# Cisco 8100 Series Routers Overview

Cisco 8100 Series Routers

The Cisco 8100 Series Routers utilizes Cisco's new Router-on-Chip (RoC) model to deliver full routing functionality with a single ASIC per router. The RoC architecture is distinguished from System-on-Chip (SoC) switches by supporting large forwarding tables, deep buffers, more flexible packet operations, and enhanced programmability.

The Cisco 8100 series routers include the following variants:

- Cisco 8102-64H-O - It provides 6.4 Tbps of network bandwidth with dramatically lower power consumption than contemporary 10 Tbps systems. The Cisco 8102 Router is a fixed port, high density, two rack unit form-factor router. Supported ports include 64 x 100G QSFP28. The Cisco 8102-64H-O supports supports Cisco-qualified open-source network operating systems, such as SONiC (Software for Open Networking in the Cloud).

- Cisco 8101-32FH-O - It provides 12.8Tbps of network bandwidth. The Cisco 8101-32FH Router is a fixed port, high density, one rack unit form-factor router. Supported ports include 32 x 400G QSFP-DD. The Cisco 8101-32FH-O supports supports Cisco-qualified open-source network operating systems, such as SONiC (Software for Open Networking in the Cloud). The functionality and installation of this router is similar to that of Cisco 8201-32FH. The Hardware Installation Guide for Cisco 8201-32FH is available here.

- Cisco 8101-32H-O - It provides 3.2 Tbps of network bandwidth with dramatically lower power consumption than contemporary 10 Tbps systems. The Cisco 8101 Router is a fixed port, high density, one rack unit form-factor router. Supported ports include 32 x 100G QSFP28. This variant supports the Cisco-qualified open-source network operating system, such as SONiC (Software for Open Networking in the Cloud).

- Cisco 8111-32EH-O - It provides 25.6Tbps of network bandwidth. The Cisco 8111-32EH Router is a fixed port, high density, one rack unit form-factor router. Supported ports include 32 x 800G QSFP-DD. This variant supports the Cisco-qualified open-source network operating system, such as SONiC (Software for Open Networking in the Cloud).

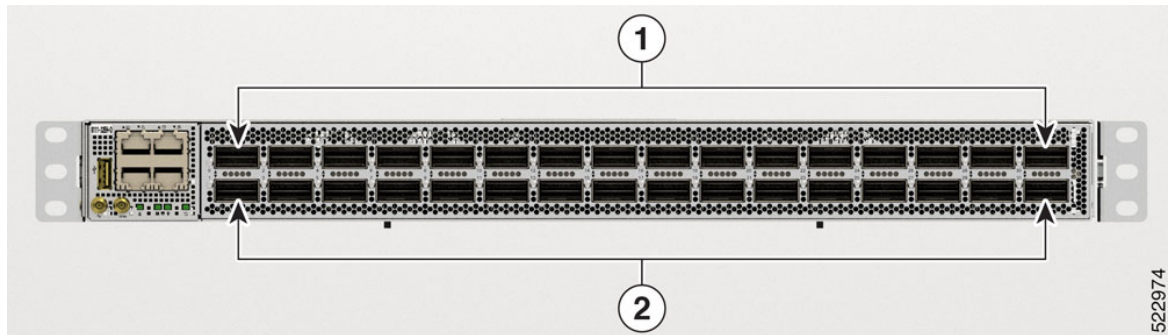*Figure 1: Cisco 8102-64H-O Router—Front View*
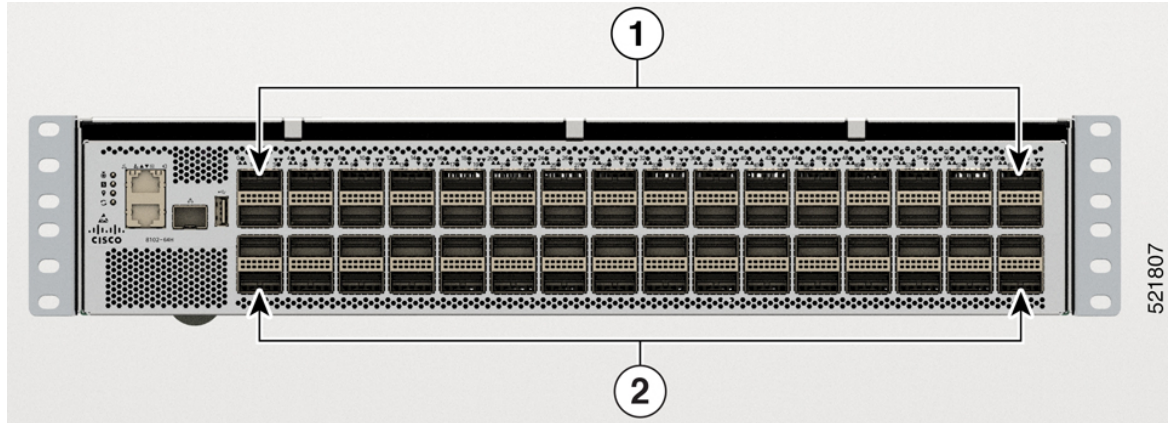
1	32 QSFP28 ports
2	32 QSPF28 ports

