# Cisco 8500 Switch Overview

Cisco 8500 Switches

Cisco 8501

The Cisco 8501 is a G200-based, 4-RU switch. It uses a single-slot non-redundant System Control Module (SCM) card in the front which contains the CPU complex for managing the system. .

The Cisco 8501 supports 64x800G OSFP ports with support for 2x400G optics, providing a total of 128x400GbE ports, for 51.2T total switching bandwidth.
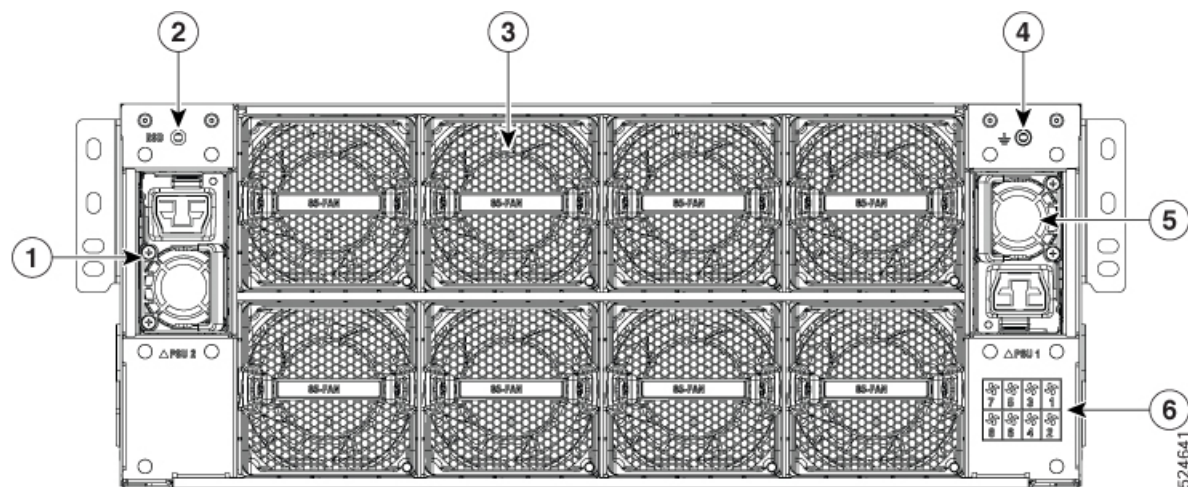
The front of the chassis has the Switch Main Board (SMB) and pluggable System Control Module (SCM).

