Cisco CQ211L01-48H8FH Switch

Contents

Overview

Figure 1.
Cisco CQ211L01-48H8FH Switch

The Cisco® CQ211L01 switch is a high-performance and high-density switch designed for cloud data center applications. It offers 48 ports of 100 Gigabit Ethernet (GE) Dual Small Form-Factor Pluggable (DSFP) and 8 ports of 400 GE Quad SFP Double Density (QSFP-DD) connectivity, delivering a total of 8 Tbps of switching capacity. The switch enables scalable and secure multitenant cloud environments. It also leverages the Cisco Silicon One™ architecture, which provides a unified silicon platform for both routing and switching applications across different market segments. The switch is powered by the Cisco Silicon One Q211L ASIC, which is based on the 7-nm process technology, offering lower power consumption, higher performance, and greater integration. It is ideal for data center leaf and top-of-rack deployments, where it can provide high-speed connectivity and low-latency forwarding for cloud applications and services.

Hardware

The Cisco CQ211L01-48H8FH Switch uses a fixed form factor.

Table 1. Fixed chassis components

Fixed chassis	Bandwidth	Packets per second	100 GE ports	400 GE ports	Silicon
Cisco CQ211L01-48H8FH	8 Tbps	6.75 Bpps	48x DSFP	8x QSFP56-DD	Q211L

Silicon innovation with the Cisco Silicon One ASIC

Cisco Silicon One is a groundbreaking routing silicon architecture that exceeds the 10-Tbps benchmark for network bandwidth without compromising route capacity, forwarding performance, or feature flexibility. The first-generation Q100 ASIC achieves 10.8 Tbps of throughput using 16-nm process technology. The second-generation Q200 ASIC boosts performance to 12.8 Tbps using 7-nm process technology, while the new P100 ASIC further increases performance to 19.2 Tbps using the same technology. These ASICs provide high-scale routing and deep buffering without requiring off-chip memories, which can reduce data path bandwidth due to frequent memory access. This is made possible by the innovative internal architecture of Cisco Silicon One, which includes an on-chip High Bandwidth Memory (HBM) that significantly improves performance while reducing power consumption.

The Cisco Silicon One Q211L builds on the ground-breaking technology of the Cisco Silicon One Q200L, Q201L, and Q202L to provide a full-duplex, standalone switching processor with efficiency and flexibility enabled by Cisco Silicon One and 7-nm technology. It supports 80x 100 GE, 40x 200 GE, 48x 100 GE plus 8x 400 GE, and 20x 400 GE leaf and Top-of-Rack (TOR) switches and can be used to build fixed form-factor switches ideally targeted for data center leaf and TOR applications.

The Cisco Silicon One architecture offers numerous benefits, including a unified architecture across multiple markets that greatly simplifies customer network infrastructure deployments, a unified SDK across market segments and applications that provides a consistent point of integration for all applications across the entire network infrastructure, high-performance routing and switching silicon that achieves line rate at small packet sizes, power-efficient routing and switching silicon enabled by the power efficiency of 7 nm and the Cisco Silicon One architecture, a large and fully unified packet buffer, switching efficiency with routing features and scale that addresses the requirements of service providers' and web-scale providers' routing and switching applications, a run-to-completion network processor that provides feature flexibility without compromising performance or power efficiency, and P4 programmability that allows for rapid feature development.

System design innovation

The Cisco CQ211L01 switches are based on the Cisco Silicon One ASIC, which delivers industry-leading performance, power efficiency, and programmability. These switches support up to 48 ports of 100 GE DSFP plus 8 ports of 400 GE QSFP-DD in a compact one-rack-unit (1RU) form factor and support lower speeds such as 10 GE, 25 GE, 40 GE, and 50 GE. This provides customers with the flexibility to design networks that can accommodate various types of servers, storage devices, and network appliances. The switches offer wire-speed Layer 2 and Layer 3 switching with low latency and jitter, as well as advanced features.

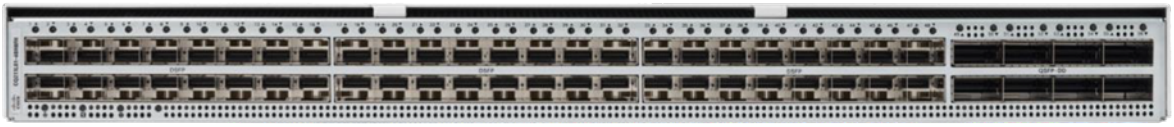

Figure 2.
Cisco CQ211L01-48H8FH front view

Figure 3.
Cisco CQ211L01-48H8FH back view

Ordering overview

The high-level hardware components are listed below. For full ordering information, refer to the ordering documentation.

