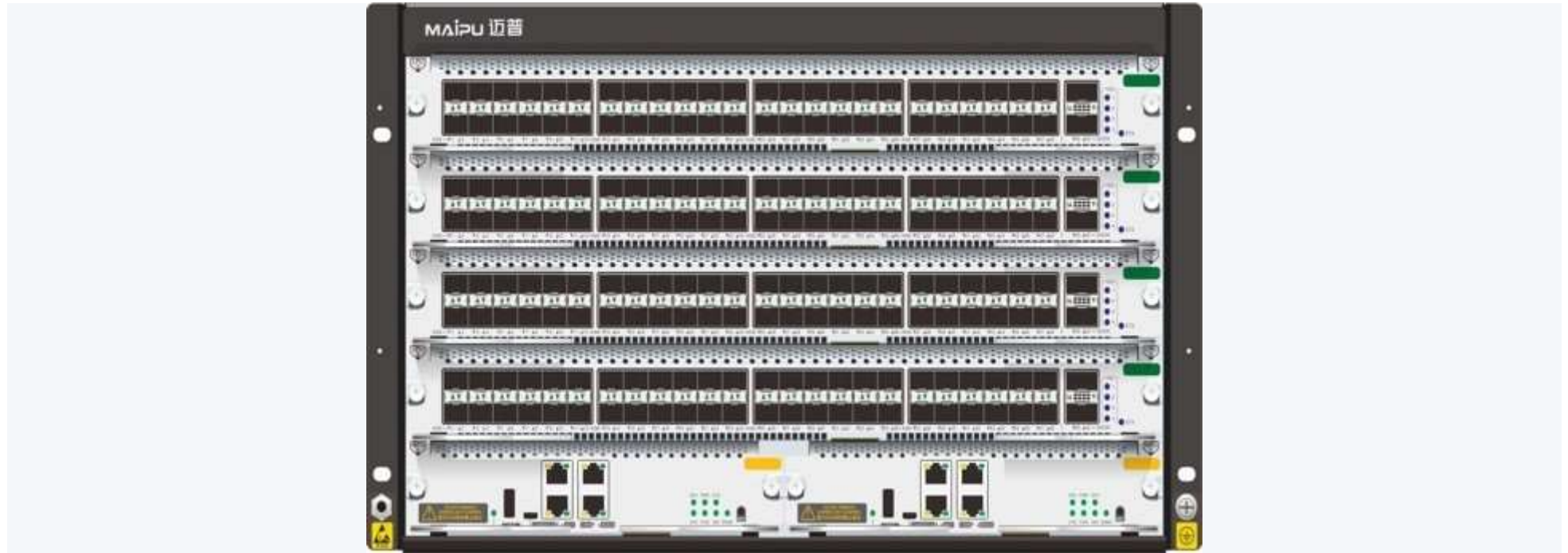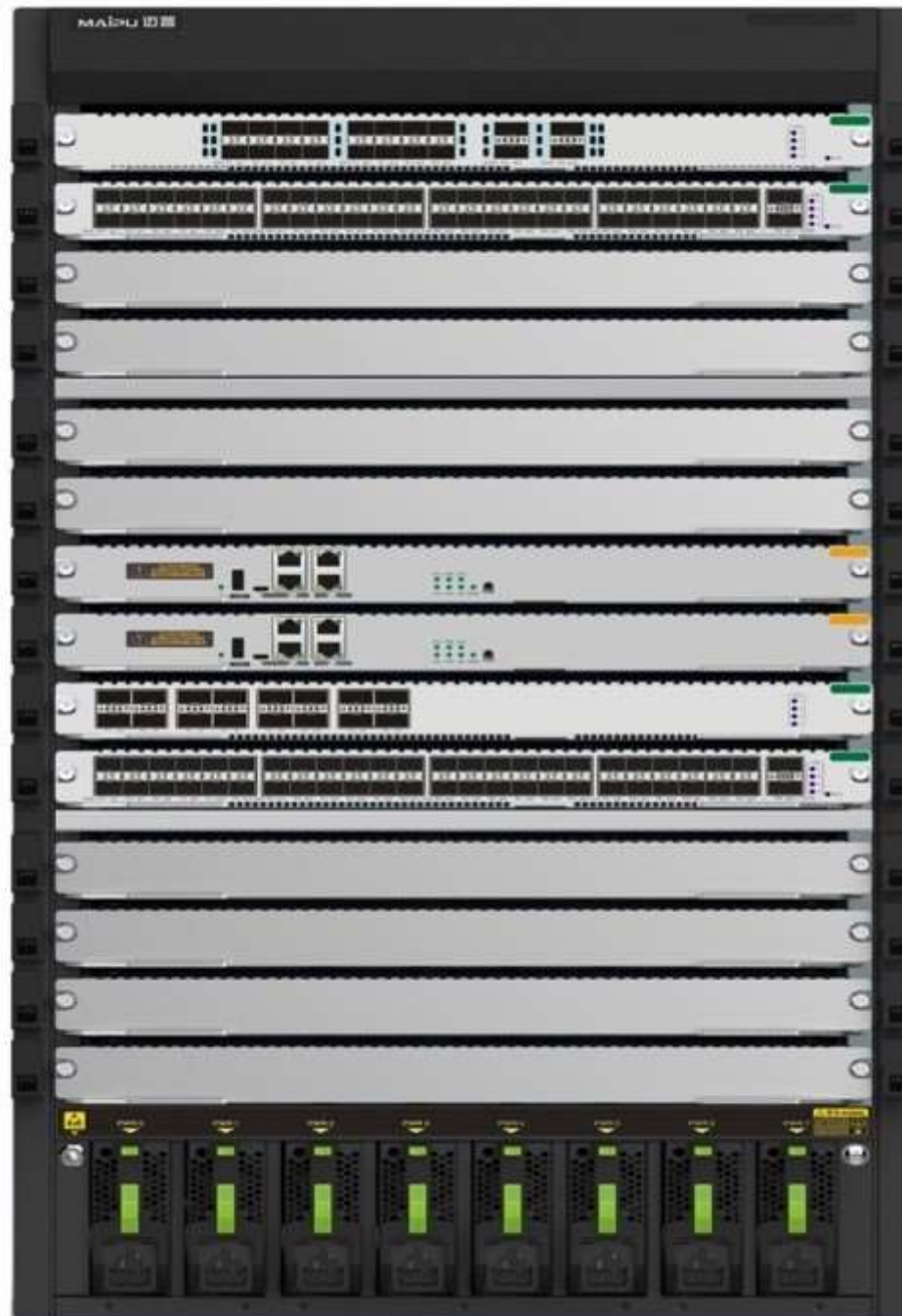https://www.maipu.com/Campus_Switch/202210/1174.html
