



Quick Start Guide



500 Series Stackable Managed Switches

Welcome

Thank you for choosing the Cisco 500 Series Stackable Managed Switch, a Cisco network communications device. This device is designed to be operational right out of the box as a standard layer 2 and 3 switch. In the factory default configuration, it will forward packets between connecting devices after power up.

Before you begin installing the switch, make sure you have all of the package contents available, access to the *Cisco 500 Series Stackable Managed Switch Administration Guide*, and a PC with a web browser for using web-based system management tools.

Package Contents

- Cisco 500 Series Switch
- Rackmount Kit
- Power Cord
- This Quick Start Guide
- Product CD
- Serial Cable
- Rubber Feet

This guide will familiarize you with the layout of the switch and describe how to deploy the device in your network. For additional information, see www.cisco.com/smb.

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Mounting the Cisco Stackable Managed Switch

There are two ways to physically install the switch:

- Set the switch on a flat surface.
- Mount the switch in a standard rack (1 rack unit).

Do not deploy the device in a location where any of the following conditions exist:

High Ambient Temperature—The ambient temperature must not exceed 104 degrees Fahrenheit (40 degrees Centigrade).

Reduced Air Flow—Both side panels must be unobstructed to prevent overheating.

Mechanical Overloading—The device should be level, stable, and secure to prevent it from sliding or shifting out of position.

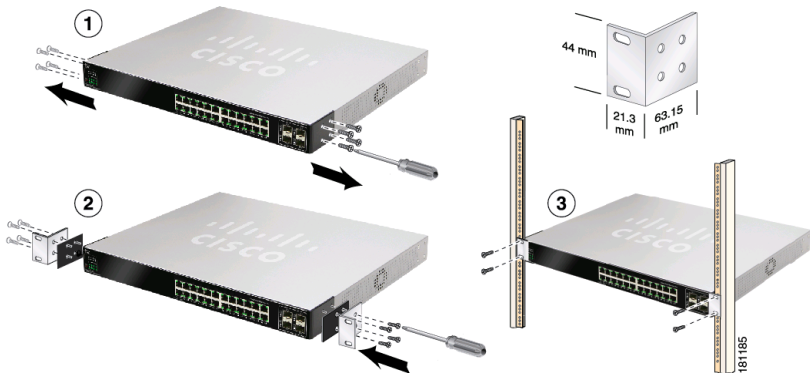
Circuit Overloading—Adding the device to the power outlet must not overload that circuit.

Rack-Mount Placement

STEP 1 Remove the four screws from each side near the front of the switch. Retain the screws for re-installation. (Do not remove the four screws from each side near the back of the switch.)

STEP 2 Place one of the supplied spacers on the side of the switch so the four holes of the spacers align to the screw holes. Place a rack mount bracket next to the spacer and reinstall the four screws removed in step 1.

NOTE If your screws are not long enough to reattach the bracket with the spacer in place, attach the bracket directly to the case without the spacer.



STEP 3 Repeat **Step 2** for the other side of the switch.

STEP 4 After the mounting hardware has been securely attached, the switch is now ready to be installed into a standard 19-inch rack.



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.

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Connecting Network Devices

To connect the switch to the network:

STEP 1 Connect an Ethernet cable to an Ethernet port of a computer, printer, network storage, or other network device.

STEP 2 Connect the other end of the network Ethernet cable to one of the numbered switch Ethernet ports.

The Ethernet port light turns green when the connection is active. Refer to **External Features of the Cisco 500 Series Stackable Managed Switch, page 12** for details about the different ports and LEDs on each switch.

STEP 3 Repeat **Step 1** and **Step 2** for each device you want to connect to the switch.

NOTE Cisco strongly recommends using Cat5 or better cable for Gigabit connectivity. When you connect your network devices, do not exceed the maximum cabling distance of 100 meters (328 feet). It can take up to one minute for attached devices or the LAN to be operational after it is connected. This is normal behavior.

NOTE 500 Series switches have both standard Ethernet and stack ports. Standard ethernet ports can not be used for stacking. Refer to **Stacking the Switches, page 8** for additional details.

Power over Ethernet (PoE) Considerations

If your switch is one of the PoE models, as a PSE (Power Sourcing Equipment) device, the switch supports 802.3at which can deliver up to 30 Watts per PoE port to a PD (Powered Device).

