

NSS5930-56SQFP Series Data Center Switch

Datasheet

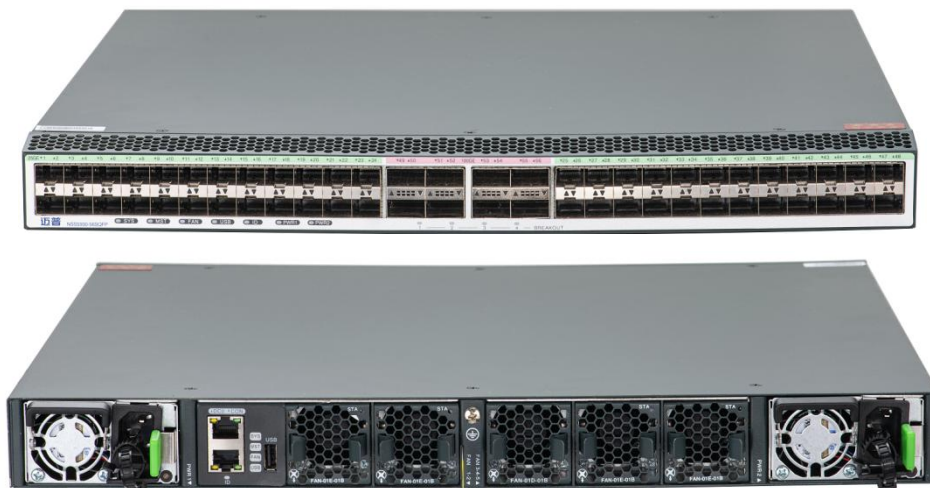
Overview

NSS5930-56SQFP is a new generation 25G Ethernet switch designed for enterprise data center and campus LAN networks, providing high-throughput, high-density 25GE interfaces, larger buffer and lower latency. The NSS5930-56SQFP adopts advanced hardware architecture with 48*10/25GE access ports and multiple 40/100GE uplinks. By using Maipu MyPowerOS software platform, NSS5930-56SQFP provides rich data center service features and management capability.

NSS5930-56SQFP 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.

NSS5930-56SQFP can work with NSS18500 core switches to build a complete, scalable, virtualized fabric network that meets the data center requirements. Meanwhile, NSS5930 can also be deployed as aggregation or core switches for enterprise campus LAN networks.

NSS5930-56SQFP supports 48*10/25G SFP28 optical interfaces, 8*40/100G QSFP28 optical interfaces, five fan modular slots and dual modular power slots.



Key Features

- **High-density 25GE ports with 100GE uplinks**

NSS5930-56SQFP provides fixed 48*10/25GE interfaces in compact 1U device. The port combination fully satisfies the interface density requirement of data center scenarios. NSS5930-56SQFP have a maximum of eight 40/100GE QSFP28 uplinks, the uplink ports can be connected to NSS18500 core switches to build a non-blocking network architecture.

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

NSS5930-56SQFP 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**

NSS5930-56SQFP 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. NSS5930-56SQFP supports 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**

NSS5930-56SQFP series fully support the RoCEv2 standards, meeting the requirements for switch performance in high-performance data center scenarios. NSS5930-56SQFP 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**

NSS5930-56SQFP supports NETCONF and RESTCONF API which can work with 3rd party SDN controller for simplified device remote configuration and management.

- **Telemetry for intelligent OAM**

NSS5930 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**

NSS5930-56SQFP 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. NSS5930-56SQFP 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 | | NSS5930-56SQFP | |
|------------------------|--------------------|--|--|
| Hardware specification | | | |
| Physical Ports | | Fixed 48*10/25G SFP28 optical interfaces, 8*40/100G QSFP28 optical interfaces, five modular fan slots, and dual modular power slots. | |
| Management Interface | | One Console port, one management Ethernet port, one USB interface | |
| Switching Capacity | | 4Tbps | |
| Flash | | 8G | |
| Memory | | 4G(Default) | |
| Interface Buffer Size | | 32M | |
| Jumbo Frame | | 12K | |
| MAC Address Entry | | 224K/720K | |
| ARP Entry | | 56K/94K | |
| IPv4 Routing Entry | | 294K/737K | |
| MSTP Instance | | 64 | |
| VRF Entry | | 4K/8K | |
| VRRP Group | | 255 | |
| ACL Entry | | 28K in/2K out | |
| 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 | | 294W | |
| Dimension(WxDxH) | | 442mmx420mmx44.2mm | |
| 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 | |

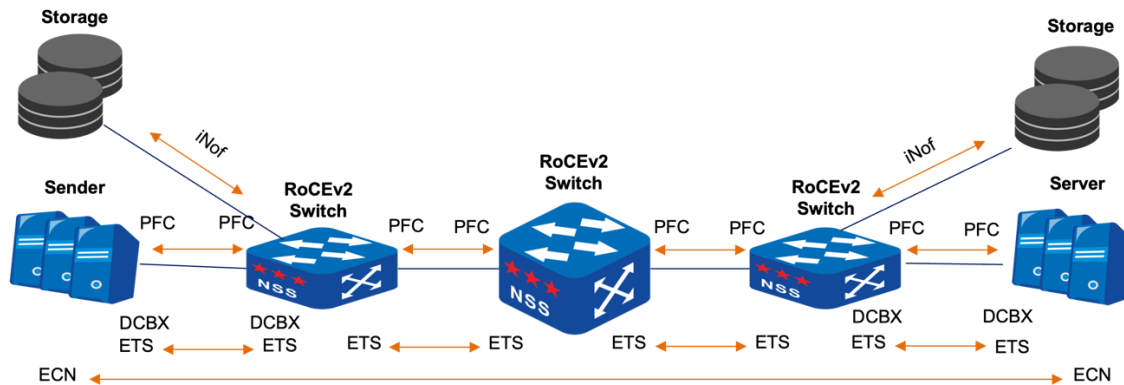
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|--------------------------------|---------------------|--|
| | | mapping, Super VLAN, PVLAN, Voice VLAN, STP, RSTP, MSTP, Loopback-detection, Error-disable, VIST/VISR+, GVRP, MLAG, MLAG Lite, VLAN isolation |
| Standard L3 Protocol | IP Protocol | 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 |
|--------------------------------|--|
| NSS5930 Series Host | |
| NSS5930-56SQFP | 48*10/25G SFP28 optical interfaces, 8*40/100G QSFP28 optical interfaces, five modular fan slots, 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.

NSS5930-56SQFP fully supports the RoCEv2 standards, meeting the requirements for switch performance in high-performance data center scenarios. NSS5930-56SQFP 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.

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