



Product Overview

Cisco Catalyst 9300 Series Switches family is the stackable enterprise switching platform built for Security, IoT, Mobility, and Cloud. It has the most flexible uplink architecture with support for 1 GE, 10 GE, 25 GE, 40 GE and 100 GE.

Cisco Catalyst 9300 Series Switches provide support for the following features:

- 24 and 48 10/100/1000 M downlink ports with data, PoE+, Cisco UPOE and Cisco UPOE+ support
- 24 and 48 100 Mbps/1/2.5/5/10 Gbps ports with Cisco UPOE support
- Fixed 1G or 10G uplinks or modular 1 GE, 10 GE, 25 GE, 40 GE, 100 GE and Multigigabit uplinks
- Advanced security capabilities like Encrypted Traffic Analytics (ETA), AES-256 MACSEC encryption, and TrustWorthy systems
- High speed back-panel data stacking solution with StackWise-320 (C9300L and C9300LM), StackWise-480 (C9300), and StackWise-1T (C9300X)
- Intelligent Power Management with StackPower technology that provides power stacking among members for power redundancy
- IoT integration and policy-based automation from the edge to the cloud with SD-Access solution
- RJ-45 and USB Mini-Type B console ports
- USB Type A and USB Type C ports that support USB 3.0 and source 900 mA at 5 V
- External USB 3.0 SSD pluggable storage support
- [Switch Models, on page 2](#)
- [Front Panel Components, on page 5](#)
- [Rear Panel, on page 22](#)
- [Network Configurations, on page 31](#)

Switch Models

Table 1: Cisco Catalyst 9300 Series Switches Models and Descriptions

Switch Model	Description
C9300-24H	Stackable 24 10/100/1000 Mbps UPOE+ ports; PoE budget of 830 W with 1100 WAC power supply; supports StackWise-480 and StackPower.
C9300-24P	Stackable 24 10/100/1000 Mbps PoE+ ports; PoE budget of 445 W with 715 WAC power supply; supports StackWise-480 and StackPower.
C9300-24S	Stackable 24 10/100/1000 Mbps SFP ports; two power supply slots with 715 WAC power supply installed by default; supports StackWise-480 and StackPower.
C9300-24T	Stackable 24 10/100/1000 Mbps Ethernet ports; 350 WAC power supply; supports StackWise-480 and StackPower.
C9300-24U	Stackable 24 10/100/1000 Mbps UPOE ports; PoE budget of 830 W with 1100 WAC power supply; supports StackWise-480 and StackPower.
C9300-24UB	Stackable 24 10/100/1000 Mbps UPOE ports that provide deep buffers and higher scale; PoE budget of 830 W with 1100 WAC power supply; supports StackWise-480 and StackPower.
C9300-24UX	Stackable 24 Multigigabit Ethernet (100 Mbps or 1/2.5/5/10 Gbps) UPOE ports; PoE budget of 560 W with 1100 WAC power supply; supports StackWise-480 and StackPower.
C9300-24UXB	Stackable 24 Multigigabit Ethernet (100 Mbps or 1/2.5/5/10 Gbps) UPOE ports that provide deep buffers and higher scale; PoE budget of 560 W with 1100 WAC power supply; supports StackWise-480 and StackPower.
C9300-48H	Stackable 48 10/100/1000 Mbps UPOE+ ports; PoE budget of 822 W with 1100 WAC power supply; supports StackWise-480 and StackPower.
C9300-48P	Stackable 48 10/100/1000 Mbps PoE+ ports; PoE budget of 437 W with 715 WAC power supply; supports StackWise-480 and StackPower.
C9300-48S	Stackable 48 10/100/1000 Mbps SFP ports; two power supply slots with 715 WAC power supply installed by default; supports StackWise-480 and StackPower.
C9300-48T	Stackable 48 10/100/1000 Mbps Ethernet ports; 350 WAC power supply; supports StackWise-480 and StackPower.
C9300-48U	Stackable 48 10/100/1000 Mbps UPOE ports; PoE budget of 822 W with 1100 WAC power supply; supports StackWise-480 and StackPower.
C9300-48UB	Stackable 48 10/100/1000 Mbps UPOE ports that provide deep buffers and higher scale; PoE budget of 822 W with 1100 WAC power supply; supports StackWise-480 and StackPower.

Switch Model	Description
C9300-48UN	Stackable 48 (12 Multigigabit Ethernet and 36 2.5 Gbps) UPOE ports; PoE budget of 490 W with 1100 WAC power supply; supports StackWise-480 and StackPower.
C9300-48UXM	Stackable 48 Multigigabit Ethernet (100 Mbps or 1/2.5/5 Gbps) UPOE ports; PoE budget of 610 W with 1100 WAC power supply; supports StackWise-480 and StackPower.

Table 2: Cisco Catalyst 9300L Series Switches Models and Descriptions

Switch Model	Description
C9300L-24T-4G	Stackable 24 10/100/1000 Mbps Ethernet ports; 4x1 GE SFP fixed uplink ports; 350 WAC power supply; supports StackWise-320.
C9300L-24P-4G	Stackable 24 10/100/1000 Mbps PoE+ ports; 4x1 GE SFP fixed uplink ports; PoE budget of 505 W with 715 WAC power supply; supports StackWise-320.
C9300L-24T-4X	Stackable 24 10/100/1000 Mbps Ethernet ports; 4x10 GE SFP+ fixed uplink ports; 350 WAC power supply; supports StackWise-320.
C9300L-24P-4X	Stackable 24 10/100/1000 Mbps PoE+ ports; 4x10 GE SFP+ fixed uplink ports; PoE budget of 505 W with 715 WAC power supply; supports StackWise-320.
C9300L-48T-4G	Stackable 48 10/100/1000 Mbps Ethernet ports; 4x1 GE SFP fixed uplink ports; 350 WAC power supply; supports StackWise-320.
C9300L-48P-4G	Stackable 48 10/100/1000 Mbps PoE+ ports; 4x1G SFP fixed uplink ports; PoE budget of 505 W with 715 WAC power supply; supports StackWise-320.
C9300L-48T-4X	Stackable 48 10/100/1000 Mbps Ethernet ports; 4x10 GE SFP+ fixed uplink ports; 350 WAC power supply; supports StackWise-320.
C9300L-48P-4X	Stackable 48 10/100/1000 Mbps PoE+ ports; 4x10 GE SFP+ fixed uplink ports; PoE budget of 505 W with 715 WAC power supply; supports StackWise-320.
C9300L-48PF-4G	Stackable 48 10/100/1000 Mbps PoE+ ports; 4x1 GE SFP+ fixed uplink ports; PoE budget of 890 W with 1100 WAC power supply; supports StackWise-320.
C9300L-48PF-4X	Stackable 48 10/100/1000 Mbps PoE+ ports; 4x10 GE SFP+ fixed uplink ports; PoE budget of 890 W with 1100 WAC power supply; supports StackWise-320.
C9300L-24UXG-4X	Stackable 16 10/100/1000 Mbps and 8 Multigigabit Ethernet (100 Mbps or 1/2.5/5/10 Gbps) UPOE ports; 4x10 GE SFP+ fixed uplink ports; PoE budget of 880 W with 1100 WAC power supply; supports StackWise-320.
C9300L-24UXG-2Q	Stackable 16 10/100/1000 Mbps and 8 Multigigabit Ethernet (100 Mbps or 1/2.5/5/10 Gbps) UPOE ports; 2x40 GE QSFP+ fixed uplink ports; PoE budget of 722 W with 1100 WAC power supply; supports StackWise-320.
C9300L-48UXG-4X	Stackable 36 10/100/1000 Mbps and 12 Multigigabit Ethernet (100 Mbps or 1/2.5/5/10 Gbps) UPOE ports; 4x10 GE SFP+ fixed uplink ports; PoE budget of 675 W with 1100 WAC power supply; supports StackWise-320.

Switch Model	Description
C9300L-48UXG-2Q	Stackable 36 10/100/1000 Mbps and 12 Multigigabit Ethernet (100 Mbps or 1/2.5/5/10 Gbps) UPOE ports; 2x40 GE QSFP+ fixed uplink ports; PoE budget of 675 W with 1100 WAC power supply; supports StackWise-320.

Table 3: Cisco Catalyst 9300LM Series Switches Models and Descriptions

Switch Model	Description
C9300LM-48T-4Y	Stackable 48 x 10/100/1000 M Ethernet ports; 4 x 25 GE SFP28 fixed uplink ports; 600 WAC power supply and fixed fans; supports StackWise-320.
C9300LM-24U-4Y	Stackable 24 x 10/100/1000 M UPOE ports; 4 x 25 GE SFP28 fixed uplink ports; PoE budget of 420 W with a single default 600 WAC power supply; supports StackWise-320.
C9300LM-48U-4Y	Stackable 48 x 10/100/1000 M UPOE ports; 4 x 25 GE SFP28 fixed uplink ports; PoE budget of 790 W with a single default 1000 WAC power supply; supports StackWise-320.
C9300LM-48UX-4Y	Stackable 40 x 10/100/1000 M and 8 Multigigabit Ethernet (100M/1000M/2.5GE/5GE/10GE) UPOE ports; 4 x 25 GE SFP28 fixed uplink ports; PoE budget of 790 W with a single default 1000 WAC power supply; supports StackWise-320.

