Maipu NSS5950-04C Data Center Switch Datasheet

Overview

The NSS5950-04C data center flexible modular switch is a next-generation Ethernet switching product developed by Maipu for next-generation data centers, featuring high performance, business flexibility, and low latency.

The NSS5950-04C offers ultra-high density and space-saving design, providing various port speeds such as 1G/10G/25G/40G/100G, and supports a rich set of data center features, meeting the demands for high-performance forwarding. Its modular card design is flexible and adaptable, offering exceptional versatility across multiple scenarios, including integrated access, interconnection gateway, dedicated line access, data center aggregation and core, storage-integrated devices, among others. It can also cater to next-generation campus networks with high-density access, aggregation, core, and simplified network deployment requirements.

The NSS5950-04C provides comprehensive, secure, controllable, stable, and reliable high-performance switching services, covering everything from chip design to hardware and software. It is well-suited for industries such as finance, government, telecommunications, energy, transportation, education, healthcare, and more.

NSS5950-04C

Key Features

- ## Flexible Port Combination for Easy Expansion

The NSS5950-04C data center flexible modular switch supports high-density 1G/10G/25G/40G/100G ports and allows flexible combinations of various port types. The device can support up to 100*10G/25G ports, 64*40G ports, or 32*100G ports. This meets the high-speed interconnection demands of data centers, eliminates bandwidth bottlenecks, and supports network upgrades for the next 3 to 5 years.

- ## Simplified and Flexible Network Deployment to Reduce Complexity

The NSS5950-04C enables easy deployment based on high-density access points and supports simplified network architecture, greatly enhancing access and aggregation capabilities while reducing the number of network layers and devices. This brings unprecedented convenience and efficiency to campus networks. Its high-performance and high-density features make it an ideal choice for aggregation and core layers in data centers, enabling box-to-box network architectures. Compared to traditional modular switch solutions, it significantly reduces network complexity and latency in data centers.

- ## Supports RoCE for Building Zero-Jitter, Low-Latency Networks

The NSS5950-04C core data center switch supports lossless Ethernet DCB (Data Center Bridging) technology, addressing packet loss issues due to congestion in traditional Ethernet networks. It provides a lossless, low-latency, and high-throughput network environment for RoCEv2 applications, meeting high-performance demands. Based on ECN (Explicit Congestion Notification), which is a congestion control technology, and using ETS (Enhanced Transmission Selection) for two-level scheduling, it controls the total data entering the network to prevent congestion. Combined with RoCE NICs, it enables end-to-end RoCE, increasing data transmission throughput, reducing network latency, and lowering CPU load. 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.

- ## Integration and Openness with Exceptional Adaptability

The NSS5950-04C offers exceptional adaptability for both data center and campus network scenarios.

In campus networks, it provides high-density interface access capabilities, delivering unmatched convenience and efficiency. In interconnection and dedicated line hubs, it offers a wide range of port options from 1GE to 100GE, ensuring smooth data traffic at high volumes. In integrated access zones, it efficiently supports seamless integration for security devices and various systems. In data centers, it provides robust performance for both aggregation and core layers, offering continuous power for network demands.

The NSS5950-04C is also highly open, seamlessly integrating into various converged infrastructure scenarios (storage/database/hyper-converged systems). It supports open platforms like ONIE (Open Network Install Environment) and Sonic (Software for Open Networking in the Cloud), empowering users to easily build more flexible, intelligent, and efficient data centers and campus networks based on cloud-native and open network architectures.

Technical Specifications

| Product Model	NSS5950-04C		
Hardware specification			
Line Card Slots	4		
Fixed Service Interfaces	4*10G SFP+		
Management interface	1* RJ45 Console Port, 1*RJ45 DC0 Management Ethernet Port, 1*USB Port		
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 45℃		
	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×88.5mm		
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	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, 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, BSM, MOD

Order Information

Product model	Description
NSS5950 Series Host	
NSS5950-04C	NSS5950-04C, 4*Service Slots, Fixed 4*10G SFP+ Ports, 3*Modular Fan Slots and 2*Modular Power Slots
Service Card Modules	
NSM5-8MQS	8*40/100G QSFP28 Ports Line Card
NSM5-16MQF	16*40G QSFP+ Ports Line Card
NSM5-24FP2QS	24*10/25G SFP28 and 2*40/100G QSFP28 Ports Line Card
NSM5-24XF2QS	24*1/10G SFP+ and 2*40/100G QSFP28 Ports Line Card
NSM5-24FP	24*10/25G SFP28 Ports Line Card
NSM5-24XF	24*1/10G SFP+ Ports Line Card
Fan Modules	
FAN-02A-01B	FAN-02A-01B, Modular Fan Slot, Hot-swappable, Air front in rear out
FAN-02A-01F	FAN-02A-01F, Modular Fan Slot, Hot-swappable, Air rear in front out
Power Modules	
AD550M-HV0B	V1 Version: AC input 100-240VAC/7A, 550W, output 12V/45A, current sharing, supporting hot-swap, Air front in rear out. (Note: Need work together with FAN-02A-01B)
AD550M-HV0F	V2 Version: AC input 100-240VAC/7A, 550W, output 12V/45A, current sharing, supporting hot-swap, Air rear in front out. (Note: Need work together with FAN-02A-01F)
AD800M-HV0B	V1 Version: AC input 100-240VAC/10A, 800W, output 12V/66A, current sharing, supporting hot-swap, Air front in rear out. (Note: Need work together with FAN-02A-01B)
DD800M-5V0B	V1 Version: DC input -40-72VDC/25A, 800W, output 12V/64A, current sharing, supporting hot-swap, Air front in rear out. (Note: Need work together with FAN-02A-01B)