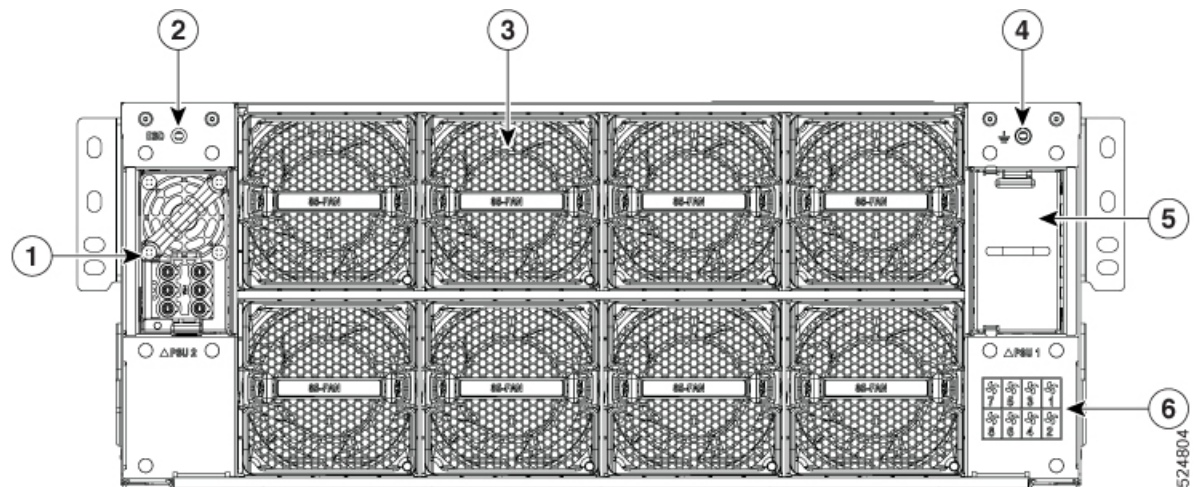*Figure 1: Cisco 8501-SYS-MT - Front View*
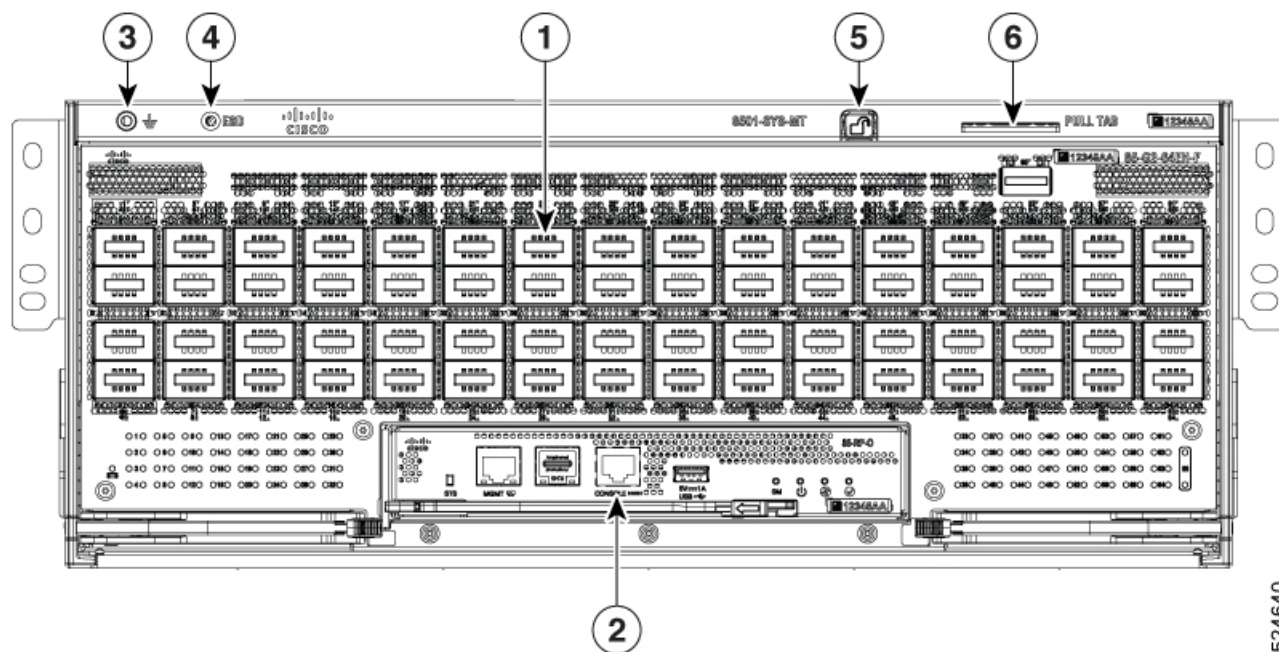
1	Switch Main Board (SBM)
2	System Control Module (SCM)
3	Ground
4	ESD receiver
5	SMB release button
6	Pull out label tab

*Figure 2: Cisco 8501-SYS-MT - Rear View with AC PSU*

1	Power module (PSU 2) **Note** The Cisco 8501 switch supports an AC power module in the PSU 2 slot in an inverted position. When inserting the AC power module into the PSU 2 slot, align the connector on the PSU accurately with the slot before insertion.
2	ESD receiver
3	Fan modules
4	Ground
5	Power module (PSU 1)
6	Fan module slot legend

Figure 3: Cisco 8501-SYS-MT - Rear View with DC PSU

1	Power module (PSU 2)
2	ESD receiver
3	Fan modules
4	Ground
5	Power module (PSU 1) **Note** The Cisco 8501 switch supports DC power module in PSU 2 slot only and the PSU 1 slot must be covered with PSU blank.
6	Fan module slot legend

