Welcome
Thank you for choosing the Cisco ESW2 Series Advanced Switch, a Cisco network communications device. This device is designed to be operational right out of the box as a standard bridge. In the 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 ESW2 Series Advanced Switch Administration Guide, and a PC with a web browser for using web-based system management tools.

Package Contents
- Cisco ESW2 Series Advanced Switch
- Rackmount Kit
- 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.

Mounting the Cisco 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 high).

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 (50 degrees Centigrade).

Reduced Air Flow—Front and back vent holes 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 may tip over.
Replacing or Reversing the Fan

Mounting the switch in a rack environment requires proper air flow. The fan module of the ESW2 switch can be reversed to allow for air flow from front to back, or back to front. The default configuration is flowing from front to back. To reverse the air flow on your switch, or to replace a defective fan module, perform the following:

**Step 1**
Remove the fan tray from the back of the switch by twisting the two thumb screws until they are loose, then pull the fan tray out of the switch.

![Fan Tray Removal](image-url)

**Step 2**
Squeeze the two release tabs on the fan module between your thumb and finger, then pull the module straight up out of the fan tray.

![Fan Module Removal](image-url)
**STEP 3** (Optional) To reverse the air flow on the switch, rotate the fan module 180 degrees.

**STEP 4** Place the fan module back into the fan tray by lining it up with the guides and pushing straight down. You should hear an audible click when it is in place.
**STEP 5** Insert the fan tray back into the switch, and secure it by tightening the thumb screws.

**STEP 6** Check for proper air flow.

### DC Electrical Connections

Power installation must be performed by a qualified electrician and followed by the local and national electrical codes ANSI/NFPA 70 and Canadian Electrical Code, Part I, CSA C22.1

**WARNING** Before powering on the switch for the first time, you must properly connect the frame of the switch to earth ground. This is necessary to reduce the effects of external electrical noise, and help protect the user from electrocution. The minimum gauge wire for grounding is 18AWG.

**WARNING** Hazardous voltage or energy may be present on DC power terminals.

Proper grounding is from an earth connection to the terminal ground screw on the back of the switch. In the following diagram, 1 is the grounding tab screwed into place on the grounding lug of the terminal strip, and 2 is the grounding cable to earth ground.
DC power connections must meet the following criteria:

- Branch circuit over-currant protection must be rated at 20A.
- The circuit breaker must have a contact separation of at least 3mm.
- The DC power rating is -38 — -72 VDC ± 0% 2.5A.

In the following diagram, 1 is the DC power main, and 2 is the circuit breaker.
Connecting Network Devices

To connect the switch to the network:

**STEP 1** Connect the Ethernet cable to the 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 ESW2 Series Advanced Switch, page 14* 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** ESW 550 Series switches have both standard Ethernet and stack ports. Standard ethernet ports can not be used for stacking. Refer to *Stacking the ESW2 Series Advanced Switch, page 11* for additional details.

Configuring the ESW2 Series Advanced Switch

**Before You Begin**

Verify the managing computer requirements in the product release notes.

The switch can be managed by two different methods: using the web-based interface, or the Command Line Interface (CLI).
Accessing and Managing Your Switch

Use the console port
To configure the switch 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 1.2.9, 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 made are saved before exiting by issuing the command:
```
copy running-config startup-config
```

You are now ready to configure the switch. Refer to the *Cisco ESW2 Series Advanced Switch Administration Guide* for further information.
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 up the IP configuration on your computer.

a. If the switch is using the default static IP address of 192.168.1.254, you must chose an IP address 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 Help and Support functionality on your computer and 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 ESW2 Series Advanced 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 ESW2 Series Advanced Switch**

The 550 series switches can be configured in a stack. The 350 series switches do not have stack capability. Before configuring the switches as a stack, refer to the *Cisco ESW2 Series Advanced Switch Administration Guide* for additional details. Refer to the front panel graphics in *External Features of the ESW2 Series Advanced Switch, page 14* 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 default stack ports on the 550X 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 550X need to be configured manually via the CLI or web-based interface in order to utilize these ports as stack ports.

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 four 550X models.

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 550 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.

Example Stacking Scenarios

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

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.

External Features of the ESW2 Series Advanced Switch

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

Front Panel

The ports and LEDs are located on the front panel of the switch.
Left Side of 350 Panel

Left Side of 550 Panel

Right Side of 350 Panel

Cisco ESW2 Series Advanced Switches
Right Side of 550 Panel

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/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 1G modules MGBT1, MGBSX1, MGBLH1, MGBLX1, MGBBX1; and 100M modules MFELX1, MFEFX1, and MFEBX1, as well as other brands of modules.

- SFP+ interface (XG1-XG4) support the following modules:
  - Cisco SFP+ 10G Optical Modules:
    - SFP-10G-SR
    - SFP-10G-LRM
    - SFP-10G-LR
  - Cisco SFP+ Copper Twixex Cable:
    - SFP-H10GB-CU1M
    - SFP-H10GB-CU3M
    - SFP-H10GB-CU5M

**NOTE** SFP+ modules are backward compatible with the 1G modules only, not the 100M SFP modules. The SFP interface supports the 1G and 100M SFP module, and the SFP+ interface supports the 1G and 10G modules. The 5G interface supports Copper Twixex Cable.
• 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. Combo ports are indicated by the presence of a bar on the panel that connects them, as shown in the following example:

![Combo Port Example]

• The LEDs of the shared RJ-45 port light to respond to the SFP interface traffic.

**Front Panel LEDs**

**Master (550 Series only)**—(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, and acquiring an IP address. If the LED flashes Amber, the switch has detected a hardware failure.

**Stack ID (550 Series only)**—(Green) Lights steady when this switch is stacked and the corresponding number indicates its stack ID.

**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.

**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 opening. See *Returning the Device to the Factory Default Settings, page 19* for details.

**Back Panel**
The power connector and console port are located on the back panel of the switch.

**Console**—The Console port is where you can connect a serial cable to a computers serial port for configuration using a terminal emulation program.

**DC Power and Ground**—The Power and Ground connector is where you will connect the switch to DC power and earth ground. The connections from left to right are; earth ground, negative, and positive.

Review the warnings and information in the *DC Electrical Connections, page 6* section before connecting power to the device.
Returning the Device to the Factory Default Settings

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

- To **reboot** the switch, press 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.
## Where to Go From Here

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### Product Documentation

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