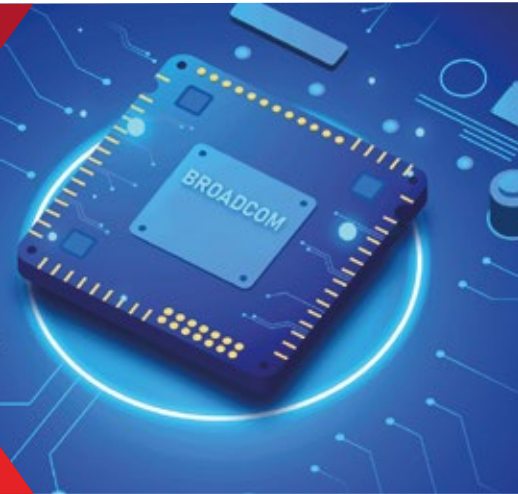


Data Center Switch NX-7510S-48S8CQ



OVERVIEW

The NX-7510S-48S8CQ 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-7510S-48S8CQ 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 48 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

- › Flexible 10/25/40/100GbE Interface Speeds, Support Stacking
- › PFC, ECN, RDMA over Converged Ethernet (RoCE) Support
- › BGPV4/V6, REUP, GR, BFD Support
- › 1+1 Hot-Swappable Power Supplies, 3+1 Smart Fans
- › CLI/Telnet/SNMP/SSH Support
- › Low-latency, Zero Packet Loss with PFC/ECN
- › M-LAG, GR and BFD Enhance Reliability
- › Non-Blocking Performance with Powerful Caching Capacity
- › 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-7510S-48S8CQ 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-7510S-48S8CQ 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-7510S-48S8CQ 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-7510S-48S8CQ significantly improves access security and is ideal for big networks.

Hardware-Based Traffic Visualization

In a multipath, multinode network, the switch NX-7510S-48S8CQ 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.

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. The functionality of cross-device link aggregation allows access to servers or switches to achieve active-active uplinks.



Data Center Switch NX-7510S-48S8CQ

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-7510S-48S8CQ 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 48 100G ports and 8x 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.

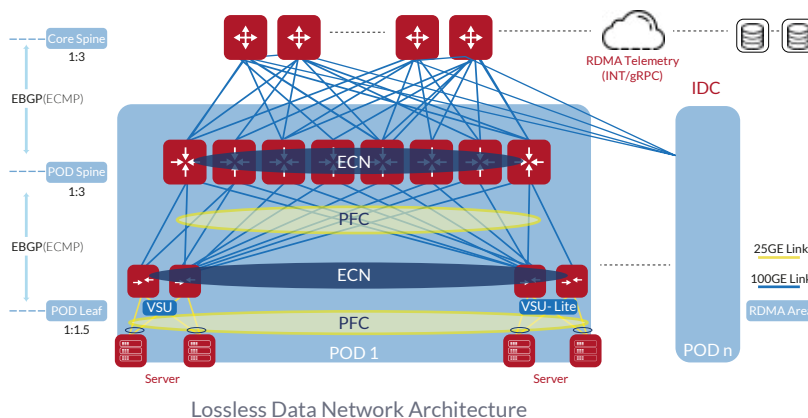
Carrier-Class Reliability Protection

Built-in redundant power modules and modularized fan components are supported by the switch NX-7510S-48S8CQ. 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-7510S-48S8CQ. 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.

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 Switch NX-7510S-48S8CQ



TECHNICAL SPECIFICATIONS

SPECIFICATIONS	NX-7510S-48S8CQ
Ports	48 fixed 25G SFP28 ports, 8 100G QSFP28 ports
Modular Power Slots	2
Fan Slots	3
Management Ports	1 console port, 1 MGMT port, 1 USB 2.0 port
Switching Capacity	4.0Tbps
Packet Forwarding Rate	2000Mpps
Port Buffer	32MB
SDRAM	4GB
ARP Table	Up to 100K
MAC Address	Up to 96K
Routing Table Size (IPv4/IPv6)	Up to 28K
Multicast Entries (IPv4/IPv6)	Up to 16K
ACL Entries	Up to 4.5K
VLAN	4K VLANs, Port-based VLAN, MAC-based VLAN, Super VLAN, Protocol-based VLAN, Private VLAN, IP subnet-based VLAN, GVRP
QinQ	Basic QinQ, Flexible QinQ
Link Aggregation	Support LACP
Port Mirroring	Many-to-one mirroring, One-to-many mirroring, Flow-based mirroring, Over devices mirroring, VLAN-based mirroring, VLAN-filtering mirroring, AP-port mirroring, RSPAN, ERSPAN
Spanning Tree Protocols	IEEE802.1d STP, IEEE802.1w RSTP, Standard 802.1s MSTP, Port fast, BPDU filter, BPDU guard, TC guard, TC protection, Loop guard, Root guard, Spanning Tree Root Guard (STRG)
DHCP	DHCP server, DHCP client, DHCP snooping, DHCP relay, IPv6 DHCP relay
Multiple Spanning Tree Protocol (MSTP) Instances	64 (not include default 0)
Maximum Aggregation Port (AP)	Up to 256
VRF Instances	Up to 2K