Figure 4: Cisco 8501-SYS-MT - Fan Module Slot Legend
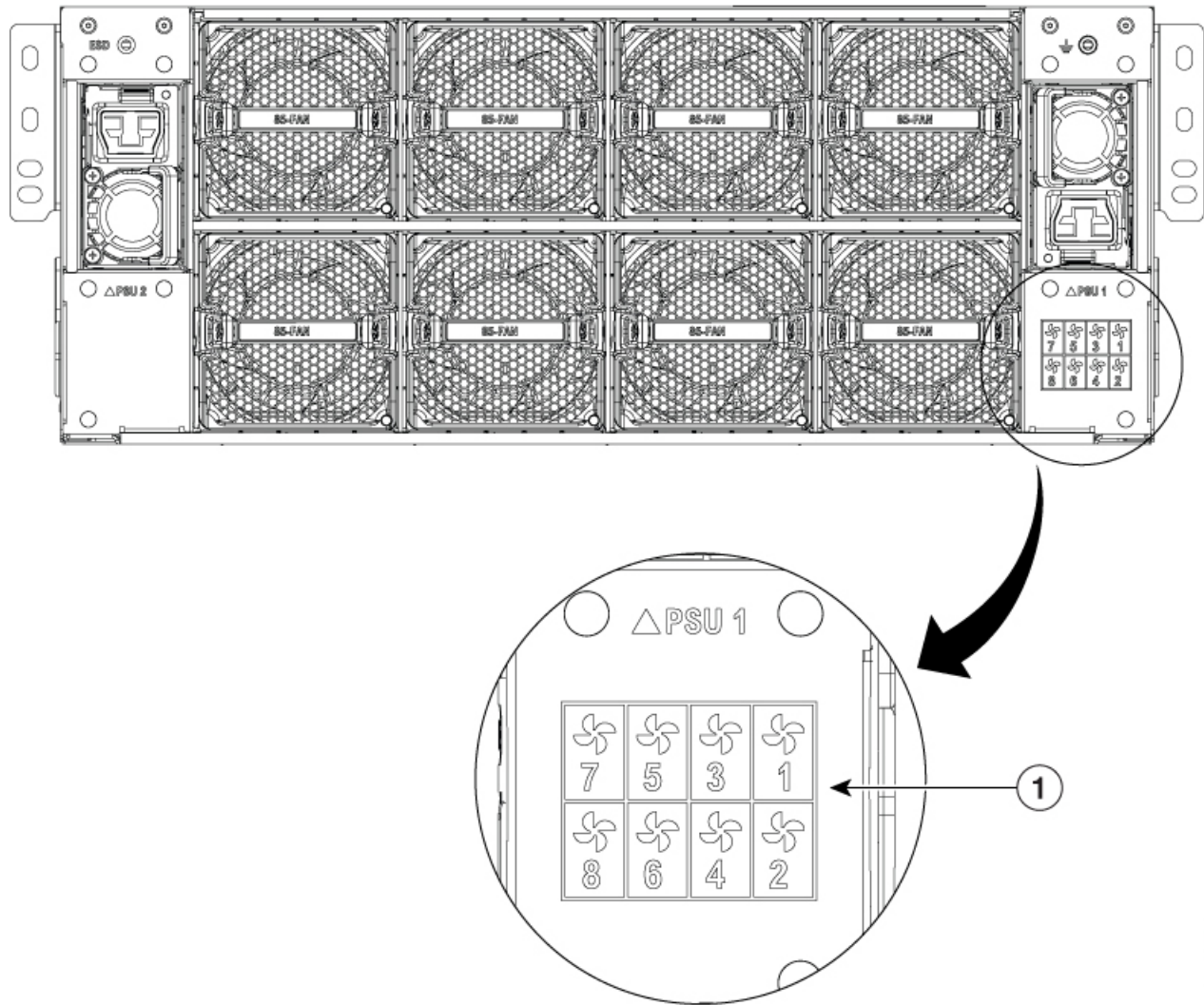
The rear of the chassis has the following:

- Two 3KW power modules providing 1+1 power redundancy when using AC power modules. One 3KW power module when using DC power module. The power modules support port-side-intake (PSI) airflow direction and different AC/DC inputs capabilities.

Note The Cisco 8501 switch supports DC power module in PSU 2 slot only and the PSU 1 slot must be covered with PSU blank. When using the DC power module in the 8501-SYS, the entire length of the power interconnect (i.e. power cable(s), busbars, and so on) between the DC power input connector on the power module and the power source must not be longer than 3 meters.

- Eight 80mm counter-rotating double-fan fan trays providing 7+1 redundancy. The fan trays can be removed individually.

