



Product Overview

This chapter provides an overview of the features and components of the Catalyst 4500 series switches. The Catalyst 4500 series switches are the Catalyst 4503 switch, the Catalyst 4506 switch, and the Catalyst 4507R switch. The information is presented in these major sections:

- [Switch Features, page 1-1](#)
- [Supervisor Engines, page 1-13](#)

Switch Features

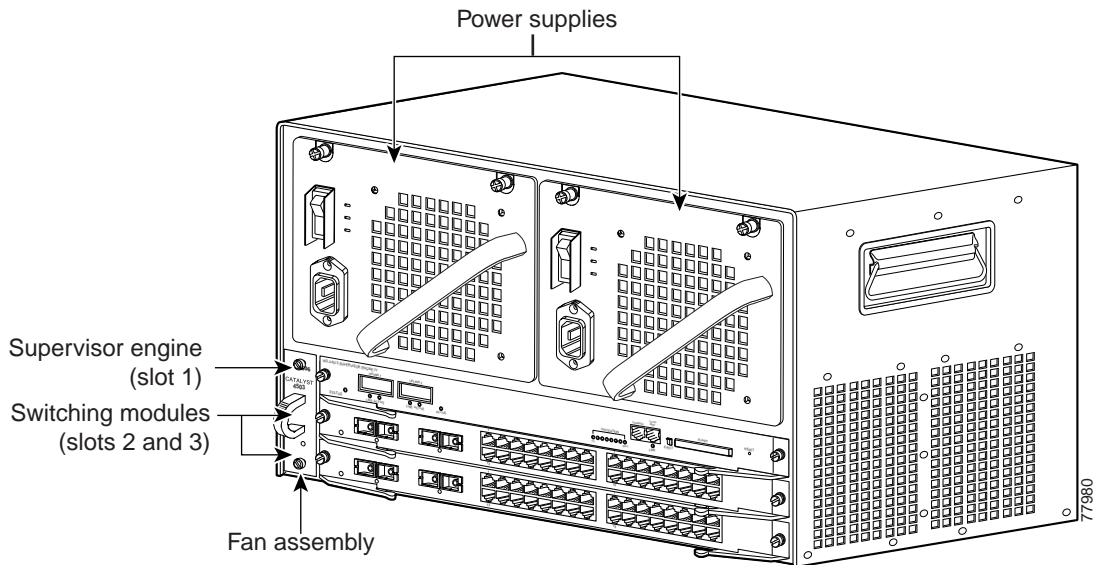
The following sections describe the features of the Catalyst 4500 series switches:

- [Catalyst 4503 Switch Features, page 1-1](#)
- [Catalyst 4506 Switch Features, page 1-5](#)
- [Catalyst 4507R Switch Features, page 1-9](#)

Catalyst 4503 Switch Features

The Catalyst 4503 switch (see [Figure 1-1](#)) is a three-slot switch designed for high-performance, high-density wiring closet applications.

Figure 1-1 Catalyst 4503 Switch (Front View)



The Catalyst 4503 switch supports the Supervisor Engine III and IV. The supervisor engine has two Gigabit Ethernet ports and a 64-Gbps, nonblocking, full-duplex, switching fabric that provides connections between the supervisor engine and the switching modules. The Gigabit Ethernet ports can be configured with any combination of shortwave SX, LX/LH, and ZX Gigabit Interface Converters (GBICs). For a description of GBICs, refer to the *Catalyst 4000 Family Module Installation Guide*.

Slot 1 is reserved for the supervisor engine only, which provides switching, local and remote management, and switch-status monitoring. Slots 2 and 3 are available for switching modules.

[Table 1-1](#) describes the features of the Catalyst 4503 switch.

Table 1-1 Features of the Catalyst 4503 Switch

Feature	Description
Ethernet speeds	<ul style="list-style-type: none"> • Ethernet (10BASE-T) interface to workstations and repeaters • Fast Ethernet (100BASE-T) interface to workstations, servers, switches, and routers <p>Note Autonegotiation of link speed on each 10/100 port allows migration to 100BASE-T from a 10BASE-T installed base.</p> <ul style="list-style-type: none"> • Gigabit Ethernet (1000BASE-T and 1000BASE-X) interfaces for backbone interconnection of high-performance switches and routers
Standard equipment	<ul style="list-style-type: none"> • Three-slot modular chassis with one slot reserved for a supervisor engine and two slots for switching modules • One hot-swappable fan assembly
Standard management and support	<ul style="list-style-type: none"> • Supports Layer 2 forwarding with an aggregate forwarding rate of 18 Mpps • Supports 32,768 MAC addresses per system • Supports up to 4,096 VLANs with IEEE 802.1Q VLAN tagging on all ports and VTP¹ • Supports port aggregation using PAgP² for 100-Mbps and 1000-Mbps EtherChannel
Embedded management	<ul style="list-style-type: none"> • Full SNMP implementation, including entity-MIB, all relevant standard MIBs, and all relevant Cisco MIBs • The first four RMON groups (Ethernet statistics, Alarms, Events, and History) are on a per-port basis without an optional RMON processing module • Provides SPAN³, which allows you to redirect traffic from any port or VLAN to a SPAN destination port • Performance management information

Table 1-1 Features of the Catalyst 4503 Switch (continued)

