

Cisco 8700 Series Routers Overview

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Cisco 8700 Series Routers

Cisco 8711-32FH-M

The Cisco 8711-32FH-M is a P100 silicon chip-based router that provides 12.8 Tbps of network bandwidth. The Cisco 8711-32FH-M is a fixed-port, high density, one rack-unit form factor router. Supported ports include 32 QSFP56-DD 400GbE ports. It includes HBM/2.5D for advanced performance, and supports Cisco 400GbE Digital Coherent Optical Modules.

Cisco 8711-32FH-M Router Front View

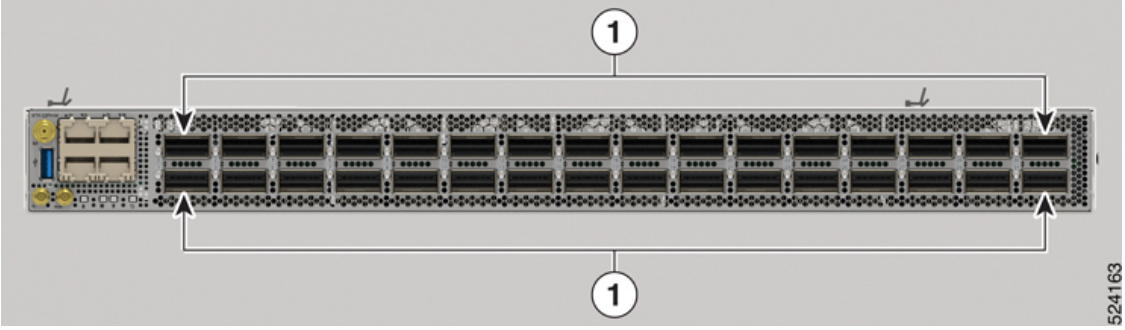
The front of the chassis has the following:

- 32 x QSFP56-DD or 16 x 800G QSFP-DD800 ports

Note The QSFP-DD800 ports support 2x400GbE and 8x100GbE traffic. You can have any combination of the available 400GbE or 800G ports that must not exceed the total bandwidth of 12.8 Tbps.

- Ports 4 through 11 do not support 40GbE traffic or 4x10GbE breakout operation.

Figure 1: Cisco 8711-32FH-M - Front View



1	32 QSFP56-DD 400GbE ports **Note** The top row is 16 x 800G QSFP-DD800 capable ports.

Cisco 8711-32FH-M Router Rear View

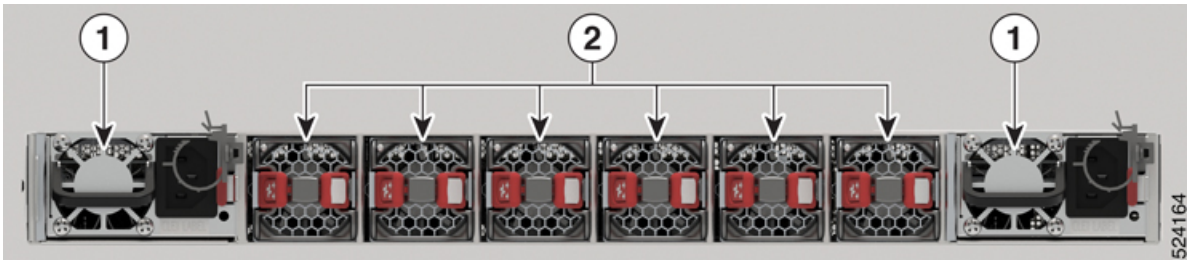
This table details the modules available in the rear of the chassis:

Table 1: Cisco 8711-32FH-M Router Rear View Details

Module Type	Description	Airflow Directions	Module Color
Power Supply Modules	Two 2KW power modules that operate at 12 V capacity, providing 1+1 power redundancy and different AC/DC inputs capabilities.	Port-Side-Intake (PSI)	Burgundy
		Port-Side-Exhaust (PSE)	Cisco Safety Blue
Fan Modules	Six 40mm counter-rotating double-fan trays providing N+1 redundancy. The fan modules can be removed individually.	Port-Side-Intake (PSI)	Burgundy
		Port-Side-Exhaust (PSE)	Cisco Safety Blue

Note The chassis does not come preloaded with fans and power supply units.

Figure 2: Cisco 8711-32FH-M - Rear View



1	Power Supply
2	Fans

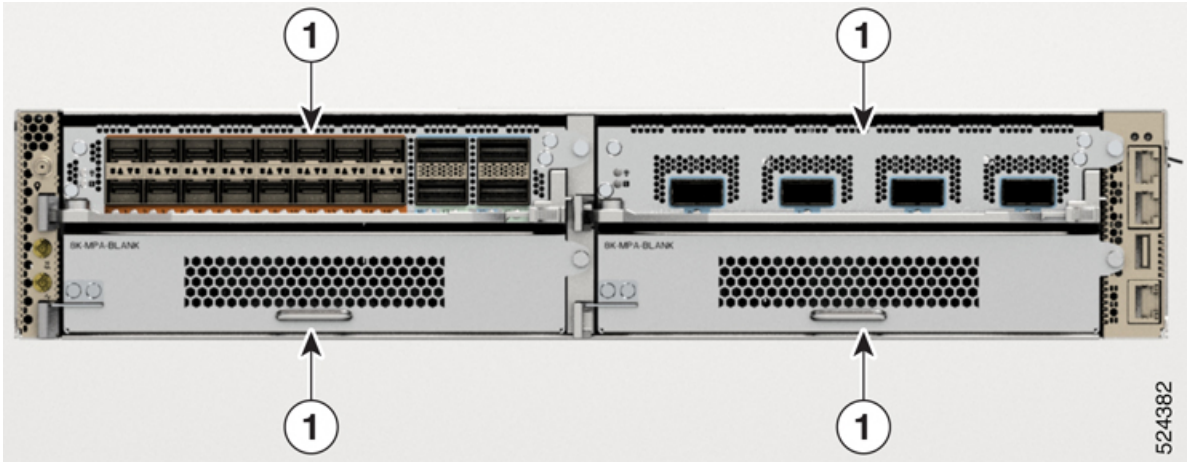
Note The fans and power modules illustrated have Port-Side-Intake (PSI) configuration.