Figure 2: Cisco 8101-32H-O Router—Front View
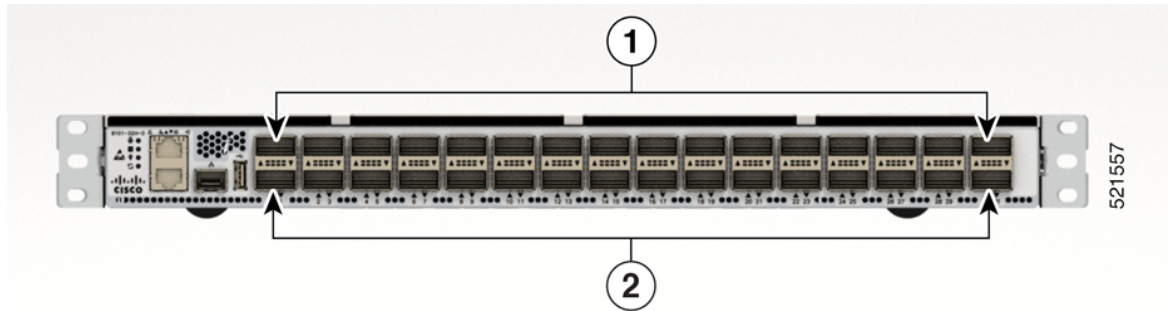
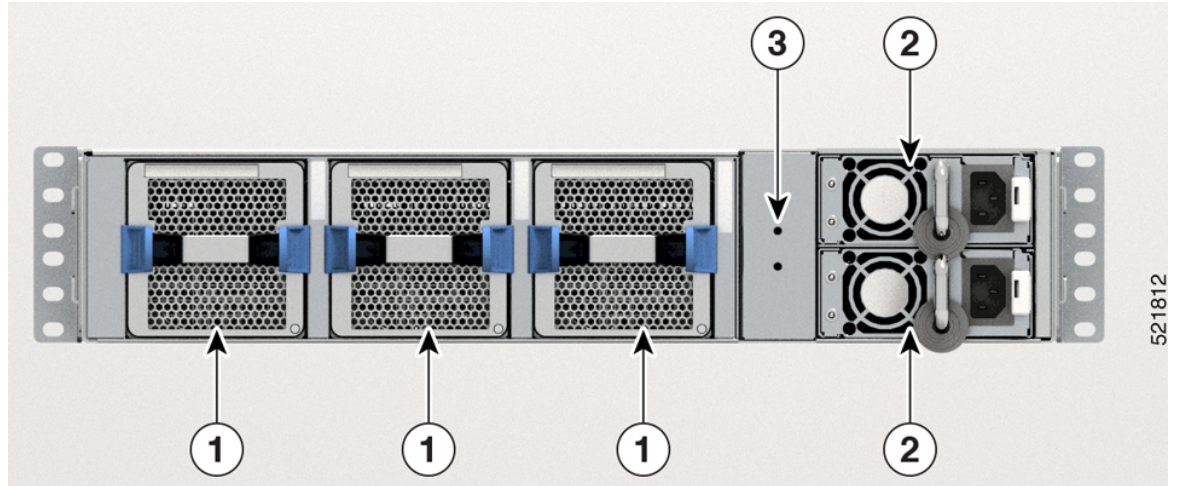| 1	16 QSFP28 ports
2	16 QSPF28 ports

