

Data Center Switch NX-9530S-32CQ



OVERVIEW

The NX-9530S-32CQ is a spine switch which provides robust, dependable, and secure Layer 2/Layer 3 switching services, making it appropriate for midsize data centers and cloud computing services.

The NX-9530S-32CQ is designed for medium and large-scale data centers, as well as cloud computing. Low-latency, zero packet loss, non-blocking lossless Ethernet is featured in this compact 1U ToR High-Density switch with 32 full line-rate 40G/100G uplink ports. The switch has a number of characteristics that improve data center network flexibility, efficiency, and reliability, including an industry-leading chip and redundant host ports.

FEATURES HIGHLIGHTS

- › VXLAN Scales Data Center Capacity
- › Low-latency, Zero Packet Loss with PFC/ECN
- › M-LAG, GR and BFD Enhance Reliability
- › CLI/ SNMPv1/v2c/v3/Telnet
- › 1+1 Redundant Power Supply
- › IPv4/IPv6 Dual-Stack Multi-Layer Switching
- › 32 full line-rate 40G/100G uplink ports
- › Static routing, RIPvng, OSPFv3, and BGP4+
- › Highly reliable for hot patches, power and fan redundancy support



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PRODUCT FEATURES

IPv4/IPv6 Dual-Stack Multi-Layer Switching

The switch NX-9530S-32CQ enables line-rate IPv4/IPv6 dual-stack multi-layer switching, as well as distinguishing and processing IPv4 and IPv6 protocol packets. Manually setup tunnels, automated tunnels, ISATAP tunnels, and other tunneling technologies are all supported by the switch.

The switch offers adaptable IPv6 inter-network communication options that may be implemented based on the IPv6 network's requirements and current state.

Static routing, RIP, OSPF, IS-IS, and BGP4 are among the IPv4 routing protocols supported by the switch, which may be selected flexibly depending on the network environment. The switch also supports a variety of IPv6 routing protocols, including static routing, RIPng, OSPFv3, and BGP4+, which may be used to upgrade an existing network to IPv6 or to build a new IPv6 network.

Flexible and Comprehensive Security Policies

Multiple security measures on the switch NX-9530S-32CQ efficiently guard against and regulate virus floods and hacker assaults. Anti-DoS protection, ARP packet validity checks on ports, and various hardware-based ACL settings are among these characteristics.

NX-9530S-32CQ supports hardware-based IPv6 ACLs, which may easily limit IPv6 users' access to edge devices. It lets IPv4 and IPv6 users to coexist on the network and may govern IPv6 user access rights, such as preventing access to critical network resources.

Telnet access control based on source IP addresses is also supported. The security is improved by preventing unauthorized users or hackers from assaulting or manipulating it. Secure Shell (SSH) and SNMPv3 are also included in the switch to encrypt management information in Telnet and SNMP procedures, assuring the security of management device information and preventing hackers from conducting attacks or managing devices.

Multi-element binding, port security, time ACL, and bandwidth limit depending on data flow are some of the features with which NX-9530S-32CQ significantly improves access security and is ideal for big networks.

Lossless Ethernet (RDMA Based)

The switch increases service forwarding performance by using low-delay lossless Ethernet forwarding based on Remote Direct Memory Access (RDMA). It lowers the overall network's operation cost per bit and improves the competitiveness of service offerings.

Data Center Virtualization

To provide unified network administration, minimize network nodes, for network stability, the switch uses industry-leading stacking technology. To ensure smooth operation for critical applications, the failover time for connection failure is 50 to 200ms. This cross-device link aggregation allows access to servers or switches to achieve active-active uplinks.



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Advanced Management

The switch has a number of management interfaces, including Console, MGMT, and USB. SNMP v1/v2c/v3, a global network management platform, and BMC are also supported by the switch. The switch supports Command Line Interface (CLI), Telnet, and cluster administration, simplifying device management and enhancing network security with encryption options including SSH2.0 and SSL. SPAN/RSPAN mirroring and multiple mirroring observation ports are supported by the switch, providing users with excellent visibility and transparency for easy maintenance. The switch also offers a variety of network traffic statistics to assist customers in optimizing network structure and resource allocation.

Powerful Caching Capacity & Non-Blocking High Performance

The NX-9530S-32CQ is a line-rate switch designed to power data centers and cloud computing of the future. It satisfies the criteria for a spine-and-leaf network. It has 32 100G ports, all of which can transmit data at the line rate. To optimize the device's cache capabilities, the switch uses a complex cache scheduling technique, providing totally non-blocking transmission.

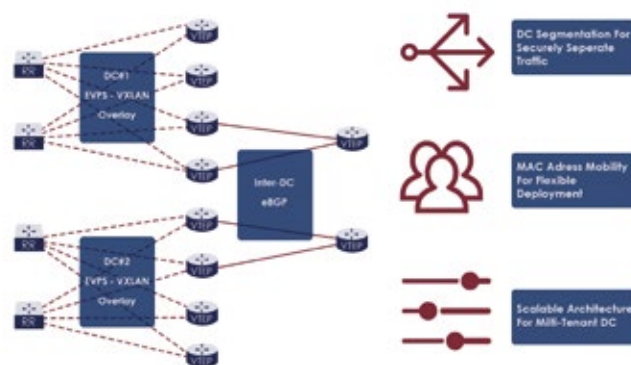
Carrier-Class Reliability Protection

Built-in redundant power modules and modularized fan components are supported by the switch NX-9530S-32CQ. To ensure uninterrupted switching operation, all power and fan modules are hot-pluggable. For the power and fan modules, the switch also offers failure detection and automated alerts. The fans' rotation speed changes to the ambient temperature automatically. With over-current, over-voltage, and overheating safety mechanisms, the switch also provides device- and link-level reliability protection.

