

MAIPU NSS5830 Series Data Center Switch Datasheet

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Overview

NSS5830 series switches are Maipu new generation 10G Ethernet switches designed for enterprise data center and campus LAN networks, providing high-throughput, high-density 10GE interfaces, larger buffer and lower latency. The NSS5830 series adopts advanced hardware architecture with 48*10GE access ports and multiple 100GE uplinks. By using Maipu MyPowerOS software platform, NSS5830 series provide rich data center service features and management capability.

NSS5830 series 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.

NSS5830 series can work with NSS18500 Core switches to build a complete, scalable, virtualized fabric network that meets the data center requirements. Meanwhile, NSS5830 can also be deployed as aggregation or core switches for enterprise campus LAN networks.

Models and Appearances	Description
 <p>NSS5830-56XQFP</p>	<ul style="list-style-type: none"> • 48x10G SFP+ ports, 8*100G QSFP28 ports. • Dual Modular AC/DC power supply • 5x Modular Fan slots • Switching capacity: 2.56Tbps • Forwarding performance: 1904Mpps
 <p>NSS5830-54XTQFP</p>	<ul style="list-style-type: none"> • 48*10G BaseT ports+ ports, 6*100G QSFP28 ports. • Dual Modular AC/DC power supply • 5x Modular Fan slots • Switching capacity: 2.16Tbps • Forwarding performance: 1607Mpps
 <p>NSS5830-32XQFP</p>	<ul style="list-style-type: none"> • 24*10G SFP+ ports, 8*100G QSFP28 ports. • Dual Modular AC/DC power supply • 5x Modular Fan slots • Switching capacity: 2.08Tbps • Forwarding performance: 1547Mpps

Key Features

High-density 10GE ports with 100GE uplinks

NSS5830 series provide fixed 48*10GE interfaces in compact 1U device. The port combination fully satisfies the interface density requirement of data center scenarios. NSS5830 series have a maximum of eight 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

NSS5830 series 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

NSS5830 series 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.

NSS5830 series 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

NSS5830 series 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.

NSS5830 series also support NETCONF and can work with 3rd party SDN controller for simplified device remote configuration.

Telemetry for intelligent OAM

NSS5830 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

NSS5830 series 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. NSS5830 series 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	MAIPU NSS5820 Series		
Product Model	NSS5830-56XQFP	NSS5830-54XTQFP	NSS5830-30XQFP
Product Configuration			
Physical Port	48x 10G SFP+ ports, 8*100G QSP28 ports.	48* 10G BaseT ports+ ports, 6*100G QSFP28 ports.	24x 10G SFP+ ports, 8*100G QSFP28 ports.
Management interface	One Console port, one management Ethernet port		
USB Port	1 USB port can be used to easily upload the MAIPU firmware and configuration files.		
Power Supply	Dual Modular AC/DC	Dual Modular AC/DC	Dual Modular AC/DC
Intelligent Fans	Yes	Yes	Yes
Dimension (W×D×H) (mm)	442mm×420mm×44.2mm (1RU)	442mm×480mm×44.2mm (1RU)	442mm×420mm×44.2mm (1RU)
Performance Parameters			
Switching Capability (Bi-directional non-blocking)	2.56Tbps	2.16Tbps	2.08Tbps
Throughput	1904Mpps	1607Mpps	1547Mpps
Memory/Flash	8GB/4GB		
Buffer (byte)	36M		
Stacking	Maipu VST Stacking 8 switches as a single logical device		
VLAN Entry	4094 (4K Vlan L3 interace)		
MAC Entry	224K (56.000 ARP Table)		
IP Routing	Static route, RIP v1/v2, RIPng, OSPFv2, OSPFv3, BGP, BGPv6, ISIS, VRRP, Policy Route, IP-VRF (288.000 ipv4, 144.000 ipv6 routing table)		
Multicast Entry	8K		
ACL Entry	28K		
Link Aggregation	128 group (32 port each group)		
Management	Telnet, SFTP, FTP, SSHv2, SNMP v1/v2/v3, NTP, SNTP, DNS, LLDP, LLDP-MED, Telemetry, Netconf		
Loop-free L2 Topology	STP, RSTP, MSTP (64 instance), ULFD, BPDU Guard, STP Root Guard, G.8032/ERPS, EIPS		
Power Supply			
Power Input	Input voltage (AC): 100V ~ 240V, 50Hz ~ 60Hz		
Environment			
Temperature	Work temperature: 0°C to 50°C		
	Storage temperature: -40°C to 70°C		

