



CHAPTER 1

Overview

The Catalyst 2350 switch, also referred to as the *switch*, is an Ethernet switch to which you can connect devices such as servers, routers, and other switches.

- [Switch Models, page 1-1](#)
- [Front Panel Description, page 1-1](#)
- [Rear Panel Description, page 1-5](#)
- [Management Options, page 1-8](#)

Switch Models



Note

All switch models support the Cisco TwinGig Converter Module.

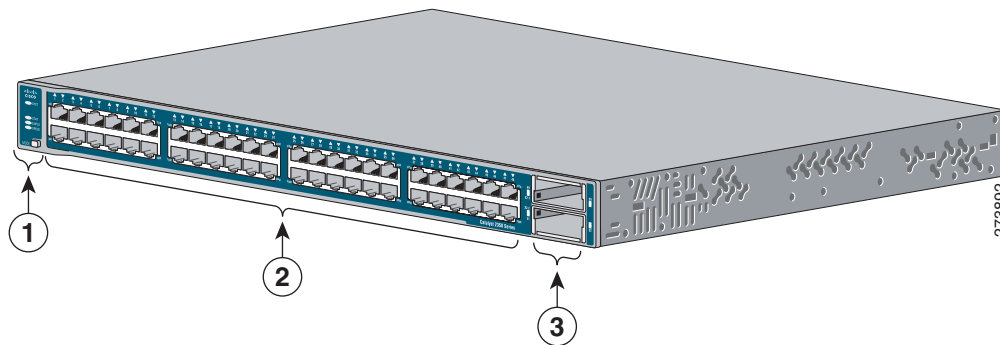
Table 1-1 *Catalyst 2350 Switch Models*

Model	Description
WS-C2350-48TD-S	48 10/100/1000 Ethernet ports, 2 10-Gigabit Ethernet X2 module slots, AC power
WS-C2350-48TD-SD	48 10/100/1000 Ethernet ports, 2 10-Gigabit Ethernet X2 module slots, DC power

Front Panel Description

The switch front panel includes the 10/100/1000 Ethernet ports, the 10-Gigabit Ethernet module slots, and the switch LEDs. [Figure 1-1](#) shows the Catalyst 2350 switch with AC power as an example. Both the AC-powered and DC-powered switches have similar components.

Figure 1-1 Catalyst 2350 Switch Front Panel



1	Mode button and switch LEDs	3	10-Gigabit Ethernet module slots ¹
2	10/100/1000 Ethernet ports and port LEDs		

1. For use with the Cisco TwinGig Converter Modules and Cisco X2 transceiver modules.

10/100/1000 Ethernet Ports

The 10/100/1000 Ethernet ports use standard RJ-45 connectors with Ethernet pinouts. The maximum cable length is 328 feet (100 meters). The 100BASE-TX and 1000BASE-T traffic requires Category 5, Category 5e, or Category 6 unshielded twisted pair (UTP) cable. The 10BASE-T traffic can use Category 3 or Category 4 UTP cable.

For more information about the 10/100/1000 Ethernet port connections and specifications, see the “10/100/1000 Ethernet Port Connections” section on page 2-16 and Appendix B, “Connector and Cable Specifications.”

10-Gigabit Ethernet Module Slots

The switch 10-Gigabit Ethernet module slots are used for uplink connection to other switches and routers. The module slots operate in full-duplex mode and use the hot-swappable Cisco X2 transceiver modules and the Cisco TwinGig Converter Module.

For the list of supported X2 transceiver modules, see the switch release notes on Cisco.com.

http://www.cisco.com/en/US/products/ps10116/tsd_products_support_series_home.html

For more information about the 10-Gigabit Ethernet module slots, see the “Installing Devices in 10-Gigabit Ethernet Slots” section on page 2-12. For cable specifications, see Appendix B, “Connector and Cable Specifications.”

Cisco TwinGig Converter Module

The Cisco TwinGig Converter Module, also known as the *converter module*, has two SFP module slots that convert a 10-Gigabit slot into a dual SFP module interface to establish Gigabit uplinks to network devices.

For more information about the Cisco TwinGig Converter Module, see the [“Installing X2 Transceiver and Converter Modules”](#) section on page 2-12. For cable specifications, see [Appendix B, “Connector and Cable Specifications.”](#)

SFP Modules

The Gigabit Ethernet SFP modules connect to other devices and provide uplink interfaces when inserted in an SFP module slot. The SFP modules have LC connectors for fiber-optic connections or RJ-45 connectors for copper connections. You can use any combination of these field-replaceable modules:

- 1000BASE-SX
- 1000BASE-T

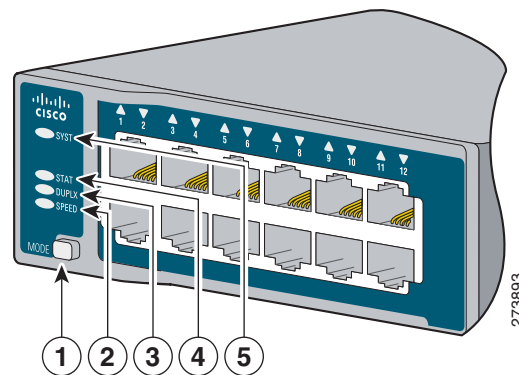
The Catalyst 2350 switch supports the SFP module patch cable, a 0.5-meter, passive copper cable with SFP module connectors at each end. The patch cable can connect two Catalyst 2350 switches in a cascaded configuration.