Feature	Description
Power supplies	<ul style="list-style-type: none"> • Supports a 1000 W, 1300 W, or 2800 W AC-input power supply or a 1400 W DC-input power supply⁴ • Optional redundant power supply
Supervisor engine	<ul style="list-style-type: none"> • Supports the Supervisor Engine II, III, and IV • Holds the ASIC-based forwarding engine (data path) and the management processor and software (control path) • Features interface monitoring, environmental status, and SNMP and console/Telnet interface <p>Note Packets are not forwarded while the module is removed; a system reboot occurs when a supervisor engine is reinserted.</p> <ul style="list-style-type: none"> • Features a 64-Gbps full-duplex Gigabit Ethernet switching engine <p>Note The Catalyst 4503 switch has a port capacity of 28 Gbps.</p> <ul style="list-style-type: none"> • Includes two Gigabit Ethernet (1000BASE-X) interfaces for backbone interconnection of high-performance switches and routers • Supervisor Engines III and IV support 48 Mpps⁵ Layer 2, 3, and 4 forwarding
Supported switching modules	<ul style="list-style-type: none"> • 24-port 100BASE-FX Fast Ethernet switching module (WS-X4124-FX-MT) • 48-port 100BASE-FX Fast Ethernet switching module (WS-X4148-FX-MT) • 48-port 10/100-Mbps Fast Ethernet switching module (WS-X4148-RJ) • 48-port 10/100-Mbps Fast Ethernet switching module (WS-X4148-RJ21) • 48-port Inline Power 10/100BASE-TX switching module (WS-X4148-RJ45V) • 32-port 10/100-Mbps Fast Ethernet plus 2-port Gigabit Ethernet switching module (WS-X4232-GB-RJ)

Table 1-1 Features of the Catalyst 4503 Switch (continued)

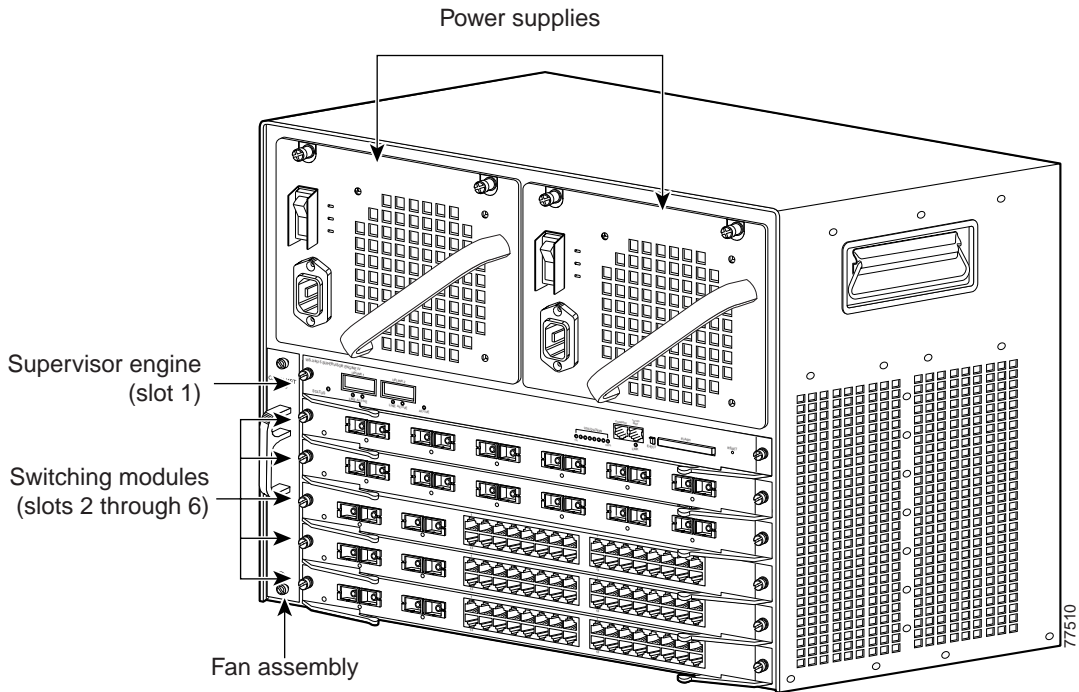
Feature	Description
Supported switching modules (continued)	<ul style="list-style-type: none"> • 32-port 10/100-Mbps Fast Ethernet switching module with modular uplink support (WS-X4232-RJ-XX) <ul style="list-style-type: none"> – 4-port 100BASE-FX MT-RJ uplink module (WS-X4504-FX-MT) (optional) • 6-port 1000BASE-X Gigabit Ethernet switching module (WS-X4306-GB) • 12-port 1000BASE-TX plus 2-port 1000BASE-X Gigabit Ethernet switching module (WS-X4412-2GB-T) • 18-port Gigabit Ethernet switching module (WS-X4418-GB) • 24-port 10/100/1000BASE-T Gigabit Ethernet switching module (WS-X4424-GB-RJ45) • 48-port Gigabit Ethernet switching module (WS-X4448-GB-LX) • 48-port 10/100/1000BASE-TX Gigabit Ethernet switching module (WS-X4448-GB-RJ45)

1. VTP = VLAN Trunking Protocol
2. PAgP = Port Aggregation Protocol
3. SPAN = switched port analyzer
4. You will need to configure the 1400 W DC input current as appropriate for the model of switch. Refer to [Appendix A, “Specifications.”](#)
5. Mpps = Million packets per second

Catalyst 4506 Switch Features

The Catalyst 4506 switch (see [Figure 1-2](#)) is a six-slot switch designed for high-performance, high-density wiring closet applications.

