Cisco 8800 Series Routers Overview

Table 1: Feature History Table

Hardware	Release Information	Description
Cisco 8804	Release 7.3.2	This release introduces Cisco 8804, a 4-slot 10 RU (rack unit) modular router that provides 57.6 Tbps of network bandwidth. For more information, see the Cisco 8800 section in the Datasheet here.

The Cisco 8800 series routers include:

- The Cisco 8818 is a 33-RU router that supports distributed forwarding across multiple field replaceable units (FRUs).
- The Cisco 8812 is a 21-RU router that supports distributed forwarding across multiple field replaceable units (FRUs).
- The Cisco 8808 is a 16-RU router that supports distributed forwarding across multiple field replaceable units (FRUs).
- The Cisco 8804 is a 10-RU router that supports distributed forwarding across multiple field replaceable units (FRUs).

Cisco 8800 Series Routers

Table 2: Feature History Table

Feature Name	Release	Description
PSU4.8KW-DC100 power supply for Cisco 8804 and 8808 routers.	Release 7.3.2	This feature introduces support for the 4.8 KW power supply for 48V 100A DC (DC100) on the Cisco 8804 and 8808 routers. The power supply accepts a nominal input voltage of 48V 100A DC, with an operational tolerance range of -40 to -75 VDC.

The following table describes the Cisco 8818 router components, and the supported quantity.

Table 3: Cisco 8818 Router Components

Component	Quantity
Line cards	18
Route Processors	2
Fabric Cards	8
Fan trays	4
Power trays	6
Power supplies	HVAC/HVDC—18 (3 per tray) DC60—24 (4 per tray) DC100—24 (4 per tray)

The following table describes the Cisco 8812 router components, and the supported quantity.

Table 4: Cisco 8812 Router Components

Component	Quantity
Line cards	12
Route Processors	2
Fabric Cards	8
Fan trays	4
Power trays	3

Component	Quantity
Power supplies	HVAC/HVDC—9 (3 per tray) DC60—12 (4 per tray) DC100—12 (4 per tray)

The following table describes the Cisco 8808 router components, and the supported quantity.

Table 5: Cisco 8808 Router Components

Component	Quantity
Line cards	8
Route Processors	2
Fabric Cards	8
Fan trays	4
Power trays	3
Power supplies	HVAC/HVDC—9 (3 per tray) DC60—12 (4 per tray) DC100—12 (4 per tray)

The following table describes the Cisco 8804 router components, and the supported quantity.

Table 6: Cisco 8804 Router Components

Component	Quantity
Line cards	4
Route Processors	2
Fabric Cards	8
Fan trays	4
Power trays	2
Power supplies	HVAC/HVDC—6 (3 per tray) DC60—8 (4 per tray) DC100—8 (4 per tray)

Line Card Overview

Table 7: Feature History Table

Feature Name	Release	Description
88-LC0-36FH-M with MACsec, based on Q200 Silicon Chip	Release 7.3.15	The Cisco 8800 modular chassis support the Cisco 8800 36x400 GE QSFP56-DD Line Card (88-LC0-36FH-M). The 88-LC0-36FH-M line card is Q200 silicon chip-based, and MACsec-capable, providing 14.4 Tbps of throughput with line rate MACsec on all ports. The line card provides up to 144 ports of 100 GE via breakout and support QSFP+, QSFP28, and QSFP28-DD modules. 88-LC0-36FH-M line card is supported on Cisco 8808 and Cisco 8818 modular chassis.
88-LC0-36FH without MACsec, based on Q200 Silicon Chip	Release 7.3.15	The Cisco 8800 modular chassis support the Cisco 8800 36x400 GE QSFP56-DD Line Card (88-LC0-36FH). 88-LC0-36FH line card is Q200 silicon chip-based, providing 14.4 Tbps of throughput line rate without MACsec on all ports. The line card provides up to 144 ports of 100 GE via breakout and support QSFP+, QSFP28, and QSFP28-DD modules. 88-LC0-36FH line card is supported on Cisco 8808 and Cisco 8818 modular chassis.

