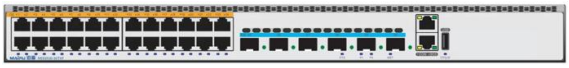
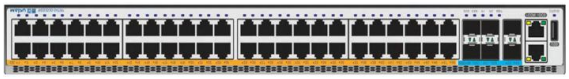
NSS3330 Series Stackable L3 MPLS Access Switch Datasheet

Overview

NSS3330 series switch is a high-performance stackable L3 access MPLS routing switch developed by Maipu. It is applied in enterprise campus network and easy to deploy Layer2/3 switching solution that offers 6*10GE uplinks and inbuilt power supply, Static/RIP/OSPF/BGP/ISIS, L2/L3 Multicast, VST/M-LAG stacking enabled and flexible management. NSS3330 series switch can be used as L3 access or aggregation devices on campus networks. The switches help build highly reliable enterprise campus networks that are easy to expand and manage.

NSS3330 series switch includes NSS3330-30TXF, NSS3330-30TXP, NSS3330-54TXF, NSS3330-54TXP, NSS3330-38GTXF five models.

Model Name	Specification
 **NSS3330-30TXF(V1)**	● 24*10/100/1000M Base-T + 6*10G SFP+ ● Fixed Dual AC Power Supply ● RJ45 Console/RJ45 Management/USB2.0 Port ● Switching Capacity: 168Gbps
 **NSS3330-54TXF(V1)**	● 48*10/100/1000M Base-T + 6*10G SFP+ ● Fixed Dual AC Power Supply ● RJ45 Console/RJ45 Management/USB2.0 Port ● Switching Capacity: 216Gbps
 NSS3330-30TXP(S1)	● 24*10/100/1000M Base-T + 6*10G SFP+ ● Fixed One AC Power Supply ● 380W PoE/PoE+ Budget ● RJ45 Console/RJ45 Management/USB2.0 Port ● Switching Capacity: 168Gbps
 NSS3330-54TXP(S1)	● 48*10/100/1000M Base-T + 6*10G SFP+ ● Fixed One AC Power Supply ● 760W PoE/PoE+ Budget ● RJ45 Console/RJ45 Management/USB2.0 Port ● Switching Capacity: 216Gbps
 NSS3330-38GTXF(V1)	● 24*1G SFP + 8*10/100/1000M Base-T + 6*10G SFP+ ● Fixed Dual AC Power Supply ● RJ45 Console/RJ45 Management/USB2.0 Port ● Switching Capacity: 184Gbps

Key Features

- **Intelligent Stacking Technology**

The NSS3330 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 SFP+ 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 NSS3330 series switch also support M-LAG, aggregating links of multiple switches to ensure link backup and uninterrupted services during upgrade.

- **Software Defined Network**

The NSS3330 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 NSS3330 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 NSS3330 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 NSS3330 series switch an ideal choice for scalable and dynamic network environments.

- **High Availability**

The NSS3330 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 NSS3330 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 NSS3330 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 NSS3330 series ideal for large-scale, multi-service, and complex-traffic networks.

- **Advanced QoS**

The NSS3330 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 NSS3330 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 NSS3330 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 NSS3330 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

Product Model	NSS3330-30TXF	NSS3330-54TXF	NSS3330-30TXP	NSS3330-54TXP	NSS3330-38GTXF
Hardware specification					
Hardware Version	V1	V1	S1	S1	V1
Physical Traffic Port	24*10/100/1000M Base-T 6*1/10G SFP+ interfaces	48*10/100/1000M Base-T 6*1/10G SFP+ interfaces	24*10/100/1000M Base-T 6*1/10G SFP+ interfaces	48*10/100/1000M Base-T 6*1/10G SFP+ interfaces	8*10/100/1000M Base-T 24*1G SFP 6*1/10G SFP+ interfaces
CPU	integrated CPU 2Core 1.4Ghz				
Fixed Power Supply	Dual	Dual	One	One	Dual
Fixed Fan	Fanless	Yes	Yes	Yes	Yes
PoE Power Consumption	N/A	N/A	380W	760W	N/A
PoE Standard	N/A	N/A	IEEE 802.af/at	IEEE 802.af/at	N/A
Power Consumption (Without PoE)	≤37W	≤56W	≤42W	≤54W	≤52W
Dimension(W*D*H)mm	442*320*44.2	442*320*44.2	442*380*44.2	442*380*44.2	442*320*44.2
Physical Management Port	1* RJ45 Console Port 1* DC0 Port 1* USB2.0 Port				
Input Voltage	AC:100V ~ 240V/50Hz ~ 60Hz				
Work Temperature	-5°C to 45°C	-5°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 Capacity	168Gbps	216Gbps	168Gbps	216Gbps	184Gbps
Throughput	125Mpps	160.7Mpps	125Mpps	160.7Mpps	136.8Mpps
Flash (GB)	8GB	8GB	8GB	8GB	8GB
Memory (GB)	1GB	1GB	1GB	1GB	1GB
MAC Address Entry	32K	32K	32K	32K	32K
Jumbo Frame	12K	12K	12K	12K	12K
ARP Entry	12K	12K	12K	12K	12K
ND Entry	6K	6K	6K	6K	6K
VLAN Entry	4K	4K	4K	4K	4K
LACP Group	64	64	64	64	64