The following table describes the Cisco 8501 switch components, and the supported quantity.
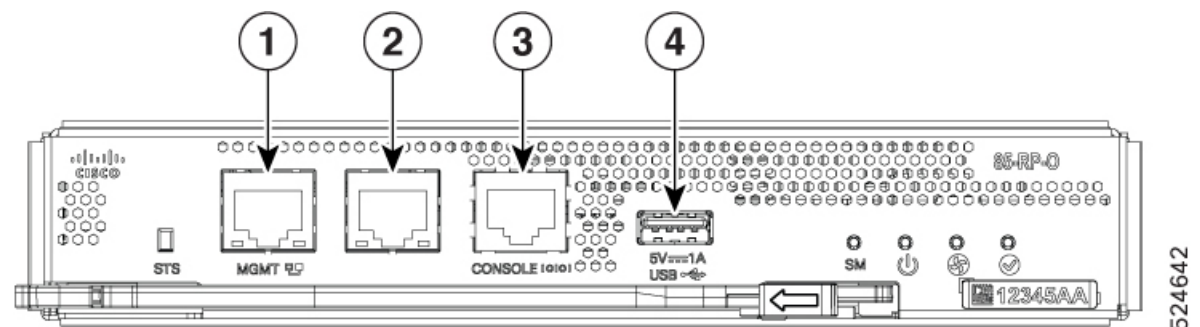
Table 1: Cisco 8501 Switch Components

Component	Quantity
Ports	64
Fan Modules	8
Power Modules	2 (if AC) 1 (if DC)
System Control Module	1
Switch Main Board	1

System Control Module Overview

The System Control Module (85-RP-O) manages all switching operations on the Cisco 8500 Switches.

**Figure 5: System Control Module**

1	Management Ethernet (10/100/1000-Mbps) RJ-45 (Copper) LAN port
2	Debug port (Unused) **Note** The RJ45 port must always be covered with a cap.
3	Console RS232 RJ45 port
4	Type-A USB2.0 port

SSD Card

The switch has a removable Solid State Drive (SSD) card. We recommend to remove the SSD card before shipping the hardware for a Return Merchandise Authorization (RMA) request. Removal of the SSD card enforces customer data security while performing an RMA.

You can access the SSD card in the SCM. To remove the SSD card, do the following:

Figure 6: Remove SSD Card
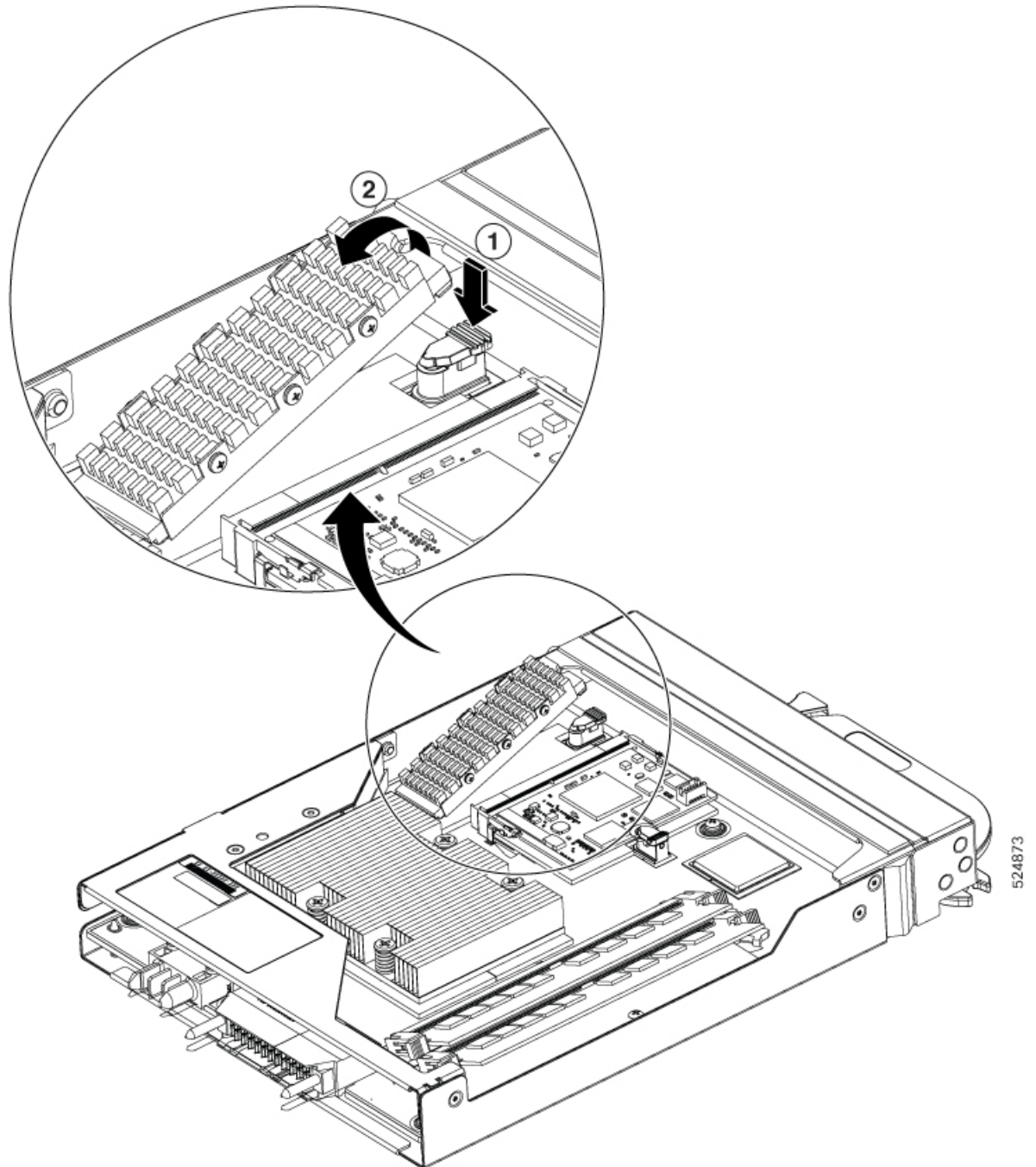
1. Carefully push the SSD removal latch backward.

