NSS7816-32QE 400G Data Center Switch Datasheet

Product Overview

NSS7816-32QE is a new generation 400G VxLAN spine switch designed for enterprise data center and campus LAN networks, providing high-throughput, high-density full 100/200/400GE interfaces, larger buffer and lower latency. By using Maipu MyPowerOS software platform, NSS7816-32QE provide rich data center service features and management capability.

NSS7816-32QE realize large buffer of the interfaces, meeting the burst flow forwarding without packet loss; provide the M-LAG technology for virtualization scenarios; provide the modular power and fan design for high reliability. The key components adopt "overvoltage" designs to ensure that the product has the strong ability of continuous operation.

NSS7816-32QE adopts advanced hardware architecture with up to 32*400GE ports. It can work together with NSS5830/5930 VxLAN leaf switches to build a complete, scalable, virtualized fabric network that meets the data center requirements. Meanwhile, NSS7816-32QE can also be deployed as aggregation or core switches for enterprise campus LAN networks.

NSS7816-32QE supports 32*Port QSFP112 400G interfaces, 6*Fan slots, 2*Power slots.

NSS7816-32QE 400G Data Center Switch

Key Features

- **High-density 400G ports**

The NSS7816-32QE adopts advanced hardware architecture with full 32*400G interfaces in compact 1U device. The port combination fully satisfies the interface density requirement of data center scenarios. NSS7816-32QE can work with NSS5830/NSS5930 leaf switches to build a non-blocking network architecture.

- **M-LAG for cross-device link aggregation**

The NSS7816-32QE supports multi-chassis link aggregation group (M-LAG), which enables links of multiple switches to aggregate into one to implement cross-device link backup. The rest of switches in the M-LAG group are working actively regardless any switch failure. During the upgrade, other switches in the system take over traffic forwarding to ensure uninterrupted services.

- **VxLAN for Layer2/3 Virtualized Deployment**

The NSS7816-32QE can work with the industry's mainstream virtualization platforms and acts a hardware gateway on an VxLAN overlay network. Virtual extensible LANs (VxLAN), a common network virtualization overlay protocol that expands the layer 2 network address space from 4,000 to 16 million. NSS7830-09C supports BGP-EVPN, which is used as the overlay control plane and provides virtual connectivity between different layer 2/3 domains over an IP or MPLS network.

- **RoCEv2 Lossless Ethernet Technology**

The NSS7816-32QE supports lossless Ethernet (RoCEv2) features such as Priority-based Flow Control (PFC) and Explicit Congestion Notification (ECN) control algorithms which can avoid packet loss and message retransmission that may occur in traditional Ethernet protocols when encountering network congestion, reduce network latency and jitter, and thus achieve higher performance and lower latency.

- **Telemetry for intelligent OAM**

The NSS7816-32QE provides telemetry technology to collect device data in real time and send the management data to customer network analyzer platform. Telemetry systems, done properly, play an important role in providing you with information about the health of your network, so you can respond intelligently to prevent hardware failure and network downtime. It can help customers to identify and analyze network problems which affect user experience.

- **Netconf & Restfonf API Integration**

The NSS7816-32QE supports NETCONF and Restconf API and can work with 3rd party SDN controller for simplified device remote configuration.

- **Reliable hardware design and energy-saving**

The NSS7816-32QE uses a standard airflow design which isolates cold air channels from hot air channels. This design improves heat dissipation efficiency and meets design requirements of data center. It adopts hot swap redundant power modules and fans which ensure hardware reliability and non-stopping operation. The fan speed can be adjusted dynamically based on system workload.

- **Free Licensing Policy**

Maipu always insists on "One-time investment" free license policy, the standard features and advanced features will be never divided to different version. For any new firmware version, Maipu will share to customers without extra charge. Compared with other manufacturers, Maipu free license policy can better protect users' short-term and long-term investment.