Table 4: Cisco Catalyst 9300X Series Switches Models and Descriptions

Switch Model	Description
C9300X-12Y	Stackable 12 1/10/25 GE SFP28 downlink ports; 715 WAC power supply; supports StackPower+, StackWise-1T and C9300X-NM network modules.
C9300X-24Y	Stackable 24 1/10/25 GE SFP28 downlink ports; 715 WAC power supply; supports StackPower+, StackWise-1 and C9300X-NM network modules.
C9300X-48HX	Stackable 48 Multigigabit Ethernet (100 Mbps or 1/2.5/5/10 Gbps) UPOE+ ports; PoE budget of 590 W with 1100 WAC power supply; supports StackPower+, StackWise-1T and C9300X-NM network modules.
C9300X-48TX	Stackable 48 Multigigabit Ethernet (100 Mbps or 1/2.5/5/10 Gbps) ports; 715 WAC power supply; supports StackPower+, StackWise-1T and C9300X-NM network modules.
C9300X-24HX	Stackable 24 Multigigabit Ethernet (100 Mbps or 1/2.5/5/10 Gbps) UPOE+ ports; PoE budget of 735W with 1100WAC power supply; supports StackPower+, StackWise-1T, and C9300X-NM network modules.
C9300X-48HXN	Stackable 40 x 100/1000 M or 2.5/5 GE Multigigabit Ethernet and 8 x 100/1000 M or 2.5/5/10 GE Multigigabit Ethernet UPOE+ ports; PoE budget of 690W with 1100WAC power supply; supports StackPower+, StackWise-1T, and C9300X-NM network modules.

Front Panel Components

Front Panel Components of a Cisco Catalyst 9300 Series Switch

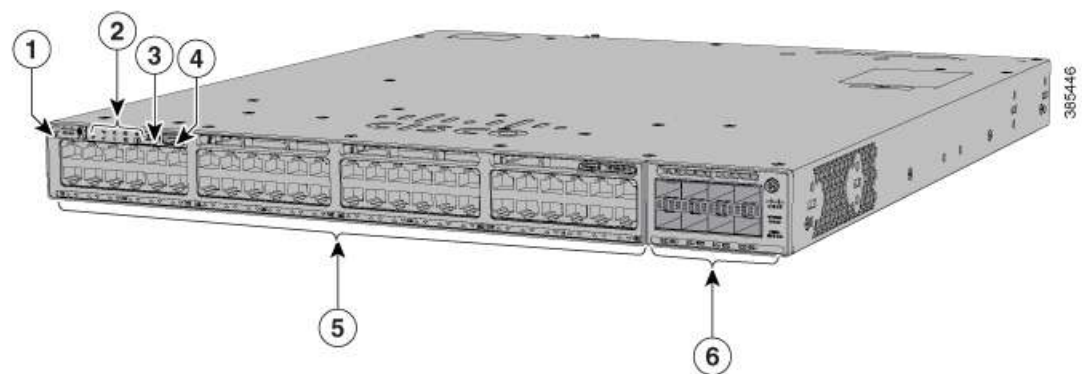
- 12, 24 or 48 downlink ports of one of these types:
 - 10 M/100 M/1000 M
 - 1 GE/10 GE/25 GE SFP28
 - 10 M/100 M/1000 M PoE+
 - 10 M/100 M/1000 M Cisco UPOE/UPOE+
 - Multigigabit Ethernet 100 M/1 GE/2.5 GE/5 GE/10 GE Cisco UPOE
- Uplink network module slots
- USB Type A connector
- USB mini-Type B (console) port
- LEDs
- Mode button
- Beacon LED (UID button)

All the switch models have similar components. See the following illustration for example.



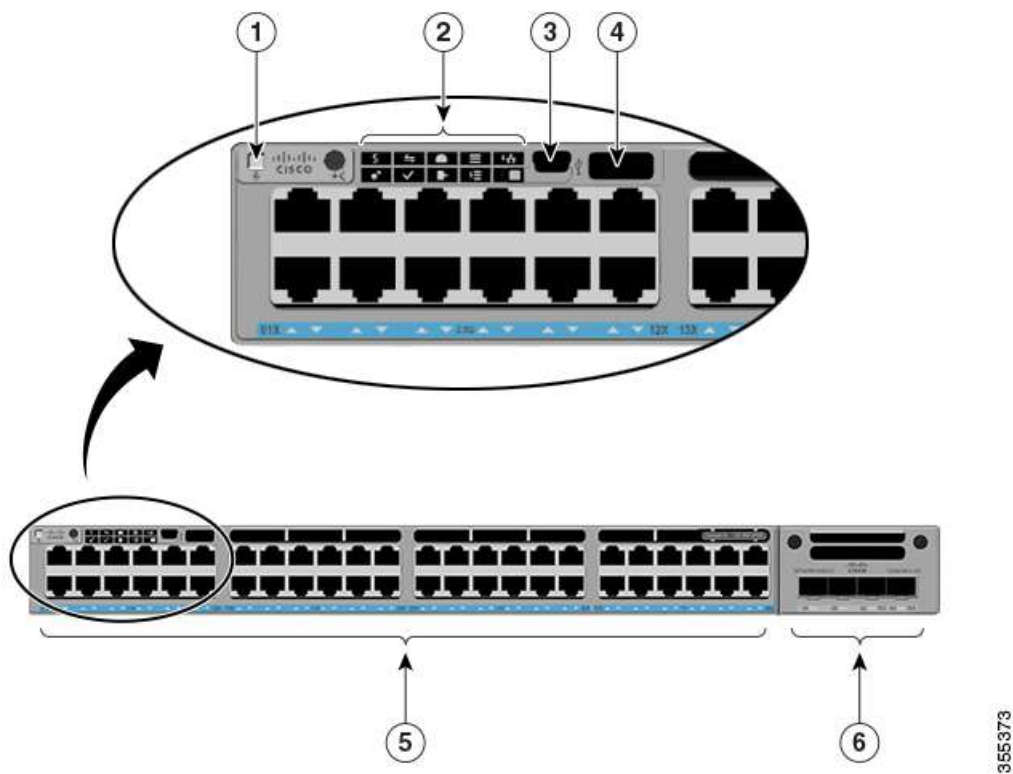
Note The Catalyst 9300 switches might have slight cosmetic differences on the bezels.

Figure 1: C9300-48P Switch Front Panel



1	Beacon LED (UID button)	4	USB Type A storage port
2	Status LEDs	5	10 M/100 M/1000 M PoE+ ports
3	USB mini-Type B (console) port	6	Network module slots

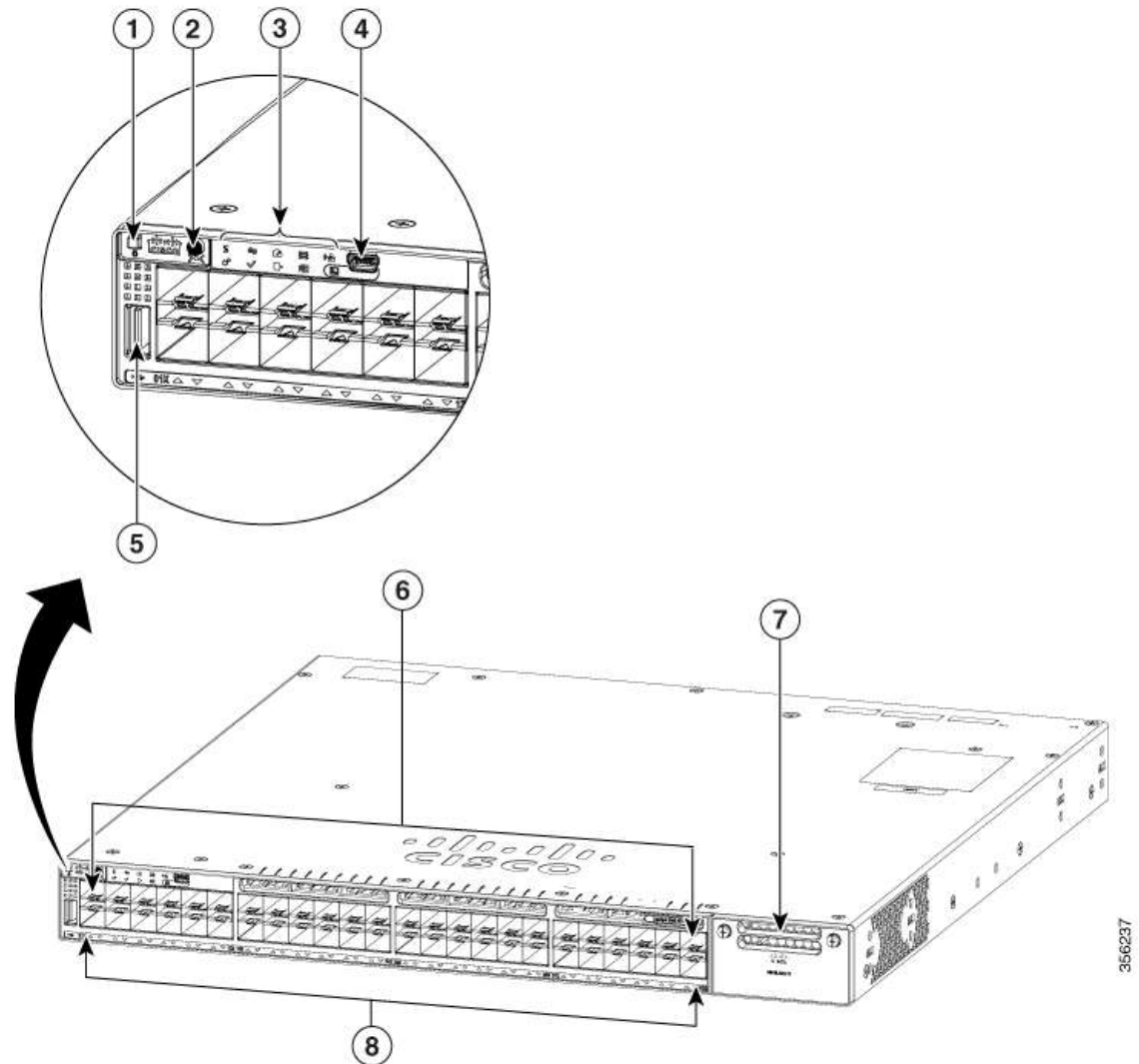
Figure 2: C9300-48UXM Switch Front Panel



