NSS5810 Series L3 MPLS Aggregation Switch Datasheet

Overview

NSS5810 series switch is a high-performance stackable L3 MPLS aggregation routing switch developed by Maipu. It is applied in enterprise campus network and easy to deploy Layer3 switching solution that offers enhanced security and 1G/10G/25GE/40GE/100GE uplinks, RIP/OSPF/BGP/IS-IS, L2&L3 Multicast, VST/M-LAG stacking enabled and flexible management.

NSS5810 series switch can be used as L3 aggregation devices on large-sized campus networks. They can also be used as core devices on small and medium-sized campus networks. The switches help build highly reliable enterprise campus networks that are easy to expand and manage.

NSS5810 series switch includes NSS5810-50TXFP, NSS5810-26XF(V1), NSS5810-26XF(V2), NSS5810-48XF Four models.

Model Name	Specification
 **NSS5810-50TXFP（V2）**	● 24*10/100/1000M Base-T + 18*10G SFP+ ● 8*25G SFP28 ● Dual Power Slots ● RJ45 Console/RJ45 Management/USB2.0 Port ● Switching Capacity: 808Gbps
 **NSS5810-26XF (V1)**	● 24*10G SFP+ ● 2*40G QSFP+ ● Dual Power Slots ● Dual FAN Slots ● RJ45 Console/RJ45 Management/USB2.0 Port ● Switching Capacity: 640Gbps
 **NSS5810-26XF (V2)**	● 24*10G SFP+ ● 2*100G/40G QSFP28 ● Dual Power Slots ● Dual FAN Slots ● RJ45 Console/RJ45 Management/USB2.0 Port ● Switching Capacity: 880Gbps
 **NSS5810-48XF(V1)**	● 48*10G SFP+ ● Dual Power Slots ● Dual FAN Slots ● RJ45 Console/RJ45 Management/USB2.0 Port ● Switching Capacity: 960Gbps

Key Features

- **Intelligent stacking technology**

The NSS5810 series switch is equipped with Maipu VST stacking function that allows a minimum of four devices to be stacked into one logical device via the 10G/25G/40G/100G ports. VST (Virtual Switching Technology) stacking combines multiple switches to form a logical virtual switch, improving device and link reliability, network expansion, and simplifying configuration and management.

The NSS5810 series switch also support M-LAG, aggregating links of multiple switches to ensure link backup and uninterrupted services during upgrade.

- **Software Defined Network**

The NSS5810 series switch is capable of being managed by Maipu's BD-LAN controller, an integrated SDN platform designed for campus networks. The utilization of software-defined network technologies in this platform simplifies the deployment, management, and security of campus networks, while also enabling network teams to complete the majority of their work directly on the BD-LAN controller platform. When compared with traditional methods, implementing a BD-LAN solution can significantly reduce network deployment times, simplify network maintenance, improve troubleshooting efficiency, and ultimately lead to overall cost savings for customers.

- **Advanced MPLS Capabilities**

The NSS5810 series switch delivers advanced MPLS capabilities, enhancing your network infrastructure with powerful features. These include seamless MPLS VPN deployment for secure and efficient data transmission, MPLS Traffic Engineering for optimized traffic routing, and MPLS Quality of Service (QoS) support for prioritizing critical applications.

- **Zero Touch Provisioning**

The NSS5810 series switch features advanced Zero Touch Provisioning (ZTP) capabilities, streamlining the deployment process for network administrators. With ZTP, the switch can automatically discover and load necessary version files from a file server via a DHCP server or a USB flash disk, eliminating the need for manual intervention during initial setup. This automation reduces configuration errors, accelerates the deployment process, and enhances overall network efficiency, making the NSS5810 series switch an ideal choice for scalable and dynamic network environments.

- **Advanced Network Virtualization**

The NSS5810 series switch excels in virtualization and congestion management, catering to contemporary network demands. Offering L2/L3 VxLAN Gateway support, it enables flexible deployment with Static, Distributed, and Centralized VxLAN Gateways. Additionally, the switch accommodates IPv4/IPv6 VxLAN Tunnels and BGP-EVPN for seamless overlay networking.

- **High availability**

The NSS5810 series switch offers advanced redundancy and reliability features, catering to diverse networking requirements. In addition to supporting traditional spanning tree protocols such as STP, RSTP, and MSTP, the switch also complies with the ITU-T G.8032 international standard. This Ethernet Ring Protection Switching (ERPS) protocol enables rapid 50ms failover within Ethernet ring network topologies, ensuring seamless connectivity and minimal downtime.