Data Center Switch NX-7510S-48S8CQ



TECHNICAL SPECIFICATIONS

SPECIFICATIONS	NX-7510S-48S8CQ
Data Center Unified Network Features	Virtualization: Virtual Switch Unit (VSU), EVPN VXLAN, Open-Flow. Visualization: INT, gRPC, s-FLOW Others: PFC, ECN
VSU (Virtual Switch Unit)	Support (up to 2 stack members)
L2 Features	MAC, ARP, VLAN, Basic QinQ, Felix QinQ, Link aggregation, Mirroring, STP, RSTP, MSTP, Broadcast storm control, IGMP v1/v2/v3 snooping, IGMP filter, IGMP fast leave, MLD snooping, DHCP, Jumbo frame, RLDP, LLDP
Layer 2 Protocols	IEEE802.3 (10BASE-T), IEEE802.3u (100BASE-T), IEEE802.3z (1000BASE-X), IEEE802.3ab (1000BASE-T), IEEE802.3ae (10GBASE-T), IEEE802.3an (10GBASE-T), IEEE802.3ak, IEEE802.3an, IEEE802.3x, IEEE802.3ad (link aggregation), IEEE802.1p, IEEE802.1x, IEEE802.1Q, IEEE802.1D (STP), IEEE802.1w (RSTP), IEEE802.1s (MSTP), IGMP snooping, Jumbo Frame (9Kbytes), IEEE802.1ad (QinQ and flexible QinQ), GVRP
Layer 3 Features	ARP, IPv4/v6, PBRv4/v6
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, Any-RP, ISIS
IPv4 Features	Ping, Traceroute, Equal-cost routing, URPF, IPIP, GRE tunnel, VRF
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
Basic IPv6 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, FTP/TFTP v6, NTP v6, VRRP for IPv6, IS-ISv6
IPv6 Routing Protocols	Static routing, Equal-cost routing, Policy routing, RIPng, OSPFv2/v3, BGP4+, IS-IS
IPv6 Tunnel Features	Manual tunnel, Auto tunnel, 6over4 manual tunnel, 6to4 auto tunnel, ISATAP, IPv4 over IPv6 tunnel, IPv6 over IPv6 tunnel, GRE tunnel
Multicast	IGMP v1/v2/v3, IGMP proxy, MSDP, PIM-DMv4 (PIM-DM), PIM-SMv4 (PIM-SM, PIM-SSM), PIM-SM v6, MLD, MLD Proxy
ACL	Standard/Extended/Expert ACL, Extended MAC ACL, ACL 80, IPv6 ACL
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
Reliability	VSU , GR for OSPF/IS-IS/BGP; BFD detection; REUP dual-link fast switching technology, RLDP (Rapid Link Detection Protocol); 1+1 power redundancy; 2+1 fan redundancy; Hot-swappable line cards and power modules, Dynamic ARP Inspection(DAI), De-Stacking



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TECHNICAL SPECIFICATIONS

SPECIFICATIONS	NX-7510S-48S8CQ
Security	NFPP, CPU Protection, DoS protection, Detection of unauthorized data packets, Data encryption, IP source guard; RADIUS / TACACS+; IPv4 / IPv6 ACL packet filtering ; 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, DHCP Option 82.; Anti-gate-way ARP spoofing; ARP check
Manageability	SNMP v1/v2c/v3; Telnet; Console; Hardware support RCM1 (combo interface for MGMT); RMON; SSHv1/v2; FTP/TFTP for file upload and download management; NTP clock; Syslog; SPAN/RSPAN
Hot Patch	Stacking technology for virtualizing 2 devices into 1
Smart Temperature Control	Auto fan speed adjustment; Fan malfunction alerts; Fan status check
Smart Power Supply	Support power monitor
Other Protocols	DHCP client, DHCP relay, DHCP server, DNS client, UDP relay, ARP proxy, Syslog
Dimensions (W x D x H) (mm)	442 * 387 * 44
Rack Height	1RU
Weight	8kg (incl. 4 fan modules and 2 power supply modules)
MTBF	>300K hours
Safety Standards	EN 60950-1, GB4943-2011
Emission Standards	GB9254-2008 CLASSA, VCCI Class A, EN 300 386, EN 55032, EN 61000-3-2, EN 61000-3-3, EN 55035, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11
Power Supply	AC input: Rated voltage range: 100V to 240V AC - Frequency: 50-60Hz - Rated current: 7.2A - 3.5A HVDC input: Input voltage range: 192V to 288V DC Input current range: 3.6A
Power Consumption	<300W
Temperature	Operating temperature: 0°C to 45°C - Storage temperature: -40°C to 70°C
Humidity	Operating humidity: 10% to 90%RH
Operating Altitude	-500—5000 m

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