Product Model	NSS5830-56XQFP	NSS5830-54XTQFP	NSS5830-30XQFP
Software Features			
Standard L2 Protocols	Interface	Port Type UNI/NNI, Port Speed, Port MTU, Port Loopback, Loopback interface, Tunnel interface, Null interface, VXLAN interface	
	Ethernet Swithing	LACP Link aggregation (32 port/128 group), LACP Port Priority, LACP Load Balance, LACP Rate Monitor, LACP Debug, Port isolation, QinQ, VLAN mapping, Super VLAN, Private VLAN (PVLAN), Voice VLAN, STP, MSTP, Loopback-detection, Error-disable, GVRP, MLAG, VLAN isolation, 16K Jumbo Frame	
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	
Multicast	L2 multicast	IGMPv1/v2/v3 Snooping, multicast VLAN	
	L3 multicast	IGMPv1/v2/v3, MLDv1/v2, PIM-SM, IPv6 PIM-SM, IPv6 PIM-SSM, PIM-DM, MSDP, MLD-snooping	
QoS & ACL	QoS	802.1p, DSCP, and other priority mapping, L2 to L4 packet filtering, SP, WRR, SP+WRR, WRED, WDRR, Flow classification, Traffic monitoring, Traffic shaping, Congestion management, Congestion avoidance, Flow-based mirroring, Port rate limiting	
	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, M-LAG, VXLAN, BGP-EVPN, NLB, OpenFlow, Netconf	
MPLS	BGP MPLS	MPLS LDP, MPLS GR, M-VRF, MPLS L3 VPN	
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, MAC limit, DHCPv6 Snooping, Dynamic ARP Inspection, 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	
	AAA	Authentication, Authorization, Accounting, Radius, TACACS+, 802.1x	
Management	Network Management	SNMP v1/v2/v3, MIB, RMON, SYSLOG, DNS, CLI, Telnet, FTP/TFTP, Debug, NTP, Keepalive Gateway	
	Network Monitoring	SPAN, RSPAN, ERSPAN, VLAN SPAN, IPFIX, LLDP, IP-SLA, CWMP, Telemetry, BSM	

Order Information

Models	Descriptions
NSS5830 Series Datacenter Switch	
NSS5830-56XQFP	48*10G SFP+ optical interfaces, 8*100G QSFP28 optical interfaces, five modular fan slots and dual modular power slots
NSS5830-54XTQFP	48*10G electric interfaces, 6*100G QSFP28 optical interfaces, five modular fan slots and dual modular power slots
NSS5830-30XQFP	24*10G SFP+ optical interfaces, 8*100G QSFP28 optical interfaces, five 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
SFP Modules	
SFP-STACK-15	High speed stacking cable, SFP+ to SFP+, 10Gbps, L=1.5m
SFP-STACK-30	High speed stacking cable, SFP+ to SFP+, 10Gbps, L=3.0m
SFP-STACK-50	High speed stacking cable, SFP+ to SFP+, 10Gbps, L=5.0m
SFP-STACK-AOC150	SFP+ AOC cable, SFP+ to SFP+, 10Gbps, 15 meters length
SFP-STACK-AOC200	SFP+ AOC cable, SFP+ to SFP+, 10Gbps, 20 meters length
SFP-GETA	1000M Base-T, RJ45 interface
SFP-GETB	100/1000M Base-T, RJ45 interface
MP-S851X3-NCLM	10G SFP+ 850nm 300m LC DDM Multi-mode
MP-S311X2-NCL10	10G SFP+ 1310nm 10Km LC DDM Single-mode
MP-S311X2-NCL40	10G SFP+ 1310nm 40Km LC DDM Single-mode
MP-S311X2-NCL80	10G SFP+ 1550nm 80Km LC DDM Single-mode
SFP-XGEA	10G Base-T RJ45 30m
MP-S85123-3CDLM	1.25G SFP 850nm 550m LC DDM Multi-mode
MP-S31121-3CDL20	1.25G SFP 1310nm 20Km LC DDM Single-mode
MP-S31121-3CDL40	1.25G SFP 1310nm 40Km LC DDM Single-mode
MP-S55122-3CDL80	1.25G SFP 1550nm 80Km LC DDM Single-mode
MP-B231XL-3CD10	10G SFP+ Tx1270/Rx1330nm 10Km LC DDM Single-mode
MP-B321XL-3CD10	10G SFP+ Tx1330/Rx1270nm 10Km LC DDM Single-mode
MP-B351XL-3CD40	10G SFP+ Tx1270/Rx1330nm 40Km LC DDM Single-mode
MP-B531XL-3CD40	10G SFP+ Tx1330/Rx1270nm 40Km LC DDM Single-mode
MP-B351XL-3CD80	10G SFP+ Tx1490/Rx1550nm 80Km LC DDM Single-mode
MP-B531XL-3CD80	10G SFP+ Tx1550/Rx1490nm 80Km LC DDM Single-mode