Furthermore, the NSS5810 series switch incorporates the Virtual Router Redundancy Protocol (VRRP), facilitating uplink backup capabilities. By connecting to multiple aggregation switches via multiple links, the switch significantly enhances access device reliability, promoting network stability and resilience.

- **Perfect security policy**

The NSS5810 series switch offers a comprehensive suite of security features, including user authentication, port security, ACLs, loopback detection, and 802.1X authentication. It also incorporates IP Source Guard, DHCP/ND

Snooping, Host Guard, Dynamic ARP Inspection, and PPPoE+ security mechanisms. These robust security functions ensure user access and network protection.

Additionally, the switch supports MAC+IP+VLAN binding, 802.1X authentication, and countermeasures against network storm, DOS/DDOS, ARP, and protocol packet attacks. This makes the NSS5810 series ideal for large-scale, multi-service, and complex-traffic networks.

- **Advanced QoS**

The NSS5810 series switch offers sophisticated QoS capabilities for optimal network performance. Supporting eight queues per port and advanced scheduling algorithms such as SP, RR, WRR, and WDRR, the switch effectively manages traffic prioritization and resource allocation.

The switch accommodates diverse priority mapping techniques, including 802.1p, CoS, and DSCP, enabling fine-grained control over traffic classification and prioritization. With granular port traffic rate limiting and time-based controls, network administrators can regulate bandwidth usage as needed.

To optimize network performance and minimize congestion, the NSS5810 series switch employs advanced congestion management techniques, such as Tail Drop and RED packet loss algorithms. These mechanisms help maintain seamless network operation while ensuring efficient delivery of critical data.

- **IPv4&IPv6 Dual-stack ability**

The NSS5810 series switch is built on an IPv4/IPv6 dual-stack platform, delivering hardware-based, wire-speed forwarding for both IPv4 and IPv6 traffic. The switch supports IPv4/IPv6 Layer 3 routing protocols, including RIPng, OSPFv3, BGP4+, and IS-IS for IPv6. These IPv6 capabilities enable seamless deployment on pure IPv4, pure IPv6, or dual-stack networks, facilitating a smooth transition from IPv4 to IPv6 infrastructure.

- **Rich Network Management**

The NSS5810 series switch offers a comprehensive set of management options. These options encompass network management protocols like SNMP and TR-069, configuration and control options like Netconf/Yang and CLI, monitoring and diagnostic tools such as RMON and SYSLOG. These versatile features enable network administrators to effectively manage, monitor, and maintain optimal network performance locally

- **Free Licensing Policy**

Maipu consistently adheres to a "One-time investment" free license policy, ensuring that standard and advanced features are not differentiated across versions. This approach guarantees that customers receive new firmware updates without incurring additional charges. In comparison to other manufacturers, Maipu's free license policy safeguards both short-term and long-term user investments, providing an unparalleled value proposition.

Technical Specifications

Model	NSS5810-50TXFP	NSS5810-26XF	NSS5810-26XF	NSS5810-48XF
Version	**V2**	**V1**	**V2**	**V1**
Hardware Specification				
Physical Traffic Port	24*10/100/1000M Base-T interfaces 18*10G SFP+ interfaces 8*25G SFP28 interfaces	24*10G SFP+ interfaces 2*40G QSFP+ interfaces	24*10G SFP+ interfaces 2*100G/40G QSFP28 interfaces	48*10G SFP+ interfaces
CPU	2Core 1.0 Ghz			
Power Slot	Dual	Dual	Dual	Dual
Fan Slot	N/A	Dual	Dual	Dual
Power Consumption	≤83W	≤94W	≤100W	≤100W
Dimension (W*D*H)mm	442*420*44.2			
Physical Management Port	1* RJ45 Console Port 1* DC0 Port 1* USB2.0 Port			
Input Voltage	AC:100V ~ 240V/50Hz ~ 60Hz			
Temperature	Work Temperature: 0°C to 50°C Storage Temperature:-40°C to 70°C			
Humidity	Work Humidity:10%～90%, non-condensing Storage Humidity:5%～95%, non-condensing			
Anti-lightning	6KV			
Anti-Static	6KV			
MTBF	>100000 hours			
Performance Parameters				
Switching Capability	808Gbps	640Gbps	880Gbps	960Gbps
Throughput	595Mpps	476Mpps	589Mpps	714Mpps
Flash	8GB	8GB	8GB	8GB
RAM	2GB	2GB	2GB	2GB
Max MAC Address Entry	384K	384K	384K	384K
Jumbo Frame	12K	12K	12K	12K
ARP Entry	62K	62K	62K	62K
Max ND Entry	19K	19K	19K	19K
VLAN Entry	4K	4K	4K	4K
LACP Group	64	64	64	64
LACP Member in Group	32	32	32	32
MSTP Instance	64	64	64	64
Max IPv4 Routing Entry	632K	632K	632K	632K
Max IPv6 Routing Entry	383K	383K	383K	383K