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Configuring the 500 Series Stackable Managed Switch

Before You Begin

Verify the managing computer requirements in the product release notes. The switch can be accessed and managed by two different methods; over your IP network using the web-based interface, or by the Command Line Interface (CLI) through the console port. Using the console port requires advanced user skills.

Accessing and Managing Your Switch

Use the Web-Based Interface

To access the switch by using the web-based interface, you must know the IP address the switch is using. The switch uses the factory default IP address of **192.168.1.254** by default.

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 on solid (DHCP is enabled by default).

NOTE 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 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 through an IP network:

STEP 1 Power on the computer and the switch.

STEP 2 Set the IP configuration on your computer.

- a. If the switch is using the factory default IP address of **192.168.1.254**, you must chose an IP address for the computer in the range of 192.168.1.1-192.168.1.253 that is not already in use.
- b. If the IP addresses is assigned by a DHCP server, make sure the DHCP server is running and can be reached from the switch and the computer. It might be necessary 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 you are using. Use the computer Help and Support functionality to search for “IP Addressing.”

STEP 3 Open a Web browser window. If you are prompted to install an Active-X plug-in when connecting to the device, follow the prompts to accept the plug-in.

STEP 4 Enter the switch IP address in the address bar and press **Enter**. For example, **http://192.168.1.254**.

The *Switch Login Page* displays.

STEP 5 Enter the default login information:

- Username is **cisco**
- Default password is **cisco** (passwords are case sensitive)

STEP 6 If this is the first time that you have logged on with the default username and password, the *Change Password Page* opens. The rules for constructing a new login and password are displayed on the page. Enter a new administrator password and click **Apply**.



CAUTION

Make sure that any configuration changes made are saved to the Startup configuration before exiting from the web-based interface by clicking on the **Save** icon. Exiting before you save your configuration will result in all current changes being lost the next time the switch is rebooted.

The **Getting Started** window displays. You are now ready to configure the switch. Refer to the *Cisco 500 Series Stackable Managed Switch Administration Guide* for further information.

Use the console port

To configure the switch by using the console port:

STEP 1 Connect a computer to the switch console port by using the provided serial cable.

STEP 2 Start a terminal application such as HyperTerminal on the computer.

STEP 3 Configure the utility with the following parameters:

- 115200 bits per second (with release 1.2.7 of the firmware, autobaud detection is enabled by default, so the switch should detect the speed after you press Enter).

- 8 data bits
- no parity
- 1 stop bit
- no flow control

STEP 4 Enter a user name and password. User names and passwords are both case sensitive and alpha-numeric. The default username is **cisco**, and the default password is **cisco**.

STEP 5 If this is the first time that you have logged on with the default username and password, the following message appears:

```
Please change your password from the default
settings. Please change the password for better
protection of your network. Do you want to change
the password (Y/N) [Y]?
```

STEP 6 Select **Y**, and enter a new administrator password.



CAUTION

Make sure that any configuration changes are saved before exiting by issuing the command:

```
copy running-config startup-config
```

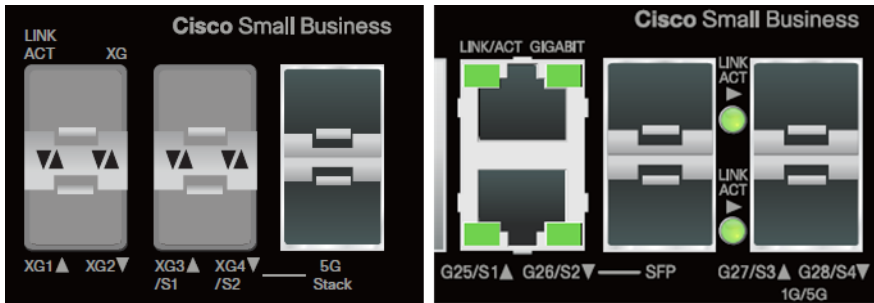
You are ready to configure the switch. Refer to the *Cisco 500 Series Stackable Managed Switch Administration Guide* for further information.

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.

Stacking the Switches

Before configuring the switches as a stack, refer to the *Cisco 500 Series Stackable Managed Switch Administration Guide* for additional details. Refer to the front panel graphics in [External Features of the Cisco 500 Series Stackable Managed Switch, page 12](#) to help with the stack port descriptions and supported modules.

The following graphic shows the stack ports to assist in connecting the devices in a stack:



The 500X model is on the left, and the Sx500 model is on the right.