LACP Member in Group	32	32	32	32	32
MSTP Instance	64	64	64	64	64
IPv4 Routing Entry	12K	12K	12K	12K	12K
IPv6 Routing Entry	6K	6K	6K	6K	6K
L2 Multicast Entry	2K	2K	2K	2K	2K
L3 Multicast Entry	2K	2K	2K	2K	2K
VRF Entry	1K	1K	1K	1K	1K
VRRP Group	255	255	255	255	255

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, 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, 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

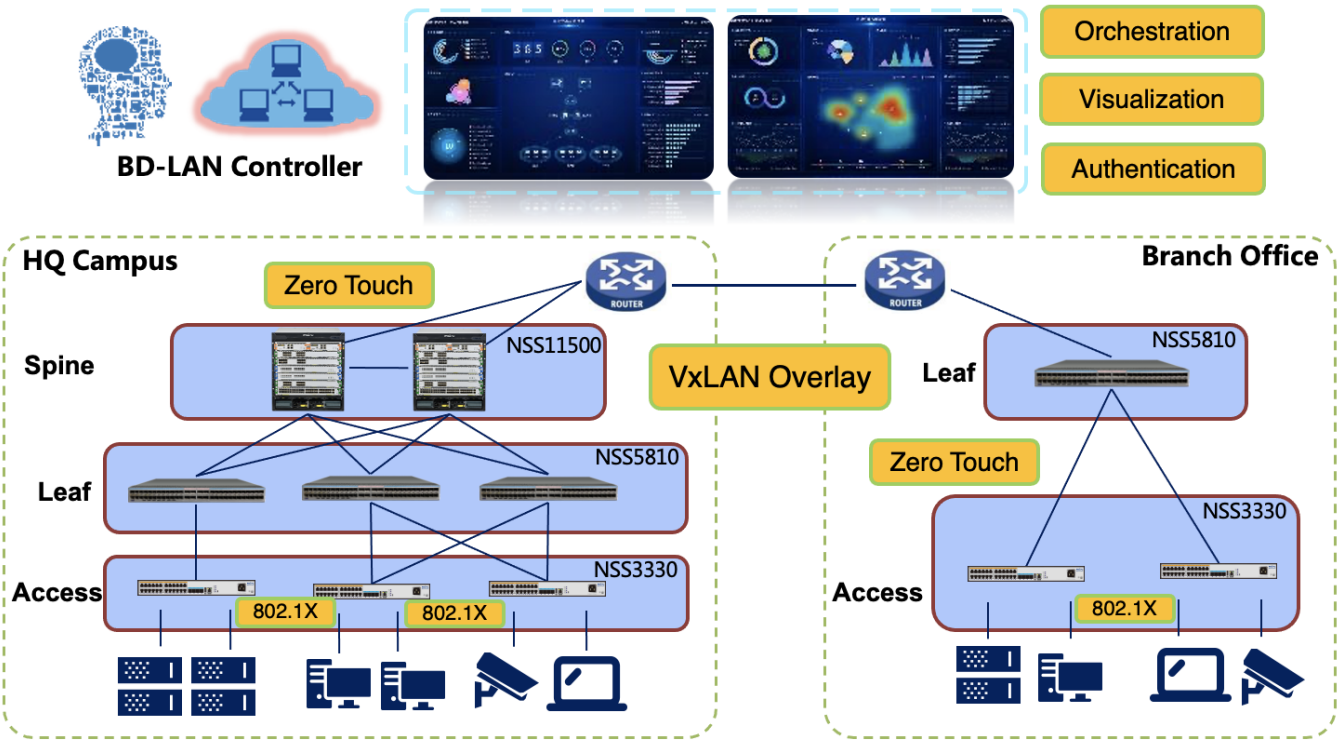
	Network Access Control	IP Source Guard(ISG), DHCP Snooping, ND Snooping, Host Guard
	Threat Prevention	Dynamic ARP Inspection(DAI), ARP Check, AARF ARP-Guard, ARP Speed Limit, ARP Source Suppression, PPPoE+
	Access Control List	Standard IP ACL, Extended IP ACL, Standard MAC ACL, Extended MAC ACL, Standard 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, FTP/SFTP/TFTP/FTPS, Debug, Telemetry, ISSU, Hot Patch, Keepalive Gateway
	Zero Touch Provisioning	ZTP Provisioning Through DHCP Server, ZTP Provisioning Through USB Flash Disk
Network Virtualization	Software Defined Networking(SDN)	Netconf/Yang
IEEE Standard	IEEE 802.3 (10BASE-T) IEEE 802.3u (100BASE-T) IEEE 802.3z (1000BASE-X) IEEE 802.3ab (1000BASE-T) IEEE 802.3ae (10G 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