1	Beacon LED (UID button)	4	USB Type A storage port
2	Status LEDs	5	Ports 1-36 of 100 M/1000 M/2.5 GE and ports 37-48 of 100 M/1000 M/2.5 GE/5 GE/10 GE
3	USB mini-Type B (console) port	6	Network module slots

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Figure 3: Front panel components of C9300-48S



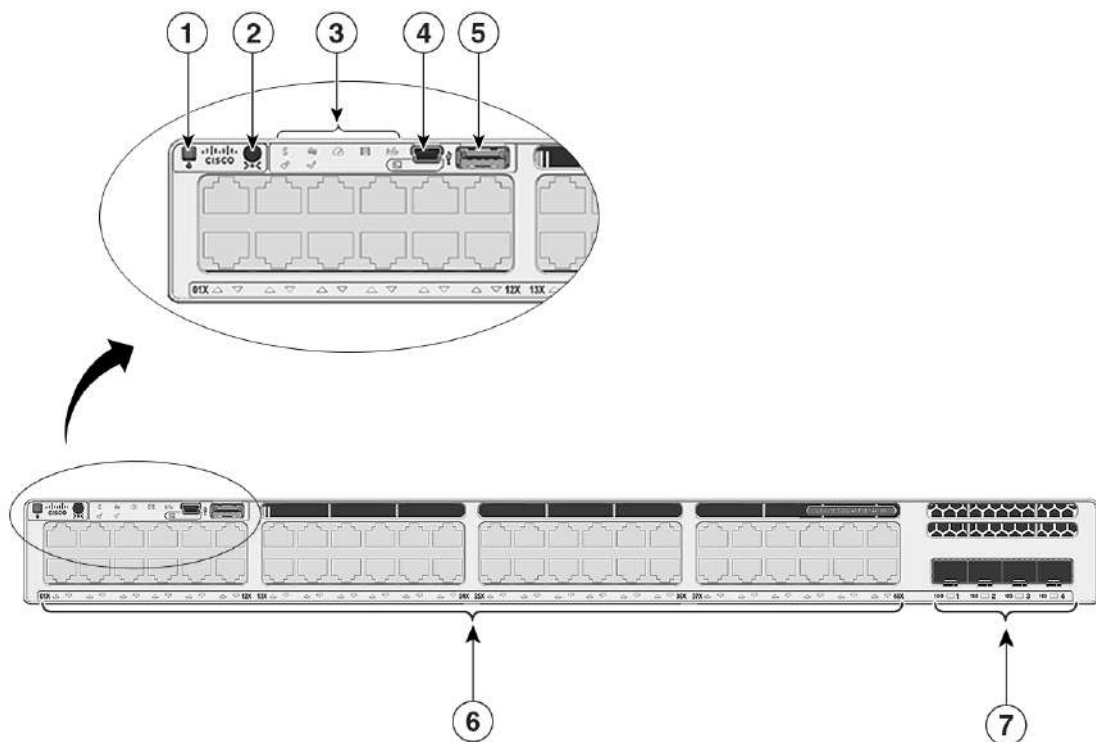
1	Beacon LED (UID button)	5	USB Type A storage port
2	Mode button	6	10 M/100 M/1000 M SFP ports
3	Status LEDs	7	Uplink network module slots
4	USB mini-Type B (console) port	8	Port LEDs

Front panel components of a Cisco Catalyst 9300L Series Switch

- 12, 24 or 48 downlink ports of one of these types:
 - 10 M/100 M/1000 M
 - 1 GE/10 GE/25 GE SFP28

- 10 M/100 M/1000 M PoE+
- 10 M/100 M/1000 M Cisco UPOE/UPOE+
- Multigigabit Ethernet 100 M/1 GE/2.5 GE/5 GE/10 GE Cisco UPOE
- SFP/SFP+/QSFP+ fixed uplink ports
- USB Type A connector
- USB mini-Type B (console) port
- LEDs
- Mode button
- Beacon LED (UID button)

Figure 4: C9300L-48P-4X Switch Front Panel



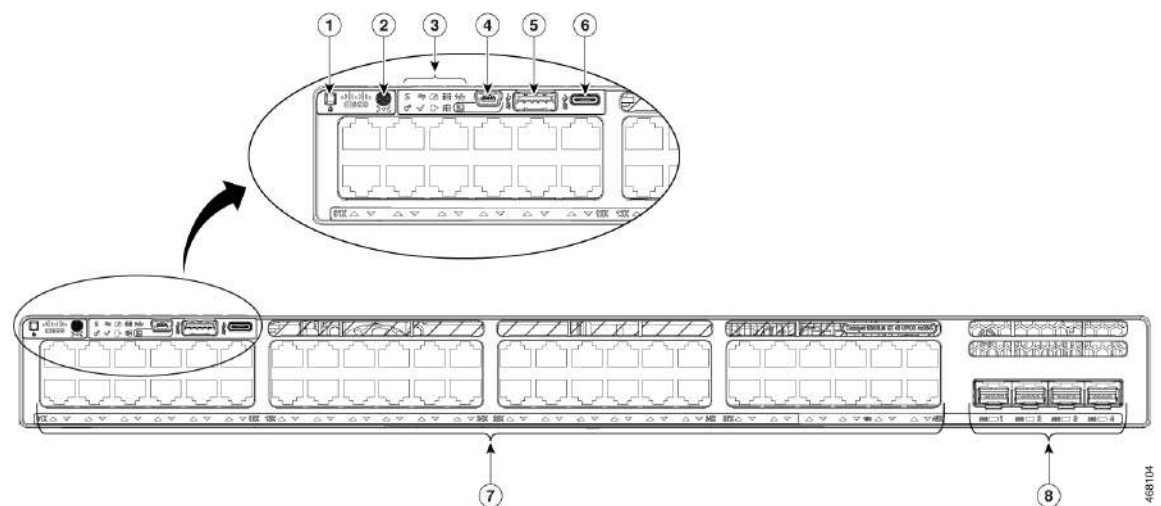
1	Beacon LED (UID button)	5	USB Type A storage port
2	Mode button	6	10 M/100 M/1000 M PoE+ ports
3	Status LEDs	7	Fixed uplink ports
4	USB mini-Type B (console) port	-	-

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Front Panel Components of a Cisco Catalyst 9300LM Series Switch

- 24 or 48 downlink ports of one of these types:
 - 10 M/100 M/1000 M
 - 10 M/100 M/1000 M Cisco UPOE
 - Multigigabit Ethernet 100 M/1 GE/2.5 GE/5 GE/10 GE Cisco UPOE
- 1 GE/10 GE/25 GE fixed uplink ports
- USB mini-Type B (console) port
- USB 3.0 Type A connector
- USB Type C connector
- LEDs
- Mode button
- Beacon LED (UID button)