Cisco 8712-MOD-M

The Cisco 8712-MOD-M is a K100-based, 2-RU router that provides 6.4 Tbps of network bandwidth and supports fixed architecture with I/O diversity.

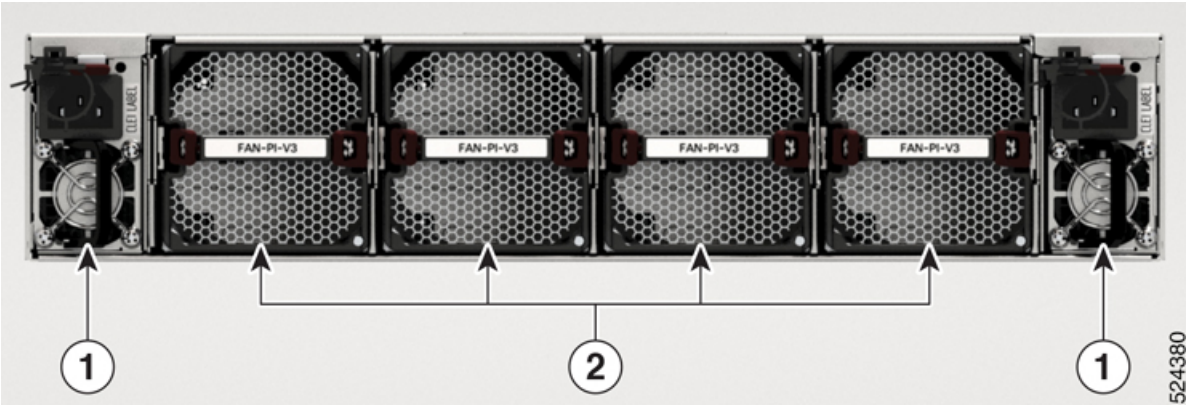
The front of the chassis has four pluggable Modular Port Adapters (MPAs) slots.

Figure 3: Cisco 8712-MOD-M - Front View



1	Modular Port Adapters (MPAs) Slots

Figure 4: Cisco 8712-MOD-M - Rear View



1	Power Supply Slots
2	Fan Slots

This table details the modules available in the rear of the chassis:

Table 2: Cisco 8712-MOD-M Router Rear View Details

Module Type	Description	Airflow Directions	Module Color
Power Supply Modules	Two 2KW power modules that operate at 12 V capacity, providing 1+1 power redundancy and different AC/DC inputs capabilities.	Port-Side-Intake (PSI)	Burgundy
		Port-Side-Exhaust (PSE)	Cisco Safety Blue
Fan Modules	Four 80mm counter-rotating double-fan trays providing N+1 redundancy. The fan modules can be removed individually.	Port-Side-Intake (PSI)	Burgundy
		Port-Side-Exhaust (PSE)	Cisco Safety Blue

Note The airflow direction must be the same for all power supply and fan modules in the chassis. That is, you must use PSI power modules with PSI fan modules and PSE power module with PSE fan modules only.

The following table describes the Cisco 8712-MOD-M router components, and the supported quantity.

Table 3: Cisco 8712-MOD-M Router Components

Component	Quantity
MPA	4
Fan module	4

Component	Quantity
Power module	2 AC or 2 DC

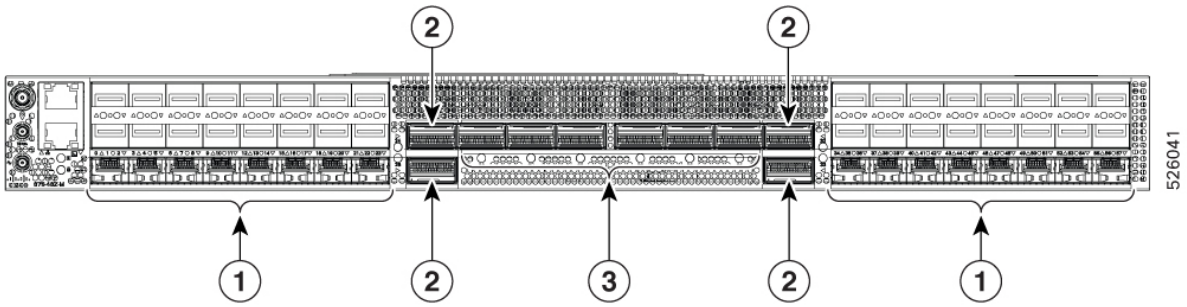
Cisco 8711-48Z-M

The Cisco 8711-48Z-M is a K100 silicon chip-based router that provides 5.6 Tbps of network bandwidth. The Cisco 8711-48Z-M is a fixed-port, high density, one rack-unit form factor router. Supported ports include:

- Six QSFP-DD 400GbE ports
- Four QSFP 200GbE ports
- 48 SFP56 ports

Cisco 8711-48Z-M Router Front View

Figure 5: Cisco 8711-48Z-M - Front View



1	48 SFP56 ports
2	Four QSFP56 200GbE ports
3	Six QSFP56-DD 400GbE ports

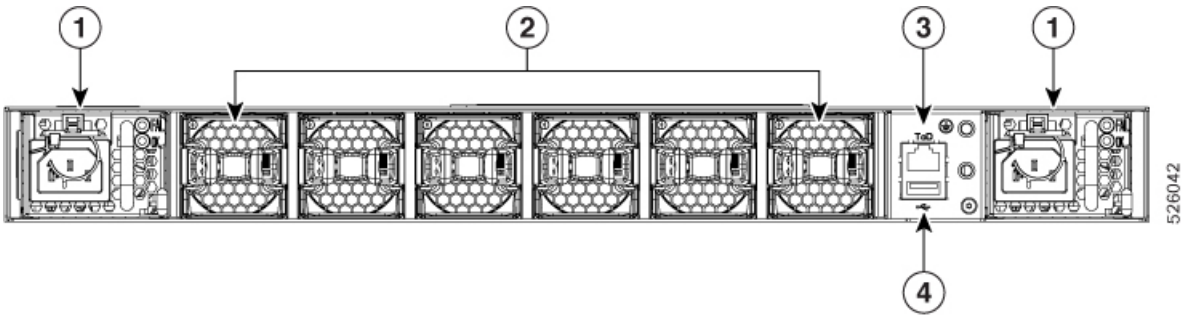
Cisco 8711-48Z-M Router Rear View

These are the modules available in the rear of the chassis:

Note

- The fans and power modules illustrated have Port-Side-Intake (PSI) and Port-Side-Exhaust (PSE) configuration.
- The chassis does not come preloaded with fans and power supply units.

Figure 6: Cisco 8711-48Z-M - Rear View



1	Power Supply
2	Fans
3	RJ-45 connector for Time-of-Day (TOD) interface, input, and output
4	USB 2.0

Table 4: Cisco 8711-48Z-M Router Rear View Details

Module Type	Description	Airflow Directions	Module Color
Power Supply Modules	Two AC or DC power modules that operate at 12 V capacity, providing 1+1 power redundancy and different AC/DC inputs capabilities.	Port-Side-Intake (PSI)	Burgundy
		Port-Side-Exhaust (PSE)	Cisco Safety Blue
Fan Modules	Six 40mm counter-rotating double-fan trays providing N+1 redundancy. The fan modules can be removed individually.	Port-Side-Intake (PSI)	Burgundy
		Port-Side-Exhaust (PSE)	Cisco Safety Blue

Cisco 8711-28H8F-M

The Cisco 8711-28H8F-M is a K100 silicon chip-based router that provides 6.0 Tbps of network bandwidth. The Cisco 8711-28H8F-M is a fixed-port, high density, one rack-unit form factor router. Supported ports include:

- Eight QSFP-DD 400GbE ports
- 28 QSFP28 100GbE ports

Modular Port Adapters Overview

Cisco 8712 Series Routers support the following Modular Port Adapters (MPAs):

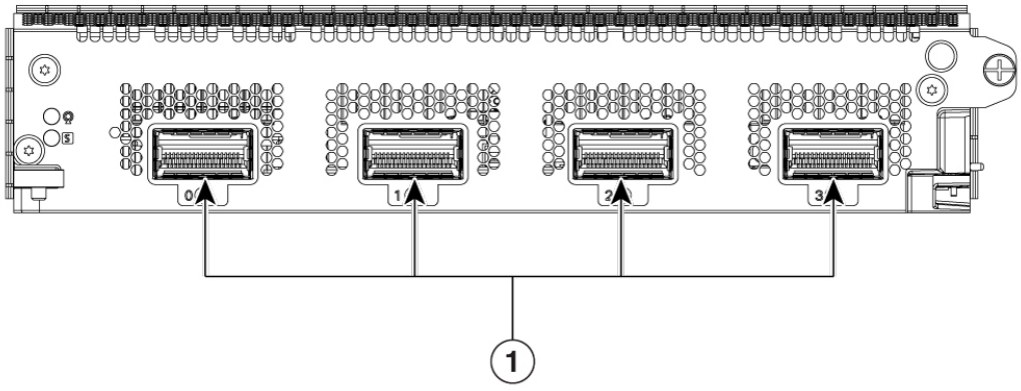
Table 5: Supported MPAs on Cisco 8700 Router