Figure 3: Cisco 8111-32EH-O Router—Front View

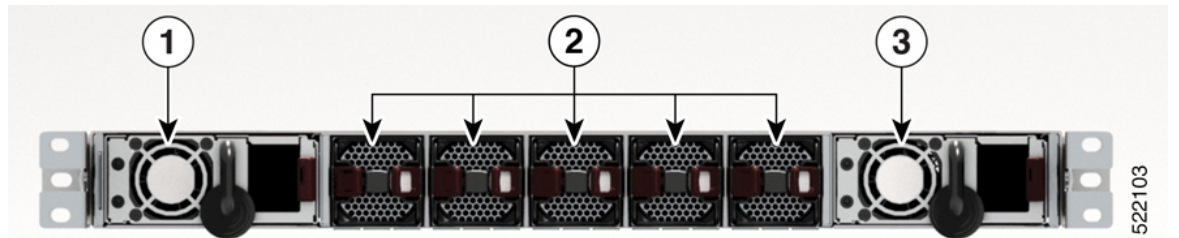| 1	16 QSFP-DD ports. Supports 30W optics.

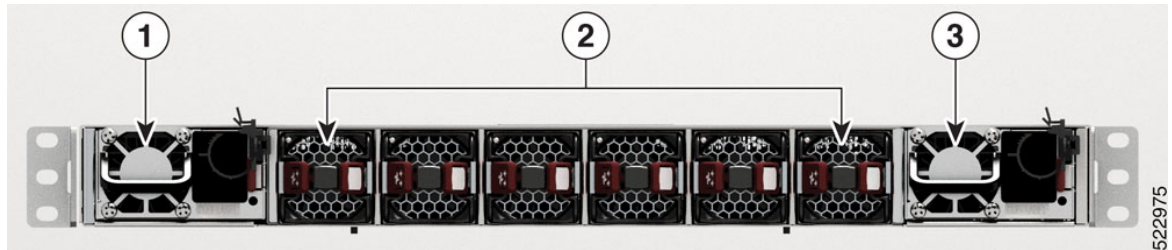| 2	16 QSFP-DD ports. Supports 17W optics.

Figure 4: Cisco 8102-64H-O Router—Rear View

1	Fan Tray Three Fans: FT0, FT1, and FT2
2	PSU-0 and PSU-1
3	Ground Lug Location

Figure 5: Cisco 8101-32H-O Router—Rear View

1	PSU-0
2	Fan Tray Five Fans: FT0, FT1, FT2, FT3, and FT4
3	PSU-1

Figure 6: Cisco 8111-32EH-O Router—Rear View

1	PSU-0
2	Fan Tray Six Fans: FT0, FT1, FT2, FT3, FT4, and FT5
3	PSU-1

Field Replaceable Units

The router has two field replaceable units (FRUs):

- Fan Module
- Power Supply Unit

Both the FRUs support OIR (Online Insertion and Removal).