2. Slowly remove the SSD card from the connector.

BMC Card

The switch has a removable Baseboard Management Controller (BMC) card. We recommend to remove the BMC card before shipping the hardware for a Return Merchandise Authorization (RMA) request. Removal of the BMC card enforces customer data security while performing an RMA.

You can access the BMC card in the SCM. To remove the BMC card, do the following:
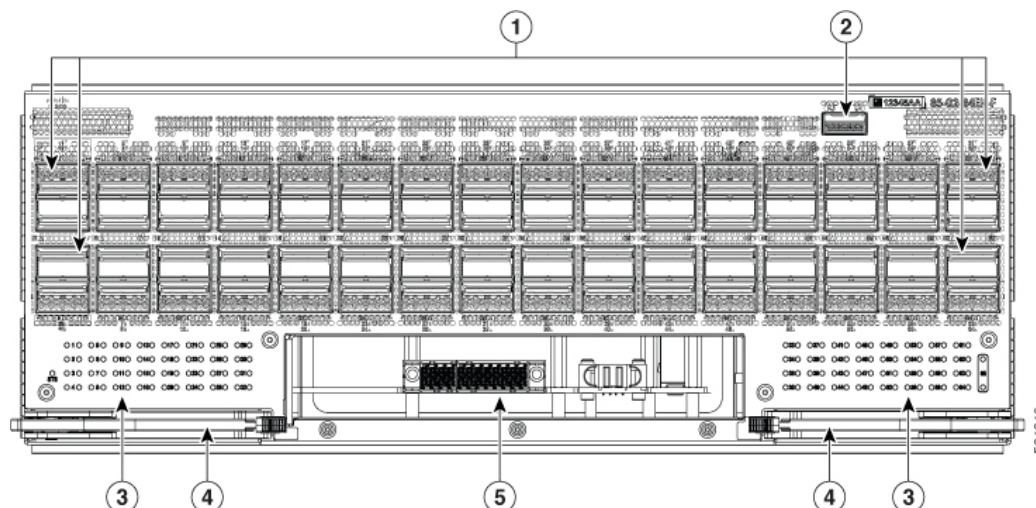
Figure 7: Remove BMC Card
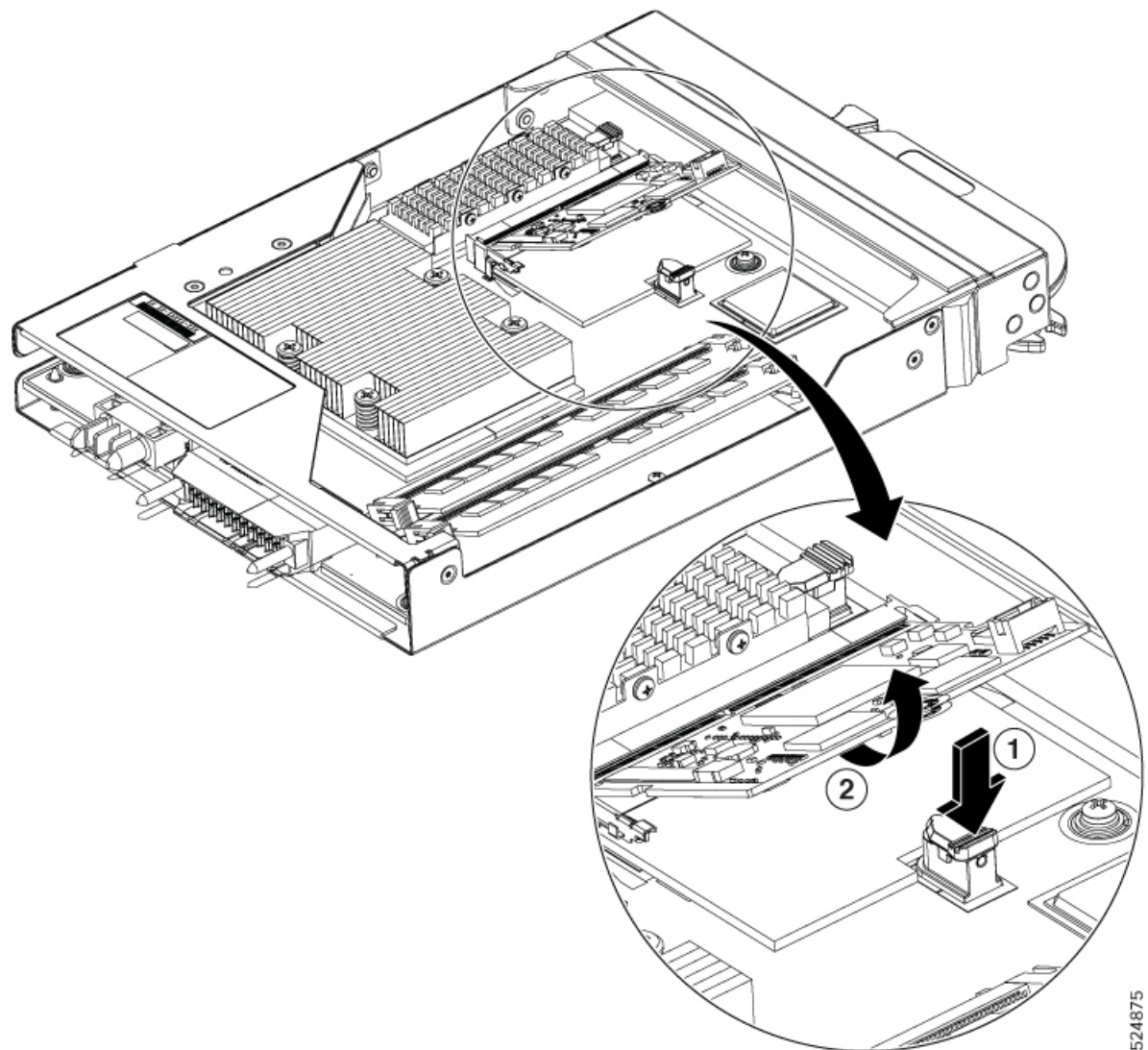
1. Carefully push the BMC removal latch backward and remove the lock on the either side of the card.

2. Slowly remove the BMC card from the connector.

Switch Main Board Overview

The Cisco 8500 switches are powered by the Cisco Silicon One G200 series processors.

Cisco 8501 G200 Silicon-based Switch Main Board (SMB) (85-G2-64EH-F) is a 51.2T switch card that includes 64x800G OSFP ports with support for 2x400G optics providing a total of 128x400GbE ports and a PIE port that supports QSFP28 optics.

Figure 8: Switch Main Board

1	Ports without dust caps
	The port numbering in SMB row-wise starting from the top (port numbering is from left to right):
	• Row 1 (Ports 1, 5, 9, 13, 17, 21, 25, 29, 33, 37, 41, 45, 49, 53, 57, and 61)
	• Row 2 (Ports 2, 6, 10, 14, 18, 22, 26, 30, 34, 38, 42, 46, 50, 54, 58, and 62)
	• Row 3 (Ports 3, 7, 11, 15, 19, 23, 27, 31, 35, 39, 43, 47, 51, 55, 59, and 63)
	• Row 4 (Ports 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, and 64)
2	PIE port (Punt inject eject)
3	Port LEDs
	Note Port LED from 1-64 are for the OSFP ports and the port LED 65 is for PIE port.
4	SMB latch
5	SCM Slot

Temperature and Physical Specifications

For temperature and physical specifications, refer to the *Physical characteristics* table in the Cisco 8100 Series Routers Data Sheet.