Figure 1-2 Catalyst 4506 Switch (Front View)



The Catalyst 4506 switch supports the Supervisor Engine III and IV. The supervisor engine has two Gigabit Ethernet ports and a 64-Gbps, nonblocking, full-duplex, switching fabric that provides connections between the supervisor engine and the switching modules. The Gigabit Ethernet ports can be configured with any combination of shortwave SX, LX/LH, and ZX GBICs. For a description of GBICs, refer to the *Catalyst 4000 Family Module Installation Guide*.

Slot 1 is reserved for the supervisor engine only, which provides switching, local and remote management, and switch-status monitoring. Slots 2 through 6 are available for switching modules.

[Table 1-2](#) describes the features of the Catalyst 4506 switch.

Table 1-2 Features of the Catalyst 4506 Switch

Feature	Description
Ethernet speeds	<ul style="list-style-type: none"> • Ethernet (10BASE-T) interface to workstations and repeaters • Fast Ethernet (100BASE-T) interface to workstations, servers, switches, and routers <p>Note Autonegotiation of link speed on each 10/100 port allows migration to 100BASE-T from a 10BASE-T installed base.</p> <ul style="list-style-type: none"> • Gigabit Ethernet (1000BASE-T and 1000BASE-X) interfaces for backbone interconnection of high-performance switches and routers
Standard equipment	<ul style="list-style-type: none"> • Six-slot modular chassis with one slot reserved for a supervisor engine and five slots for switching modules • One hot-swappable fan assembly
Standard management and support	<ul style="list-style-type: none"> • Supports Layer 2 forwarding with an aggregate forwarding rate of 48 Mpps • Supports 32,768 MAC addresses per system • Supports up to 4,096 VLANs with IEEE 802.1Q VLAN tagging on all ports and support for VTP¹ • Supports port aggregation using PAgP² for 100-Mbps and 1000-Mbps EtherChannel
Embedded management	<ul style="list-style-type: none"> • Full SNMP implementation, including entity-MIB, all relevant standard MIBs, and all relevant Cisco MIBs • The first four RMON groups (Ethernet statistics, Alarms, Events, and History) are on a per-port basis without optional RMON processing module • Provides SPAN³, which allows you to redirect traffic from any port or VLAN to a SPAN destination port • Performance management information

Table 1-2 Features of the Catalyst 4506 Switch (continued)

Feature	Description
Power supplies	<ul style="list-style-type: none"> • Supports a 1000 W, 1300 W, or 2800 W AC-input power supply or a 1400 W DC-input power supply⁴ • Optional redundant power supply
Supervisor engine	<ul style="list-style-type: none"> • Supports the Supervisor Engine II, III, and IV • Holds the ASIC-based forwarding engine (data path) and the management processor and software (control path) • Features interface monitoring, environmental status, and SNMP and console/Telnet interface <p data-bbox="388 610 1235 667">Note Packets are not forwarded while the module is removed; a system reboot occurs when a supervisor engine is reinserted.</p> <ul style="list-style-type: none"> • Features a 64-Gbps full-duplex Gigabit Ethernet switching engine • Includes two Gigabit Ethernet (1000BASE-X) interfaces for backbone interconnection of high-performance switches and routers • Supervisor Engines III and IV support 48 Mpps Layer 2, 3, and 4 forwarding
Supported switching modules	<ul style="list-style-type: none"> • 24-port 100BASE-FX Fast Ethernet switching module (WS-X4124-FX-MT) • 48-port 100BASE-FX Fast Ethernet switching module (WS-X4148-FX-MT) • 48-port 10/100-Mbps Fast Ethernet switching module (WS-X4148-RJ) • 48-port 10/100-Mbps Fast Ethernet switching module (WS-X4148-RJ21) • 48-port Inline Power 10/100BASE-TX switching module (WS-X4148-RJ45V) • 32-port 10/100-Mbps Fast Ethernet plus 2-port Gigabit Ethernet switching module (WS-X4232-GB-RJ)

Table 1-2 Features of the Catalyst 4506 Switch (continued)