Table 2. Ordering overview

Part number	Description
CQ211L01-48H8FH	Switch, 48x 100 GE DSFP + 8x QSFP-DD, 8T capability
FAN-1RU-PI-V2	Cisco 8000 Series 1RU Fan with Port-side Air Intake Ver 2
PSU1.1KW-ACPI	1100W AC Port Side Intake
CQ211L01-ACC-KIT	CQ211L01-48 Fixed Accessory Kit, 1RU front and rear removal
SONIC-202111-CS1F	SONiC 202111 based image for Cisco Silicon One System
CAB-C13-C14-AC	Power cord, C13 to C14 (recessed receptacle), 10A
CQ211L01-48H8FH=	Switch, 48x 100 GE DSFP + 8x QSFP-DD, 8T Capability
FAN-1RU-PI-V2=	Cisco 8000 Series 1RU Fan with Port-side Air Intake V2, Spare
CQ211L01-ACC-KIT=	CQ211L01-48 Fixed Accessory Kit, 1RU front and rear removal
PSU1.1KW-ACPI=	1100W AC Port Side Intake
CAB-C13-C14-AC=	Power cord, C13 to C14 (recessed receptacle), 10A

Physical characteristics

Table 3. Physical characteristics

Specification	Description
CQ211L01-48H8FH	Operating temperature: 32° to 104°F (0° to 40°C) Nonoperating temperature: -40° to 158°F (-40° to 70°C) Humidity: 5% to 95% (noncondensing) Altitude: 0 to 6000 ft (0 to 1800 m)
CPU	Intel® Broadwell 4-core 2.4-GHz CPU
Memory	32-GB DDR4 DIMM (2x 16 GB)
Storage	M.2 SSD (240 GB)
Fans	6x 40 mm, 5+1 redundancy
PSU	2x 1100W, 1+1 redundancy, AC-PI, HV-PI
System power	Max: 1050W, type: 564W
Optics power max	12W QSFP-DD, 2.5W DSFP
Depth	23.62 in. (600 mm)
Width	17.3 in. (439.4 mm)
Height	1RU 1.75 in. (44.45 mm)
Weight	28.5 lb. (12.7 kg)

Compliance

Table 4. Compliance

Specification	Description
Regulatory compliance	Complies with CE Markings according to directives 2004/108/EC and 2006/95/EC
Safety	IEC 62368-1: 2018 EN-IEC 62368-1:2020+A11:2020 CSA C22.2 No. 62368-1:19 UL 62368-1 3rd edition BS EN IEC 62368-1:2020+A11:202 AS/NZS 62368-1.2022 GB4943
EMC: Emissions	47 CFR Part 15 (CFR 47) Class A AS/NZS CISPR32 Class A CISPR32 Class A EN55032 Class A ICES003 Class A VCCI Class A EN61000-3-2 KS C 9832 Class A CNS 15936 Class A
EMC: Immunity	EN55035/EN55024 CISPR35/CISPR 24 EN300386 EN61000-6-1 EN61000-6-2 KS C 9835
RoHS	The product is RoHS 6 compliant with exceptions for leaded Ball Grid Array (BGA) balls and lead press fit connectors.

Warranty

Service and support

Cisco provides an extensive range of services that can facilitate and expedite your deployment and optimization of the Cisco CQ211L switches. These innovative services are delivered through a unique combination of processes, tools, partners, and experts, with a clear focus on enhancing network performance and increasing operating efficiency.

Cisco Advanced Services use an architecture-led approach to align your network infrastructure with your business objectives, enabling you to achieve long-term value. Additionally, Cisco Smart Net Total Care® service is designed to assist you in resolving mission-critical problems quickly and efficiently by providing direct access to Cisco network experts and award-winning resources. With the Cisco Smart Call Home service, which is included in this service, you can enjoy proactive diagnostics and real-time alerts on your Cisco CQ211L switch. Throughout the entire network lifecycle, Cisco Services offerings help increase investment protection, optimize network operations, support migration operations, and strengthen your IT expertise.

Product sustainability

Information about Cisco's Environmental, Social, and Governance (ESG) initiatives and performance is provided in Cisco's CSR and sustainability reporting.

Table 5. Product sustainability

Sustainability topic		Reference
General	Information on product-material-content laws and regulations	Materials
	Information on electronic waste laws and regulations, including our products, batteries and packaging	WEEE Compliance
	Information on product takeback and reuse program	Cisco Takeback and Reuse Program
	Sustainability inquiries	Contact: csr_inquiries@cisco.com
Material	Product packaging weight and materials	Contact: environment@cisco.com

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Printed in USA C78-4263497-00 03/24