Feature Name	Release	Description
88-LC0-34H14FH, based on Q200 Silicon Chip	Release 7.5.1 and Release 7.3.3	This release introduces a 48-port combo line card that provides 9 Tbps of throughput. The 88-LC0-34H14FH line card is Q200 silicon chip-based and comprises 34 ports of 100 GbE (QSFP28) and 14 ports of 400 GbE (QSFP-DD). Sixteen 100 GbE ports are MACsec capable. 100 GbE ports support 4x10/25 GbE breakout, and 400 GbE ports support 4x100 GbE, 2x100 GbE, and 4x10/25 GbE breakout. The 88-LC0-34H14FH line card is supported on Cisco 8800 series modular chassis. For more information on this line card, see the Cisco 8000 Series Routers Data Sheet.

Feature Name	Release	Description
88-LC0-34H14FH-O Line Card based on the Q200 Silicon Chip	Release 7.5.2	This release introduces the Q200 silicon chip-based 88-LC0-34H14FH-O line card with these highlights: • A 48-port combination line card providing 9 Tbps of throughput. • Thirty-four ports of 100 GbE (QSFP28) and 14 ports of 400 GbE (QSFP-DD). • Sixteen 100 GbE ports are MACsec capable. • 100 GbE ports support 4x10/25 GbE breakout. • 400 GbE ports support 4x100 GbE, 2x100 GbE, and 4x10/25 GbE breakout. • Supports Cisco-qualified open-source network operating systems, such as SONiC (Software for Open Networking in the Cloud). See the Cisco 8000 Series Routers Data Sheet for more information on this line card. The details available for 88-LC0-34H14FH line card in the datasheet are also applicable to 88-LC0-34H14FH-O line card.

Cisco 8800 Series Routers support the following line cards:

Table 8: Supported Line Cards and Transceivers

Line Card PIDs	Transceivers
8800-LC-48H	QSFP28 / QSFP+
8800-LC-36FH	QSFP56-DD / QSFP28 / QSFP+
88-LC0-36FH	QSFP56-DD / QSFP28 / QSFP+
88-LC0-36FH-M	QSFP56-DD / QSFP28 / QSFP+

88-LC0-36FH and 88-LC0-36FH-M line cards are compatible with Q100 and Q200 silicon based fabric cards.

88-LC0-34H14FH and 88-LC0-34H14FH-O Line Card

The following image explains the port configuration details of the 88-LC0-34H14FH and 88-LC0-34H14FH-O line card:

Figure 1: 88-LC0-34H14FH and 88-LC0-34H14FH-O Line Card

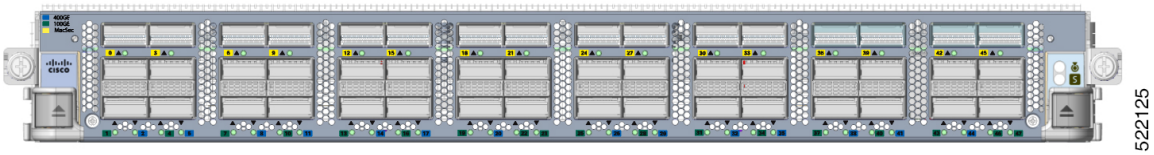


Table 9: Port Description

Port Color	Description
Blue	Fourteen 400 GbE QSFP-DD ports. These ports support 4x100 GbE, 2x100 GbE, and 4x10/25 GbE breakout.
Green	Eighteen 100 GbE QSFP28 ports. These ports support 4x10/25 GbE breakout.
Yellow	Sixteen 100 GbE QSFP28 MACsec-capable ports. These ports support 4x10/25 GbE breakout.

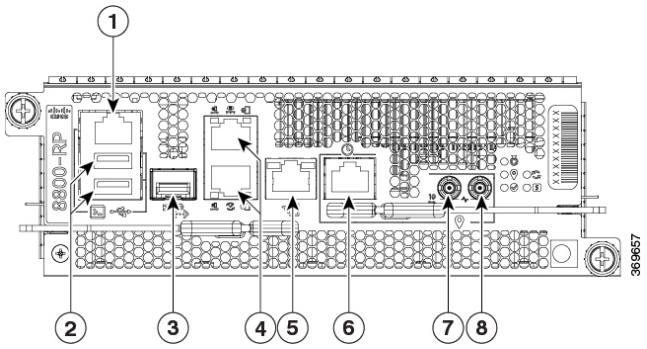
Route Processor Card Overview

Table 10: Feature History Table

Hardware	Release Information	Description
Route Processor Card 8800-RP2	Release 7.11.1	This release introduces support for a new route processor card, 8800-RP2, on Cisco 8800 Series routers. It provides a capacity of 8-core x86 CPU at 2.7GHz with 64GB RAM. For more information, see the Cisco 8800 section in the Datasheet here.