MPA PIDs	Transceivers
8K-MPA-4D	QSFP-DD
8K-MPA-16H	QSFP28
8K-MPA-16Z2D	QSFP-DD/zSFP56+
8K-MPA-18Z1D	QSFP-DD/zSFP56+

8K-MPA-4D

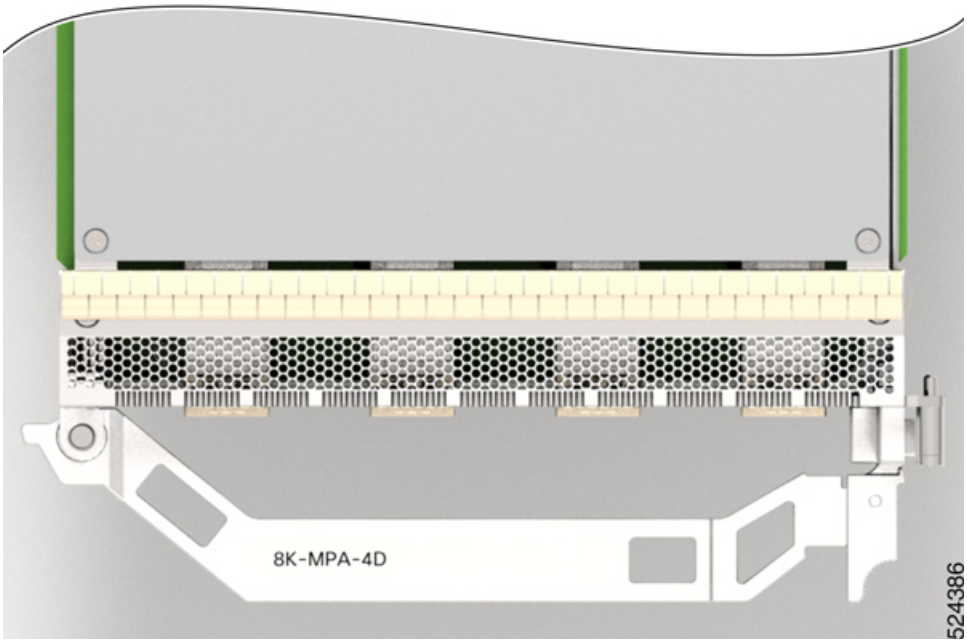
The following image explains the port details of the MPA:

Figure 7: 8K-MPA-4D Port Details



1	QSFP-DD (Ports 0, 1, 2, and 3)

Figure 8: 8K-MPA-4D Handle

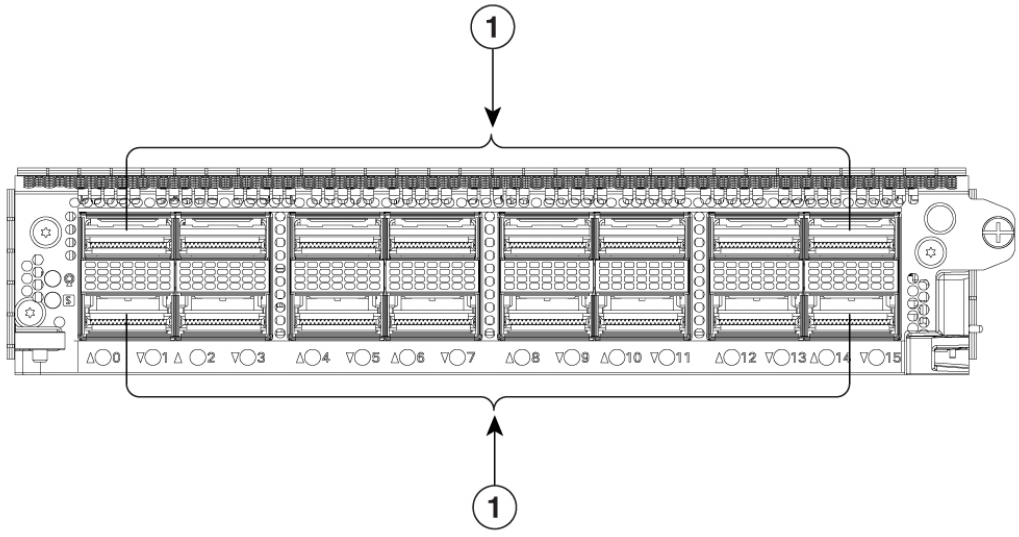


The 8K-MPA-4D is a pluggable card that provides 4 interface ports that can support QSFP-DD 400GbE, 200GbE, or 100GbE modules

8K-MPA-16H

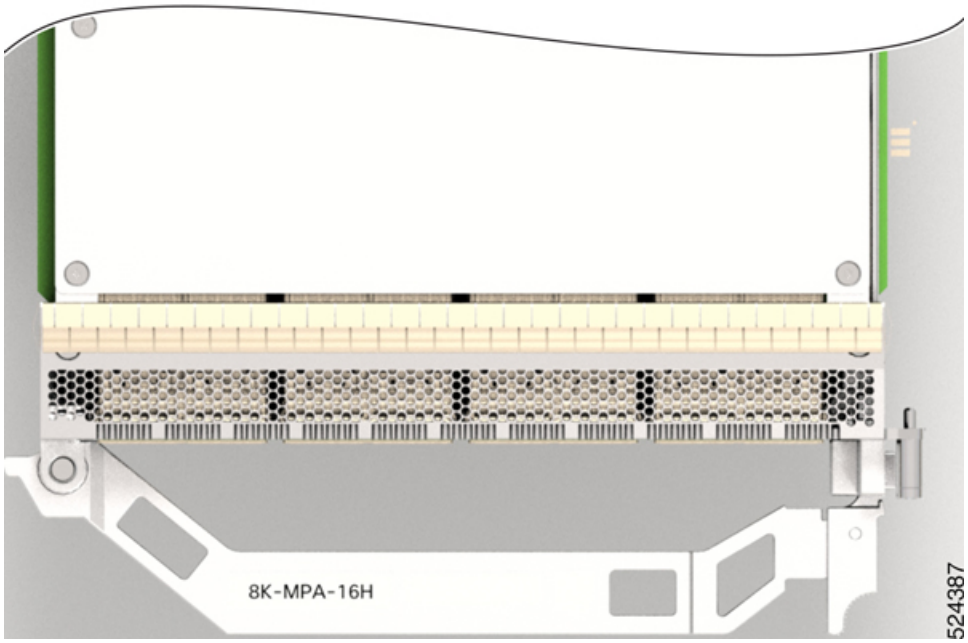
The following image displays the MPA PID and explains the port configuration details of the MPA:

Figure 9: 8K-MPA-16H Port Details



1	QSFP28 100G (Ports 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 15)

Figure 10: 8K-MPA-16H Handle

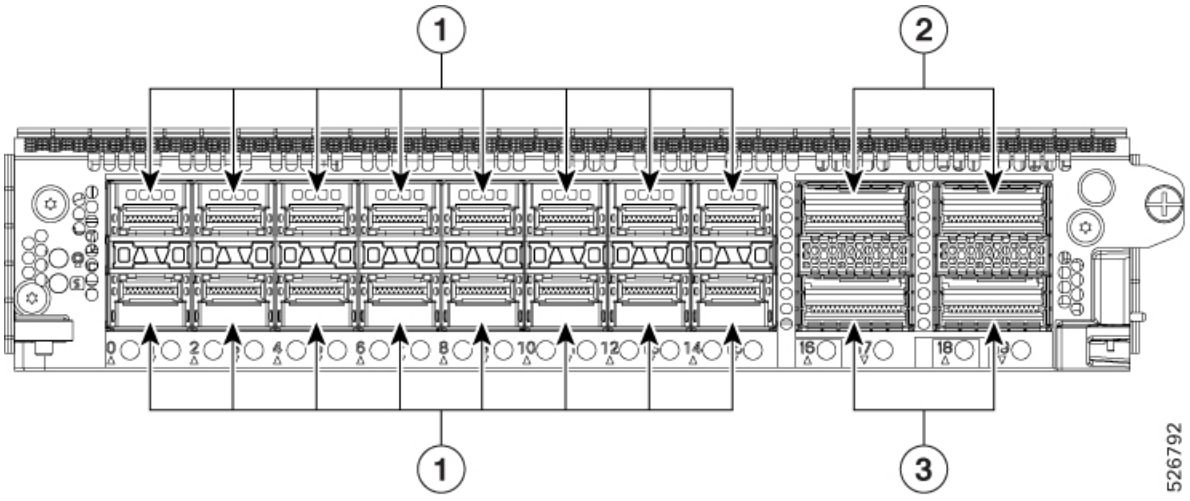


The 8K-MPA-16H is a pluggable card that provides 16 interface ports that supports QSFP-28 100GbE module.

8K-MPA-16Z2D

The following image displays the MPA PID and explains the port details of the MPA:

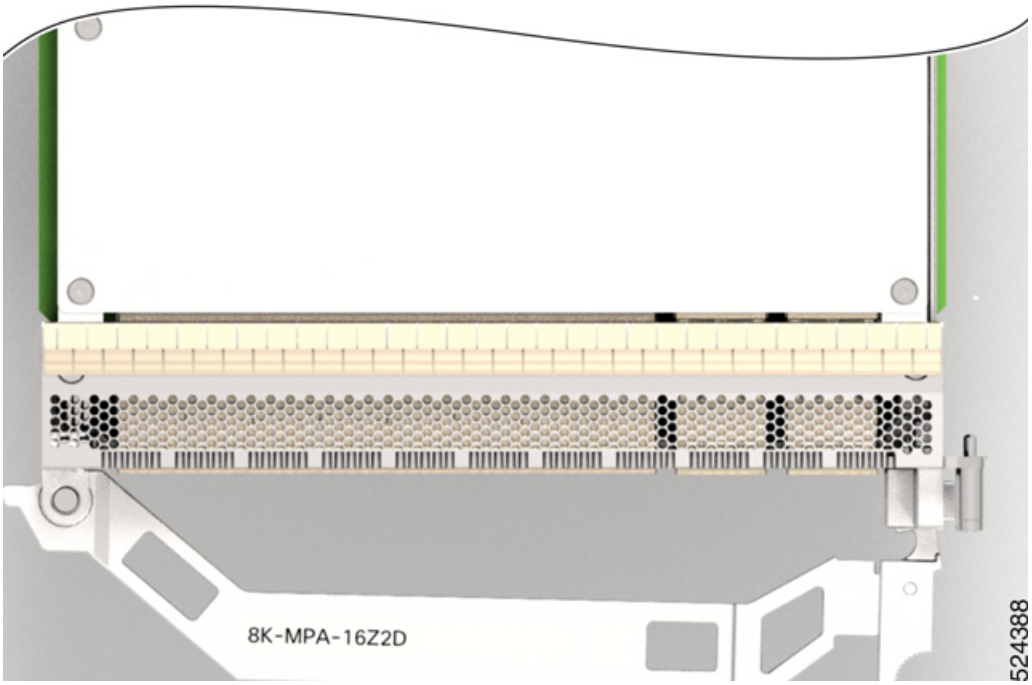
Figure 11: 8K-MPA-16Z2D



1	SFP 50GbE, 25GbE, 10GbE, or 1GbE (Ports 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 15)
2	QSFP-DD 400GbE, 200GbE, or 100GbE (Ports 16 and 18)