Graceful Restart (GR) and Bidirectional Forwarding (BFD) techniques are also supported by the switch NX-9530S-32CQ. All of these characteristics ensure that the network convergence time remains unaltered even when the network is overburdened with services and traffic, ensuring normal functioning.

Hardware-Based Traffic Visualization

In a multipath, multinode network, the switch NX-9530S-32CQ is equipped with switch chips that provide end-to-end traffic viewing. The forwarding path and latency of each session may be monitored in a centralized manner in this fashion, resulting in a 10x increase in fault finding efficiency.



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TECHNICAL SPECIFICATIONS

SPECIFICATIONS	NX-9530S-32CQ
Ports	32 40G/100G QSFP28
Modular Power Slots	2
Fan Slots	3
Management Ports	1 console port, 1 MGMT port, 1 USB port
Switching Capacity	6.4Tbps
Packet Forwarding Rate	4.76Mpps
Port Buffer	32MB
SDRAM	8GB
OS	NXOS
MAC Address	Up to 96K
Flash Memory	240G
Latency	<1μs
Number of VLANs	4K
Jumbo Frame	9KB
QinQ	Basic QinQ, Flexible QinQ
Jumbo Frame	9KB
Stackability	Up to 2 Units
MTBF (Hours)	390K
Status Indicators	SYS, PSU, FAN, Link, ACT, QSFP28 Port, Fan Module, Power Supply Module
Remote Management Protocol	SNMP V1/V2C/V3, CLI, Telnet
Input Voltage	90 to 264 V AC, 50-60Hz
Max. Power Consumption	400W
Dimensions (HxWxD)	1.73"x 17.4"x 22" (44x 442x 560mm)
Rack Space	1U
Fan Number	5 (4+1 Redundancy)
Hot-swappable Power Supplies	2 (1+1 Redundancy)



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Airflow	Front-to-Back
Weight	28.2 lbs (12.8kg), with 2 installed PSUs and 5 Fans
Operating Temperature	32°F to 104°F (0°C to 40°C)
Storage Temperature	40°F to 158°F (-40°C to 70°C)
Operating Humidity	10% to 90% (Non-condensing)
Layer 2 Protocols	IEEE802.3ae (10Gbase), IEEE802.3ak, IEEE802.3an, IEEE802.3x, IEEE802.3ad (link aggregation), IEEE802.1p, IEEE802.1Q, IEEE802.1D (STP), IEEE802.1w (RSTP), IEEE802.1s (MSTP), IGMP Snooping, Jumbo Frame (9Kbytes), IEEE802.1ad (QinQ and flexible QinQ), GVRP
Storage Humidity	10% to 90% (Non-condensing)
Layer 3 Protocols (IPv4)	BGP4, OSPFv2, RIPv1, RIPv2, MBGP, LPM routing, Policy-based routing, Route-policy, ECMP, WCMP, VRRP, IGMP v1/v2/v3, DVMRP, PIM-SSM/SM/DM, MSDP
Basic IPv6 Protocols	FTP/TFTP v6, NTP v6, IPv6 MIB support for SNMP, VRRP for IPv6, IPv6 Qos
IPv6 Features	Static routing Equal-cost routing, Policy-based routing, OSPFv3, RIPng, BGP4+, MLDv1/v2, PIM-SMv6, Manual tunnel, Auto tunnel, IPv4 over IPv6 tunnel, ISATAP tunnel
IPv6 Routing Protocols	ND, ICMPv6, Path MTU Discovery, DNSv6, DHCPv6, ICMPv6, ICMPv6 redirection, ACLv6, TCP/UDP for IPv6, SNMP v6, Ping /Traceroute v6, IPv6 RADIUS, Telnet/SSH v6
Stacking	Stacking technology for virtualizing 2 devices into 1
Data Center Features	PFC, ECN, RDMA, VXLAN routing, VXLAN bridging, BGP-EVPN VXLAN
Visualization	Support gRPC communication protocol, Support sFlow sampling
Reliability	GR for RIP/OSPF/BGP, BFD detection, 1+1 power redundancy, 4+1 fan redundancy, Hot-swappable fans and power modules
Other Protocols	DHCP Client, DHCP Relay, DHCP Server, DNS Client, ARP Proxy, Syslog
QoS	EXP priority mapping based on 802.1p, DSCP, TOS and IP Precedence; ACL traffic classification; Priority marking/remarking; Multiple queue scheduling mechanisms, such as SP, WRR, DRR, SP+WRR, and SP+DRR
Security	Network Foundation Protection Policy (NFPP), CPU Protection (CPP), DoS protection, Detection of unauthorized data packets, Data encryption, RADIUS / TACACS+, IPv4 / IPv6 ACL packet filtering based on standard or extended VLANs, Plaintext authentication and MD5 cipher-text authentication of OSPF, RIPv2, and BGPv4 packets, Telnet login through limited IP addresses and the password mechanism, u-RPF, Broadcast packet suppression, DHCP snooping, Anti-gateway ARP spoofing, ARP check

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Manageability	SNMP v1/v2c/v3; Telnet; Console; Hardware support RCMi (combo interface for MGMT); RMON; SSHv1/v2; FTP/TFTP for file upload and download management; NTP clock; Syslog; SPAN/RSPAN, Telemetry, VXLAN OAM, VXLAN ping VXLAN tracer, In-band Network Telemetry (INT)
Power Supply	AC input: Rated voltage range: 100V to 240V AC Max. voltage range: 90V to 264V AC Frequency: 50-60Hz Rated current: 7.2A-3.5A

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