Figure 5: C9300LM-48UX-4Y Switch Front Panel



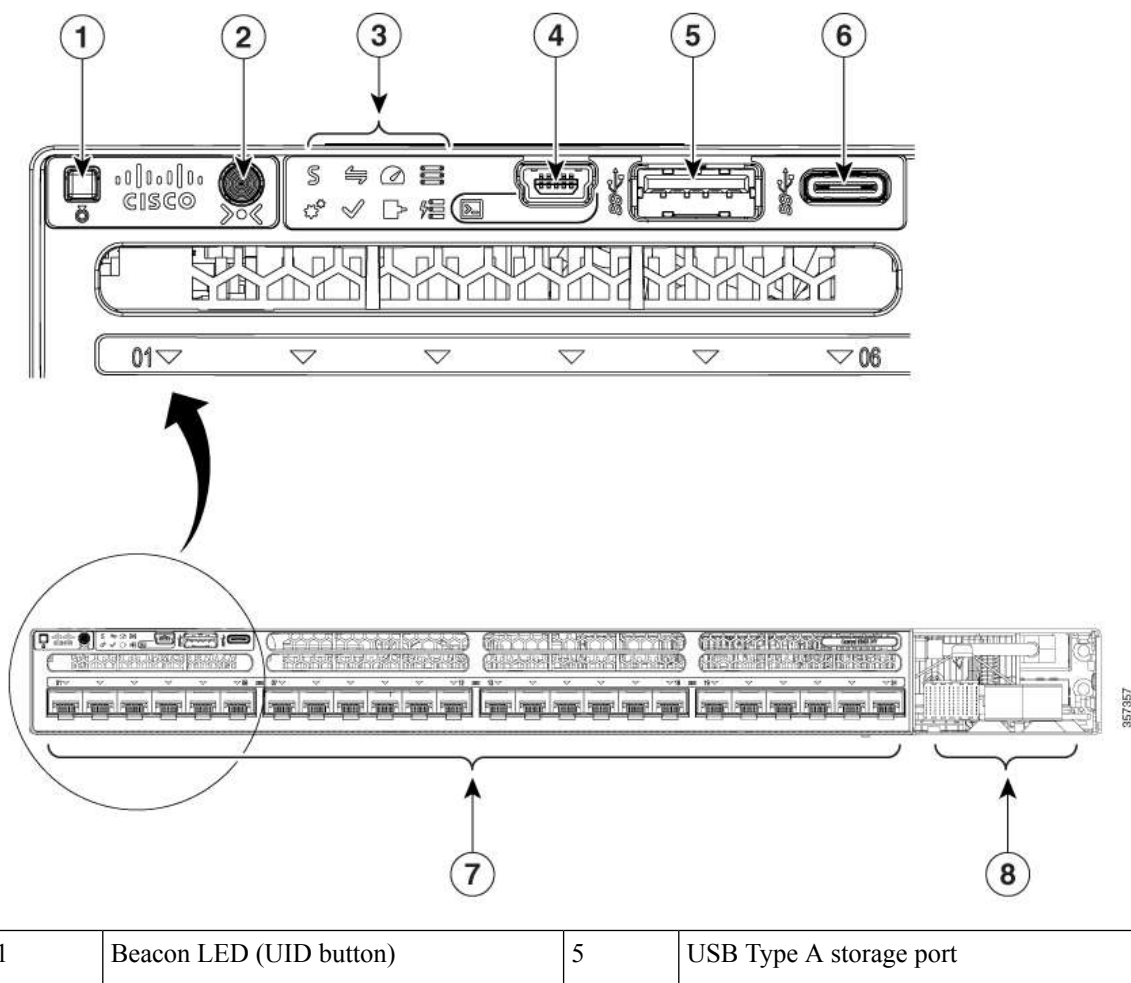
1	Beacon LED (UID button)	5	USB Type A storage port
2	Mode button	6	USB Type C port
3	Status LEDs	7	10/100/1000 M UPOE ports
4	USB mini-Type B (console) port	8	Fixed uplink ports

Front panel components of a Cisco Catalyst 9300X Series switch

- 12, 24 or 48 downlink ports of one of these types:
 - 10 M/100 M/1000 M

- 1 GE/10 GE/25 GE SFP28
- 10 M/100 M/1000 M PoE+
- 10 M/100 M/1000 M Cisco UPOE/UPOE+
- Multigigabit Ethernet 100 M/1 GE/2.5 GE/5 GE/10 GE Cisco UPOE
- Uplink network module slots
- USB Type A connector
- USB Type C connector
- USB mini-Type B (console) port
- LEDs
- Mode button
- Beacon LED (UID button)

Figure 6: C9300X-24Y Switch Front Panel



2	Mode button	6	USB Type C port
3	Status LEDs	7	1 GE/25 GE/25 GE SFP28 ports
4	USB mini-Type B (console) port	8	Uplink network module slots

10/100/1000 Ports

The 10/100/1000 ports use RJ-45 connectors with Ethernet pinouts. The maximum cable length is 328 feet (100 meters). The 100BASE-TX and 1000BASE-T traffic requires twisted pair (UTP) cable of Category 5 or higher. The 10BASE-T traffic can use Category 3 cable or higher.

PoE, PoE+, Cisco UPOE and Cisco UPOE+ Ports

The PoE+ and Cisco Universal Power Over Ethernet (Cisco UPOE and Cisco UPOE+) ports use the same connectors as described in [10/100/1000/Multigigabit Ethernet Port Connections](#). They provide:

- PoE+ ports: Support for IEEE 802.3af-compliant powered devices (up to 15.4 W PoE per port) and support for IEEE 802.3at-compliant powered devices (up to 30 W PoE+ per port).
- Cisco UPOE ports: Support for Type 1 (IEEE 802.3af), Type 2 (IEEE 802.3at), Type 3 (IEEE 802.3bt), and Cisco UPOE powered devices delivering up to 60 W PoE per port. The maximum total PoE power in a 1RU switch is 1800 W.
- Cisco UPOE+ ports: Support for Type 1 (IEEE 802.3af), Type 2 (IEEE 802.3at), Type 3 (IEEE 802.3bt), Type 4 (IEEE 802.3bt), and Cisco UPOE powered devices delivering up to 90 W per port.
- Support for pre-standard Cisco powered devices.
- Configuration for StackPower. When the switch internal power supply module(s) cannot support the total load, StackPower configurations allow the switch to leverage power available from other switches.
- Configurable support for Cisco intelligent power management, including enhanced power negotiation, power reservation, and per-port power policing.

See the [Power Supply Modules, on page 26](#) for the power supply matrix that defines the available PoE, PoE+ and Cisco UPOE/UPOE+ power per port. The output of the PoE+ or Cisco UPOE/UPOE+ circuit has been evaluated as a Limited Power Source (LPS) per IEC 60950-1.

Multigigabit Ethernet Ports

The Multigigabit (mGig) Ethernet ports can be configured to auto-negotiate multiple speeds on switch ports. The ports support 100 Mbps, 1 Gbps, 2.5 Gbps, and 5 Gbps speeds on Category 5e (Cat5e) cables, and up to 10 Gbps over Category 6 (Cat6) and Category 6A (Cat6A) cables up to a maximum of 100 m. 10Gbps over Cat6 cable is limited for distances up to 55 m. For 10GBASE-T, Cat6a can support up to 100 m when transmitting 10Gbps. Due to the extra bandwidth requirements from the cable, additional limitations exist for best performance. These limitations include, but are not limited to cable reach, cable bundling parameters (tightness, frequency, number of cables, speed with respect to each cable) and cable termination quality.

The 802.3 channel requirements for interoperability typically limit the cable reach to 100 m, but other factors can shorten this reach. In addition, for both Cisco UPOE and Cisco UPOE+ and data integrity, the 100 m total should not include more than 10 m total stranded or patch cable. Therefore, it is assumed that a 100 m link

includes a maximum of two 5 m patch cables of the appropriate category, and 90 m of plenum or riser (i.e. solid copper core) cables. Ensure that you follow the TIA guidance on cable dressing.

It is recommended to test the complete link using an appropriate cable tester for 10 Gbps as well as 5 Gbps links. However, even if the link passes cable testing, it is still prone to occasional errors due to aggressors in the bundle, and physical disturbances of the cables. As an example of bundling limitations, for 5 Gbps with cat5e cable, only a total 45 m bundled length is supported; the remaining 55 m should be unbundled. For bundling, follow [Cisco Guidelines and Best Practices for the Installation and Maintenance of Data Networking Equipment](#) which recommends the use of Velcro ties every 1 to 2 m for bundled sections.

If you are upgrading the network gear but reusing the existing cable plant, note that at speeds above 2.5 Gbps traditional Cat5e channel specifications do not support full 100 m reach. To ensure 5 Gbps link speeds, we recommend using Cat6a cabling. For more information, see the Whitepaper from NBASE-T alliance, which has now merged with Ethernet Alliance, archived at <https://archive.nbaset.ethernetalliance.org/library/white-paper-2/>.



Note Multigigabit ports do not support half duplex mode. Use full duplex mode.

Management Ports

The management ports connect the switch to a PC running Microsoft Windows or to a terminal server.

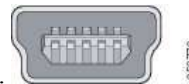
- Ethernet management port. See [Ethernet Management Port, on page 31](#).
- RJ-45 console port (EIA/TIA-232). See [RJ-45 Console Port, on page 31](#).
- USB mini-Type B console port (5-pin connector).

The 10/100/1000 Ethernet management port connection uses a standard RJ-45 crossover or straight-through cable. The RJ-45 console port connection uses the supplied RJ-45-to-DB-9 female cable. The USB console port connection uses a USB Type A to 5-pin mini-Type B cable. The USB console interface speeds are the same as the RJ-45 console interface speeds.

If you use the USB mini-Type B console port, the Cisco Windows USB device driver must be installed on any PC connected to the console port (for operation with Microsoft Windows). Mac OS X or Linux do not require special drivers.

The 4-pin mini-Type B connector resembles the 5-pin mini-Type B connectors. They are not compatible. Use only the 5-pin mini-Type B.

Figure 7: USB Mini-Type B Port



This illustration shows a 5-pin mini-Type B USB port.

With the Cisco Windows USB device driver, you can connect and disconnect the USB cable from the console port without affecting Windows HyperTerminal operations.

The console output always goes to both the RJ-45 and the USB console connectors, but the console input is active on only one of the console connectors at any one time. The USB console takes precedence over the RJ-45 console. When a cable is connected into the USB console port, the RJ-45 console port becomes inactive. Conversely, when the USB cable is disconnected from the USB console port, the RJ-45 port becomes active.

You can use the command-line interface (CLI) to configure an inactivity timeout which reactivates the RJ-45 console if the USB console has been activated and no input activity has occurred on the USB console for a specified time.

After the USB console deactivates due to inactivity, you cannot use the CLI to reactivate it. Disconnect and reconnect the USB cable to reactivate the USB console. For information on using the CLI to configure the USB console interface, see the Software Configuration Guide.

USB Type A and Type C Ports

The USB Type A and Type C ports provide access to external USB flash devices (also known as thumb drives or USB keys).

The USB Type A port supports Cisco USB flash drives with capacities from 128 MB to 8 GB (USB devices with port densities of 128 MB, 256 MB, 1 GB, 4 GB, and 8 GB are supported). Whereas, USB Type C port provides support for flash drives with capacities from 128 MB to 256 GB.