3	QSFP-DD 200GbE or 100GbE (Ports 17 and 19)

Figure 12: 8K-MPA-16Z2D Handle



The 8K-MPA-16Z2D is a pluggable card that provides 20 interface ports that can support up to:

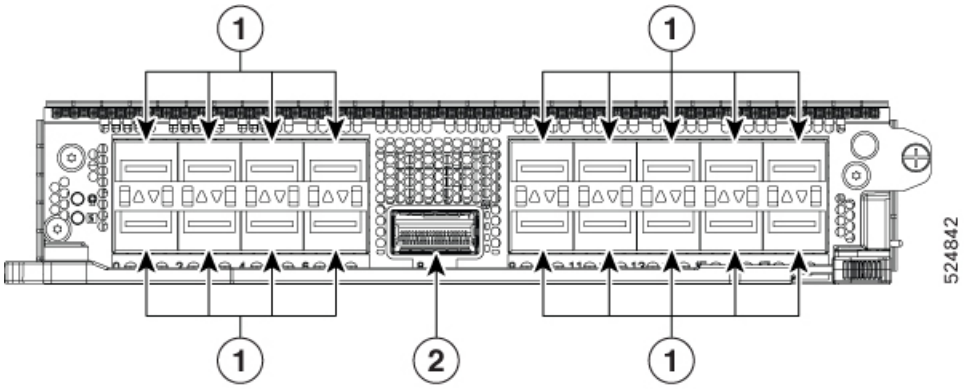
- 4 ports of QSFP-DD and 16 ports of SFP
- 16 ports (0-15) of SFP 50GbE, 25GbE, 10GbE, or 1GbE modules
- 2 ports (16 and 18) of QSFP-DD 400GbE, 200GbE, or 100GbE modules
- 2 ports (17 and 19) of QSFP-DD 200GbE or 100GbE modules

Note In the 8K-MPA-16Z2D MPA, Auto-Negotiation and Link Training (ANLT) are not supported on the 400G ports when using 400G DAC cables (QDD-400-CUxM, where x = 1 or 2).

8K-MPA-18Z1D

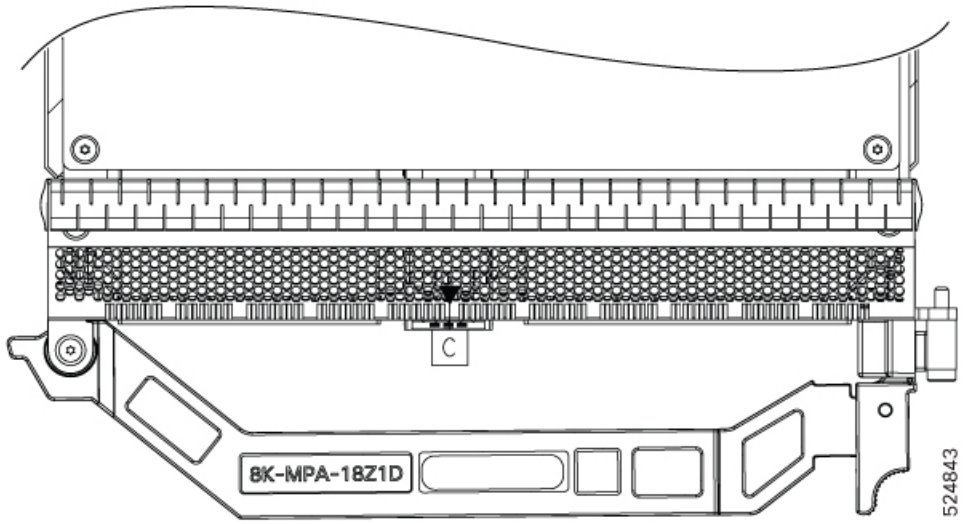
The following image displays the MPA PID and explains the port details of the MPA:

Figure 13: 8K-MPA-18Z1D



1	zSFP56+ 50GbE, 25GbE, 10GbE or 1GbE (Ports 0, 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, and 18)
2	QSFP-DD 400G-ZR/ZR+, 400GbE, 4x100GbE, 2x100GbE, 100G-ZR+/100G-ZR, 100GbE, 4x25GbE, 40GbE, or 4x10GbE (Port 8)

Figure 14: 8K-MPA-18Z1D Handle



The 8K-MPA-18Z1D is a pluggable card that provides 19 interface ports that can support up to:

- An overall throughput of 1.3T of Tbps
- 1 port of QSFP-DD and 18 ports of zSFP56+
- 1 port (Port 8) of QSFP-DD 400G-ZR/ZR+, 400GbE, 4x100GbE, 2x100GbE, 100G-ZR+/100G-ZR, 100GbE, 4x25GbE, 40GbE, or 4x10GbE modules
- 18 ports (Ports 0-7 and 9-18) of zSFP56+ 50GbE, 25GbE, 10GbE or 1GbE modules
- PTP Timing with Class C performance

Note You can only perform consecutive MPA reloads in Cisco 8700 Series Routers after the MPA has been operational for a few minutes following the first reload. Reloading the MPA again without waiting may result in abnormal failures of the subsequent reload.

Temperature and Physical Specifications

For temperature and physical specifications, refer to the *Physical characteristics* table in the *Cisco 8700 Router Data Sheet*.