For more information about SFP modules, see your SFP module documentation and the [“Installing SFP Modules”](#) section on page 2-14. For cable specifications, see [Appendix B, “Connector and Cable Specifications.”](#)

LEDs

You can use the switch LEDs to monitor switch activity and its performance. [Figure 1-2](#) shows the switch LEDs and the Mode button that you use to select one of the port modes.

Figure 1-2 Catalyst 2350 Switch LEDs



1	Mode button	4	Status LED
2	Speed LED	5	System LED
3	Duplex LED		

System LED

The System LED shows whether the system is receiving power and is functioning properly.

Table 1-2 **System LED**

Color	System Status
Off	System is not powered on.
Green	System is operating normally.
Amber	System is receiving power but is not functioning properly.

For information on the System LED colors during power-on self-test (POST), see the “[Diagnosing Problems](#)” section on page 4-1.

Port LEDs and Modes

Each Ethernet port 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 displayed through 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.

Table 1-3 **Port Mode LEDs**

Mode LED	Port Mode	Description
STAT	Port status	The port status. This is the default mode.
DUPLX	Port duplex mode	The port duplex mode: full duplex or half duplex. Note The 10/100/1000 ports operate only in full-duplex mode.
SPEED	Port speed	The port operating speed: 10, 100, or 1000 Mb/s.

Table 1-4 **Meanings 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.
	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 remain amber for up to 30 seconds as STP tests the switch for possible loops.
	Blinking amber	Port is blocked by STP and is sending or receiving packets.

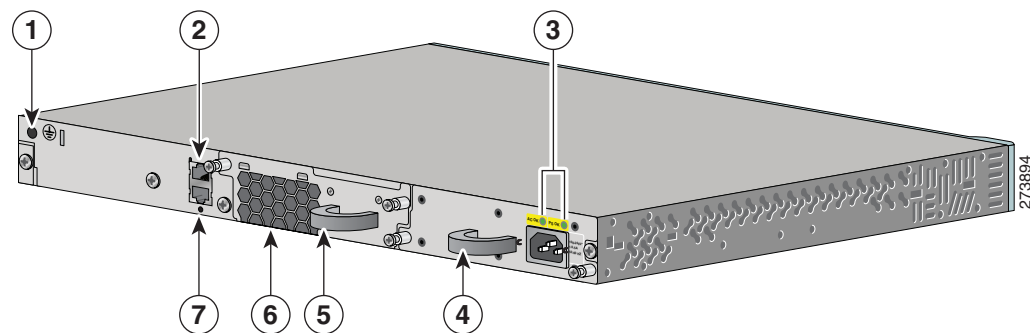
Table 1-4 Meanings of Switch LED Colors in Different Modes (continued)

Port Mode	Port LED Color	Meaning
DUPLX (duplex)	Off	Port is operating in half duplex.
	Green	Port is operating in full duplex.
SPEED	10/100/1000 ports	
	Off	Port is operating at 10 Mb/s.
	Green	Port is operating at 100 Mb/s.
	Blinking green	Port is operating at 1000 Mb/s.
	10-Gigabit Ethernet module slots	
	Off	Port is not operating.
	Blinking green	Port is operating at up to 10 Gb/s.

Rear Panel Description

The switch rear panels have a ground location, a console port, a power-supply module, a fan module, and a 10/100 management port. [Figure 1-3](#) shows the switch with AC power as an example. Both switches have similar components.

Figure 1-3 Catalyst 2350 Switch Rear Panel



1	Ground location	5	Fan module
2	Console port	6	Fan exhaust
3	Power-supply LEDs	7	Ethernet management port and LED
4	Power-supply module		

Power-Supply Modules

The Catalyst 2350 switches are powered through an internal power-supply module. See the [“Catalyst 2350 Switch Power-Supply Modules”](#) section on page 1-6 and [Table 1-5](#).

Catalyst 2350 Switch Power-Supply Modules

The switches have one internal 265-W power-supply module (Table 1-5). The 265-W AC-power-supply module is an autoranging unit that supports input voltages between 100 and 240 VAC. The DC-power-supply module has dual input feeds (A and B) and supports input voltages between 36 and 72 VDC.

