

CS84-128Q1A | Technical Datasheet

Data Center Switch



Overview

The **CS84-128Q1A** switch is purpose-built for HPC (high performance computing), AI, ML application, It is deployed at the spine/leaf layer in the hyperscale datacenter network.

CS84-128Q1A is a 4RU height, 400GbE Ethernet switch with high density 400G/200G/100G ports, up to 102.4Tbps non-blocking switch capacity and complete L2 and L3 features. The CS84-128Q1A switch provides 128 x400GbE QSFP112 ports.

CS84-128Q1A is pre-installed with ONIE (Open Network Installation Environment), supporting open-source SONIC and various commercial NOS.

Application

Artificial Intelligence, Machine Learning, High Performance Computing

Product Features

High Performance

- 128 × QSFP112 400GbE ports supported
- Up to 102.4 Tbps full-duplex switching capacity
- Packet forwarding rate 21000 Mpps
- Latency of 600 nanosecond
- High power efficiency

High Reliability

- Redundant design for power supply and fan
- Software real-time monitoring of system status

OS Compatibility

- Pre-loaded with Open Network Install Environment (ONIE), supporting open-source SONIC and multiple commercial NOS

CS84-128Q1A Data Center Switch Technical Specifications

Hardware Specifications	
Service port	128x 400G QSFP112 (4x112G PAM4)
Service port indication	QSFP112: 1 LED/Port
Switching chip	Broadcom BCM78900 (Tomahawk5)
Switching Capacity	102.4Tbps full-duplex
Packet forwarding rate	21000 Mpps
Management port	1x 10/100/1000Base-T MGMT
	1x USB 2.0 Type A
	1x RJ45 Console
	3x Status LED (Yellow-Green Bi-Color)
CPU	CPU: Intel Ice lake-D 8C16T (D-1734NT)
	2x SODIMM DDR4 16GB (up to 32GB), w/ECC
	240GB M.2 SSD
BMC	Aspeed AST2520
Power source	2+2 redundancy, 1600W CRPS PSU
	AC: 90~264VAC, HVDC: 180V~300VDC
Fan	N+1 redundancy, 5 fan modules
	Airflow: F2B
Typical Power Consumption	2200W
Operating temperature	0°C to 40°C, 5% to 90% RH
Size	440mm x 800mm x 175mm
Weight	~ 45kg

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Software Specifications	
System and Platform Infrastructure Features	<ul style="list-style-type: none"> • Dynamic Port Breakout • DOM Information Display • System Locator LED Support (Beacon) • CMIS 4.0 Optics Support • CoPP (Control Plane Policing) • Transceiver Parameter Tuning • Third-Party Container Management • PDDF and PDK Framework • Maintenance Mode <ul style="list-style-type: none"> ◦ LACP Graceful Shut ◦ BGP Graceful Shut ◦ OSPFv2 Maximum Metrics • Multi-Instance Redis DB • Zero Touch Provisioning (ZTP) • ZTP Provisioning using a USB Drive • Auto Negotiation and Link Training • Forwarding Plane Drop Counters • Time Zone Command Support • Broadcom Debug Tool • Interface Beacon LED • Support Option to Bind the Third-Party Container to the Management VRF • Limiting CPU/Memory/Disk Usage for Third Party Containers • Option to Send Audit Log Messages to Syslog Server • Multi-Site Data Center Interconnect(DCI) • Warm Reboot, Fast Reboot
Layer 2 Features	<ul style="list-style-type: none"> • VLAN • Interface Hold-Down • Static LAG • LACP Graceful Shutdown • LACP Fast Rate and LACP Fallback • LLDP • UDLD • PVST and RPVST+ • STP, MSTP • DHCP snooping • link Tracking

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Software Specifications	
Layer 3 Features	<ul style="list-style-type: none"> • IPv4,IPv6 • IGMP • IPV6 Routing • Virtual Routing and Forwarding • Border Gateway Protocol • Next Hop Group (NHG) Support • IPv4 ARP • OSPFv2 • Route-Maps • Static Routes • Policy-Based Routing • Virtual Router Redundancy Protocol • Network Address Translation • ECMP load Sharing • IP Helper • RPVST, PVST, and MSTP over MC-LAG
ACL and Flow-Based Services	<ul style="list-style-type: none"> • PBR Enhancements for Service Chaining • ACL-based CoPP • ACL DSCP Map/Remarking • ACL Rate Limiting • Control Plane ACL • Policy-based Routing (IPv4 and IPv6) • ACL-based Packet Replication • ACL Consistency Checker
Security Features	<ul style="list-style-type: none"> • RADIUS and TACACS • RADIUS/TACACS Password Obfuscation • NTP Server and NTP Authentication • NTP Prefer Option • LDAP Integration • AAA Authorization support with TACACS+
Manageability Features	<ul style="list-style-type: none"> • Industry Standard CLI (IS-CLI) • REST and gNMI Interfaces via OpenConfig YANG (OC-YANG) • Role-Based Access Control (RBAC) • RBAC and HAMd Enhancements • SNMP Configuration Traps and OIDs • gNMI Subscription Support for Limited YANG Paths (OnChange, Interval, Once, Poll, Target defined) • Bulking support in both REST(YANG patch) and gNMI • Query parameter for REST and filtering support for gNMI • Scalar encoding support for gNMI • Support to Read Service Tag via SNMP • SNMP Trap Enablement on Interface Instead of Global

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Software Specifications	
Debuggability/ Serviceability features	<ul style="list-style-type: none">• In-memory Debug Logging• Audit Logging and Syslogs• Command to Return Interfaces to the Default Configuration• Port Mirroring on Port Channel and VLAN
QoS	<ul style="list-style-type: none">• Flow-Based QoS• Scheduler Policy• Port Shaping• Qos Maps• Control Plane Policing• Priority Flow Control• Storm Control• Buffer Management
Telemetry	<ul style="list-style-type: none">• sFlow• GRPC• Inband Flow Analytics• Packet Drop Monitoring

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