# Maipu NSS5950-32QFP Data Center Switch Datasheet

Product 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 provide 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.
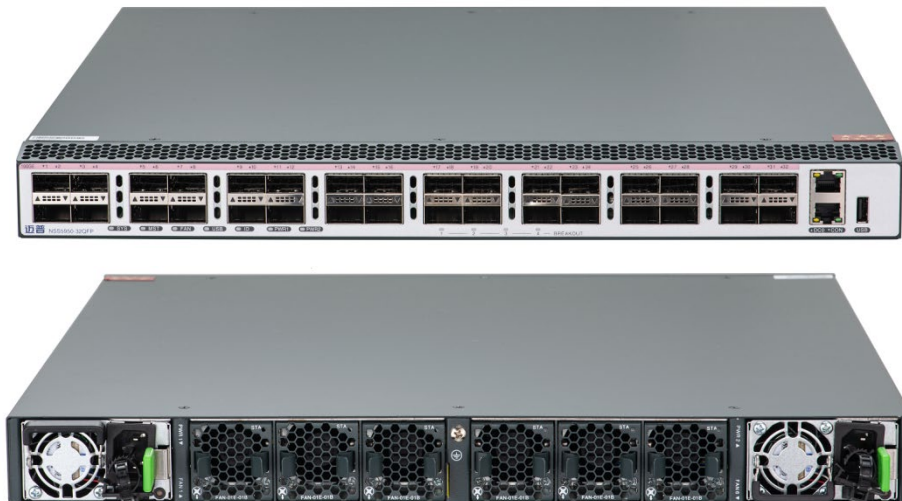
Key Features

- **High-density 100GE ports**

NSS5950-32QFP provide 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 for Layer2 Virtualized Deployment**

NSS5950-32QFP 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.

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 or MPLS network.

- **Zero Touch Implementing**

NSS5950-32QFP support Zero Touch Provisioning (ZTP). It enables the switch to automatically obtain and load version files from file server through DHCP option and XML mechanism.

NSS5950-32QFP also support NETCONF and can work with 3rd party SDN controller for simplified device remote configuration.

- **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 have 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, 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	

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	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	Data center feature	TRILL, VXLAN, BGP-EVPN, NLB, ECN, ETS, PFC, OpenFlow
MPLS	BGP MPLS	MPLS LDP, MPLS GR, M-VRF, MPLS L3VPN, MPLS OAM, IPv6 MPLS L3VPN
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, 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
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, BSM, MOD

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	AC power module, 500W, AC input 100-240V, support hot-swap
DD800M-5V0B	DC power module, 800W, DC input -40-72V, supporting hot-swap
FAN-01E-01B	FAN-01E-01B Fan module, support hot-swap

Typical Application

Enterprise Data Center VXLAN Application
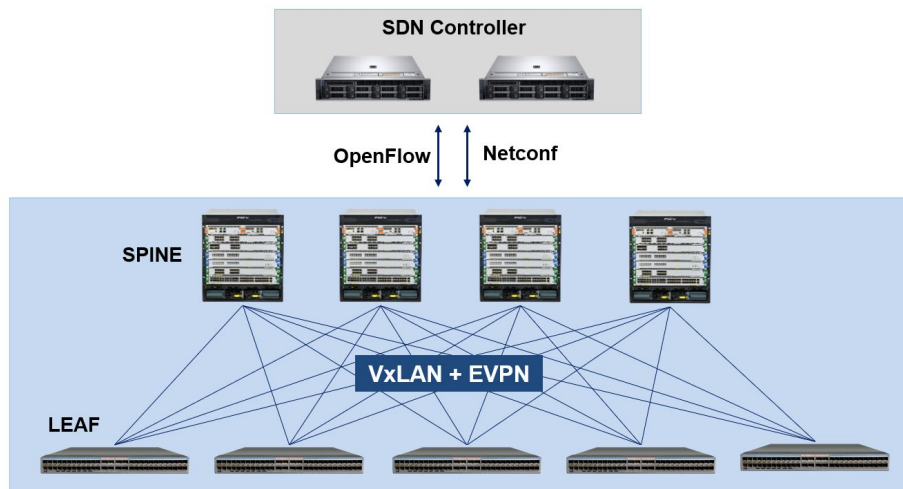
Fabric architecture has become a common and popular design option for building new-generation enterprise data center networks. Virtual Extensible LAN (VXLAN) and Ethernet VPN (EVPN) is essentially becoming the standard technology used for deploying network virtualization overlays in data center fabrics. NSS5950-32QFP switch support VxLAN and EVPN which is suitable to deploy in data center application.

ISP Metro Ethernet Network Application
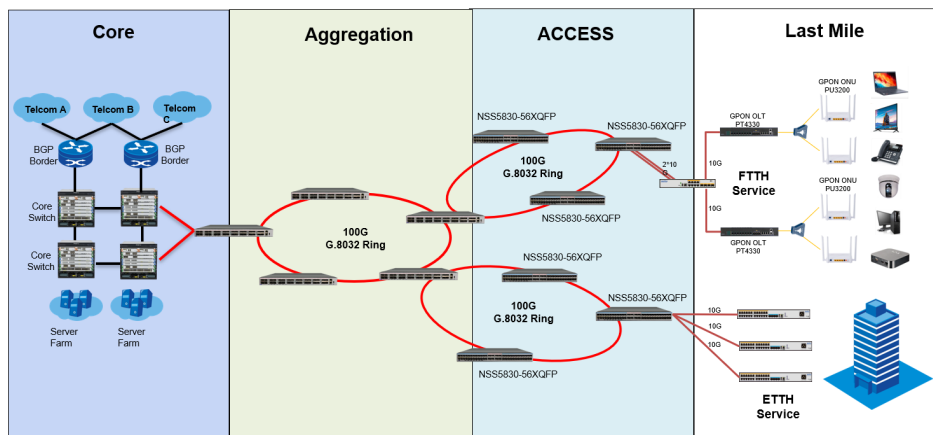
With the rapid growth of triple-play services, higher requirements are put forward for the performance, bandwidth and quality of the ISP Metro Ethernet networks. The NSS5950-32QFP 100G switch have been developed to meet the increasing demand of FTTx services for ISPs. The NSS5950-32QFP provide up to 32-Port 100G interfaces for building backbone network. It will greatly increase the bandwidth and improve the internet experience of end users.

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