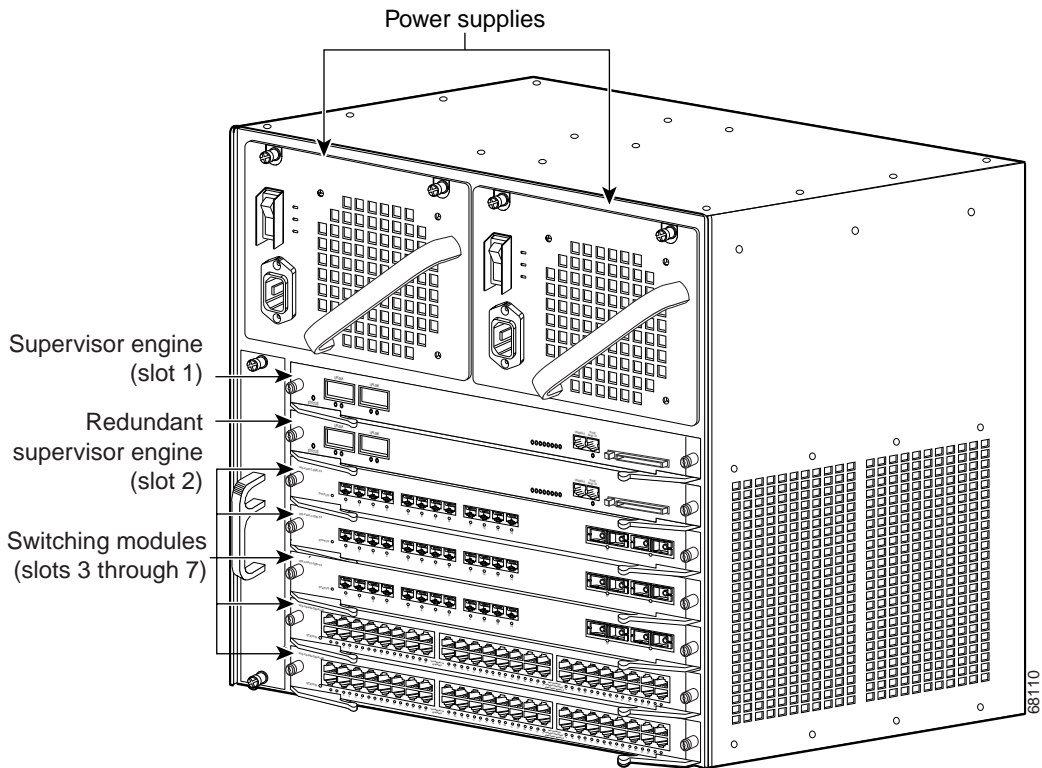
Feature	Description
Supported switching modules (continued)	<ul style="list-style-type: none"> • 32-port 10/100-Mbps Fast Ethernet switching module with modular uplink support (WS-X4232-RJ-XX) <ul style="list-style-type: none"> – 4-port 100BASE-FX MT-RJ uplink module (WS-X4504-FX-MT) (optional) • 6-port 1000BASE-X Gigabit Ethernet switching module (WS-X4306-GB) • 12-port 1000BASE-TX plus 2-port 1000BASE-X Gigabit Ethernet switching module (WS-X4412-2GB-T) • 18-port Gigabit Ethernet switching module (WS-X4418-GB) • 24-port 10/100/1000BASE-T Gigabit Ethernet switching module (WS-X4424-GB-RJ45) • 48-port Gigabit Ethernet switching module (WS-X4448-GB-LX) • 48-port 10/100/1000BASE-TX Gigabit Ethernet switching module (WS-X4448-GB-RJ45)

1. VTP = VLAN Trunking Protocol
2. PAgP = Port Aggregation Protocol
3. SPAN = switched port analyzer
4. You will need to configure the 1400 W DC input current as appropriate for the model of switch. Refer to [Appendix A, “Specifications.”](#)

Catalyst 4507R Switch Features

The Catalyst 4507R switch (see [Figure 1-3](#)) is a seven-slot switch designed for high-performance, high-density wiring closet applications.

Figure 1-3 Catalyst 4507R Switch (Front View)



The Catalyst 4507R switch supports the Supervisor Engine IV. The supervisor engine has two Gigabit Ethernet ports and a 64-Gbps, nonblocking, full-duplex, switching fabric that provides connections between the supervisor engine and the switching modules. The Gigabit Ethernet ports can be configured with any combination of shortwave SX, LX/LH, and ZX GBICs. For a description of GBICs, refer to the *Catalyst 4000 Family Module Installation Guide*.

Slot 1 is reserved for the supervisor engine only, which provides switching, local and remote management, and switch-status monitoring. Slot 2 is reserved for a redundant supervisor engine only. Slots 3 through 7 are available for switching modules.

Table 1-3 describes the features of the Catalyst 4507R switch.

Table 1-3 Features of the Catalyst 4507R Switch

Feature	Description
Ethernet speeds	<ul style="list-style-type: none"> • Ethernet (10BASE-T) interface to workstations and repeaters • Fast Ethernet (100BASE-T) interface to workstations, servers, switches, and routers <p>Note Autonegotiation of link speed on each 10/100 port allows migration to 100BASE-T from a 10BASE-T installed base.</p> <ul style="list-style-type: none"> • Gigabit Ethernet (1000BASE-T and 1000BASE-X) interfaces for backbone interconnection of high-performance switches and routers
Standard equipment	<ul style="list-style-type: none"> • Seven-slot modular chassis with one slot reserved for a supervisor engine, one slot reserved for a redundant supervisor engine, and five slots for switching modules • Two AC-input power supplies • One hot-swappable fan assembly
Standard management and support	<ul style="list-style-type: none"> • Supports Layer 2 forwarding with an aggregate forwarding rate of 48 Mpps • Supports 32,768 MAC addresses per system • Supports up to 4,096 VLANs with IEEE 802.1Q VLAN tagging on all ports and support for VTP¹ • Supports port aggregation using PAgP² for 100-Mbps and 1000-Mbps EtherChannel
Embedded management	<ul style="list-style-type: none"> • Full SNMP implementation, including entity-MIB, all relevant standard MIBs, and all relevant Cisco MIBs • The first four RMON groups (Ethernet statistics, Alarms, Events, and History) on a per-port basis without an optional RMON processing module • Provides SPAN³, which allows you to redirect traffic from any port or VLAN to a SPAN destination port • Performance management information

Table 1-3 Features of the Catalyst 4507R Switch (continued)

