, to the switch.
- **Multigigabit Ethernet Ports**—Highlighted in blue, these ports support speeds of 100 Mbps, 1 Gbps, 2.5 Gbps, and 5 Gbps on Cat 5e cables. Some uplink ports also support MultiGiga speed. In this case, port speed can reach 10Gbps. Much of the cabling deployed worldwide is limited to 1 Gbps at 100 meters. Cisco Multigigabit Ethernet enables speeds up to 2.5 or 5 Gbps on the same infrastructure without replacing a cable.
- **60-Watt PoE Ports**—Highlighted in yellow. The 60-Watt PoE ports double the PoE power to 60W. This is not found on the 250 devices nor on the SF350-48P device.
- **SFP+ Port (if present)**—The small form-factor pluggable plus (SFP+) are connection points for modules so that the switch can link to other switches. These ports are also commonly referred to as mini 10GigaBit Interface Converter ports. The term SFP+ is used in this guide.
  - The SFP+ ports are compatible with the following Cisco SFP 1G optical modules MGBSX1, MGBLH1, MGBT1, as well as other brands.
  - The Cisco SFP+ 10G optical modules that are supported in the Cisco switches are: SFP-10G-SR, SFP-10G-LR, SFP-10G-SR-S, and SFP-10G-LR-S.
  - The Cisco SFP+ Copper Cable modules that are supported in the Cisco switches are: SFP-H10GB-CU1M, SFP-H10GB-CU3M, and SFP-H10GB-CU5M.
  - The SFP+ port is a combination port, shared with one other RJ-45 port. When the SFP+ is active, the adjacent RJ-45 port is disabled.
  - The LEDs of the corresponding RJ-45 port flash green to respond to the SFP interface traffic.

- Some SFP interfaces are shared with one other RJ-45 port, called a combo port. When the SFP is active, the adjacent RJ-45 port is disabled.
- OOB Port (if present)—The Out of Band (OOB) port is a CPU Ethernet port that can be used only as a management interface. Bridging between the OOB port and the in-band Layer 2 interface is not supported. This does not appear on 250 devices.

## Front Panel LEDs

The following are the global LEDs found on the devices:

- LINK/ACT—(Green) Located on the left of each port. The LED lights steady when a link between the corresponding port and another device is detected, and flashes when the port is passing traffic.
- SFP+ (if present)—(Green) Located on the right of a 10G port. The LED lights steady when a connection is made through the shared port, and flashes when the port is passing traffic.

## Configuring Switches

The switch can be accessed and managed by two different methods; over your IP network using the web-based interface, or by using the switch's command-line interface through the console port. Using the console port requires advanced user skills.

The following table shows the default settings used when configuring your switch for the first time.

| Parameter | Default Value |
|-----------|---------------|
| Username  | cisco         |
| Password  | cisco         |
| LAN IP    | 192.168.1.254 |

## Configuring Your Switch Using the Web-based Interface

To access the switch with a web-based interface, you must know the IP address that the switch is using. The switch uses the factory default IP address of 192.168.1.254, with a subnet of /24. When the switch is using the factory default IP address, the System LED flashes continuously. When the switch is using a DHCP server-assigned IP address or an administrator has configured a static IP address, the System LED is a steady green (DHCP is enabled by default).

If you are managing the switch through a network connection and the switch IP address is changed, either by a DHCP server or manually, your access to the switch will be lost. You must enter the new IP address that the switch is using into your browser to use the web-based interface. If you are managing the switch through a console port connection, the link is retained.

To configure the switch using the web-based interface:

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**Step 1** Power on the computer and your switch.

**Step 2** Connect the computer to any network port.

**Note** For Cisco 350-550 XG switches, connect the computer to the OOB port found on the front panel.

**Step 3** Set up the IP configuration on your computer.

- a) If the switch is using the default static IP address of 192.168.1.254/24, you must choose an IP address for the computer in the range of 192.168.1.2 to 192.168.1.253 that is not already in use.
- b) If the IP addresses will be assigned by DHCP, make sure that your DHCP server is running and can be reached from the switch and the computer. You may need to disconnect and reconnect the devices for them to discover their new IP addresses from the DHCP server.

**Note** Details on how to change the IP address on your computer depend upon the type of architecture and operating system that you are using. Use your computers local Help and Support functionality and search for “IP Addressing.”

**Step 4** Open a web browser window.

**Step 5** Enter the switch IP address in the address bar and press **Enter**. For example, http://192.168.1.254.

**Step 6** When the login page appears, choose the language that you prefer to use in the web-based interface and enter the username and password.

The default username is cisco. The default password is cisco. Usernames and passwords are both case sensitive.

**Step 7** Click **Log In**.

If this is the first time that you have logged on with the default username and password, the Change username and Password page opens. The rules for constructing a new password are displayed on the page.

**Step 8** Enter a new username and password and confirm.

**Note** Password complexity is enabled by default. The password must comply with the default complexity rules.

**Step 9** Click **Apply**.

**Caution** Make sure that any configuration changes made are saved before exiting from the web-based interface by clicking on the Save icon. Exiting before you save your configuration results in all changes being lost.

The Getting Started page opens. You are now ready to configure the switch. Refer to the Administration Guide or see the help pages for further information.