L2 Multicast Entry		8K	8K	8K	8K
L3 Multicast Entry		8K	8K	8K	8K
VRF Entry		1K	1K	1K	1K
VRRP Group		255	255	255	255
Queues per port		8	8	8	8
Software Specification					
Interface	Basic Port Configuration	Auto MDI/MDIX, Port Type UNI/NNI, Port Speed, Port MTU, Switch Port, Port Loopback, Port Energy Control			
	Logic Interface	Loopback Interface, Tunnel Interface, Null Interface, L2/L3 VLAN Interface, L3 Ethernet Interface, VxLAN Interface			
	MAC Address Management	Storm Control, Flood Control, MAC Address Aging Time, Mac Address Learning on|off, Mac Address Learning Limitation, Mac Address VLAN Binding, MAC Debug			
VLAN	VLAN Management	VLAN, QinQ, Flexible QinQ, VLAN PVID, VLAN Tag/Untag, VLAN Trunk, MAC VLAN, Protocol VLAN, Subnet VLAN, Super VLAN, Voice VLAN, Private VLAN, Guest VLAN, VLAN Debug, GVRP, VLAN Isolation			
Ring Protection	Spanning Tree Protocols	STP/RSTP/MSTP, BPDU Guard, Flap Guard, Loop Guard, Root Guard, TC Guard			
	Other Ring Protocols	VIST/VIST+, G.8032(ERPSv1&v2)			
Link Aggregation	LACP Configuration	LACP Link Aggregation, LACP Port Priority, LACP Load Balance (src MAC, dst MAC, src/dst MAC, src IP, dst IP, src/dst IP), LACP Rate Monitor, LACP Debug			
Error Handling	Error-disable Configuration	Error-disable Based on bpduguard|Dai|DHCP Snooping|Link-Flap|Loopback-detect|Port Security|Storm Control|Transceiver Power, Error-disable Recovery			
Fault Detection	Fault Detection Features	ULFD, Track, Loop-back Detection, CFM(802.1ag)			
IP Services	IP Protocol	ARP, DNS, NTP Server/Client v3/v4, PTP IEEE 1588v2 transparent pass-through, ICMP, ECMP, GRE, IPIP, IPv6 over IPv4, ISATAP, IPv4 over IPv6, IPv6 over IPv6			
	Routing Protocol	Static Routing v4/v6, RIP/RIPng, IRMP, OSPF v2/v3, BGP/BGP+, ISIS/ISIS v6, VRRP/VRRP v3, VBRP, PBR/PBR v6, IP-VRF			
	DHCP Service	DHCP v4/v6 Server, DHCP v4/v6 Client, DHCP v4/v6 Relay, DHCP Snooping, DHCP Option51/82			
Multicast Protocols	L2 Multicast Protocols	IGMPv1/v2/v3 Snooping, IGMP Snooping Proxy, MLD Snooping, MVR, MVP			
	L3 Multicast Protocols	IGMPv1/v2/v3, PIM v4/v6-SM, PIM v4/v6-SSM, PIM-DM, PIM-SDM,			
QoS	Priority Mapping	802.1P Priority, DSCP priority			
	Traffic Classification	Three Color Marker, Priority Remark, Traffic Redirect, Traffic Meter, Traffic Mirror			
	Traffic Control	Rate Limit, Traffic Shaping			
	Scheduling Algorithm	SP, RR, WRR, WDRR, SP+WRR, SP+WDRR			
	Congestion Management	Tail-drop, RED, WRED			
MPLS	MPLS L3 VPN	LDP, MPLS BGP, MPLS Option-A & Option-B, Multi-VRF			
	MPLS OAM	MPLS Ping/Traceroute, MPLS QoS, MPLS TE			