Weight and Power Consumption

For weight and power consumption, refer to the *Physical characteristics* table in the *Cisco 8700 Router Data Sheet*.

Airflow Direction

The Cisco 8700 series routers support these configurations:

- Post-Side Intake (PSI) configuration - the airflow through both the fan trays and power supplies is from the front-side to the rear-side. In PSI configuration, the power and fan modules are in Burgundy color.
- Post-Side Exhaust (PSE) configuration - the airflow through both the fan trays and power supplies is from the rear-side to the front-side. In PSE configuration, the power and fan modules are in Cisco Safety Blue color.

Figure 15: Airflow Direction for Cisco 8711-32FH-M Router in PSI Configuration

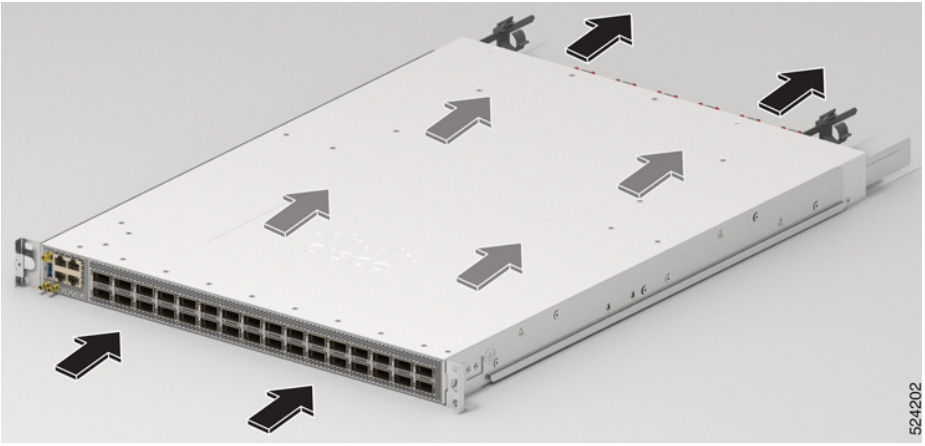


Figure 16: Airflow Direction for Cisco 8711-32FH-M Router in PSE Configuration

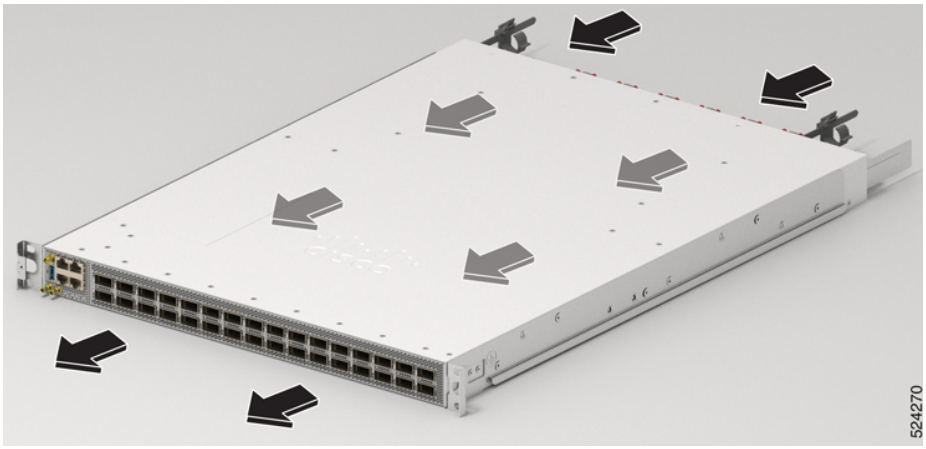


Figure 17: Airflow Direction for Cisco 8712-MOD-M Router in PSI Configuration



Figure 18: Airflow Direction for Cisco 8712-MOD-M Router in PSE Configuration



To ensure proper airflow for the Cisco 8712-MOD-M router in your facility, position the router with its air intake on a cold aisle and the air exhaust on a hot aisle.