In a switch stack, you can upgrade all the switches in the stack with a USB key inserted in any switch member within the stack. Cisco IOS software enables the flash drive with standard file system access such as read, write, erase, and copy, as well as the ability to format the flash device with a FAT file system.

These ports enable you to automatically upgrade the internal flash with the USB drive's configuration and image for emergency switch recovery using USB auto-upgrade. This feature checks the internal flash for a bootable image and configuration and if either image or the configuration is not available, then the USB drive is checked for boot images and configuration. If the boot image and configuration are available, these are copied to the flash for a reboot.

Uplink Ports

The Cisco Catalyst 9300 Series switches support both fixed and modular uplinks. The C9300 and C9300X switch models support optional hot-swappable network modules that provide uplink ports to connect to other devices. The C9300L switches provide fixed uplink ports that support 10 GE and 1 GE SFP/SFP+ modules.

The switch generates logs when you insert or remove a network module with SFP/SFP+/SFP28 ports.

The following table lists the optional Cisco Catalyst 9300 uplink network modules. In addition, Cisco Catalyst 9300 Series switches also support 3850 uplink network modules.

Table 5: Network Modules

Network Module ¹	Description
C9300-NM-4G	This module has four 1 GE SFP module slots. Any combination of standard SFP modules are supported. SFP+ modules are not supported. If you insert an SFP+ module in the 1 GE network module, the SFP+ module does not operate, and the switch logs an error message.
C9300-NM-4M	This module has four Multigigabit (mGig) interfaces.
C9300-NM-2Q	This module has two 40 GE slots with a QSFP+ connector in each slot.

Network Module ¹	Description
C9300-NM-8X	This module has eight 10 GE slots with an SFP+ port in each slot. Each port supports a 1 GE or 10 GE connection. Any combination of SFP and SFP+ modules are supported.
C9300-NM-2Y	This module has two 25 GE SFP28 module slots. Any combination of SFP, SFP+ and SFP28 modules are supported.
C9300-NM-BLANK	Insert this blank module when the switch has no uplink ports (this is required for sufficient air flow).
C9300X Network Modules¹	
Note Note that C9300X network modules are supported only on C9300X switches.	
C9300X-NM-2C	This module has two 40 GE/100 GE slots with a QSFP+ connector in each slot.
C9300X-NM-4C	This module has four 40 GE/100 GE slots with a QSFP+ connector in each slot. This module is supported only on C9300X-24Y.
C9300X-NM-8M	This module has eight Multigigabit (mGig) module slots.
C9300X-NM-8Y	This module has eight 25 GE/10 GE/1 GE slots with an SFP28 port in each slot.
C9300X-NM-BLANK	Insert this blank module when the switch has no uplink ports (this is required for sufficient air flow).



Note 1. All network modules are hot-swappable.

The following table lists the network modules that are supported on the Cisco Catalyst 9300X-HXN Series Switches and the ports that are usable on each of these network module:

Table 6: Network Modules Supported on Catalyst 9300X-48HXN Series Switches

Network Module	Cisco IOS XE Cupertino 17.7.1 and Previous Releases	Cisco IOS XE Cupertino 17.8.1 and Later Releases
C9300X-NM-8Y (8x25G)	Ports 1 to 4 usable.	Ports 1 to 6 usable. Ports 7 and 8 are permanently disabled.
C9300X-NM-8M (8xmGig)	Ports 1 to 4 usable.	Ports 1 to 6 usable. Ports 7 and 8 are permanently disabled.
C9300X-NM-2C (2x100G/2x40G)	Ports 1 to 2 usable. No breakout cable support.	Ports 1 and 2 usable. Breakout cable supported only on port 1. No support for breakout cable on port 2.

For information about the network modules, see the [Installing a Network Module in the Switch](#). For cable specifications, see [Cables and Adapters](#).

LEDs

You can use the switch LEDs to monitor switch activity and its performance.

Figure 8: Switch Front Panel LEDs



Note XPS and S-PWR LEDs are not applicable to C9300L switches.

USB Console LED

The USB console LED shows whether there is an active USB connection to the port.

Table 7: USB Console LED

LED	Color	Description
USB console port	Green	USB console port is active.
	Off	The USB is disabled.

System LED

Table 8: System LED

Color	System Status
Off	System is not powered on.
Green	System is operating normally.
Blinking green	System is loading the software.

Color	System Status
Amber	System is receiving power but is not functioning properly. The failure is due to one of the following reasons • Fan failure. • System POST failure.

Active LED

Table 9: Active LED

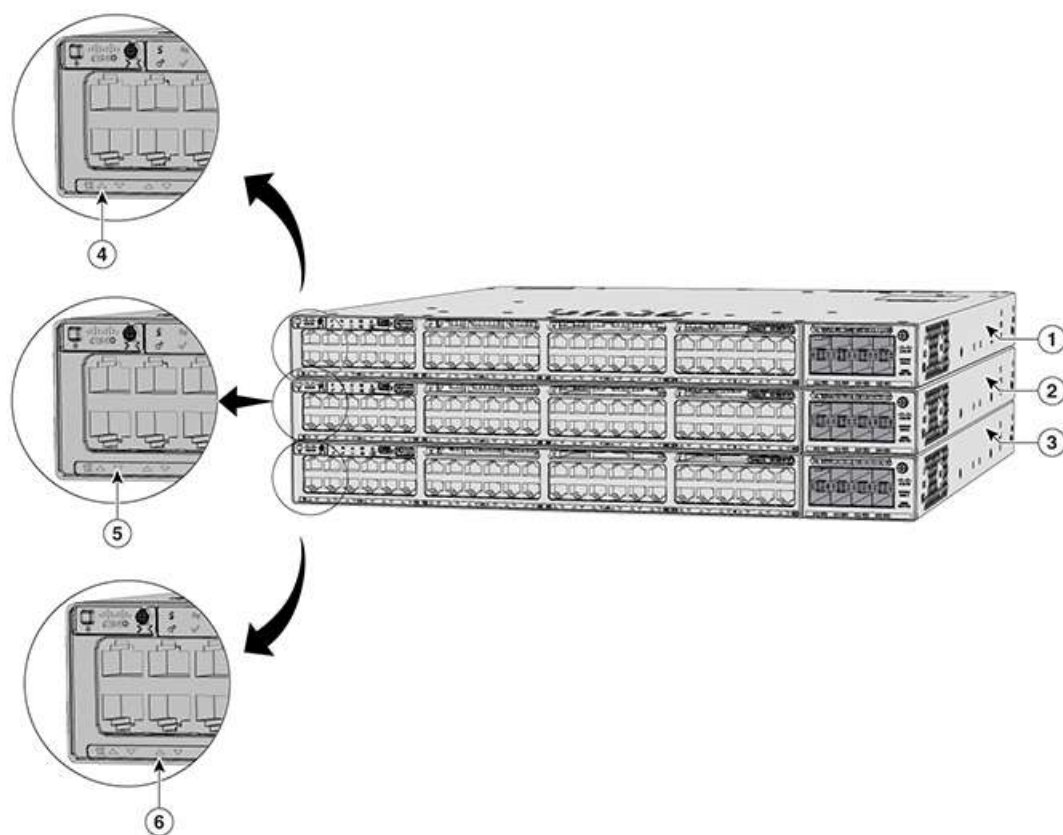
Color	Description
Off	Switch is not the active switch.
Green	Switch is the active switch or a standalone switch.
Slow blinking green	Switch is in stack standby mode.
Amber	An error occurred when the switch was selecting the active switch, or another type of stack error occurred.

STACK LED

The STACK LED shows the sequence of member switches in a stack. Up to nine switches can be members of a stack. The first nine port LEDs show the member number of a switch in a stack.

Figure 9: STACK LED

This figure shows the LEDs on for each switch. When you press the Mode button to select the STACK LED, the corresponding port LEDs will blink green for each switch. For example, for switch 1, port 1 will blink green and the rest of the LEDs will be off. On switch 2, port 2 will blink green and the rest of the LEDs will be off. The same behavior will be seen with the remaining switches in the stack.



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1	Stack member 1	4	LED blinks green to show that this is switch 1 in the stack.
2	Stack member 2	5	LED blinks green to show that this is switch 2 in the stack.
3	Stack member 3	6	LED blinks green to show that this is switch 3 in the stack.

PoE LED

The PoE LED indicates the status of the PoE mode: either PoE, PoE+, or Cisco UPOE.

Table 10: PoE LED

Color	Description
Off	PoE mode is not selected. None of the 10/100/1000 ports have been denied power or are in a fault condition.
Green	PoE mode is selected, and the port LEDs show the PoE mode status.
Blinking amber	PoE mode is not selected. At least one of the 10/100/1000 ports has been denied power, or at least one of the 10/100/1000 ports has a PoE mode fault.

Fan LEDs

Table 11: Fan LED Indicators

Color/State	Description
Off	The fan is not receiving power; the fans have stopped.
Green	All fans are operating normally.
Amber	One or more fans have encountered tachometer faults.

XPS LED



Note This LED is not supported on Cisco Catalyst 9300L Series switches.

Table 12: XPS LED

Color	Description
Off	XPS cable is not installed. Switch is in StackPower mode.
Green	XPS is connected and ready to provide back-up power.
Blinking green	XPS is connected but is unavailable because it is providing power to another device (redundancy has been allocated to a neighboring device).
Amber	The XPS is in standby mode or in a fault condition. See the XPS 2200 documentation for information about the standby mode and fault conditions.
Blinking amber	The power supply in a switch has failed, and the XPS is providing power to that switch (redundancy has been allocated to this device).