Feature	Description
Power supplies	<ul style="list-style-type: none"> • Can support a 1000 W, 1300 W, or 2800 W AC-input power supply or a 1400 W DC-input power supply⁴ • Optional redundant power supply
Supervisor engine	<ul style="list-style-type: none"> • Features interface monitoring, environmental status, and SNMP and console/Telnet interface <p data-bbox="346 492 1241 548">Note Packets are not forwarded while the module is removed; a system reboot occurs when a supervisor engine is reinserted.</p> <ul style="list-style-type: none"> • Features a 64-Gbps full-duplex Gigabit Ethernet switching engine • Includes two Gigabit Ethernet (1000BASE-X) interfaces for backbone interconnection of high-performance switches and routers • Supports 48 Mpps Layer 2, 3, and 4 forwarding
Supported switching modules	<ul style="list-style-type: none"> • 32-port 10/100-Mbps Fast Ethernet switching module with modular uplink support (WS-X4232-RJ-XX) <ul style="list-style-type: none"> – 4-port 100BASE-FX MT-RJ uplink module (WS-X4504-FX-MT) (optional) • 24-port 100BASE-FX Fast Ethernet switching module (WS-X4124-FX-MT) • 48-port 100BASE-FX Fast Ethernet switching module (WS-X4148-FX-MT) • 48-port 10/100-Mbps Fast Ethernet switching module (WS-X4148-RJ) • 48-port 10/100-Mbps Fast Ethernet switching module (WS-X4148-RJ21) • 48-port Inline Power 10/100BASE-TX switching module (WS-X4148-RJ45V)

Table 1-3 Features of the Catalyst 4507R Switch (continued)

Feature	Description
Supported switching modules (continued)	<ul style="list-style-type: none"> • 32-port 10/100-Mbps Fast Ethernet plus 2-port Gigabit Ethernet switching module (WS-X4232-GB-RJ) • 6-port 1000BASE-X Gigabit Ethernet switching module (WS-X4306-GB) • 12-port 1000BASE-TX plus 2-port 1000BASE-X Gigabit Ethernet switching module (WS-X4412-2GB-T) • 18-port Gigabit Ethernet switching module (WS-X4418-GB) • 24-port 10/100/1000BASE-T Gigabit Ethernet switching module (WS-X4424-GB-RJ45) • 48-port Gigabit Ethernet switching module (WS-X4448-GB-LX) • 48-port 10/100/1000BASE-TX Gigabit Ethernet switching module (WS-X4448-GB-RJ45)

1. VTP = VLAN Trunking Protocol
2. PAgP = Port Aggregation Protocol
3. SPAN = switched port analyzer
4. You will need to configure the 1400 W DC input current as appropriate for the model of switch. Refer to [Appendix A, "Specifications."](#)

Supervisor Engines

The following supervisor engines are available for the Catalyst 4500 series switches:

- Supervisor Engine II (WS-X4013) ([Figure 1-4](#))
- Supervisor Engine III (WS-X4014) ([Figure 1-5](#))
- Supervisor Engine IV (WS-X4515) ([Figure 1-6](#))

The Catalyst 4500 series supervisor engines have the following features:

- Data path and control for all network interfaces
- Management functions:
 - Interface monitoring
 - Environmental status

- SNMP and console/Telnet interface
- Hot-swappable

**Note**

Packets are not forwarded while the module is removed. A system reboot occurs when a supervisor engine is reinserted.

To install the supervisor engine, refer to the procedure in the *Catalyst 4000 Family Module Installation Guide*.

Figure 1-4 Supervisor Engine II (WS-X4013)

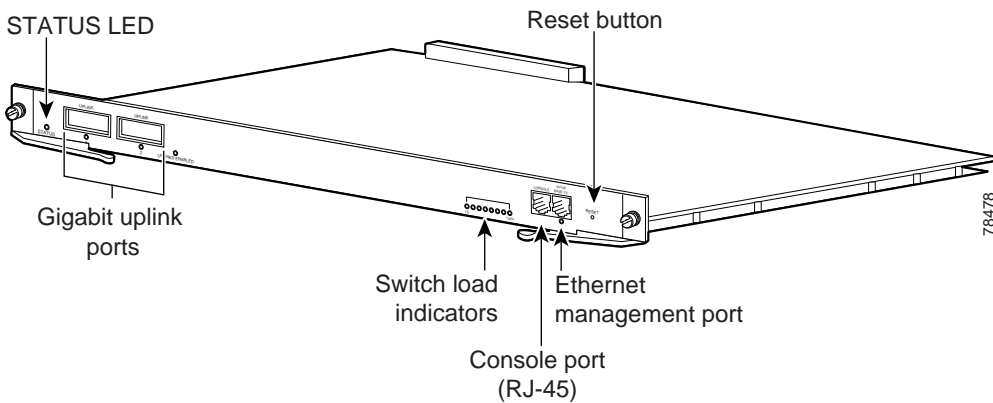


Figure 1-5 Supervisor Engine III (WS-X4014)

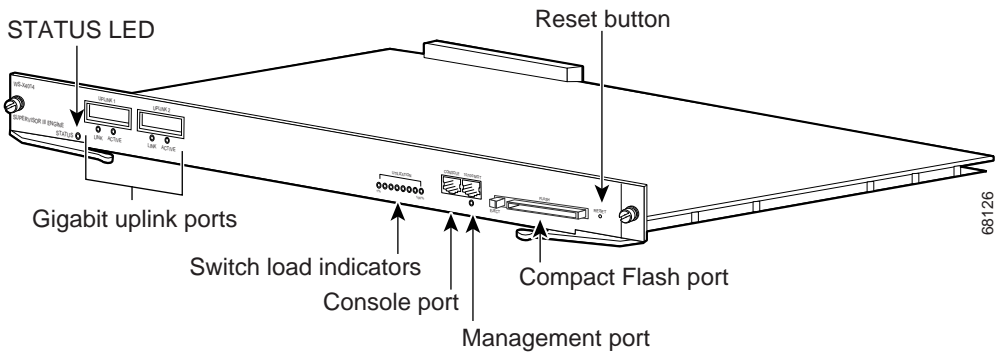
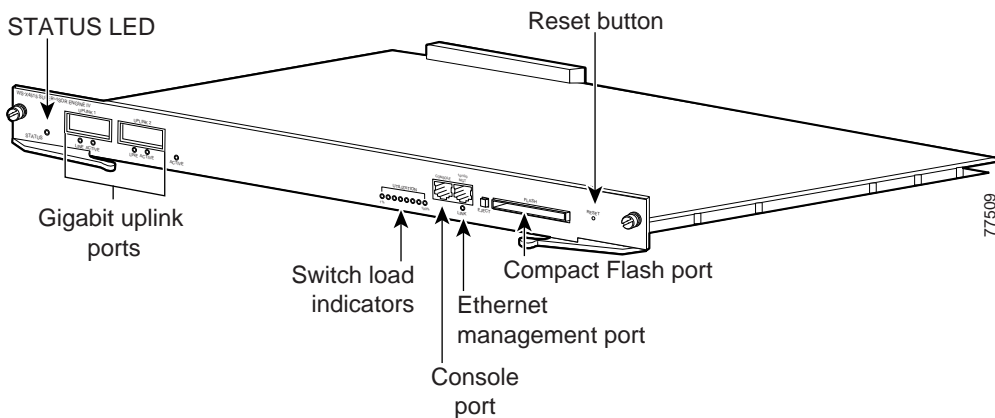