Weight and Power Consumption

For weight and power consumption, refer to the *Physical characteristics* table in the Cisco 8100 Series Routers Data Sheet.

Airflow Direction

The airflow through the fan trays and power supplies on the Cisco 8500 switches are from front to back (port side intake).

To ensure proper airflow for the switch in your facility, position the switch with its air intake on a cold aisle and the air exhaust on a hot aisle.

Figure 9: Airflow direction in Cisco 8501-SYS-MT
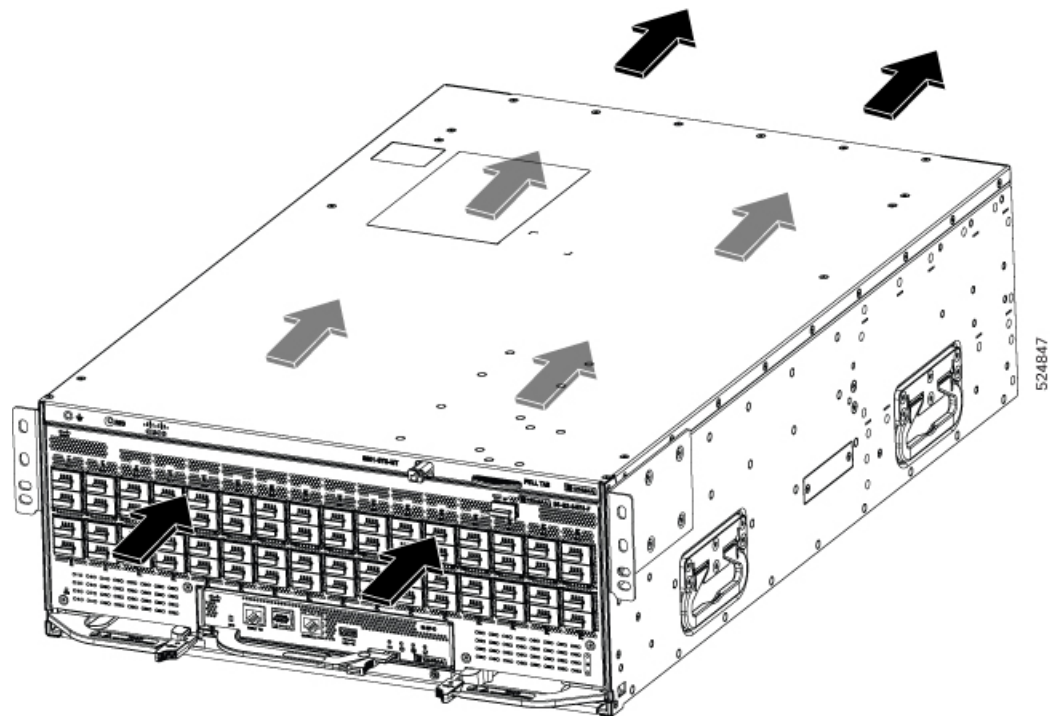
Maximum Power Available to the Switch

The maximum power available for operations depends on the input power from your power source, the number and output capabilities of your power supplies, and the power redundancy mode that you use.

The following tables lists the amount of power available for Cisco 8500 series switches from all available power trays.

Table 2: Maximum Power Available when using DC Power Modules

Total Power Supply	Combined Mode in Watts (No redundancy)	N+1 Redundancy Mode in Watts (with Single Supply Loss)
1	3000	—
2	6000	3000

Table 3: Maximum Power Available when using DC Power Module

Total Power Supply	Combined Mode in Watts (No redundancy)
1	3000

Note The power supply units (PSUs) deliver the above stated output power (e.g., 3,000W) to the switch However, the wall power or input power to the switch will be high due to conversion efficiencies.

Supported Optics

Note To determine which transceivers and cables are supported by this switch, refer to the Transceiver Module Group (TMG) Compatibility Matrix Tool:

https://tmgmatrix.cisco.com/home