

Get To Know Your Switch

This chapter contains the following sections:

- Introduction, on page 1
- Features of the Cisco Catalyst C1200 Switches, on page 2
- Front Panel, on page 6
- Rack Mounting Switch, on page 8
- Wall Mounting a Switch, on page 9
- Configuring Switches, on page 10
- Navigation, on page 13

Introduction

Thank you for choosing the Cisco Catalyst Series Switch. These switches combine powerful network performance and reliability with a complete suite of network features that you need for a solid business network. These expandable 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.

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.
- 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 rack mounting.
  - If the supplied screws are lost, use replacement screws in the following size:
    - Diameter of the screw head: 6.9 mm
    - Length of the face of the screw head to the base of screw: 5.9 mm
    - Shaft diameter: 3.94 mm

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

- A computer to manage the device either via the console port or via the web-based interface. for web-based interface the computer needs to support one of the following browsers:
  - Microsoft Edge
  - Firefox (version 82 or 81 or higher)
  - Chrome (version 86 or 85 or higher)
  - Safari over MAC (version 14.0 and higher)

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

Features of the Cisco Catalyst C1200 Switches

Cisco Catalyst 1200 and 1300 Series Switches are fixed-managed Gigabit Ethernet enterprise-lite Layer 2 switches designed for small and medium-size businesses and branch offices. These are simple, flexible, and secure switches ideal for any size business. Cisco® Catalyst 1200 and 1300 operate on Linux-based Software. The switches support simple device management and network management via a command-line interface (CLI) as well as an on-box web UI. These switches deliver enhanced network security, network reliability, and operational efficiency for small and medium organizations.

Product Highlights

- 8, 16, 24, or 48-Gigabit Ethernet with multiple PoE and SFP options
- Models support 802.3af PoE and 802.3at PoE+ with a power budget of up to 740W.
- Support Command-Line Interface (CLI) and/or intuitive web UI manageability options
- Security with 802.1X support for connected devices, Web-based authentication provides a consistent interface to authenticate all types of host devices and operating systems, without the complexity of deploying IEE 802.1x clients on each endpoint.
- Compact fanless models available with a depth of less than 13 inches (33 cm), providing additional deployment flexibility include outside wiring closet installation such as retail stores, open plan offices and classrooms.
- Support for the Energy-Efficient Ethernet (IEE 802.3az) standards, which reduces energy consumption by monitoring the amount of traffic on the ports and optimizing the power during quite periods.
- Device management support with over-the-air access via Bluetooth, Simple Network Management Protocol (SNMP), USB-C console access.

Product ID*	Gigabit Ethernet	Uplink interfaces	PoE power budget	Fanless	Dimensions (WxDxH in inches)	Weig (kg)
C1200-8T-D	8 x1G RJ45, 1 x 1G PD PoE	2 SFP/ RJ-45 combo	12.95W	Y	10.56 x 7.28 x 1.73	1.80
C1200-8T-E-2G	8 1G RJ45 Data	2 SFP/ RJ-45 combo	–	Y	10.56 x 7.28 x 1.73	1.55
C1200-8P-E-2G	8 1G RJ45 PoE	2 SFP/ RJ-45 combo	67W	Y	10.56 x 12.73 x 1.73	1.55
C1200-8FP-E-2G	8 1G RJ45 PoE+	2 SFP/ RJ-45 combo	120W	Y	10.56 x 7.28 x 1.73	1.55
C1200-16T-2G	16 1G RJ45 Data	+2GE SFP uplink	–	Y	10.56 x 10.69 x 1.73	1.78
C1200-16P-2G	16 1G RJ45 PoE	+2GE SFP uplink	120W	Y	10.56 x 11.69 x 1.73	2.38
C1200-24T-4G	24 1G RJ45 Data	+4GE SFP uplink	-	Y	17.48 x 9.45 x 1.73	2.63
C1200-24P-4G	24 1G RJ45 PoE+	+4GE SFP uplink	195W	Y	17.48 x 11.76 x 1.73	3.53
C1200-24FP-4G	24 1G RJ45 PoE+	+4GE SFP uplink	370W	N	17.48 x 13.59 x 1.73	4.6
C1200-24T-4X	24x1G downlink+4x10GE SFP+ uplink	4x10GE SFP+ uplink	-	N	17.48 x 13.59 x 1.73	2.78
C1200-24P-4X	24x1G downlink+4x10GE SFP+ uplink	4x10GE SFP+ uplink	195	N	17.48 x 13.59 x 1.73	3.68
C1200-24FP-4X	24x1G downlink+4x10GE SFP+ uplink	4x10GE SFP+ uplink	375	Y	17.48 x 13.59 x 1.73	4.6
C1200-48T-4G	48x 1G RJ45 Data	+4GE SFP uplink	-	N	17.48 x 11.34 x 1.73	3.95
C1200-48P-4G	48x 1G RJ45 PoE+	+4GE SFP uplink	370W	N	17.48 x 13.78 x 1.73	5.43
C1200-48FP-4X	48x 1G RJ45 PoE+	+4GE SFP uplink	740W	N	17.48 x 13.78 x 1.73	5.82
C1200-48T-4X	48x1G downlink+4x10GE SFP+ uplink	4 10GE SFP + uplink	-	N	17.48 x 13.78 x 1.73	3.95
C1200-48P-4X	48x1G downlink+4x10GE SFP+ uplink	4 10GE SFP + uplink	375W	N	17.48 x 13.78 x 1.73	5.82