For information about the XPS 2200, see the *Cisco eXpandable Power System 2200 Hardware Installation Guide* on Cisco.com:

http://www.cisco.com/go/xps2200_hw

S-PWR LED

Table 13: S-PWR LED

Color	Description
Off	StackPower cable is not connected, or the switch is in standalone mode.
Green	Each StackPower port is connected to another switch.
Blinking green	This appears on the switch in a StackPower ring configuration that detects an open ring or has only one StackPower cable connected.

Color	Description
Amber	There is a fault: load shedding is occurring, a StackPower cable is defective, or an administrative action is required. See the switch software configuration guide for information about configuring StackPower.
Blinking amber	The StackPower budget is not sufficient to meet current power demands.

Port LEDs and Modes

Each Ethernet port, 1-Gigabit Ethernet module slot, and 10-Gigabit Ethernet module slot has a port LED. These port LEDs, as a group or individually, display information about the switch and about the individual ports. The port mode determines the type of information shown by the port LEDs.

To select or change a mode, press the Mode button until the desired mode is highlighted. When you change port modes, the meanings of the port LED colors also change.

When you press the Mode button on any switch in the switch stack, all the stack switches change to show the same selected mode. For example, if you press the Mode button on the active switch to show the SPEED LED, all the other switches in the stack also show the SPEED LED.

Table 14: Port Mode LEDs

Mode LED	Port Mode	Description
STAT	Port status	The port status. This is the default mode.
SPEED	Port speed	The port operating speed: 10, 100, or 1000 Mb/s.
DUPLX	Port duplex mode	The port duplex mode: full duplex or half duplex.
ACTV	Active	The active switch status.
STACK	Stack member status	Stack member status.
	StackWise port status	The StackWise port status. See STACK LED, on page 16 .
PoE ¹	The PoE+ port status.	The PoE+ port status.

¹ Only switches with PoE+ ports.

Table 15: Meaning of Switch LED Colors in Different Modes

Port Mode	Port LED Color	Meaning
STAT (port status)	Off	No link, or port was administratively shut down.
	Green	Link present, no activity.
	Blinking green	Activity. Port is sending or receiving data.
	Alternating green-amber	Link fault. Error frames can affect connectivity, and errors such as excessive collisions, CRC errors, and alignment and jabber errors are monitored for a link-fault indication.
	Amber	Port is blocked by Spanning Tree Protocol (STP) and is not forwarding data. After a port is reconfigured, the port LED can be amber for up to 30 seconds as STP checks the switch for possible loops.
	Blinking amber	Port is blocked by STP and is only receiving control frames.
SPEED	10/100/1000/SFP ports	
	Off	Port is operating at 10 Mb/s.
	Green	Port is operating at 100 Mb/s.
	Single green flash (on for 100 ms, off for 1900 ms)	Port is operating at 1000 Mb/s.
	Blinking twice	Port is operating at 2500, 5000 or 10000 Mb/s
	Network module slots	
	Off	Port is not operating.
	Blinking green	Port is operating at up to 10 Gb/s.
DUPLX (duplex)	Off	Port is operating in half duplex.
	Green	Port is operating in full duplex.
ACTV (data active switch)	Off	The switch is not the active switch. Note For a standalone switch, this LED is off.
	Green	The switch is the active switch.
	Amber	Error during active switch election.
	Blinking green	Switch is a standby member of a data stack and assumes active responsibilities if the current active switch fails.

Port Mode	Port LED Color	Meaning
STACK (stack member)	Off	No stack member corresponding to that member number.
	Blinking green	Stack member number.
PoE+ ²	Off	PoE+ is off. If the powered device is receiving power from an AC power source, the port LED is off even if the device is connected to the switch port.
	Green	PoE+ is on. The port LED is green when the switch port is providing power.
	Alternating green-amber	PoE+ is denied because providing power to the powered device will exceed the switch power capacity.
	Blinking amber	PoE+ is off due to a fault or because it has exceeded a limit set in the switch software. Caution PoE+ faults occur when noncompliant cabling or powered devices are connected to a PoE+ port. Use only standard-compliant cabling to connect Cisco prestandard IP Phones and wireless access points or IEEE 802.3af-compliant devices to PoE+ ports. You must remove from the network any cable or device that causes a PoE+ fault.
	Amber	PoE+ for the port has been disabled. Note PoE+ is enabled by default.

² Only switches with PoE or PoE+ ports.

Beacon LED

The UID and the Beacon LED can be turned on by the administrator to indicate that the switch needs attention. It helps the administrator identify the switch. The beacon can be turned on by either pressing the UID button on the switch front panel, or by using the CLI. There is a blue beacon on the front and rear panel of the switch. The blue beacon on the front panel is a button labeled UID, and on the back panel it is a LED labeled BEACON.

Color/State	Description
Solid blue	The operator has indicated that the system needs attention.

Network Module LEDs

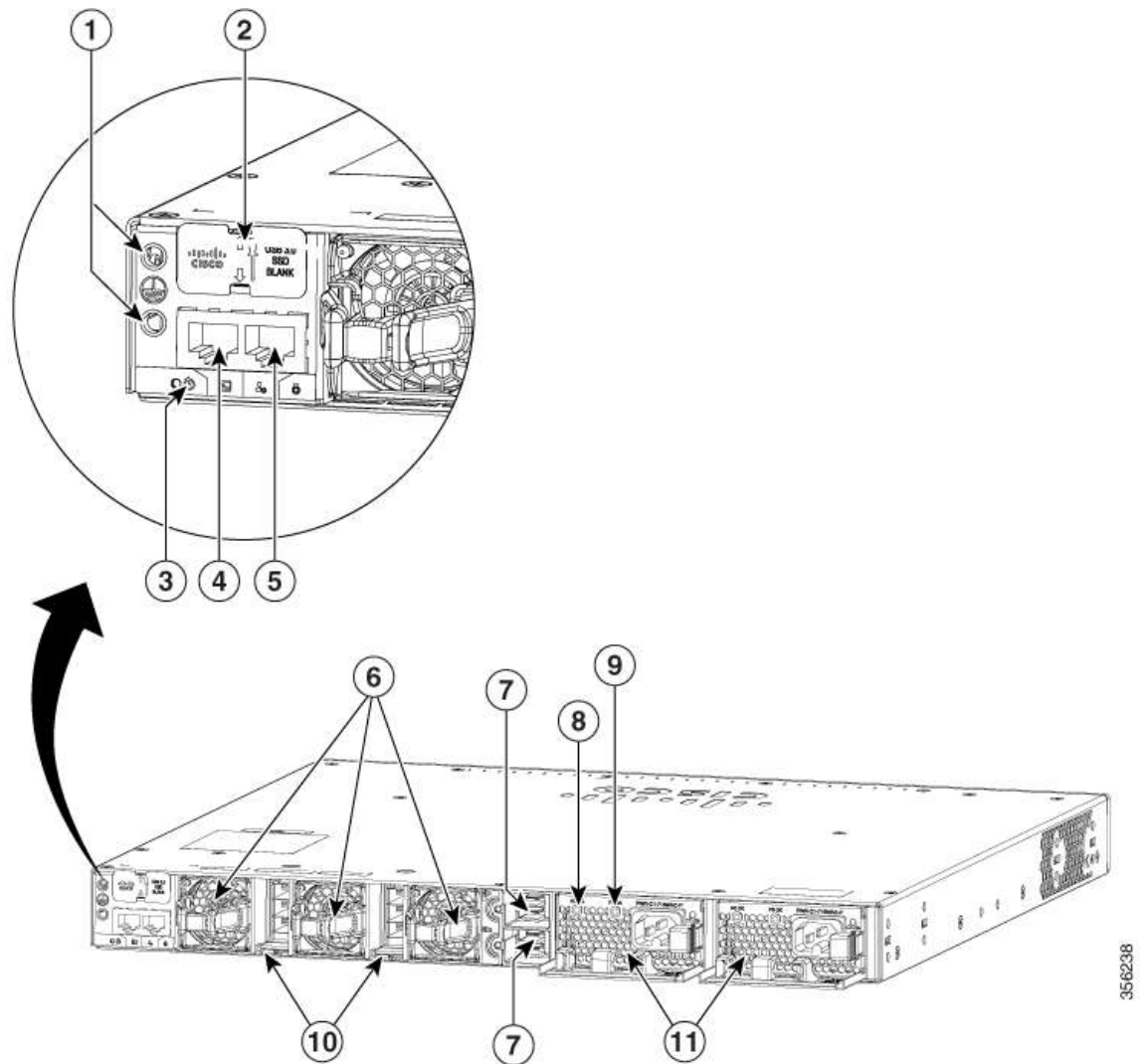
Color	Network Module Link Status
Off	Link is off.

Color	Network Module Link Status
Green	Link is on; no activity.
Blinking green	Activity on a link; no faults. Note The LED will blink green even when there is very little control traffic.
Blinking amber	Link is off due to a fault or because it has exceeded a limit set in the switch software. Caution Link faults occur when noncompliant cabling is connected to an SFP/SFP+/SFP28 port. Use only standard-compliant cabling to connect to Cisco SFP/SFP+/SFP28 ports. You must remove from the network any cable or device that causes a link fault.
Amber	Link for the SFP/SFP+/SFP28 has been disabled.