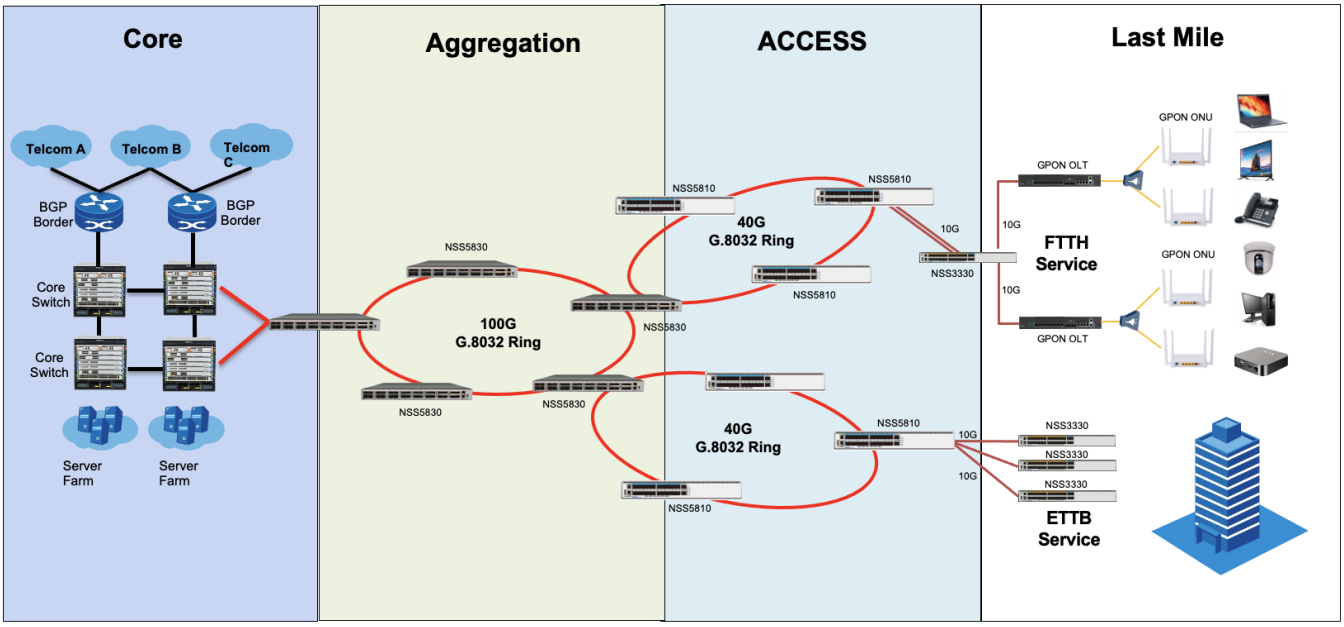
Series	Model	Description
NSS3330 Series Host		
NSS3330 Series	NSS3330-30TXF	V1 Version: 24*100/1000M Base-T interfaces, 6*10G SFP+ interfaces, Fixed Dual AC Power Supply
	NSS3330-54TXF	V1 Version: 48*100/1000M Base-T interfaces, 6*10G SFP+ interfaces, Fixed Dual AC Power Supply
	NSS3330-30TXP	S1 Version: 24*100/1000M Base-T interfaces, 6*10G SFP+ interfaces, 380W PoE&PoE+ enable, Fixed One AC Power Supply
	NSS3330-54TXP	S1 Version: 48*100/1000M Base-T interfaces, 6*10G SFP+ interfaces, 760W PoE&PoE+ enable, Fixed One AC Power Supply
	NSS3330-38GTXF	V1 Version: 24*1000M Base-X interfaces, 8*100/1000M Base-T interfaces, 6*10G SFP+ interfaces, Fixed Dual AC Power Supply

Typical Application

SDN Campus LAN Network



ISP Metro Ethernet Network



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Updated:December 05, 2024