Product ID*	Gigabit Ethernet	Uplink interfaces	PoE power budget	Fanless	Dimensions (WxDxH in inches)	Weight (kg)
C1200-48FP-4X	48x1G downlink+4x10GE SFP+ uplink	4 10GE SFP + uplink	740W	N	17.48 x 13.78 x 1.73	5.82

	8-port models	16-port models	24-port models (1/10G uplinks) (Available only on certain models)	48-port models (1/10G uplinks) (Available only on certain models)
Console ports				
RJ-45 Ethernet	1	1	1	1
USB-A port for storage and Bluetooth console	1	1	1	1
Memory and processor				
CPU	ARM v7 800 MHz	ARM v7 800 MHz	ARM v7 800 MHz	ARM v7 800 MHz
DRAM	512 MB	512 MB	512 MB	512 MB
Flash memory	512 MB	512 MB	512 MB	512 MB
Environmental				
Operating temperature				
Sea level	-5 to 50 deg C*			
Up to 5,000ft (1500 m)	**-5 to 45 deg C**			
Up to 10,000 (3000 m)	**-5 to 40 deg C**			
Operating altitude	**10,000 ft (3,000m)**			
Operating relative humidity	**5% to 90% at 40 deg C (non-condensing)**			
Storage temperature	**-13 to 158F (-25 to 70C)**			
Storage altitude	**15,000 ft (4500m)**			
Storage relative humidity	**5% to 95% at 65 deg C (non-condensing)**			

	8-port models	16-port models	24-port models (1/10G uplinks) (Available only on certain models)	48-port models (1/10G uplinks) (Available only on certain models)
*Note:	• **50C operation is supported for short-term operation only;** When using C1000-8T-E-2G-L, C1000-8T-2G-L, C1000-8P-E-2G-L, C1000-8P-2G-L, C1000-8FP-E-2G-L, C1000-8FP-2G-L, C1000-16T-E-2G-L, C1000-16T-2G-L, C1000-16P-E-2G-L, C1000-16P-2G-L, C1000-16FP-2G-L, C1000-24T-4G-L, C1000-24P-4G-L with GLC-BX-U or GLC-BX-D SFP module, the thermal limitations are as follows: Up to 5,000 feet, the operation temperature shouldn't exceed 45ºC. Up to 10,000 feet, the operation temperature shouldn't exceed 40ºC. When using C1000-24T-4X-L, C1000-24P-4X-L with SFP-10G-ER or SFP-10G-ER-S SFP+ module, the thermal limitations are as follows: Up to 5,000 feet, the operation temperature shouldn't exceed 45ºC. Up to 10,000 feet, the operation temperature shouldn't exceed 40ºC. • **The minimum ambient temperature for a cold start is at 0 deg C (32 deg F).**			
Connectors and interfaces				
Ethernet interfaces	10BASE-T ports: RJ-45 connectors, 2-pair Category 3, 4, or 5 Unshielded Twisted Pair (UTP) cabling			
	100BASE-TX ports: RJ-45 connectors, 2-pair Category 5 UTP cabling			
	1000BASE-T ports: RJ-45 connectors, 4-pair Category 5 UTP cabling			
	1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Category 5 UTP cabling			
Indicator LEDs	Per-port status: link integrity, disabled, activity			
	System status: System			
Console cables	CAB-CONSOLE-RJ45 Console cable 6 ft. with RJ-45			
Power	Use the supplied AC power cord to connect the AC power connector to an AC power outlet Models have external power supply			
	For an updated list of supported MIBs, refer to the MIB Locator at cisco.com/go/mibs.			