Rear Panel

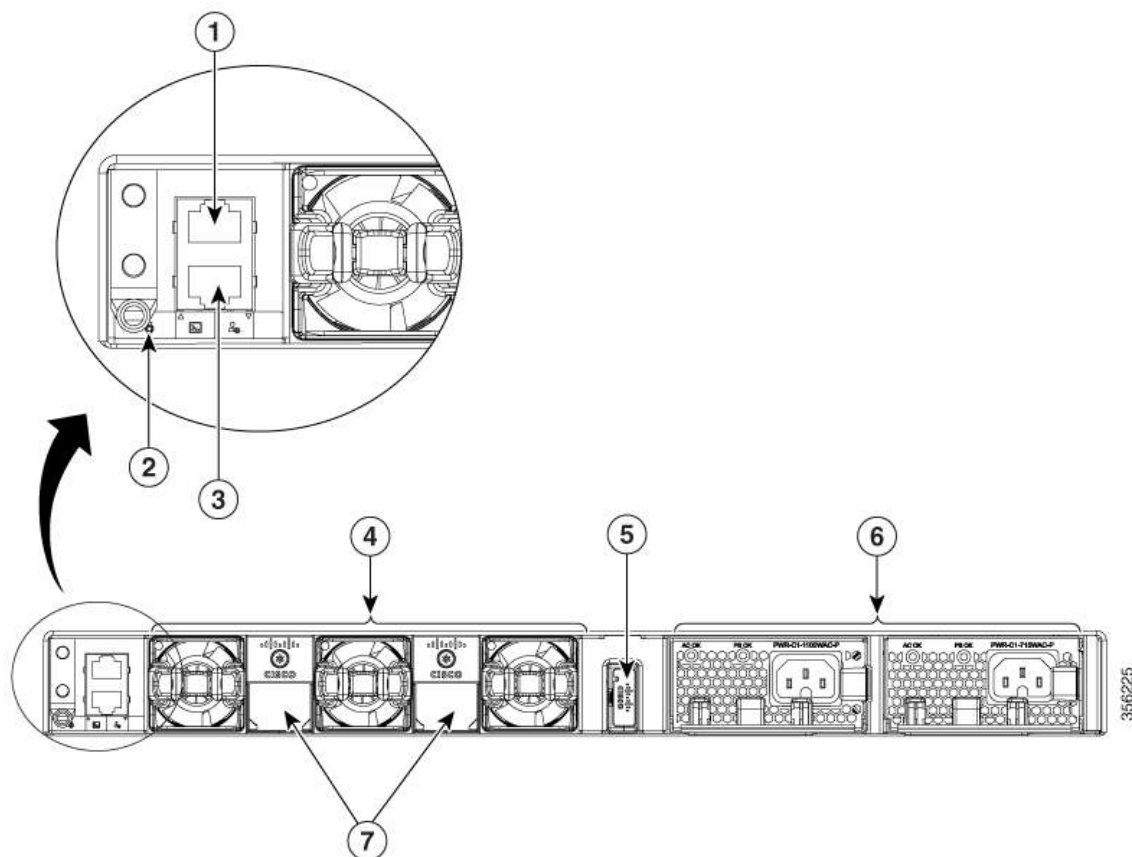
The switch rear panel includes StackWise connectors, StackPower or XPS connectors, ports, fan modules, and power supply modules.

Figure 10: Rear Panel of a Cisco Catalyst 9300 Series Switch



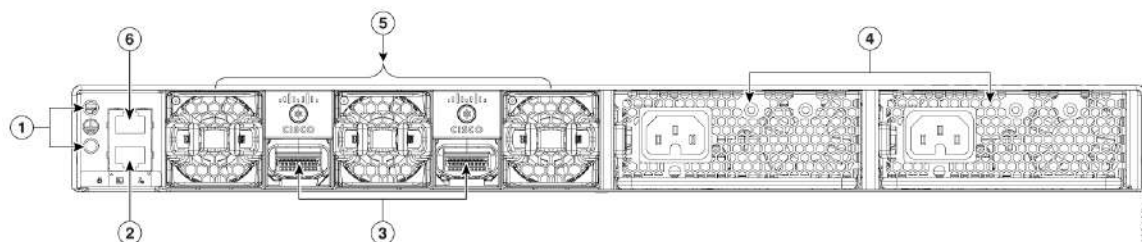
1	Ground connectors	7	StackPower connectors
2	USB3.0-SSD port	8	AC OK (input) status LED
3	BEACON LED	9	PS OK (output) status LED
4	CONSOLE (RJ-45 console port)	10	StackWise-480 port connectors
5	MGMT (RJ-45 10/100/1000 management port)	11	Power supply modules
6	Fan modules	-	-

Figure 11: Rear Panel of a Cisco Catalyst 9300L Series Switch



1	CONSOLE (RJ-45 console port)	5	USB3.0 SSD port
2	BEACON LED	6	Power supply modules
3	MGMT (RJ-45 10/100/1000 management port)	7	StackWise-320 port connectors
4	Fan modules	-	-

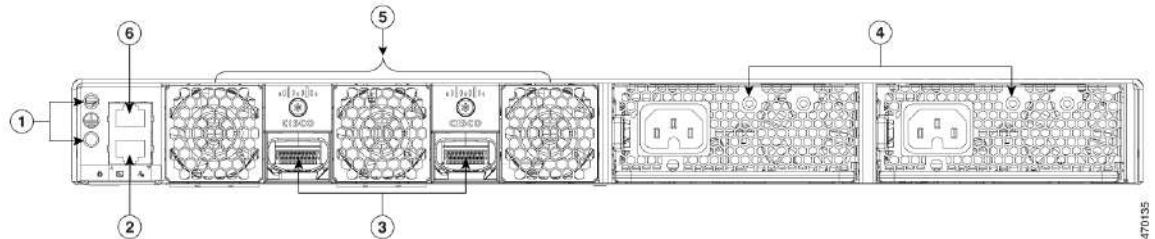
Figure 12: Rear Panel of a Cisco Catalyst 9300LM Series Switch



1	Ground connectors	4	Power supply modules
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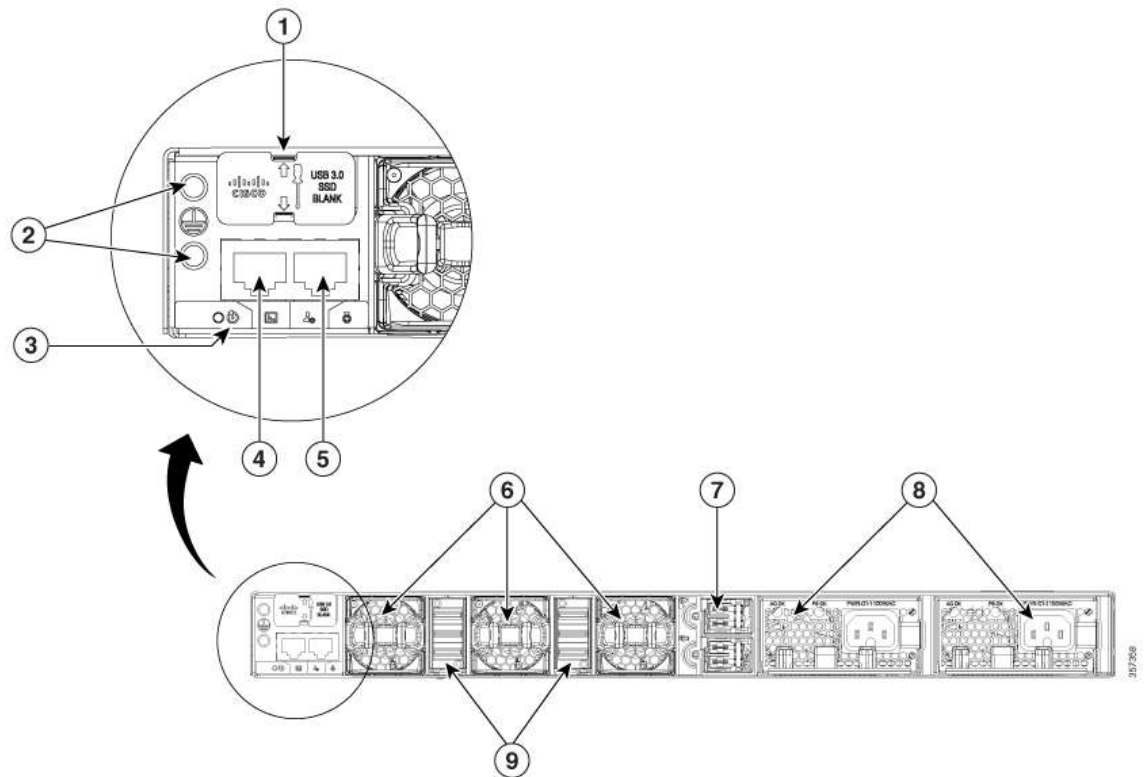
2	MGMT (RJ-45 10/100/1000 management port)	5	Fan modules
3	StackWise-320 port connectors	6	CONSOLE (RJ-45 console port)

Figure 13: Rear Panel of a C9300LM-48T-4Y



1	Ground connectors	4	Power supply modules
2	MGMT (RJ-45 10/100/1000 management port)	5	Fixed fans
3	StackWise-320 port connectors	6	CONSOLE (RJ-45 console port)

Figure 14: Rear Panel of a Cisco Catalyst 9300X Series Switch



1	USB3.0-SSD port	6	Fan modules
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2	Ground connectors	7	StackPower+ connectors
3	BEACON LED	8	Power supply modules
4	CONSOLE (RJ-45 console port)	9	StackWise-1T port connectors
5	MGMT (RJ-45 management port)	-	-

RFID Tag

The chassis has a built-in, passive RFID tag that uses UHF RFID technology and requires an RFID reader with compatible software. It provides auto-identification capabilities for asset management and tracking. The RFID tags are compatible with the Generation 2 GS1 EPC Global Standard and are ISO 18000-6C compliant. They operate in the 860- to 960-MHz UHF band. For more information, see [Radio Frequency Identification \(RFID\) on Cisco Catalyst 9000 Family Switches White Paper](#).