TIP The default stack ports on the 500X are XG3/S1 and XG4/S2. If the correct module is plugged into XG3/S1 and XG4/S2, the switch should be able to detect the connection and configure the speed according to the module capability without any manual configuration. The 5G/S1 and 5G/S2 interfaces on the 500X need to be configured manually via the CLI or web-based interface in order to utilize these ports as stack ports.

TIP The default stack ports on the 500 are S3 and S4. If the correct module is plugged into S3 and S4, the switch should be able to detect the connection and configure the speed according to the module capability without any manual configuration. The S1 and S2 interfaces on the 500 need to be configured manually via the CLI or web-based interface in order to utilize these ports as stack ports.

**WARNING**

The stack ports must be either configured with the same port speed or have the same speed capability on the module/cable plug in. If the port speed is configured as auto, then the module plugged into these two ports will need to have the same speed capability, otherwise the switch will not be able to form as a stack with multiple units.

By default, the switch is in stack mode with a stack Unit ID automatically assigned. A stack can have up to eight 500 series switches in it.

Switches in the same stack are connected together through their stack ports. Depending on the type of stack ports and the desired speed, you may need regular Cat5 or better Ethernet cables and/or Cisco approved modules or cables for the 500 Series switches.

The default stack ports on a switch function as regular Ethernet ports only by configuring them to do so, or if the switch is configured to operate in standalone mode. You cannot mix the stack speeds between the switches or ports.

If you manually assign a Unit ID to one unit, you should manually assign Unit IDs to *all* units. Using both system-assigned and manually-assigned IDs in your network can impact system performance.

Changing the stack mode of a switch requires a reboot of the switch.

Stack Unit Modes

Devices can operate in one of the following Stack Unit modes:

- **Standalone**—A device in Standalone Stack Unit mode is not connected to any other device and does not have a stack port.
- **Native Stacking**—A device in Native Stacking mode can be connected to other devices *of the same type* through its stack ports to form a stack. All units in a native stack must be of the same type (either all Sx500s or all SG500Xs).
- **Basic Hybrid**—A device in Basic Hybrid mode can be connected to other devices of the 500 series to form a stack. The only limitation (and the reason that this mode is called Basic Hybrid as opposed to Advanced Hybrid) is that there is no support for VRRP or RIP. The GUI displays the pages of Sx500, even if the stack master is SG500X, since the feature set is that of the Sx500.

In this mode, any type of device can take the master/backup roles. Only the 5G stacking ports can be used as stack ports.

- **Advanced Hybrid**—A device in Advanced Hybrid mode can be connected to other devices of the 500 series to form a stack. In this mode, VRRP and/or RIP are supported. In this mode, auto numbering of units is not supported, because only the SG500X devices can function as master/backup.

The master and backup master units must be SG500X devices. Sx500 devices can only be slaves, therefore up to 6 Sx500 units can be stacked together with two SG500X devices.

Stack Configuration Options

The following describes some typical stack configurations:

| Possible Stack Configuration | Stack Ports Speed |
|---|--|
| Stack consists of all SG500Xs in Native Stacking mode. | 1G/10G or 1G/5G |
| Stack consists of all Sx500s in Native Stacking mode. | 1G/5G (default) or 1G Copper/SFP (Combo) |
| Stack consists of mixed device types in Basic Hybrid mode. <ul style="list-style-type: none"> ▪ Master: Either type of device ▪ Backup: Either type of device ▪ Slaves: Either type of device | 1G/5G |
| Stack consists of mixed device types in Advanced Hybrid mode. <ul style="list-style-type: none"> ▪ Master: SG500X ▪ Backup: SG500X ▪ Slaves: Either type of device | 1G/5G |

Example Stacking Scenarios

NOTE Speeds listed below that use *xx*-auto mean auto-detection of the SFP speed.

For the SG500X-24, SG500X-24P, SG500X-48, or SG500X-48P devices, the following information applies:

Stacking Option One (default option):

- Ports XG3/S1 and XG4/S2 are configured as stack ports
 - Speed—1G, 10G, 1G/10G-auto

- 5G is not available
- Ports XG1 and XG2 are available as standard network ports
 - Speed—1G or 10G

Stacking Option Two:

- Ports XG3/S1 and XG4/S2 are not available
- Port S1, S2 and 5G are configured as stack ports
 - Speed—1G, 5G, 1G/5G-auto
- Ports XG1 and XG2 are available as standard network ports
 - Speed—1G or 10G

Non-Stacking standalone option:

- Ports XG3/S1 and XG4/S2 available as standard network ports
 - Speed—1G or 10G
- Port S1, S2 and 5G are not available
- Ports XG1 and XG2 are available as standard network ports
 - Speed—1G or 10G

For the SF500-24, SF500-24P, SF500-48, SF500-48P, SG500-28, SG500-28P, SG500-52, or SG500-52P devices, the following information applies:

Stacking Option One (default option):

- Ports S3 and S4 are configured as stack ports
 - Speed—1G, 5G, 1G/5G-auto
- Ports S1 and S2 are available as standard network ports
 - Speed—1G or 100M
- Port S1/SFP, S2/SFP are available as standard network ports
 - Speed—1G or 100M

NOTE These two connection options (S1 and S2 or S1/SFP and S2/SFP) cannot run at the same time, they are configured as one or the other. Any connections using the SFP ports take precedence over the other combination ports.

Stacking Option Two:

- Ports S1/SFP and S2/SFP are configured as stack ports
 - Speed—1G
- Ports S3 and S4 are available as standard network ports
 - Speed—1G

Non-Stacking standalone option:

- Port S1/SFP, S2/SFP are available as standard network ports
 - Speed—1G or 100M
- Ports S3 and S4 are configured as standard networking ports
 - Speed—1G

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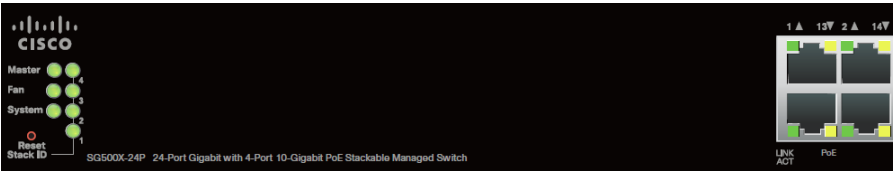
External Features of the Cisco 500 Series Stackable Managed Switch

This section describes the exterior of the switches including ports, LEDs, and connectors.

Front Panel

The ports and LEDs are located on the front panel of the switch.

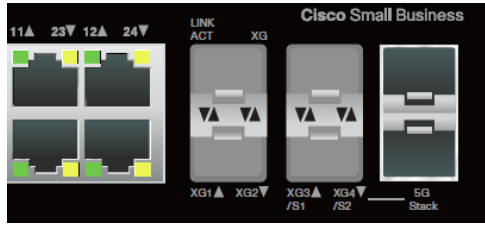
500X Left Side



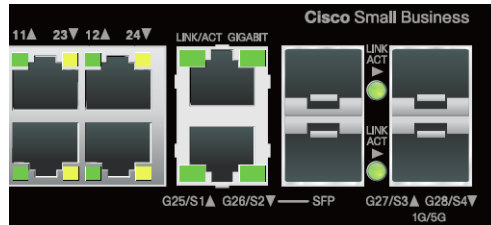
500 Left Side



500X Right Side



500 Right Side



RJ-45 Ethernet Ports—Use these ports to connect network devices, such as computers, printers, and access points, to the switch. Standard Ethernet ports can not be used to stack the switches.

SFP (if present)—The small form-factor pluggable (SFP) are connection points for modules, so the switch can link to other switches. These ports are also commonly referred to as miniGigaBit Interface Converter (miniGBIC) ports. The term SFP will be used in this guide.

- SFP ports are compatible with Cisco modules MGBSX1, MGBLH1, MGBLX1, MGBBX1, MFELX1, MFEFX1, and MFEBX1, as well as other brands of modules.
- Cisco SFP+ optical modules that are supported in the 500X switches are: SFP-10G-SR, SFP-10G-LRM, and SFP-10G-LR.
- The 500 and 500X switches support the following SFP+ Copper Cable modules for stacking: SFP-H10GB-CU1M, SFP-H10GB-CU3M, and SFP-H10GB-CU5M.
- SFP interface is a combination port, shared with one other RJ-45 interface. When the SFP is active, the adjacent RJ-45 port is disabled.
- The LEDs of the shared RJ-45 port light to respond to the SFP interface traffic.

Front Panel LEDs

Master—(Green) Lights steady when this switch is a stack master.

Fan—(Green) Lights steady when the cooling fan is operational, blinks green if there is a failure.

System LED—(Green) Lights steady when the switch is powered on, and flashes when booting, performing self tests, or acquiring an IP address. If the LED flashes Amber, the switch has detected a hardware failure.