Front Panel

The ports, LEDs, and Reset button are located on the front panel of the switch, as well as the following components:

- There are 2 device types with different console interface:

  1. Console port with RJ-45 and USB-C connector if both are connected the Mini USB has precedence over the RJ-45
  2. RJ-45 connector only type of console.

  The console interface connects a serial cable to a computer serial port so that it can be configured using a terminal emulation program or USB-C cable (depending on the connector).

- USB Port—The USB port connects the switch to a USB mass storage 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.
- 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 (if present) are compatible with the following Cisco SFP 1G optical modules MGBSX1, MGBLX1, MGBLH1, MGBT1, as well as other brands.
  - The SFP+ ports are compatible with the following Cisco SFP 1G optical modules MGBSX1, MGBLX1, MGBLH1, MGBT1, as well as other brands.
  - 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 LEDs of the corresponding RJ-45 port flash green to respond to the SFP interface traffic.
- Small form-factor pluggable (SFP) ports are connection points for modules, so the switch can link to other switches.
- Some SFP interfaces are shared with one other RJ-45 and SFP+ port, called a combo port. When the SFP is active, the adjacent RJ-45 port is disabled.
- Reset button is used to reset or reboot the switch. The table below displays the reset behavior on the switch.

LEDs and Reset Behavior

The following are the global LEDs found on the devices:

Table 1: Switch LEDs

Color	Meaning
Off	Switch is not powered on.
Solid Green	Switch is operating normally.
Flashing Green	When not connected to CBD, the flashing green LED can indicate specific information (e.g. stack unit ID indication - If a stack unit is not the active unit, its System LED flashes N times every 20 seconds, where N represents the unit ID. The System LED on the active stack unit remains solid green.
Solid Blue	The CBD agent on the device is connected to the Dashboard.
Flashing Blue	When connected to CBD, the flashing blue LED supports can indicate specific information (e.g. stack unit ID indication, reset button push duration, etc.).
Solid Amber	Switch is receiving power but is not functioning properly.
Flashing Amber	When detecting hardware or firmware failure, and / or configuration file error which includes: • Fail DRAM Read/Write self-test • Firmware Header CEC checking on Flash • Fail diagnosis and cannot bring up to the normal operation • Fan failure (on models without dedicated fan LED (The Amber blinking frequency should be higher than green blinking).

Table 2: Ethernet Port LEDs

Color	Meaning
Off	No link or port was administratively shut down.
Solid Green	Link present
Blinking Green	Activity on the switch. Port is sending or receiving data.
Solid Amber	PoE port is supplying power for downlink ports.
Blinking Amber	Port in SW defined warning (error disable, STP block….) for both downlink and uplink ports.

Port LED Status

- Status 1: PD connects, the PoE supplying Power, Amber LED showing it's ON.
- Status 2: PD boot and Link is established, Amber LED is off and the Green LED is ON/blinking confirming link and traffic.
- Status 3: Once any SW defined errors happen (eg. error disable), the Green LED is OFF and the Amber LED will be blinking.

- Status 4: When the switch is in Status 2, push the reset button for about 1second, then the Amber LED will be ON for 5 seconds to indicate the PoE status, and then later it will return to the traffic status (Green LED is ON).

Reset Button Behavior

The following describes the different scenarios when the reset button is pushed for a defined set of time.

1. When the Reset button is pushed for less than **1 sec**, the Ethernet port LED will light in solid Amber for 5 seconds, when the port is supplying power for the device.
2. When the Reset button is pushed for **1 to 5 sec**, the system LED continues to be **solid Green**. If the Reset button is released, the switch will not reload, and no action is taken.
3. When the Reset button is pushed for **6 to 10 sec**, the system LED will **slowly flash Green**. If the Reset button is released, the switch will reload without a factory default.
4. When the Reset button is pushed for **11 to 15 sec**, the system LED will light in **solid Green**. If the Reset button is released, the switch does not reload, and no action is taken.
5. When the Reset button is pushed for **16 to 20 sec**, the system LED will **rapidly flash Green**. If the Reset button is released, the switch will reload to factory default settings.
6. When the Reset button is pushed for **more than 20 sec**, the system LED will light in **solid Green**. If the Reset button is released, the switch does not reload, and no action is taken.

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:

Procedure

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.

