NSS5950-32QFP Series Data Center Switch Datasheet

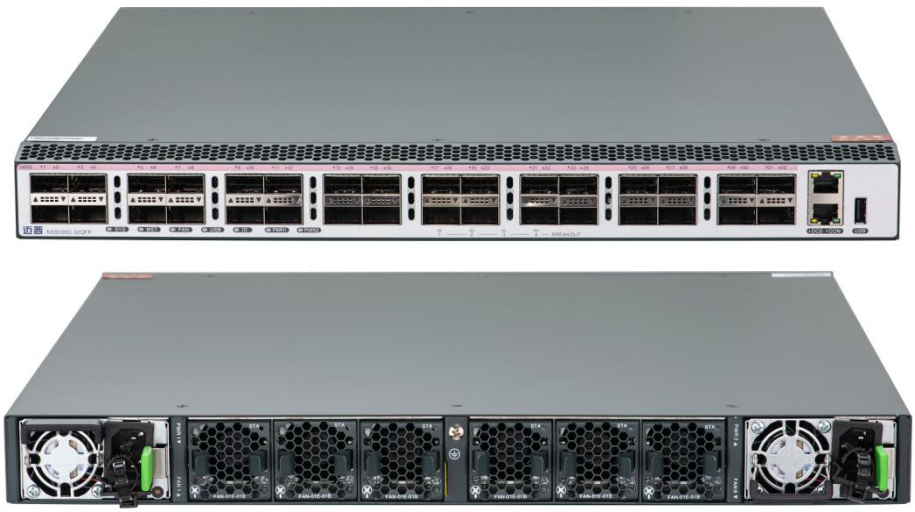
Overview

NSS5950-32QFP is a new generation Full 100G Ethernet switch designed for enterprise data center and campus LAN networks, providing high-throughput, high-density 40/100GE interfaces, larger buffer and lower latency. The NSS5950-32QFP adopts advanced hardware architecture with 32*40/100GE ports. By using Maipu MyPowerOS software platform, NSS5950-32QFP provides rich data center service features and management capability.

NSS5950-32QFP 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.

NSS5950-32QFP can work with NSS18500 core switches to build a complete, scalable, virtualized fabric network that meets the data center requirements. Meanwhile, NSS5950 can also be deployed as aggregation or core switches for enterprise campus LAN networks.

NSS5950-32QFP supports 32*40/100G QSFP28 optical interfaces, six modular fan slots and dual modular power slots.



Key Features

- **High-density 100GE ports**

NSS5950-32QFP provides fixed 32*40/100GE interfaces in compact 1U device. The port combination fully satisfies the interface density requirement of data center scenarios. NSS5950 series have a maximum 32 40/100GE QSFP28 interfaces, which can work with NSS18500 core switches to build a non-blocking network architecture.

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

NSS5950-32QFP support 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 and EVPN for L2 Virtualized Deployment**

NSS5950-32QFP can work with the industry's mainstream virtualization platforms and acts a hardware gateway on a 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. NSS5950-32QFP support BGP-EVPN, which is used as the overlay control plane and provides virtual connectivity between different layer 2/3 domains over an IP network.

- **RoCEv2 Standard Compliance**

NSS5950-32QFP series fully support the RoCEv2 standards, meeting the requirements for switch performance in high-performance data center scenarios. NSS5950-32QFP supports a wide range of lossless Ethernet technologies, including ETS, PFC, ECN, DCBX, etc. This helps create an end-to-end, zero-jitter, low-latency, lossless Ethernet network that meets the demands of cloud computing, big data, artificial intelligence, and high-performance computing deployments in data centers.

- **Southbound and Northbound API**

NSS5950-32QFP supports NETCONF and RESTCONF API which can work with 3rd party SDN controller for simplified device remote configuration and management.

- **Telemetry for intelligent OAM**

NSS5950 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.

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

NSS5950-32QFP use 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. NSS5950-32QFP has energy-saving chipsets with EEE technology and can save system power consumption in real time.

- **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	NSS5950-32QFP	
Hardware Specification		
Physical Ports	32*40/100G QSFP28 optical interfaces, six modular fan slots, dual-modular power.	
Management Interface	One Console port, one management Ethernet port, one USB interface	
Switching Capacity	6.4Tbps	
Flash	8G	
Memory	4G(Default)	
Interface Buffer Size	32M	
Jumbo Frame	12K	
MAC Address Entry	224K/720K	
ARP Entry	56K/106K	
IPv4 Routing Entry	294K/660K	
MSTP Instance	64	
VRF Entry	4K/8K	
VRRP Group	255	
Max. ECMP Path	64	
IGMP Group	8K	
VxLAN VTEP Instance	8K	
EVPN L3 Route Entry	56K	
Redundant Design	Support power redundancy, 1+ 1 backup mode	
Power Supply	Two Power Slots	
	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	
Power Consumption	318W	
Dimension(W×D×H)	442mm×480mm×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, RSTP, MSTP, Loopback-detection, Error-disable, VIST/VISR+, GVRP, MLAG, MLAG Lite, VLAN isolation
Standard L3 Protocol	IP Protocol	ARP, DHCP, DHCPv6, DHCP Server, DHCPv6 Server, DHCPv6 Client,