Figure 1-6 Supervisor Engine IV (WS-X4515)



For information about the connectors, LEDs, and switches located on the front panel of the supervisor engine, see these sections:

- [LEDs, page 1-16](#)
- [Gigabit Ethernet Uplink Ports, page 1-16](#)
- [10/100BASE-T Port, page 1-17](#)
- [Console Port, page 1-17](#)

- [Reset Button, page 1-17](#)
- [Flash Port, page 1-18](#)

LEDs

[Table 1-4](#) describes the supervisor engine LEDs.

Table 1-4 Supervisor Engine LEDs

LED	Color/State	Description
STATUS	Green	Indicates the results of a series of self-tests: All diagnostic tests passed.
	Red	A test failed.
	Orange	System boot or diagnostic test is in progress.
	Off	Module is disabled.
UTILIZATION	Green 1–100%	If the switch is operational, this display indicates the current traffic load over the backplane (as an approximate percentage).
LINK	Green	Indicates the status of the 10/100BASE-T port or uplink ports: The link is operational.
	Orange	The link is disabled by user.
	Flashing orange	The power-on self-test indicates a faulty port.
	Off	No signal is detected or there is a link configuration failure.
ACTIVE	Green	Indicates whether the uplink port is active or not: The port is active.
	Off	The port is not active.

Gigabit Ethernet Uplink Ports

The Gigabit Ethernet uplink ports operate in full-duplex mode only. GBICs have SC connectors to interface with multimode fiber (MMF) and single-mode fiber (SMF) cable. For more information about GBICs, refer to the *Catalyst 4000 Family Module Installation Guide*.

10/100BASE-T Port

The 10/100BASE-T port supports emergency image recovery. The 10/100BASE-T port supports image downloads from the ROMMON. You can use this feature when the onboard flash does not contain any IOS images, usually after all images have accidentally been deleted from onboard Flash.

Console Port

The console port has an EIA/TIA-232 RJ-45 connector. The console port allows you to perform the following functions:

- Configure the switch from the CLI
- Monitor network statistics and errors
- Configure SNMP agent parameters

**Note**

EIA/TIA-232 was known as recommended standard RS-232 before its acceptance as a standard by the Electronic Industries Alliance (EIA) and Telecommunications Industry Association (TIA).

Reset Button

The Reset button is used to restart the switch.

**Note**

Use a paper clip or other small, pointed object to press the Reset button.

Flash Port

The Flash port accepts a Type 1 Compact Flash card. You can use it for file transfer tasks such as loading a new software image. The Flash card is optional and can be obtained from third-party suppliers.

For more information, refer to *Using the Compact Flash on the Catalyst 4000 Family Supervisor Engine III and IV* at the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/inst_nts/ol_2788.htm

Fan Assembly



Note

For complete environmental specifications, including airflow requirements, see [Appendix A, “Specifications.”](#)

The system fan assembly provides cooling air for the internal chassis components. The fan assembly is a tray of fans that you can insert and remove from the chassis while the system is on line. The Catalyst 4503 fan assembly has two fans, the Catalyst 4506 fan assembly has four fans, and the Catalyst 4507R fan assembly has six fans. The fans draw in fresh air from one side and exhaust air on the other side. Catalyst 4503 airflow is shown in [Figure 1-7](#). Catalyst 4506 airflow is shown in [Figure 1-8](#). Catalyst 4507R airflow is shown in [Figure 1-9](#).



Caution

You must install module filler plates on unused switching module slots to ensure proper airflow.