Fan Module

The router has three latched fan modules that installs into the chassis from the rear. Fans cool the system and maintain proper airflow through the system. The fan modules work with N+1 redundancy.
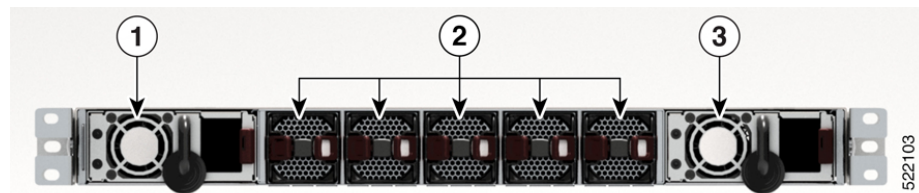
Figure 7: Fan Module - Cisco 8102-64H-O
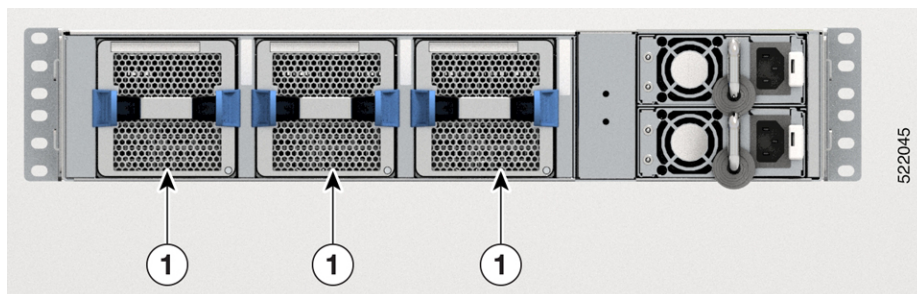
1	Fan

Table 1: Fan Module PIDs

Configuration	Fan Module PID
Port-side Intake	FAN-2RU-PI-V2 The color of the fan module is Burgundy.
Port-side Exhaust	FAN-2RU-PE-V2 The color of the fan module is Blue.

Figure 8: Fan Module - Cisco 8101-32H-O

2	Fan

Table 2: Fan Module PIDs

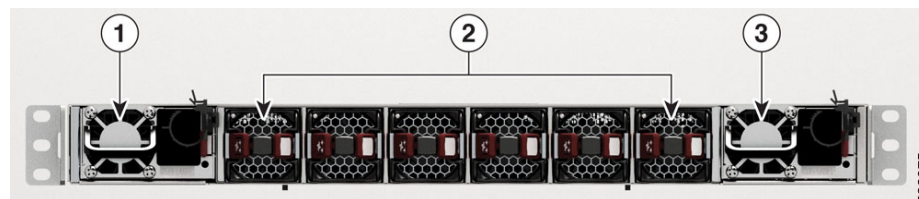| Configuration	Fan Module PID
Port-side Intake	FAN-1RU-PI-V2 The color of the fan module is Burgundy.
Port-side Exhaust	FAN-1RU-PE-V2 The color of the fan module is Blue.

Figure 9: Fan Module - Cisco 8111-32EH-O

Note   The Cisco 8111-32EH-O router supports only port-side intake configuration.

2	Fan

Table 3: Fan Module PIDs

Configuration	Fan Module PID
Port-side Intake	FAN-1RU-PI-V2
	The color of the fan module is Burgundy.

Power Supply Unit

The router has two PSUs that install into the chassis from the rear. The PSUs work with 1+1 redundancy and the router supports two AC or two DC power supplies. The PSUs can be:

- AC to DC type - 650W

- DC to DC type - 930W

The PSUs provide 12V power to the entire system.

Note For Cisco 8111-32EH-O router, when all the 32 x QSFP-DD ports are being used and you want to use 1+1 redundancy, you must use the 3KW PSU.

Table 4: PIDs for Power Supply Unit

Router	AC PID	DC PID
Cisco 8102-64H-O and Cisco 8101-32H-O	• PSU650W-ACPI • PSU650W-ACPE	• PSU930W-DCPI • PSU930W-DCPE
Cisco 8111-32EH-O	• PSU2KW-ACPI • PSU3KW-HVPI	• PSU2KW-DCPI • PSU3KW-HVPI