The AC-power-supply module uses an 18-AWG power cord for connection to an AC power outlet. The DC-power-supply module requires wiring to a DC-power source.

Table 1-5 Power-Supply Modules for the Catalyst 2350 Switch

Power-Supply Module	WS-C2350-48TD-S	WS-C2350-48TD-SD
C3K-PWR-265WAC=	Spare or primary	Not allowed
C3K-PWR-265WDC=	Not allowed	Primary or spare

The power-supply modules have two status LEDs.

Table 1-6 Power-Supply Module LEDs

AC-Power-Supply Module LEDs			
AC OK	Description	PS OK	Description
Off	No AC input power.	Off	Power supply failure.
Green	AC input power present.	Green	Power output to switch active.
DC-Power-Supply Module LEDs			
DC IN	Description	PS OK	Description
Off	No DC input power.	Off	Power supply failure.
Green	DC input power present.	Green	Power output to switch active.

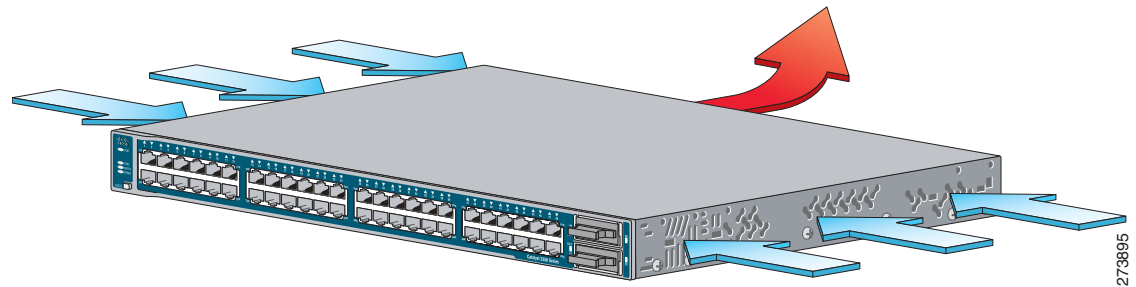
For more information about replacing a power-supply module, wiring a DC-power-supply module, and for module specifications, see Chapter 3, “Power Supply and Fan Module Installation,” and Appendix A, “Technical Specifications.”

Fan Modules

The switch models has an internal hot-swappable 12-V fan module that inserts in the switch rear panel. The air circulation system consists of the fan module and the power supply modules. The airflow patterns vary depending on the power supply configuration.

The blue arrow shows cool air flow, and the red arrow shows warm air flow.

Figure 1-4 Catalyst 2350 Switch Airflow Patterns



For more information about installing a fan module and the module specifications, see [Chapter 3, “Power Supply and Fan Module Installation,”](#) and [Appendix A, “Technical Specifications.”](#)

Management Ports

You can connect the switch to a host such as a Windows workstation or a terminal server through the 10/100 Ethernet management port or the console port (shown in [Figure 1-3](#)). The 10/100 Ethernet management port connection uses a standard RJ-45 crossover or straight-through cable. The console port connection uses the supplied RJ-45-to-DB-9 female cable.

Table 1-7 Ethernet Management Port LED

Color	Description
Green	Active link to PC
Off	Inactive link
Amber	POST failure

For more information about the switch management ports, see the switch software configuration guide and the command reference on Cisco.com and the [“Connector and Cable Specifications”](#) section on [page B-1](#).

Management Options

- Device manager

You can use the device manager, which is in the switch memory, to manage the switch. This web interface offers quick configuration and monitoring. You can access the device manager from anywhere in your network through a web browser. For more information, see the getting started guide and the device manager online help.
- Cisco IOS CLI

The switch CLI is based on Cisco IOS software and is enhanced to support desktop-switching features. You can fully configure and monitor the switch from the CLI. You can access the CLI either by connecting your management station directly to the switch management port or a console port or by using Telnet from a remote management station. See the switch command reference on Cisco.com for more information.
- CiscoWorks application

The CiscoWorks LAN Management Solution (LMS) is a suite of management tools for configuring, administering, monitoring, and troubleshooting Cisco networks. For more information, see the CiscoWorks LMS documentation on Cisco.com:

http://www.cisco.com/en/US/products/sw/cscowork/ps2425/tsd_products_support_series_home.html
- Cisco Network Assistant

Cisco Network Assistant is a PC-based network management GUI application that enables centralized management of Cisco switches. Cisco Network Assistant is available at no cost and can be downloaded from this URL:

<http://www.cisco.com/go/networkassistant>

For information on starting the Network Assistant application, see the *Getting Started with Cisco Network Assistant* guide on Cisco.com.

Network Configurations

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