RJ-45 Console Port LED

Table 16: RJ-45 Console Port LED

Color	RJ-45 Console Port Status
Off	RJ-45 console is disabled. USB console is active.
Green	RJ-45 console is enabled. USB console is disabled.

StackWise Ports

StackWise ports are used to connect switches in StackWise stacking configurations. The switch ships with a 0.5-meter StackWise cable for modular uplink switch models that you can use to connect the StackWise ports. For more information on StackWise cables, see [Connecting the StackWise Cables](#).



Caution

Use only approved cables, and connect only to similar Cisco equipment. Equipment might be damaged if connected to nonapproved Cisco cables or equipment.

Power Supply Modules

The switches are powered through one or two internal power supply modules. The switches ship with one power supply module by default, and the second power supply can be purchased when the switch is ordered or at a later time.

Following is the list of all the power supply modules supported on Cisco Catalyst 9300 Series Switches. For information about the modules supported on each switch model, see [Power Supply Modules Overview](#).

- PWR-C1-350WAC
- PWR-C1-715WAC

- PWR-C1-1100WAC
- PWR-C1-715WDC
- PWR-C1-350WAC-P
- PWR-C1-715WAC-P
- PWR-C1-1100WAC-P
- PWR-C1-1900WAC-P
- PWR-C6-600WAC
- PWR-C6-1KWAC



Note The PWR-C6 power supplies are supported only with C9300LM switches. Also, you cannot use any of the other PWR-C1 power supplies listed here with C9300LM switches.

The switch has two internal power supply module slots. You can use two AC modules or one power supply module and a blank module.

The switch can operate with either one or two active power supply modules or with power supplied by a stack. A switch that is in a StackPower stack can operate with power supplied by other switches in the stack.

[Switch Models, on page 2](#) shows the default power supply module that ships with each switch model. All the power supply modules (except the blank modules) have internal fans. All switches ship with a blank power supply module in the second power supply slot.



Caution Do not operate the switch with one power supply module slot empty. Always install a blank module in the empty slot to keep the operating temperature and fan noise lower.

The following tables show the PoE available and PoE requirements for PoE switch models.

Table 17: Available PoE with Default Power Supply

Switch Model	Default Power Supply	Available PoE
C9300 Series Switches		
C9300-24T	PWR-C1-350WAC-P	-
C9300-48T		-
C9300-24S	PWR-C1-715WAC-P	-
C9300-48S		-
C9300-24P		445 W
C9300-48P		437 W

Switch Model	Default Power Supply	Available PoE
C9300-24H	PWR-C1-1100WAC-P	830 W (PWR-C1-1100WAC)
C9300-48H		822 W (PWR-C1-1100WAC)
C9300-24U	PWR-C1-1100WAC-P	830 W
C9300-48U		822 W
C9300-24UB		830 W
C9300-48UB		822 W
C9300-24UX		560 W
C9300-24UXB		560 W
C9300-48UN		610 W
C9300-48UXM		490 W
C9300L Series Switches		
C9300L-24T-4G	PWR-C1-350WAC-P	-
C9300L-24T-4X		-
C9300L-48T-4G		-
C9300L-48T-4X		-
C9300L-24P-4G	PWR-C1-715WAC-P	505 W
C9300L-24P-4X		505 W
C9300L-48P-4G		505 W
C9300L-48P-4X		505 W
C9300L-48PF-4G	PWR-C1-1100WAC-P	890 W
C9300L-48PF-4X		890 W
C9300L-24UXG-4X		880 W
C9300L-24UXG-2Q		722 W
C9300L-48UXG-4X		675 W
C9300L-48UXG-2Q		675 W
C9300LM Series Switches		
C9300LM-48T-4Y	PWR-C6-600WAC	-
C9300LM-24U-4Y		420 W

Switch Model	Default Power Supply	Available PoE
C9300LM-48U-4Y	PWR-C6-1KWAC	790 W
C9300LM-48UX-4Y		790 W
C9300X Series Switches		
C9300X-12Y	PWR-C1-715WAC-P	-
C9300X-24Y		-
C9300X-48TX		-
C9300X-48HX	PWR-C1-1100WAC-P	590 W
C9300X-48HXN		690 W
C9300X-24HX		735 W



- Note** 1. PWR-C1-1900WAC-P provides 1900 W output power when the nominal input voltage is 230 V. If the nominal input voltage is 115 V, then the output power is limited to 1500 W. See [Table 2](#) for suitable power cord options.

For more information about power supplies, see [Specifications for the Power Supplies, Switches, and Fan](#).

Depending on the power supplies configured, C9300-24H can provide a maximum of 2160 W and C9300-48H can provide a maximum of 2880 W of UPOE+ power.

The power supply modules have two status LEDs.

Table 18: Switch Power Supply Module LEDs

AC or DC OK	Description	PS OK	Description
Off	No AC or DC input power.	Off	Output is disabled, or input is outside operating range (LED is off).
Green	AC or DC input power present.	Green	Power output to switch active.
		Red	Output has failed.

Fan Module

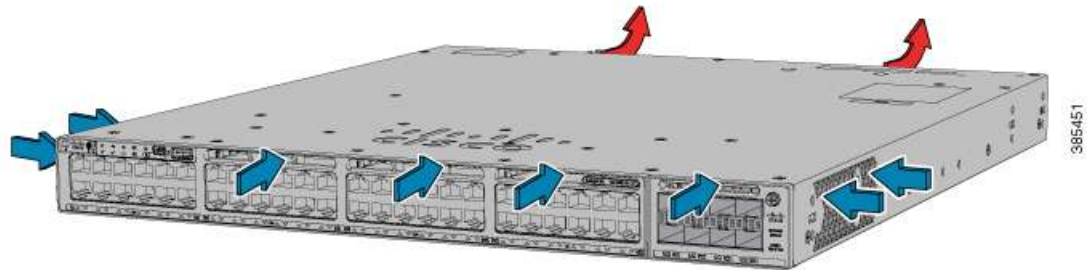
The air circulation system consists of fan modules and power supply modules. All switches except C9300LM-48T-4Y support three internal hot-swappable 12-V fan modules (FAN-T2=). The C9300LM-48T-4Y switch has fixed fans.

When the fan modules are operating properly, a green LED at the top left corner of the fan assembly (viewed from the rear), is ON. If the fan fails, the LED turns to amber. The switch can operate with two operational

fans, but the failed fan should be replaced as soon as possible to avoid a service interruption due to a second fan fault.

The airflow direction is from front-to-rear and side-to-rear. The following illustration shows the airflow pattern for the switches. The blue arrow shows cool airflow, and the red arrow shows warm airflow.

Figure 15: Switch Airflow Pattern



For information about installing a fan module and fan specifications, see [Installing a Fan Module](#).

StackPower Connector

The C9300 switches have a StackPower connector for use with Cisco StackPower cables to configure a switch power stack that includes up to four switches. A switch power stack can be configured in redundant or power-sharing mode.

You can order these StackPower cables from your Cisco sales representative:

- CAB-SPWR-30CM (0.3-meter cable)
- CAB-SPWR-150CM (1.5-meter cable)

For details about connecting StackPower cables and StackPower guidelines, see [Planning a StackPower Stack](#).

USB 3.0 SSD Port

To support the storage needs on the switch, the Cisco Catalyst 9300 Series Switches provide support for pluggable 120 GB and 240 GB USB 3.0 Solid State Drive (SSD) modules. The USB 3.0 SSD module slot is located at the rear panel of the switch. The storage drive can also be used to save packet captures and trace logs generated by the operating system. The USB 3.0 SSD device is field replaceable.



Note C9300LM switches that have a mount kit to install SSD-240G on the USB Type A port on the front panel. For more information, see [Installing an SSD Module on C9300LM Switches](#).

For information about installing a USB 3.0 SSD module, see [Installing a USB 3.0 SSD](#).

Ethernet Management Port

You can connect the switch to a host such as a Windows workstation or a terminal server through the 10/100/1000 Ethernet management port or one of the console ports. The 10/100/1000 Ethernet management port is a VPN routing/forwarding (VRF) interface and uses a RJ-45 crossover or straight-through cable.



Note The 10/100/1000 Ethernet management port is an RJ-45 connector that should be connected to a Windows workstation or a terminal server. Do not connect this port to another port in the same switch or to any port within the same switch stack.

The following table shows the Ethernet management port LED colors and their meanings.

Table 19: Ethernet Management Port LED

Color	Description
Green	Link up but no activity.
Blinking green	Link up and activity.
Off	Link down.

RJ-45 Console Port

The RJ-45 console port connection uses the optional RJ-45-to-DB-9 female cable.

The following table shows the RJ-45 console port LED colors and their meanings.

Table 20: RJ-45 Console LED

Color	Description
Green	RJ-45 console port is active.
Off	The port is not active.

Network Configurations

See the switch software configuration guide for network configuration concepts and examples of using the switch to create dedicated network segments and interconnecting the segments through Fast Ethernet and Gigabit Ethernet connections.