Figure 10: Power Supply Unit
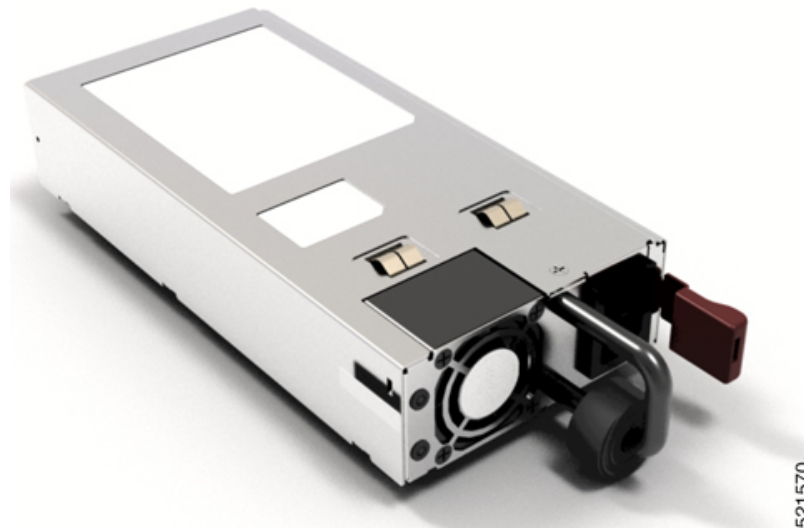
SSD Card

The router has a removable Solid State Drive (SSD) card. We recommend to remove the SDD 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 by using the hatch provided on the top panel. To remove the SSD card, follow the instructions mentioned on the printed label on the hatch.
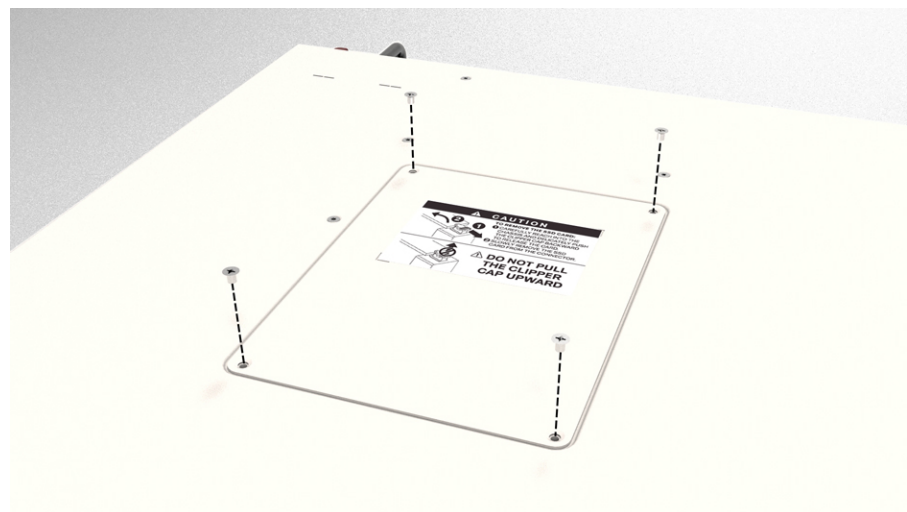
Figure 11: Remove the Hatch

Figure 12: SSD Card Removal Instructions

Power Supply Unit Input and Output Ranges

Power Supply Restrictions and Considerations

⚠️

Warning   **Statement 1090**—Installation by Skilled Person

Only a skilled person should be allowed to install, replace, or service this equipment. See statement 1089 for the definition of a skilled person.

There are no serviceable parts inside. To avoid risk of electric shock, do not open.

⚠️

Warning   **Statement 1091**—Installation by an Instructed Person

Only an instructed person or skilled person should be allowed to install, replace, or service this equipment. See statement 1089 for the definition of an instructed or skilled person.

There are no serviceable parts inside. To avoid risk of electric shock, do not open.

⚠️

Warning   **Statement 1073**—No User-Serviceable Parts

There are no serviceable parts inside. To avoid risk of electric shock, do not open.

Observe the following guidelines and limitations:

- Use one type of power supply in a router.

- The power supply type that is used in the router depends on the type and configuration of the transceivers installed in it.

- Do not install a mix of AC and DC power supplies in a router.

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

- The AC-input power supplies support low-line voltage of 120V (Nominal) and high-line voltage of 220V (Nominal). If you need to change voltage type after installation, disconnect the feed from the power supply before switching the input voltage level.