Figure 1-7 Catalyst 4503 Airflow

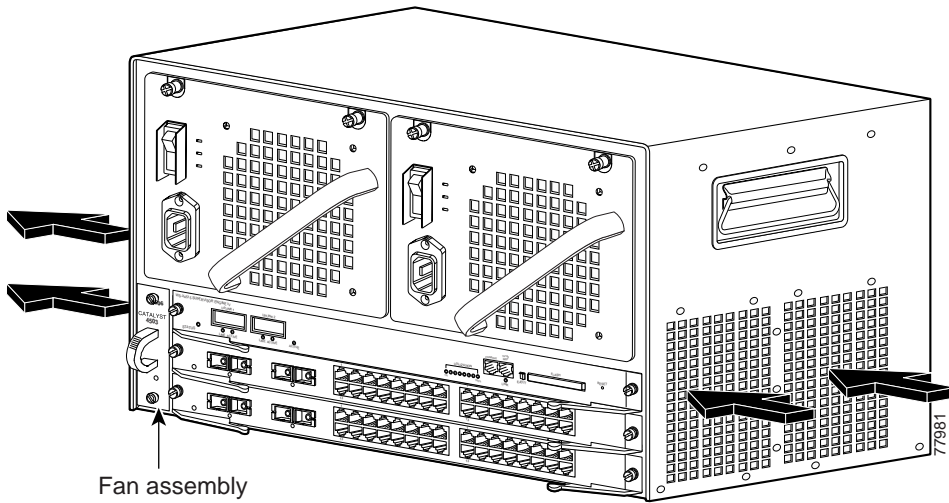


Figure 1-8 Catalyst 4506 Airflow

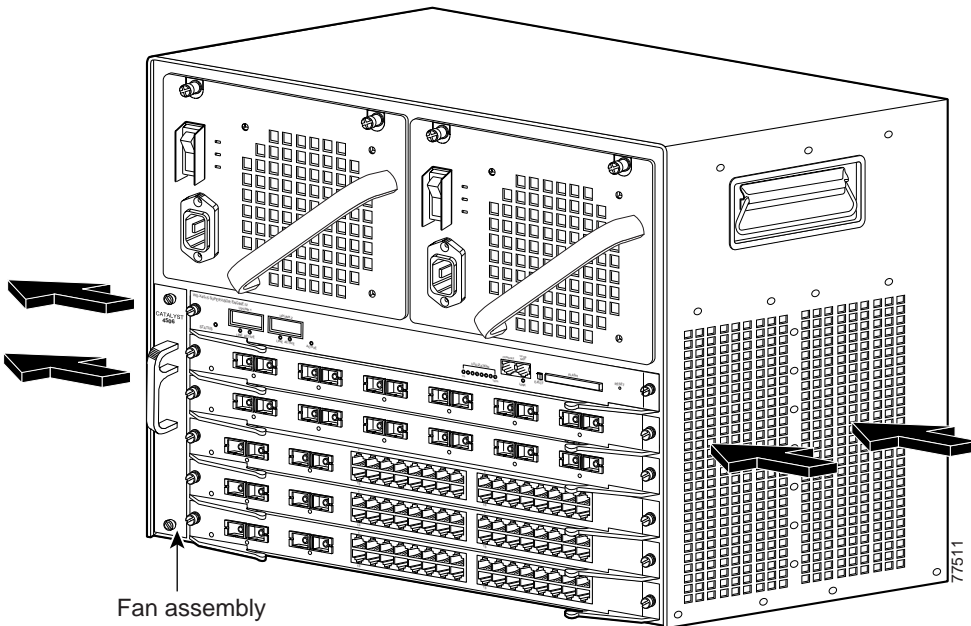
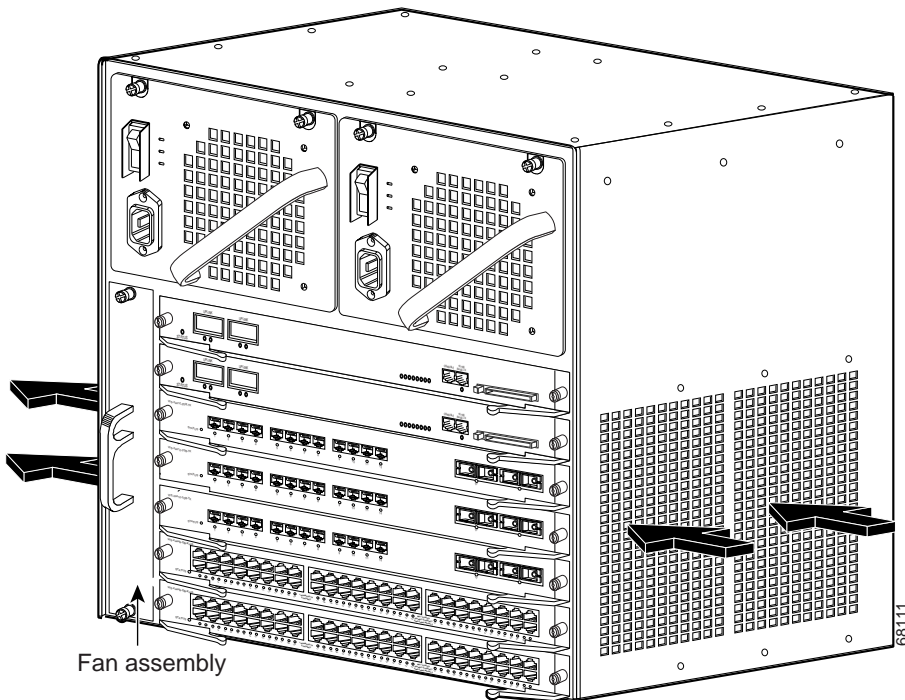


Figure 1-9 Catalyst 4507R Airflow



Power Supplies

A Catalyst 4500 series switch can use a 1000 W, 1300 W, or 2800 W AC-input power supply (see [Figure 1-10](#)) or a 1400 W DC-input power supply with integrated PEM (see [Figure 1-11](#)).

The AC-input power supply has a power cord that connects each power supply to the site power source. The DC-input power supply is equipped with a compression-style input terminal block that is directly connected to the site power wiring.

Each power supply has an ON/OFF switch that supplies power to the switch. For information on removing and replacing power supplies, see the [“Removing and Replacing the Power Supply”](#) section on [page 4-2](#).