Figure 19: Airflow Direction for Cisco 8711-48Z-M Router in PSI Configuration

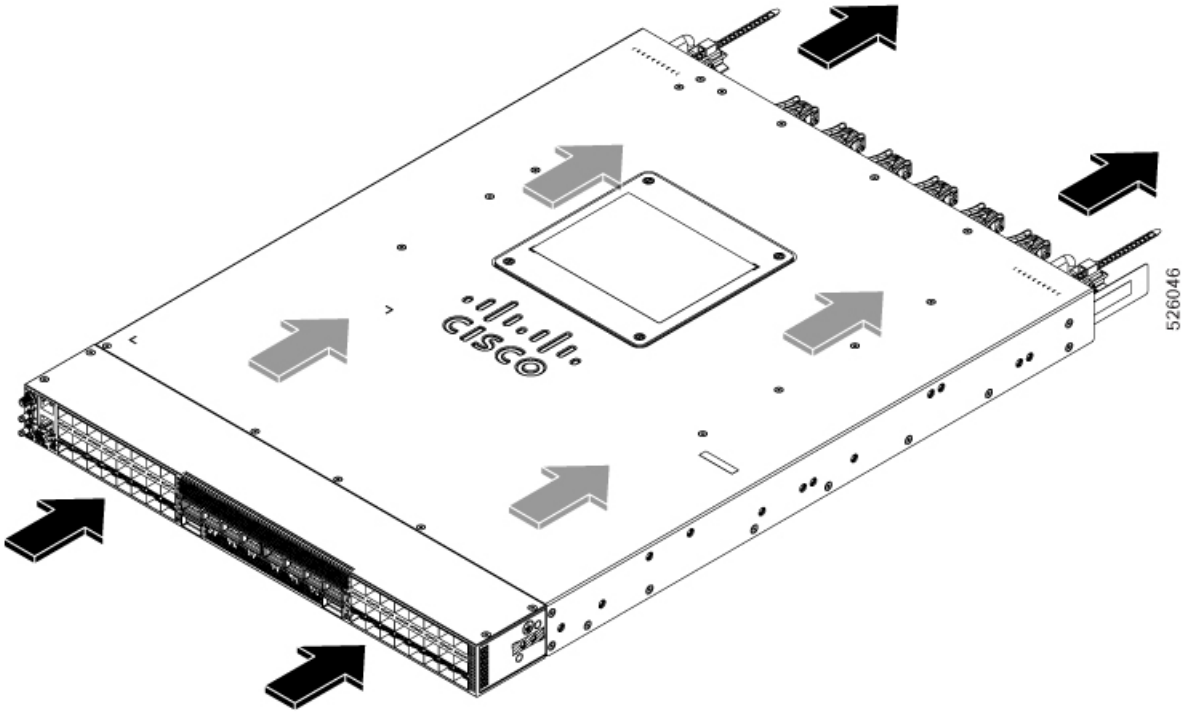
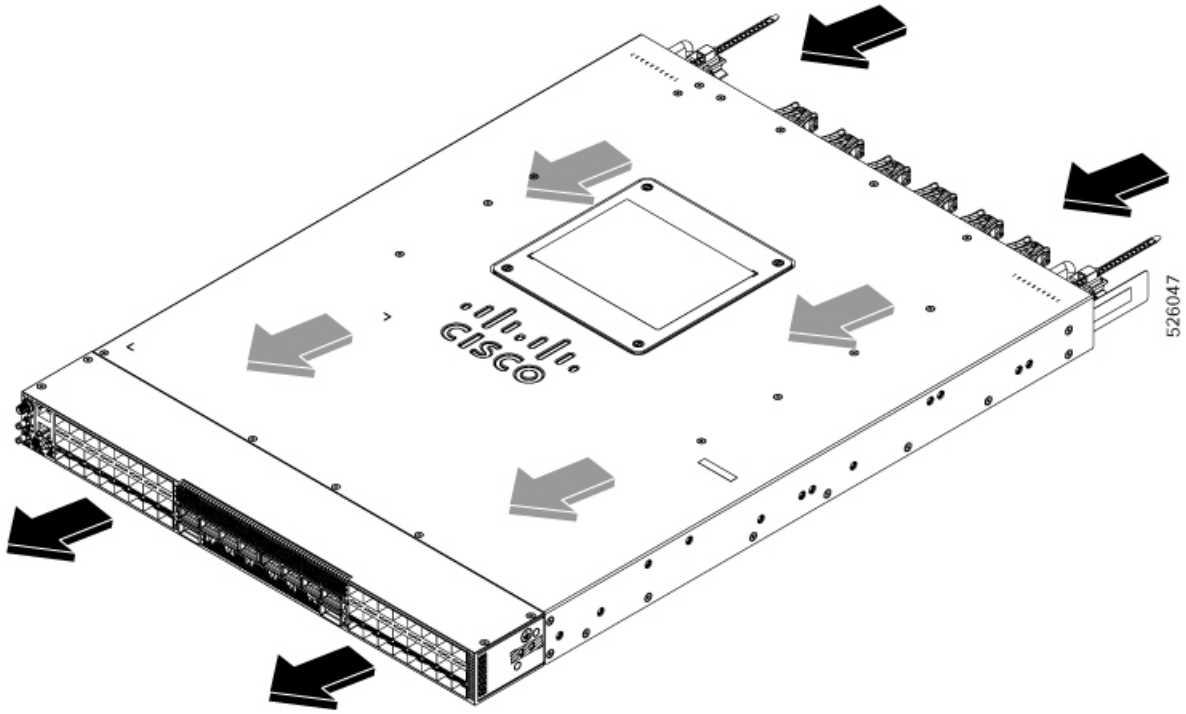


Figure 20: Airflow Direction for Cisco 8711-48Z-M Router in PSE Configuration



Note The airflow direction must be the same for all power supply and fan modules in the chassis.

Maximum Power Available to Router

The maximum power available to the router depends on the following factors:

- the input power from the power source
- the number of Power Supply Units (PSUs)
- the output capabilities of the PSUs
- the power redundancy mode

The following table lists the amount of power available for Cisco 8700 series routers from all available power trays.

Table 6: Maximum Power Available

Number of PSUs	Combined Mode (No redundancy)	1+1 Redundancy Mode (with Single Supply Loss)
1	2KW	—
2	4KW	2KW

Note In Cisco 8700 series routers, when the AC power supply unit operates at the low line voltage range of 90VAC to 140VAC, the router does not support 1+1 redundancy mode. The low line voltage maximum power per AC power supply unit is 1KW. Thus, the total power of two AC power supply units at the low line voltage is 2KW. Therefore, you must have two AC power supply units for the router to operate at low line voltage.

Supported Optics

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

https://tmgmatrix.cisco.com/