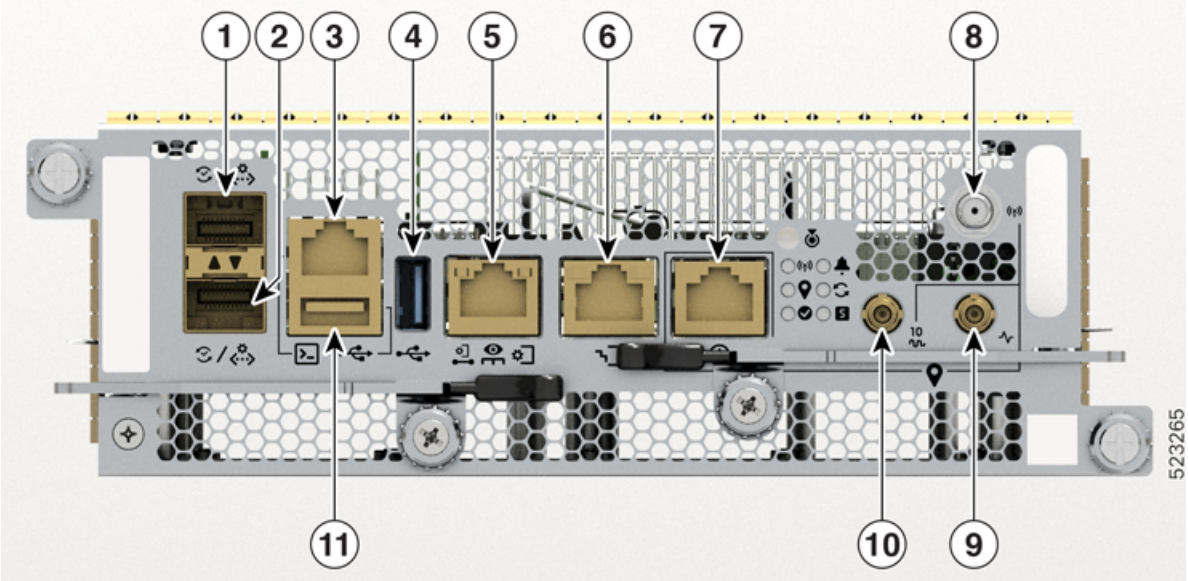
Route Processor cards (8800-RP and 8800-RP2) manage all routing operations on the Cisco 8800 Series Routers.

Figure 2: Route Processor - 8800-RP



1	Console RS-232 Serial Port RJ45	**5**	SyncE BITS/DTI/J.211
2	USB Port Type-A (2-ports). Port A gets detected ahead of Port B. Top: Port B Bottom: Port A	**6**	G.703 Time-of-Day (TOD)
3	Control Plane Expansion SFP/SFP+ port	**7**	1.0/2.3 50 ohm connector for 10 MHz, input, and output
4	Top: Management Ethernet (10/100/1000-Mbps) RJ-45 (Copper) port LAN. Bottom: IEEE 1588 Precision Time Protocol (PTP)	**8**	1.0/2.3 50 ohm connector for 1 PPS, input, and output

Figure 3: Route Processor - 8800-RP2



1	Control Plane Expansion SFP/SFP+ Port	**7**	G.703 Time-of-Day (TOD)
2	IEEE 1588 Precision Time Protocol (PTP) Port	**8**	GNSS Port
3	Console RS-232 Serial Port RJ45	**9**	1.0/2.3 50 ohm connector for 1 PPS, input, and output
4	USB Port Type-A.	**10**	1.0/2.3 50 ohm connector for 10 MHz, input, and output
5	Top: Management Ethernet (10/100/1000-Mbps) RJ-45 (Copper) Port LAN.	**11**	USB Port Type-B. Port A gets detected ahead of Port B.
6	SyncE BITS/DTI/J.211		