Stack ID—(Green) Lights steady when this switch is stacked and the corresponding number indicates its Stack ID. When a switch has a Stack ID greater than 4, a combination of the LEDs will light up to add up to the Stack ID. For example, Stack ID #5 is LED# 1 and LED#4, Stack ID #8 will show LED# 1, LED#3 and LED#4.

NOTE The above LEDs are found on each model of the switch. The following LEDs are only present on switch models that have those capabilities:

LINK/ACT LED—(Green) Located on the left of each port. The light is steady when a link between the corresponding port and another device is detected. Flashes when the port is passing traffic.

PoE (if present)—(Amber) Located on the right of a PoE port. Lights steady to indicate that power is being supplied to a device attached to the corresponding port.

100M LED (if present)—(Green) Located on the right of the port. Lights steady when another device is connected to the port, is powered on, and a 100 Mbps link is established between the devices. When the LED is off, the connection speed is under 100 Mbps or nothing is cabled to the port.

Gigabit LED (if present)—(Green) Located on the right of a GE port. Lights steady when another device is connected to the port, is powered on, and a 1000 Mbps link is established between the devices. When the LED is off, the connection speed is under 1000 Mbps or nothing is cabled to the port.

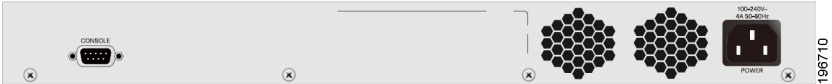
SFP (if present)—(Green) Located on the right of a GE port. Lights steady when a connection is made through the shared port. Flashes when the port is passing traffic.

Reset Button

The switch can be reset by inserting a pin or paper clip into the reset button opening on the front panel of the switch. See [Returning the Device to the Factory Default Settings and Troubleshooting, page 15](#) for details.

Back Panel

The power port and console port are located on the back panel of the switch.



Power—Connects the switch to AC power.

Console—Connects a serial cable to a computer serial port so that it can be configured by using a terminal emulation program.

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Returning the Device to the Factory Default Settings and Troubleshooting

To use the **Reset** button to reboot or reset the switch, do the following:

- To **reboot** the switch, press and hold the **Reset** button for less than 10 seconds.
- To **restore** the switch configuration to the factory default settings:
 1. Disconnect the switch from the network or disable all DHCP servers on your network.
 2. With the power on, press and hold the **Reset** button for more than 10 seconds.

Troubleshoot Your Connection

If you cannot access your switch from the web-based interface, the switch might not be reachable from your computer. You can test network connections by using **ping** on a computer running Windows:

STEP 1 Open the Terminal application.

STEP 2 Enter the **ping** command and the *switch IP address*. For example **ping 192.168.1.254** (the default IP address of the switch).

If you can reach the switch, you should get a reply similar to the following:

```
Pinging 192.168.1.254 with 32 bytes of data:  
Reply from 192.168.1.254: bytes=32 time<1ms TTL=128
```

If you cannot reach the switch, you should get a reply similar to the following:

```
Pinging 192.168.1.254 with 32 bytes of data:  
Request timed out.
```

Possible Causes and Resolutions

Bad Ethernet connection:

Check the LEDs for proper indications. Check the connectors of the Ethernet cable to ensure they are firmly plugged into the switch and your computer.

Bad console port connection:

Check the console cable connectors to make sure they are firmly plugged into the switch and your computer. Make sure the terminal application is configured with the correct parameters.

Wrong IP address:

Make sure you are using the correct IP address for the switch. You can determine the status of how the switch obtained the current IP address by observing the system LED. You can determine the current IP address of the switch through the console port interface by using the CLI, or from your network administrator.

Make sure that no other device is using the same IP address as the switch.

No IP route:

If the switch and your computer are in different IP subnets, you need one or more routers to route the packets between the two subnets.

Unusually long access time:

Most connections will be available in a few seconds. Due to the standard spanning tree loop detection logic, adding new connections might take 30 to 60 seconds for the affected interfaces and/or LAN to become operational.

| Support | |
|--|--|
| Cisco Support Community | www.cisco.com/go/smallbizsupport |
| Cisco Support and Resources | www.cisco.com/go/smallbizhelp |
| Phone Support Contacts | www.cisco.com/en/US/support/tsd_cisco_small_business_support_center_contacts.html |
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| Warranty Information | www.cisco.com/go/warranty |
| Other Cisco Resources | |
| Cisco Partner Central (Partner Login Required) | www.cisco.com/web/partners/sell/smb |

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