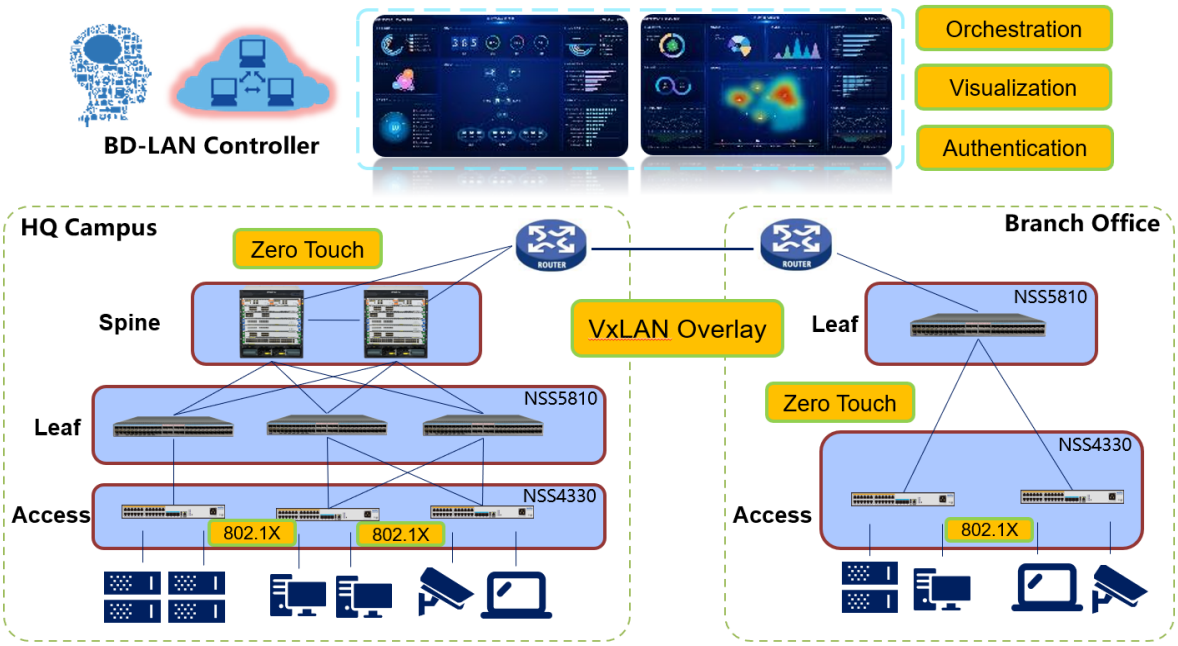
Security	Port Security	Port Security On aging|deny|permit|violation|ACL
	Network Access Control	IP Source Guard(ISG), DHCP Snooping, ND Snooping, Host Guard
	Threat Prevention	Dynamic ARP Inspection(DAI), ARP Check, AARF ARP-Guard, ARP Speed Limit, ARP Source Suppression, PPPoE+
	Access Control List	Standard IP ACL, Extended IP ACL, Standard MAC ACL, Extended MAC ACL, Standard Hybrid ACL, Extended Hybrid ACL, Standard IPv6 ACL, Extended IPv6 ACL, Time-based ACL
	Anti-Attack	Anti-Attack Detect|Drop|Flood|Log, URPF, White List, Black List
	AAA	AAA, Radius, TACACS+, 802.1x, Portal
High Availability	Device Virtualization	H-VST, M-VST, M-LAG
	Multi-Active Detection	MAD LACP, MAD BFD, MAD Fast-Hello
	High availability Protocols	HA, ULFD, UDLD, G.8032, ULPP, Monitor Link, Track, VRRP, VRRPv3, VBRP, EEP, BFD with Static|RIP|OSPF|BGP|ISIS
Configuration and Maintenance	Monitoring and Diagnostics	SPAN, RSPAN, ERSPAN, VLAN SPAN, sFlow, Telemetry, LLDP, IP-SLA
	Device Management	TR069, SNMP v1/v2/v3, MIB, RMON, SYSLOG, WEB(HTTP/HTTPS), CLI, Telnet, SSH v1/v2, FTP/TFTP, Debug, Telemetry, ISSU, Hot Patch, Keepalive Gateway
	Zero Touch Provisioning	ZTP Provisioning Through DHCP Server, ZTP Provisioning Through USB Flash Disk
Network Virtualization	VxLAN/EVPN	IPv4/IPv6 VxLAN Tunnel, Distributed VxLAN Gateway, VxLAN Static Centralized Gateway, VxLAN QoS, BGP-EVPN
	Data Center Interconnect(DCI)	END-TO-END VxLAN, VLAN Hand-Off, Cross As Segment VxLAN
	Software Defined Networking(SDN)	Openflow, Netconf/Yang
IEEE Standard	IEEE 802.3 (10 BASE-T) IEEE 802.3u (100 BASE-T) IEEE 802.3z (1000 BASE-X) IEEE 802.3ab (1000 BASE-T) IEEE 802.3ae (10G BASE-X) IEEE 802.3by (25G BASE-X) IEEE 802.3ba (40G BASE-X) IEEE 802.3ah (Ethernet in the First Mile Operations, Administration, and Maintenance) IEEE 802.1x (Port-Based Network Access Control) IEEE 802.3ad (Link Aggregation) IEEE 802.3x (Flow Control) IEEE 802.1d (Spanning Tree Protocol) IEEE 802.1ab (Link Layer Discovery Protocol) IEEE 802.1Q (Virtual LAN) IEEE 802.1w (Rapid Spanning Tree Protocol) IEEE 802.1s (Multiple Spanning Tree Protocol) IEEE 802.1p (Class of Service Priority) IEEE 802.1ag (Connectivity Fault Management)	