Typical Application

Enterprise Data Center VxLAN Application
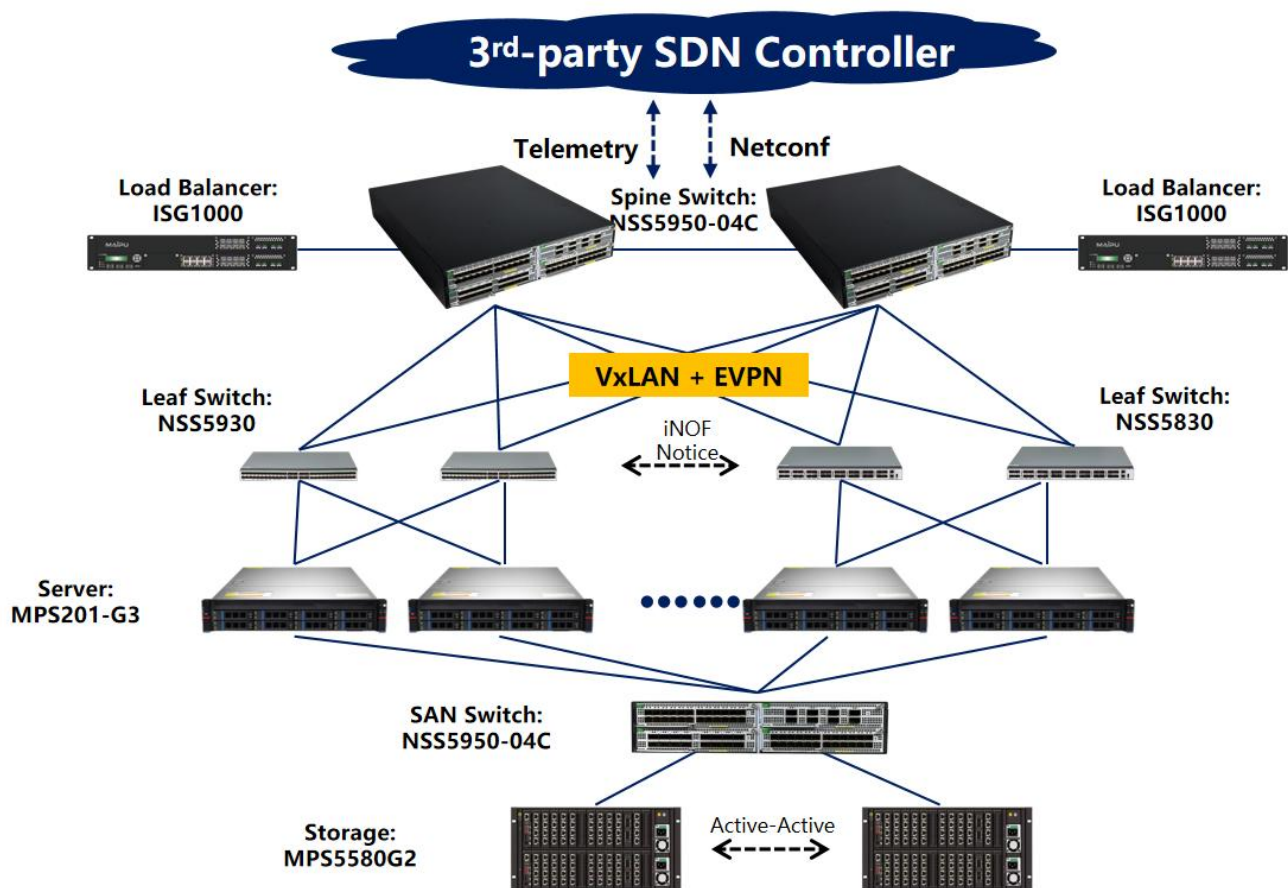
Fabric architecture has become a common and popular design option for building new-generation enterprise data center networks. Virtual Extensible LAN (VXLAN) and Ethernet VPN (EVPN) is essentially becoming the standard technology used for deploying network virtualization overlays in data center LAN fabrics. NSS5950-04C switch support VxLAN and EVPN which is suitable to deploy in data center application as spine or leaf.