Technical Specifications

Product Model	NSS7816-32QE	
Hardware specification		
Interfaces	32*400G QSFP112 Interfaces	
Power Supply Slots	2	
FAN Module Slots	6	
Management interface	One Console port, One management Ethernet port, One USB interface	
Switching capacity	25.6Tbps	
Power Supply	Input voltage (AC): 100V ~ 240V, 50Hz ~ 60Hz	
Temperature	Work temperature: 0℃ to 50℃	
	Storage temperature: -40℃ to 70℃	
Humidity	Work humidity: 10% to 90%, no-condensing	
	Storage humidity: 5% to 95%, no-condensing	
Dimension(W*D*H)	442mm*560mm*44.2mm	
MTBF	>100, 000 hours	
Software specification		
Standard L2 protocol	Interface	Port Type UNI/NNI, Port Speed, Port MTU, Port Loopback, Loopback interface, Tunnel interface, Null interface, VXLAN interface
	Ethernet Switching	LACP Link aggregation, LACP Port Priority, LACP Load Balance, LACP Rate Monitor, LACP Debug, Port isolation, QinQ, VLAN mapping, Super VLAN, PVLAN, Voice VLAN, STP, MSTP, Loopback-detection, Error-disable, GVRP, MLAG, MLAG Lite, VLAN isolation
Standard L3 protocol	IP Protocol	ARP, DHCP, DHCPv6, DHCP Server, DHCPv6 Server, DHCPv6 Client, DHCP Relay, DHCPv6 Relay, DHCP Option82, DNS, GRE, IPIP, IPv6 over IPv4, ISATAP, IPv4 over IPv6, IPv6 over IPv6
	Routing Protocol	Static route for IPv4&IPv6, RIPv1/v2, RIPng, OSPFv2, OSPFv3, IS-IS, IS-ISv6, BGP, BGPv6, Policy Route, MP-BGP
Multicast	L2 multicast	IGMP Snooping, IGMP Snooping over VxLAN, multicast VLAN (MVR, MVP), MLD Snooping, Router-alert Option
	L3 multicast	IGMPv1/v2/v3, MLDv1/v2, PIM-SM, PIM-DM, PIM-SSM, IPv6 PIM-SM, IPv6 PIM-SSM, MSDP, IGMP Group Filter, MLD Group Filter
QoS & ACL	QoS	802.1p, DSCP, Priority Mapping, SP, WRR, WDRR, SP+WRR, SP+WDRR, WRED, Flow classification, Traffic monitoring, Traffic shaping, Congestion management, Congestion avoidance, Flow-based mirroring
	ACL	Standard IP ACL, extended IP ACL, standard MAC ACL, extended MAC ACL, extended Hybrid ACL, Standard IPv6 ACL, extended IPv6 ACL
Data center feature	VxLAN	VXLAN, EVPN
	Lossless Ethernet	ECN, ETS, PFC, etc.
MPLS	BGP MPLS	MPLS LDP, MPLS GR, M-VRF, MPLS L3VPN, MPLS OAM, IPv6 MPLS L3VPN
Virtualization	Stacking	H-VST, M-VST, M-LAG
	MAD	MAD LACP, MAD BFD, MAD Fast-hello
Security & Network Reliability	Security	ARP Check, AARF, AARF ARP-Guard, CPU Protection, Port Security, IP Source Guard, IPv6 Source Guard, ND-Snooping, DHCP Snooping, DHCPv6 Snooping, Dynamic ARP Inspection, AARF, Host Guard, PPPoE+, AAA, 802.1x, Portal Authentication, Anti-attack detect|drop|flood|log, URPF
	Network Reliability	HA, ULFD, ERPS, ULPP, Monitor Link, VRRP, VRRPv3, VBRP, BFD, EEP

NSS7816-32QE 400G Data Center Switch Datasheet

Management	Network Management	SNMP v1/v2/v3, MIB, RMON, SYSLOG, DNS, CLI, Telnet, FTP/TFTP, Debug, NTP, Keepalive, Openflow
	Network Monitoring	SPAN, RSPAN, ERSPAN, VLAN SPAN, IPFIX, sFlow, LLDP, IP-SLA, CWMP, Telemetry, Netconf, BSM, MOD

Order Information

Product model	Description
NSS7816-32QE Series Host	
NSS7816-32QE	32*400G QSFP112 Interfaces, 6*Fan slots, 2*Power slots
Power Modules	
AD1300M-HV1B	CPRS AC Power Supply, AC input 100-127V/12A, output 12V/1000W or AC input 200-240V/8A, output 12V/1300W, current sharing, supporting hot-swap, Air front in rear out. (Note: Need work together with FAN-01K-01B)
AD1300M-HV0F	CPRS AC Power Supply, AC input 100-127V/12A, output 12V/1000W or AC input 200-240V/8A, output 12V/1300W, current sharing, supporting hot-swap, Air rear in front out. (Note: Need work together with FAN-01K-01F)
DD1300M-5V1B	CPRS DC Power Supply, DC input 40-72V/40-22A, output 12V/106A current sharing, supporting hot-swap, Air front in rear out. (Note: Need work together with FAN-01K-01B)
DD1300M-5V0F	CPRS DC Power Supply, DC input 40-72V/40-22A, output 12V/106A current sharing, supporting hot-swap, Air rear in front out. (Note: Need work together with FAN-01K-01F)
FAN Modules	
FAN-01K-01B	FAN-01K-01B FAN Module, Hot-swappable, Air front in rear out
FAN-01K-01F	FAN-01K-01F FAN Module, Hot-swappable, Air rear in front out
Fiber Transceivers	
SFP-M1-L192P8	10G SFP+, 850nm, 300m, LC, DDM, Multi-Mode
SFP-S1-L192P3	10G SFP+, 1310nm, 10km, LC, DDM, Single-Mode
SFP-S4-L192P5	10G SFP+, 1550nm, 40km, LC, DDM, Single-Mode
SFP-S8-L192P5	10G SFP+, 1550nm, 80km, LC, DDM, Single-Mode
SFP-XGEA	10G BASE-T RJ45, 30m
SFP28-M1-L480C8D	25G SFP28, 850nm, 100m, LC, DDM, Multi-Mode
SFP28-S1-L480C3D	25G SFP28, 1310nm, 10km, LC, DDM, Single-Mode
QSFP28-M1-M1920C8D	100Gbps QSFP28, 850nm, 100m, MPO, DDM, Multi-Mode
QSFP28-M1-100G-LD3-S	100Gbps QSFP28, 1310nm, 100m, LC, DDM, Multi-Mode
QSFP28-S1-L1920C3D	100Gbps QSFP28, 1310nm, 10Km, LC, DDM, Single-Mode
QSFP28-S4-100G-LD7	100Gbps QSFP28, 1550nm, 40km, LC, DDM, Single-Mode
QSFP56-M1-200G-MD8	200Gbps QSFP56, 850nm, 100m, MPO, DDM, Multi-Mode
QSFP112-M1-400G-MD8	400Gbps QSFP112, 850nm, 50m, MPO12-APC, DDM, Multi-Mode