Cisco Nexus 9232E Switch

Contents

A compact 1RU 32-port 800G switch

Product overview

The Cisco Nexus 9232E Switch introduces the first switch with 800 Gigabit ports to the Cisco Nexus 9000 Series portfolio. This switch offers 32 QSFP-DD800 ports in 1RU that can support 2x400G, 8x 100G, 4x 25G, and 4x 10G Ethernet interfaces.

Data centers continue to evolve to support next-generation applications such as machine learning that drive massive bandwidth growth in intra data center traffic. To support this growth, data center operators require compact, high-capacity, high-speed, and highly efficient switches.

The Cisco Nexus 9232E Switch is built with a power-efficient, high-performance, and high-capacity ASIC that supports dynamic flow let load balancing, fully shared on-die packet buffering, and line-rate performance for small packets. The ASIC provides these capabilities, without compromising on features and power efficiency, that enable the Cisco Nexus 9232E Switch to be optimized for supporting high-bandwidth applications across data centers of varying sizes and scale.

Furthermore, these capabilities provided by the high-performance, power-efficient ASIC are complemented with the robust functionality of Cisco NX-OS software and the extensive visibility provided by Cisco Nexus Dashboard.

This makes the Cisco Nexus 9232E Switch an ideal compact, high-port-density, high-capacity data center spine that supports high-speed connectivity for massively scaled out fabrics. The ability to also support lower-speed ports in breakout mode makes the Cisco Nexus 9232E a compelling high-port-density leaf switch as well.

Figure 1.
Cisco Nexus 9232E 32-port 800G Switch

Table 1. Cisco Nexus 9232E Switch specifications

Features	Specifications
Switch capacity	25.6Tbps
Number of ports	32 QSFP-DD800 ports
Breakout options	2x 400G or 8x 100G/50G/25G/10G or 4x 100G/40G
CPU complex	4-core, 32GB DRAM, 128GB SSB
Management port	1x 1G port and 1x 10G port
Console port	1x RS232
USB	1x USB 3.0 port
Timing ports	1x time of day 1x 1PPS 1x 10MHz
Number of fan trays	6
Power supplies	2,000W AC/DC (port-side intake)
Dimensions (H x W x D)	1.73 x 17.3 x 23.6 in (4.4 x 43.9 x 600 cm)
Operating temperature	32 to 104F (0 to 40C)
Non-operating temperature	-40 to 158°F (-40 to 70°C)
Humidity	5% to 95% (noncondensing)
Altitude	0 to 9,842 ft. (0 to 3000 m) For every 300 m (1000 ft) elevation, the operating temperature is reduced by 1C.

Prominent feature

Compact high-density 400GE connectivity

The Cisco Nexus 9232E Switch is the most compact 25.6Tbps switch and can also provide up to 64 line rate 400GE ports in a 1RU fixed chassis. This allows data center operators to build scaled out fabrics without compromising on high-speed port density and rack space need for spine switches. Furthermore, the total capacity and high 400G port density make the Cisco Nexus 9232E an ideal spine switch for multi-tier data center fabrics.

Flexibility and Backwards Compatibility

The Cisco Nexus 9232E switch supports 32 QSFP-DD800 ports. These ports are compatible with appropriate QSFP-DD (400G), QSFP28 (100G), and QSFP+(40G) transceivers. This enables the Cisco Nexus 9232E switch to be gracefully deployed into data center fabrics that are already deployed with 400G or 100G fabric speeds.

Buffering

The Cisco Nexus 9232E Switch supports a fully shared buffer memory architecture that allows the switch to absorb bursts up to the available shared memory size. This shared memory architecture also improves power efficiency by minimizing the number of read/write operations to just one of each.

Timing and synchronization

The Cisco Nexus 9232E Switch supports IEEE 1588 PTP and Synchronous Ethernet with Class C accuracy.

Power and fan redundancy

The Cisco Nexus 9232E Switch supports high-efficiency hot-swappable AC, DC, or high voltage AC/DC power supplies that provide 1 + 1 power supply redundancy. The switch also supports six hot-swappable variable speed fan trays.

Licensing

The Cisco Nexus 9232E Switch would use the XF2 tier Cisco Data Center Network (Cisco DCN) Premier, Advantage, and Essentials subscription licenses.

Product sustainability

Information about Cisco's environmental, social, and governance (ESG) initiatives and performance is provided in Cisco's CSR and sustainability reporting.

Table 2. Cisco environmental sustainability information

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

Product specifications

Table 3. Cisco Nexus 9232E Switch specifications

Description	Specification
Number of ports	32 QSFP-DD800 ports
Processor	Intel Broadwell-DE NS 4-core 2.4GHz
DRAM	32GB
SSD	128GB

Description	Specification
Console	1x RS232
Management Port	1x 1GE 1x 10GE
USB Port	1x USB 3.0
Power Supply	2x 2,000W AC and DC
Airflow	Port-side intake
Operating Temperature	32 to 104°F (0 to 40°C)
Non-operating Temperature	-40 to 158°F (-40 to 70°C)
Humidity	5% to 95% non-condensing
Altitude	0 to 9,842 ft. (0 to 3,000m)
Weight	25 lb (11.34 kg)
Dimensions	(H) 1.73” H x (W) 17.3”x (D) 23.62” 43.95mm x 439.42mm x 600mm
Height	1 RU

Ordering information

Part #	Product description
N9K-C9232E-B1	Cisco Nexus 9232E 32-port QSFP-DD800 800G Switch

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