Fabric Card Overview

Table 11: Feature History Table

Feature Name	Release	Description
8808-FC1-G Fabric Card based on G100 Silicon Chip	Release 7.11.1	The Cisco 8808 modular chassis supports the Cisco 8808 fabric card (8808-FC1-G). The 8808-FC1-G fabric card is based on Silicon One G100 ASIC operating in the fabric engine mode. The 8808-FC1-G fabric card provides 35.4 Tbps of switching capacity per line card. The fabric card supports 8FC and 5FC modes.
8804-FC0 Fabric Card based on Q200 Silicon Chip	Release 7.3.16	The Cisco 8804 modular chassis supports the Cisco 8804 fabric card (8804-FC0). The 8804-FC0 fabric card is Q200 silicon chip-based providing 9.6 Tbps. The fabric card supports 8FC and 5FC modes.
8818-FC0 Fabric Card based on Q200 Silicon Chip	Release 7.3.16	The Cisco 8818 modular chassis supports the Cisco 8818 fabric card (8818-FC0). The 8818-FC0 fabric card is Q200 silicon chip-based providing 43.2 Tbps. The fabric card supports 8FC and 5FC modes.
8808-FC0 Fabric Card based on Q200 Silicon Chip	Release 7.3.15	The Cisco 8808 modular chassis supports the Cisco 8808 fabric card (8808-FC0). The 8808-FC0 fabric card is Q200 silicon chip-based providing 21.6 Tbps. The fabric card supports 8FC and 5FC modes.

The Cisco 8800 series routers are powered by the Cisco Silicon One Q200 and Q100 series processors.

Cisco 8800 Series Routers support the following Q100 Silicon based fabric cards:

- 8818-FC—Cisco 8818 Fabric Card based on Q100 Silicon
- 8812-FC—Cisco 8812 Fabric Card based on Q100 Silicon
- 8808-FC—Cisco 8808 Fabric Card based on Q100 Silicon

Cisco 8800 Series Routers support the following Q200 Silicon based fabric cards:

- 8804-FC0—Cisco 8804 Fabric Card based on Q200 Silicon
- 8808-FC0—Cisco 8808 Fabric Card based on Q200 Silicon
- 8818-FC0—Cisco 8818 Fabric Card based on Q200 Silicon

Cisco 8800 Series Routers support the following G100 Silicon based fabric cards:

- 8808-FC1-G—Cisco 8808 Fabric Card based on G100 Silicon

Note The 8808-FC1-G fabric card cannot be used in the router that has 8800-LC-48H and 8800-LC-36FH line cards installed.

Caution The system doesn't support a mix of Q100 Silicon based fabric cards, Q200 Silicon based fabric cards, and G100 based fabric cards. Attempting to mix Q100, Q200, and G100 Silicon based fabric cards in a system could result in an equipment failure.

Temperature and Physical Specifications

For temperature and physical specifications, refer to the *Physical characteristics* table in the Cisco 8000 Series Routers Data Sheet.

Weight and Power Consumption

For weight and power consumption, refer to the *Physical characteristics* table in the Cisco 8000 Series Routers Data Sheet.

Airflow Direction

The airflow through the fan trays and power supplies on the Cisco 8800 series routers routers are from front to back (port side intake).

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

Maximum Power Available to the Router

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 table lists the amount of power available for Cisco 8800 series routers from all available power trays.

Table 12: Maximum Power Available for a Router with HVAC/HVDC Power Supplies

Total Power Supply	Combined Mode in Watts (No redundancy)	N+1 Redundancy Mode in Watts (with Single Supply Loss)	Total Power Tray
1	6,300	—	1
2	12,600	6,300	
3	18,900	12,600	
4	25,200	18,900	2[1]
5	31,500	25,200	
6	37,800	31,500	
7	44,100	37,800	3[2]
8	50,400	44,100	
9	56,700	50,400	
10	63,000	56,700	4[3]
11	69,300	63,000	
12	75,600	69,300	
13	81,900	75,600	5[3]
14	88,200	81,900	
15	94,500	88,200	
16	100,800	94,500	6[3]
17	107,100	100,800	
18	113,400	107,100	

Note

- [1] Cisco 8804 router supports 2 power trays.
- [2] Cisco 8808 and Cisco 8812 routers support 3 power trays.
- [3] Power Tray 4, 5 and 6 are applicable for Cisco 8818 Router.