Order Information

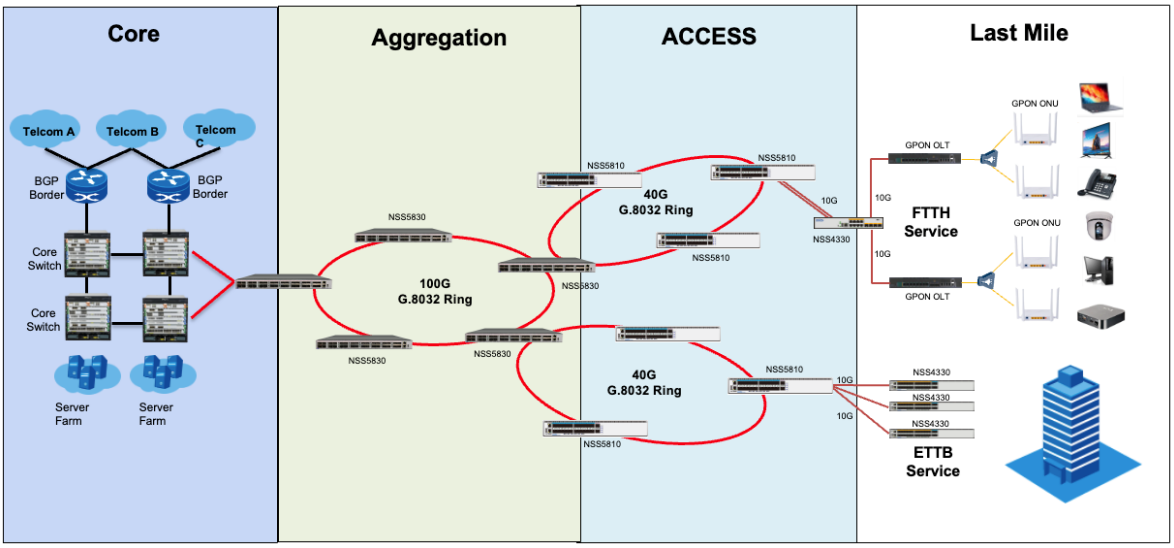
Model	Description
NSS5810 Series	
NSS5810-50TXFP	24 10/100/1000M electric interfaces,18*10G SFP+ interfaces, 8*25G SFP28 interfaces, Dual Power Slots
NSS5810-26XF	V1 Version: 24-Port SFP+ interfaces, 2-Port 40G QSFP+ interfaces, Dual Fan Slots, Dual Power Slots
NSS5810-26XF	V2 Version: 24-Port SFP+ interfaces, 2-Port 100G/40G QSFP28 interfaces, Dual Fan Slots, Dual Power Slots
NSS5810-48XF	48-Port SFP+ interfaces, Dual Fan Slots, Dual Power Slots
FAN Module	
FAN-01C-01B	V2 Version: FAN-01C-01B Fan Module for NSS5810-26XF and NSS5810-48XF
Power Module	
AD120-1S005E	120W Power Module, AC 100V~240V For NSS5810-50TXFP
AD120M-HS0N	120W Power Module, AC 100V~240V For NSS5810-26XF
AD250-1S005E-B	250W Power Module, AC 100V~240V For NSS581048XF
DD250-5D005E	120W Power Module, DC -40V~57V For NSS5810-50TXFP
DD250M-5S0N	120W Power Module, DC -40V~57V For NSS5810-26XF
DD500M-5S0B	500W Power Module, DC -40V~57V For NSS5810-48XF

Typical Application

- **Campus LAN Network**



- **ISP Metro Ethernet Network**

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