SFP Modules	
MP-QSFP-SR4	40G QSFP+ 850nm 100m MPO DDM Multi-mode
MP-QSFP-LR4	40G QSFP+ 1310nm 10km LC DDM Single-mode
MP-QSFP-ER4	40G QSFP+ 1310nm 40km LC DDM Single-mode
MP-QSFP28-SR4	100G QSFP28 850nm 100m MPO DDM Multi-mode
MP-QSFP28-LR4	100G QSFP28 1310nm 10km LC DDM Single-mode
MP-QSFP28-ER4	100G QSFP28 1310nm 40km LC DDM Single-mode
QSFP-STACK-AOC50	QSFP AOC cable, QSFP to QSFP, 40Gbps, 5 meters length
QSFP-STACK-AOC100	QSFP AOC cable, QSFP to QSFP, 40Gbps, 10 meters length
QSFP-STACK-AOC150	QSFP AOC cable, QSFP to QSFP, 40Gbps, 15 meters length
QSFP-STACK-AOC200	QSFP AOC cable, QSFP to QSFP, 40Gbps, 20 meters length
QSFP-STACK-50-4SFP	QSFP AOC cable, QSFP to 4*SFP+, 40Gbps, 5 meters length
QSFP-STACK-100-4SFP	QSFP AOC cable, QSFP to 4*SFP+, 40Gbps, 10 meters length
QSFP-STACK-150-4SFP	QSFP AOC cable, QSFP to 4*SFP+, 40Gbps, 15 meters length
QSFP-STACK-200-4SFP	QSFP AOC cable, QSFP to 4*SFP+, 40Gbps, 20 meters length
QSFP28-STACK-AOC100	QSFP28 AOC cable, QSFP28 to QSFP28,100G, 10 meters length
QSFP28-STACK-AOC200	QSFP28 AOC cable, QSFP28 to QSFP28,100G, 20 meters length
QSFP28-STACK-50-4SFP28	QSFP28 AOC cable, QSFP28 to 4*SFP28,100G, 5 meters length
QSFP28-STACK-100-4SFP28	QSFP28 AOC cable, QSFP28 to 4*SFP28,100G, 10 meters length
QSFP28-STACK-150-4SFP28	QSFP28 AOC cable, QSFP28 to 4*SFP28,100G, 15 meters length
QSFP28-STACK-200-4SFP28	QSFP28 AOC cable, QSFP28 to 4*SFP28,100G, 20 meters length
QSFP-STACK-10	QSFP DAC stacking cable, QSFP to QSFP, 40Gbps, 1.0 meters length
QSFP-STACK-30	QSFP DAC stacking cable, QSFP to QSFP, 40Gbps, 3 meters length
QSFP-STACK-50	QSFP DAC stacking cable, QSFP to QSFP, 40Gbps, 5 meters length
QSFP28-STACK-30	QSFP28 DAC stacking cable, QSFP28 to QSFP28, 100Gbps, 3 meters length

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