Table 13: Maximum Power Available for a Router with DC60 Power Supplies (or DC100 Power Supplies in 60A Mode)

Total Power Supply	Combined Mode in Watts (No redundancy)	N+1 Redundancy Mode in Watts (with Single Supply Loss)	N+N Redundancy Mode in Watts (with Feed Loss)	Total Power Tray
1	4,400	—	2,200	1
2	8,800	4,400	4,400	
3	13,200	8,800	6,600	
4	17,600	13,200	8,800	
5	22,000	17,600	11,000	2[1]
6	26,400	22,000	13,200	
7	30,800	26,400	15,400	
8	35,200	30,800	17,600	
9	39,600	35,200	19,800	3[2]
10	44,000	39,600	22,000	
11	48,400	44,000	24,200	
12	52,800	48,400	26,400	

Note

- [1] Cisco 8804 router supports 2 power trays.
- [2] Cisco 8808 and Cisco 8812 routers support 3 power trays.

Total Power Supply	Combined Mode in Watts (No redundancy)	N+1 Redundancy Mode in Watts (with Single Supply Loss)	N+N Redundancy Mode in Watts (with Feed Loss)	Total Power Tray
13	57,200	52,800	28,600	4[3]
14	61,600	57,200	30,800	
15	66,000	61,600	33,000	
16	70,400	66,000	35,200	
17	74,800	70,400	37,400	5[3]
18	79,200	74,800	39,600	
19	83,600	79,200	41,800	
20	88,000	83,600	44,000	
21	92,400	88,000	46,200	6[3]
22	96,800	92,400	48,400	
23	101,200	96,800	50,600	
24	105,600	101,200	52,800	

Note [3] Power Tray 4, 5 and 6 are applicable for Cisco 8818 Router.

Table 14: Maximum Power Available for a Router with DC100 Power Supplies

Total Power Supply	Combined Mode in Watts (No redundancy)	N+1 Redundancy Mode in Watts (with Single Supply Loss)	N+N Redundancy Mode in Watts (with Feed Loss)	Total Power Tray
1	4,800	—	2,400	1
2	9,600	4,800	4,800	
3	14,400	9,600	7,200	
4	19,200	14,400	9,600	
5	24,000	19,200	12,000	2[1]
6	28,800	24,000	14,400	
7	33,600	28,800	16,800	
8	38,400	33,600	19,200	

Total Power Supply	Combined Mode in Watts (No redundancy)	N+1 Redundancy Mode in Watts (with Single Supply Loss)	N+N Redundancy Mode in Watts (with Feed Loss)	Total Power Tray
9	43,200	38,400	21,600	3[2]
10	48,000	43,200	24,000	
11	52,800	48,000	26,400	
12	57,600	52,800	28,800	

Note

- [1] Cisco 8804 router supports 2 power trays.
- [2] Cisco 8808 and Cisco 8812 routers support 3 power trays.

Total Power Supply	Combined Mode in Watts (No redundancy)	N+1 Redundancy Mode in Watts (with Single Supply Loss)	N+N Redundancy Mode in Watts (with Feed Loss)	Total Power Tray
13	62,400	57,600	31,200	4[3]
14	67,200	62,400	33,600	
15	72,000	67,200	36,000	
16	76,800	72,000	38,400	
17	81,600	76,800	40,800	5[3]
18	86,400	81,600	43,200	
19	91,200	86,400	45,600	
20	96,000	91,200	48,000	
21	10,0800	96,000	50,400	6[3]
22	105,600	10,0800	52,800	
23	110,400	105,600	55,200	
24	115,200	110,400	57,600	

Note [3] Power Tray 4, 5 and 6 are applicable for Cisco 8818 Router.

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

- For QSFP-DD data sheets, refer to the Cisco 400G QSFP-DD Cable and Transceiver Modules Data Sheet.
- For QSFP28 data sheets, refer to the Cisco 100GBASE QSFP-100G Modules Data Sheet.
- For QSFP+ data sheets, refer to the Cisco 40GBASE QSFP Modules Data Sheet.