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#### Browser Restrictions

If you are using IPv6 interfaces on your management station, use the IPv6 global address and not the IPv6 link local address to access the device from your browser.

## Configuring Your Switch Using the Console Port

To configure the switch using the console port, proceed with the following steps:

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**Step 1** Connect a computer to the switch console port using a Cisco console cable (purchased separately).

**Step 2** Start a console port utility such as HyperTerminal on the computer.

**Step 3** Configure the utility with the following parameters:

- 115200 bits per second
- 8 data bits
- no parity
- 1 stop bit
- no flow control

**Step 4** Enter a username and password. The default username is cisco, and the default password is cisco. Usernames and passwords are both case sensitive.

If this is the first time that you have logged on with the default username and password, the following message appears:

```
Please change your username AND password from the default settings. Change of credentials
is required for better protection of your network.
Please note that new password must follow password complexity rules
```

**Step 5** Set a new administrator username and password.

**Caution** Make sure that any configuration changes made are saved before exiting.

You are now ready to configure the switch. See the CLI Guide for your switch.

**Note** If you are not using DHCP on your network, set the IP address type on the switch to Static and change the static IP address and subnet mask to match your network topology. Failure to do so may result in multiple switches using the same factory default IP address of 192.168.1.254.

Console access also provides additional interfaces for debug access which are not available via the web interface. These debug access interfaces are intended to be used by a Cisco Support Team personnel, in cases where it is required to debug device's behavior. These interfaces are password protected. The passwords are held by the Cisco support team. The device supports the following debug access interfaces:

- U-BOOT access during boot sequence
- Linux Kernel access during boot sequence
- Run time debug modes - allows Cisco support team to view device settings and apply protocol and layer 1 debug commands and settings. The run time debug mode is accessible over telnet and SSH terminals in addition to console.

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## Restoring Factory Default Settings

To restore the switch to factory default settings, use the **Reset** button to reboot or reset the switch and do the following:

- To reboot the switch, press and hold the **Reset** button for less than ten seconds.
- To restore the switch to its factory default settings:
  - Disconnect the switch from the network or disable all DHCP servers on your network.

- With the power on, press and hold the **Reset** button for more than ten seconds.

## Product Models

The following are the available product models:

**Table 2: Product Models**

| SKU Name   | Description  |
|------------|--|
| SF250-24   | SF250-24 24-Port 10/100 Smart Switch                               |
| SF250-24P  | SF250-24P 24-Port 10/100 PoE Smart Switch                          |
| SF250-48   | SF250-48 48-Port 10/100 Smart Switch                               |
| SF250-48HP | SF250-48HP 48-Port 10/100 PoE Smart Switch                         |
| SG250-08   | SG250-08 8-Port Gigabit Smart Switch                               |
| SG250-08HP | SG250-08HP 8-Port Gigabit PoE Smart Switch                         |
| SG250-10P  | SG250-10P 10-Port Gigabit PoE Smart Switch                         |
| SG250-18   | SG250-18 18-Port Gigabit Smart Switch                              |
| SG250-26   | SG250-26 26-Port Gigabit Smart Switch                              |
| SG250-26HP | SG250-26HP 26-Port Gigabit PoE Smart Switch                        |
| SG250-26P  | SG250-26P 26-Port Gigabit PoE Smart Switch                         |
| SG250-50   | SG250-50 50-Port Gigabit Smart Switch                              |
| SG250-50HP | SG250-50HP 50-Port Gigabit PoE Smart Switch                        |
| SG250-50P  | SG250-50P 50-Port Gigabit PoE Smart Switch                         |
| SG250X-24  | SG250X-24 24-Port Gigabit with 4-Port 10-Gigabit Smart Switch      |
| SG250X-24P | SG250X-24P 24-Port Gigabit PoE with 4-Port 10-Gigabit Smart Switch |
| SG250X-48  | SG250X-48 48-Port Gigabit with 4-Port 10-Gigabit Smart Switch      |
| SG250X-48P | SG250X-48P 48-Port Gigabit PoE with 4-Port 10-Gigabit Smart Switch |

## Navigation

The navigation menu, located at the top right of each UI page, lists the device's main features. You can access each feature's UI pages using a series of cascading menus. To access an individual UI page, click the



corresponding feature tab in the navigation menu to display a menu of subcategories. Select a subcategory and repeat this process until you see the desired page, and then select the page to display it in the main window.

## Basic or Advanced Display Mode

The product supports many features, and therefore the WEB GUI includes hundreds of configuration and display pages. These pages are divided into the following display modes:

- Basic—Basic subset of configuration options are available. If you are missing some configuration option, select the Advanced mode in the device header.
- Advanced—Full set of configuration options are available.

When the user switches from basic to advanced, the browser reloads the page. However, after reload, the user stays on the same page. When the user switches from advanced to basic, the browser reloads the page. If the page exists also on the basic mode, the user stays on the same page. If the page does not exist in the basic mode, the browser will load the first page of the folder which was used by the user. If the folder does not exist, the Getting Started page will be displayed.

If there is advanced configuration, and the page is loaded in basic mode, a page-level message will be displayed to the user (e.g. there are 2 radius server configured but in basic mode only a single server can be displayed, or there is 802.1X port authentication with time range configured but time range is not visible in basic mode). When switching from one mode to another, any configuration which was made on the page (without Apply) is deleted.