Figure 1-10 AC-Input Power Supply

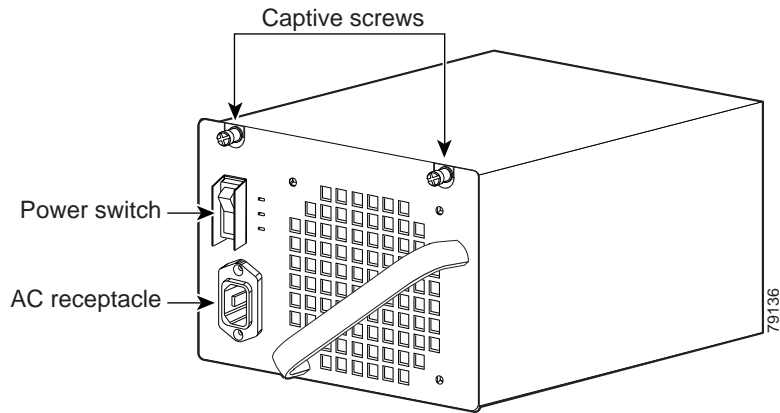
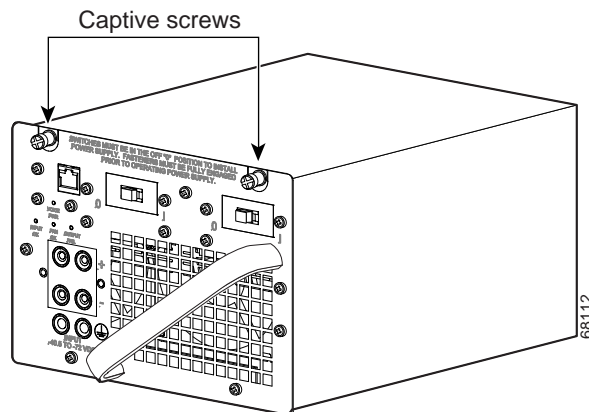


Figure 1-11 1400 W DC-Input Power Supply



Note

The input terminals on the 1400 W DC-input power supply are sized for cables that are appropriate for the maximum input that the supply will handle. You can use smaller cables if they are appropriate for the current flow in a specific environment.

Catalyst 4500 series switches support one power supply and an optional redundant power supply. Each power supply has an individual power cord and status LEDs. Systems with redundant power supplies will share the load, with each unit providing approximately one-half of the total load. For information about configuring your switch for redundant and combined modes, refer to the software configuration guide for your switch.

When power is removed from one power supply on a Catalyst 4500 series switch that has two power supplies, the redundant power feature causes the second power supply to produce full power.

To replace a power supply, see the [“Removing and Replacing the Power Supply” section on page 4-2](#).

Power Supply LEDs

Table 1-5 describes the power supply LEDs.

Table 1-5 Power Supply LEDs

LED	Color/State	Description
INPUT OK	Green	Indicates whether the input voltage is within the required range: Input voltage is within the required range.
	Flashing	Input voltage is present, but is below required range.
	Off	Input voltage is below the required range or the power supply is off.
OUTPUT FAIL	Red	Indicates whether the output voltage is within the specified range: Output voltage is not within the specified range.
	Off	Output voltage is within the specified range.
FAN OK	Green	Indicates the status of the power supply fans: The fans are operational.
	Off	The fans are not operational.

Table 1-5 Power Supply LEDs (continued)

LED	Color/State	Description
In-line PWR (for 1400 W DC-input power supplies only)	Green	Indicates the status of the in-line power connection:
		-48 V passthru output voltage is enabled and is greater than -39V and less then -60 V.
In-line PWR (AC-input)	Off	Indicates any of the following: <ul style="list-style-type: none"> • Passthru breakers are not enabled • DC input is less than -40.5 V • One or more -48V outputs is less then -39 V.
	Amber	Passthru breakers are enabled and input voltage exceeds -60 V.

Power Supply Fan

Each power supply has a built-in fan. Air enters the front of the power supply (power-input end) and exits through the back. An air dam keeps the airflow separate from the rest of the chassis, which is cooled by the system fan assembly.

Load-Sharing Feature

When you install and turn on a second power supply on a Catalyst 4500 series switch, it provides approximately one-half of the required power to the system. If one power supply fails, the other power supply immediately assumes full power to maintain uninterrupted system operation.



Note

Load sharing works only when both power supplies in the chassis are the same type.

When you install a redundant power supply, load sharing and fault tolerance are enabled automatically; no additional software configuration is required.

Environmental Monitoring Feature

With the environmental monitoring and reporting feature, you can keep your system running by resolving adverse environmental conditions before loss of operation.

The power supply monitors its own internal temperature and voltages. In the event of excessive internal temperature, the power supply shuts down to prevent damage. When the power supply returns to a safe operating temperature, it restarts. If the power supply output voltage is not within the specified range, the LED labeled OUTPUT FAIL will light. An instance of substantial input overvoltage can shut down the power supply.

An instance of substantial input overvoltage (greater than -75 VDC continuous) can damage the power supply input circuitry and can cause it to shut down permanently.

The main power switch has an input range of -40.5 to -72 VDC, while the -48 V voice power switch operates over a range of -40.5 to -56 VDC. The voice power will either fail to start or will shut down if exposed to greater than -56 VDC input. Voice power will recover after you recycle input power within the proper voltage range.

If the voice power shuts down due to input overvoltage (greater than -56 VDC), the main convertor section will not shut down.

The supervisor engine monitors the status of each power supply and provides a status report through the switch software. For more details on how the supervisor engine monitors the power supplies, refer to the *Catalyst 4000 Family Module Installation Guide*.