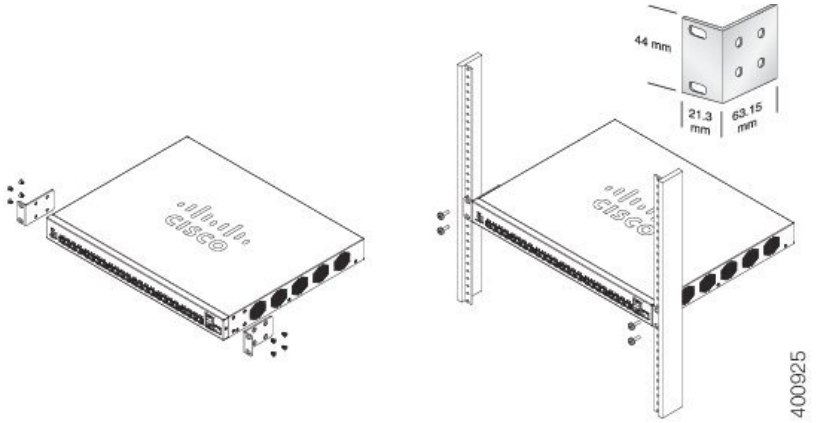
Step 3 After the brackets are securely attached, the switch is now ready to be installed into a standard 19-inch rack.

Note Use supplied brackets to rack mount the switch.

Supplied rack mounting for switch models with front mounting position. The mounting ears do not sit flush to the front panel.

Due to design differences, some of the mounting brackets will attach such that the switch will protrude about an inch from the mounting surface.

Supplied rack mounting for switch models with front mounting position. The mounting ears sit flush to the front panel.



Wall Mounting a Switch

You can mount the switches on a wall, using wall studs or to a firmly attached plywood mounting backboard.

Caution Read these instructions carefully before beginning installation. Failure to use the correct hardware or to follow the correct procedures could result in a hazardous situation to people and damage to the system.

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

To wall-mount a 24-port switch using brackets:

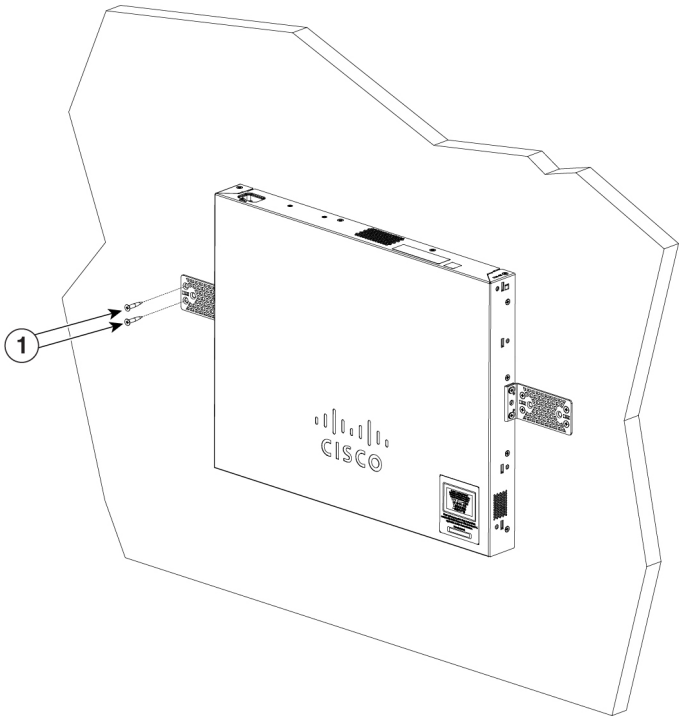
Procedure

Step 1 Attach a 19-inch bracket to one side of the switch.

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, mount the switch with the front panel facing down. Make sure that the switch is attached securely to wall studs or to a firmly attached plywood-mounting backboard. Wall-mounting a 24-port switch.

Wall-mounting a 24-port



Configuring Switches

The switch can be accessed and managed 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 and is only supported on certain models.

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 (Default)

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:

Procedure

Step 1 Power on the computer and your switch.

Step 2 Connect the computer to any network port.

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**.

Step 8 If this is the first time that you have logged on with the default username and password, the Change username and Password. Enter a new username and password and confirm.

If this is the first time that you have logged on with the default username and password, the Change username and Password

page opens

Note
Please refer to the password complexity rule section in Login Settings before creating a password.

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.

Configuring Your Switch Using the Console Port

To configure the switch using the console port, which is only supported on certain models, proceed with the following steps:

Procedure

Step 1 Connect a computer to the switch console port using a Cisco console cable (purchased separately) or a cable with mini USB connector.

Step 2 Start a console port utility such as Hyper Terminal 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 the console.

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 reloading, 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 an 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 servers 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.