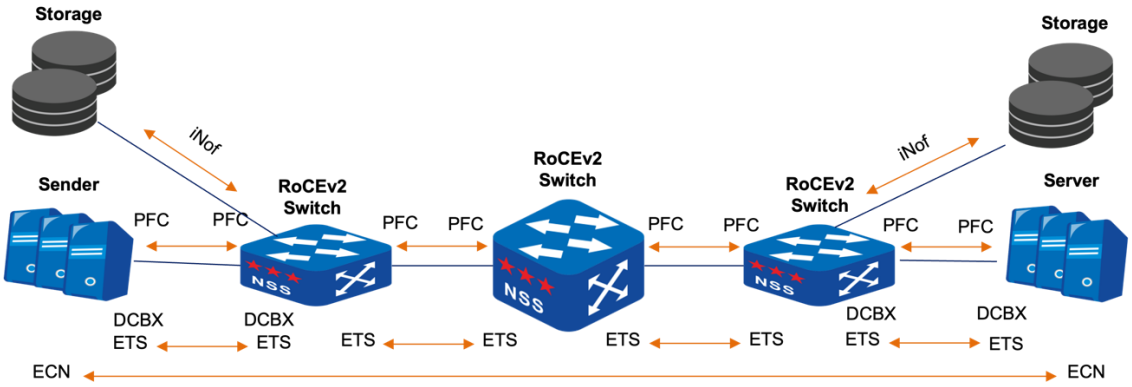
		DHCP Relay, DHCPv6 Relay, DHCP Option82, DNS, GRE, IPIP, IPv6 over IPv4, ISATAP, IPv4 over IPv6, IPv6 over IPv6
	Routing Protocol	Static route for IPv4&IPv6, RIPv1/v2, RIPng, OSPFv2, OSPFv3, IS-IS, IS-ISv6, BGP, BGPv6, Policy Route, MP-BGP
Multicast	L2 Multicast	IGMP Snooping, IGMP Snooping over VxLAN, 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	Basic Feature	TRILL, VXLAN, ESI Multi-Homing, BGP-EVPN, NLB, OpenFlow
	RoCEv2	ECN, ETS, PFC, iNOF, DCBX
MPLS L2/L3 VPN	L3 MPLS VPN	MPLS LDP, MPLS GR, M-VRF, MPLS L3VPN, MPLS OAM, IPv6 MPLS L3VPN, MPLS TE, MPLS QoS
	L2 VPLS VPN	VPWS, Martini/Kompella VPLS
Precision Time Protocol (PTP)	IEEE 1588v2	E2ETC, P2PTC
Virtualization	VST	H-VST, M-VST
	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 (DAI), AARF, Host Guard, P2P MACSec, PPPoE+, 802.1x, Portal Authentication, Anti-attack detect|drop|flood|log, URPF
	AAA	Authentication, Authorization, Accounting, Radius, TACACS+
	Network Reliability	HA, ULFD, ERPS, ULPP, Monitor Link, VRRP, VRRPv3, VBRP, BFD, EEP, CPU protection
Management	Network Management	SNMP v1/v2/v3, MIB, RMON, SYSLOG, DNS, CLI, Telnet, SSH, HTTP/HTTPS, FTP/TFTP, Debug, NTP, Keepalive Gateway
	Network Monitoring	SPAN, RSPAN, ERSPAN, VLAN SPAN, IPFIX, sFlow, LLDP, LLDP-MED, IP-SLA, CWMP, Telemetry, Netconf, Restconf, BSM, MOD, Capture Packet

Order Information

Product Model	Description
NSS5950 Series Host	
NSS5950-32QFP	32*Port 40/100G QSFP28 optical interfaces, six modular fan slots and dual modular power slots
Power & Fan Modules	
AD550M-HV0B	V1 Version: AC input 100-240VAC/7A, 550W, output 12V_45A, current sharing, supporting hot-swap, Air rear out.
AD550M-HV0F	V2 Version: AC input 100-240VAC/7A, 550W, output 12V_45A, current sharing, supporting hot-swap, Air rear in.
DD800M-5V0B	V1 Version: DC input -40-72VDC/25A, 800W, output 12V/64A, current sharing, supporting hot-swap, Air rear out.
FAN-01E-01B	FAN-01E-01B, Modular Fan Slot, Hot-swappable, Air front in rear out
FAN-01E-01F	FAN-01E-01F, Modular Fan Slot, Hot-swappable, Air rear in front out

Typical Application

RoCEv2 Lossless Ethernet Solution for Data Center



RoCEv2 is a network protocol that enables servers in data centers to perform Remote Direct Memory Access (RDMA) directly over Ethernet. RoCEv2 benefits significantly from a lossless Ethernet environment because it relies on high reliability and low latency for performance efficiency. Lossless Ethernet technology ensures that RoCEv2 can deliver its full potential benefits by avoiding the typical challenges associated with standard Ethernet communications.

NSS5950-32QFP fully supports the RoCEv2 standards, meeting the requirements for switch performance in high-performance data center scenarios. NSS5950-32QFP supports a wide range of lossless Ethernet technologies, including ETS, PFC, ECN, DCBX, etc. This helps create an end-to-end, zero-jitter, low-latency, lossless Ethernet network that meets the demands of cloud computing, big data, artificial intelligence, and high-performance computing deployments in data centers.

Maipu values and appreciates comments you may have concerning our products or this document. Please address comments to:

Maipu Communication Technology Co., Ltd
Maipu Mansion，No.16, Jiuxing Avenue
High-tech Park
Chengdu, Sichuan Province
P. R. China
610041
Tel: (86) 28-65544850,
Fax: (86) 28-65544948,
URL: http:// www.maipu.com
Email: overseas@maipu.com