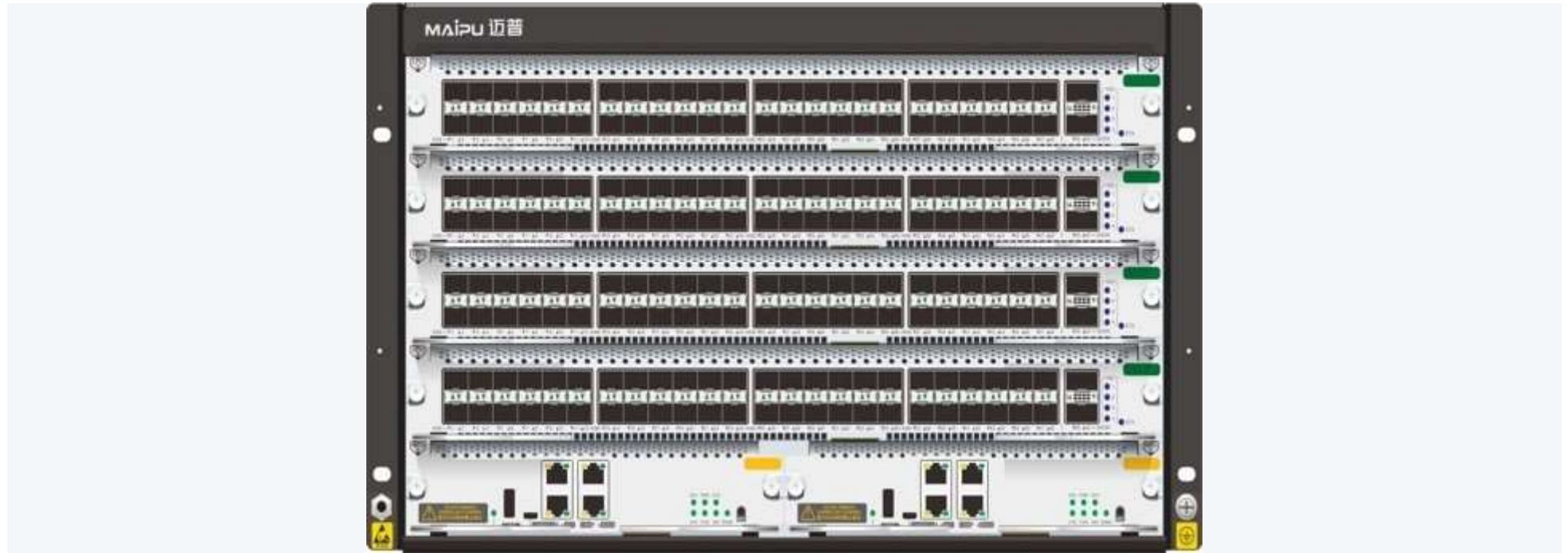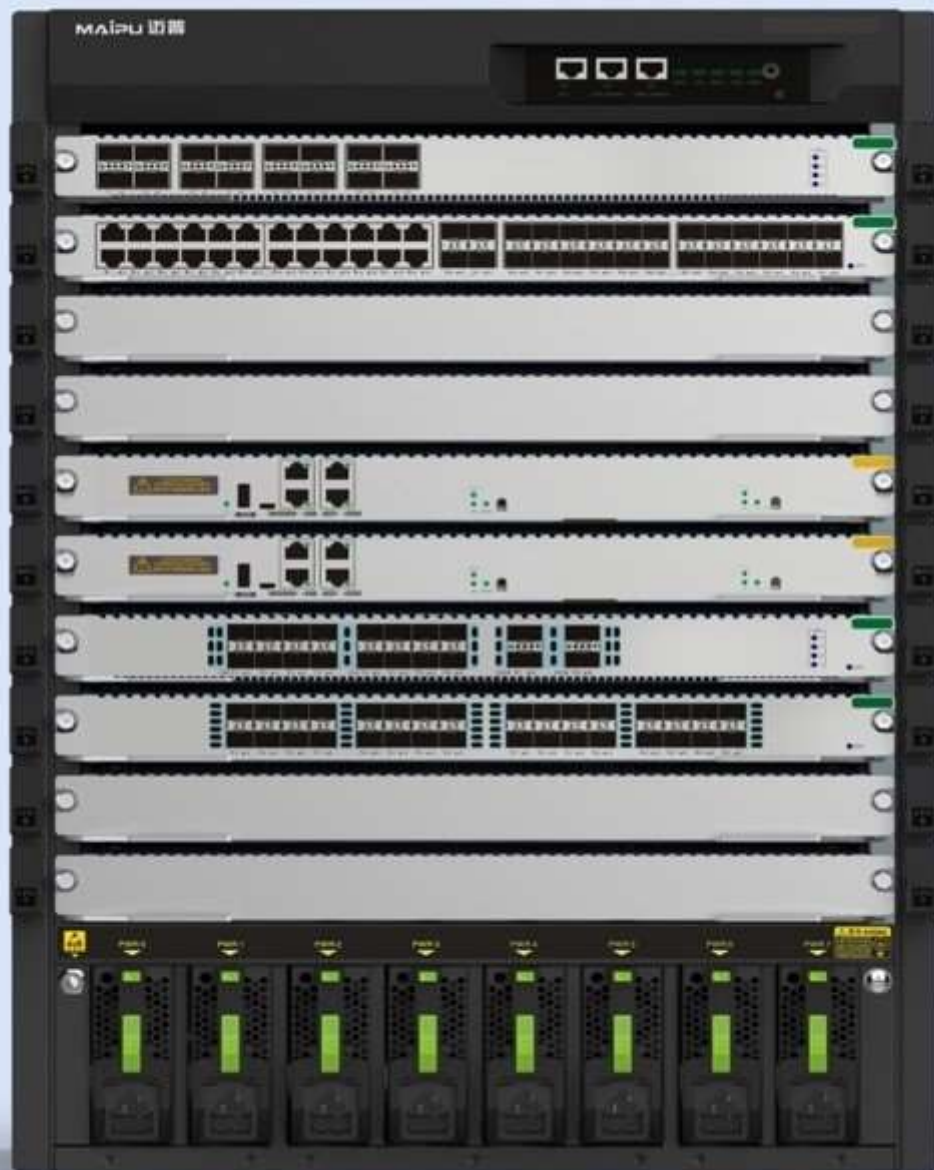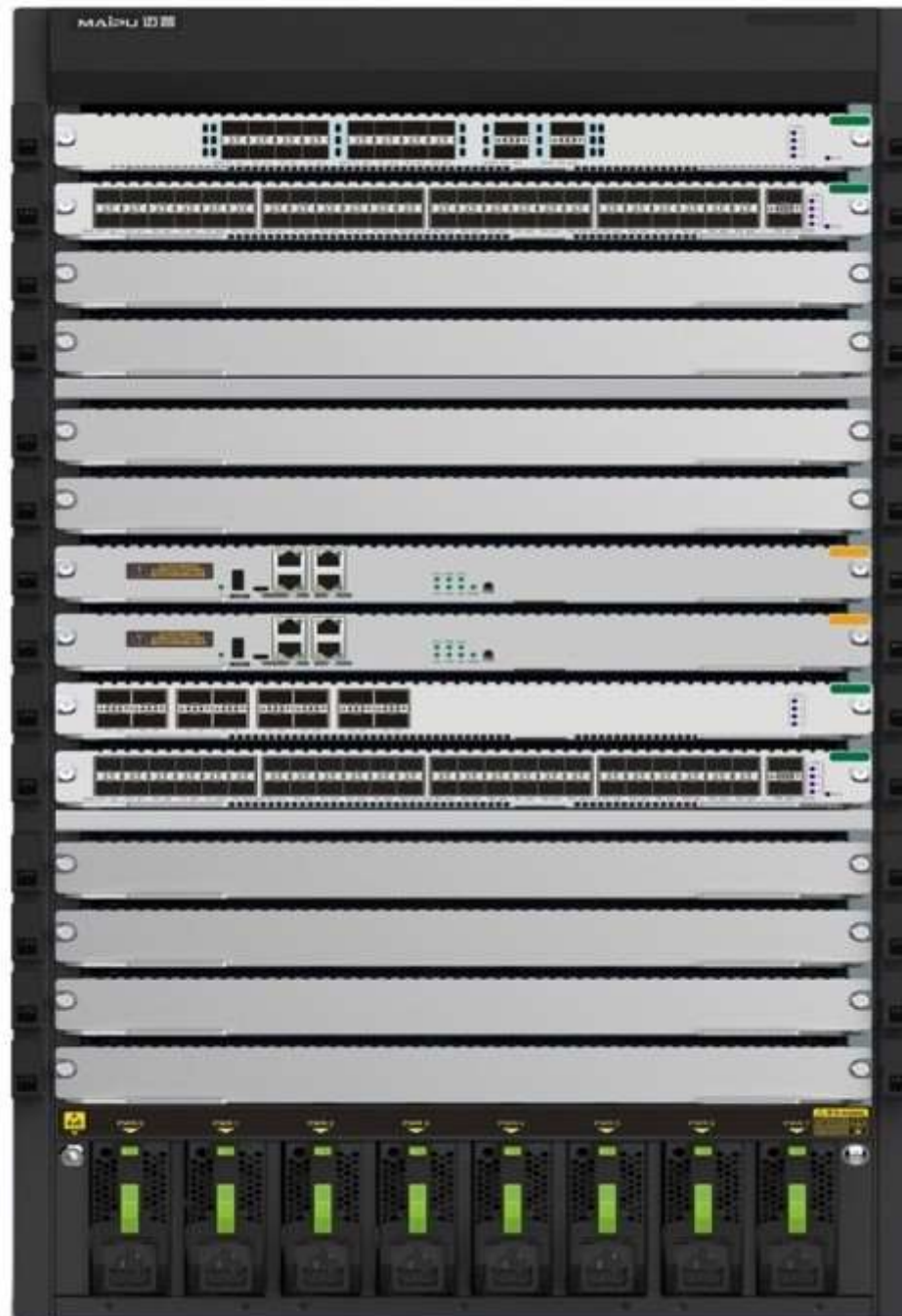
NSS11500 Series L3 Core Switch

NSS11500-08/12 series switch is a high-performance stackable L3 core routing switch developed by Maipu. It is applied in enterprise campus network and easy to deploy Layer3 switching solution that offers enhanced security and 1GE/10GE/40GE interfaces, RIP/OSPF/BGP/IS-IS, L2&L3 Multicast, VST stacking enabled and flexible management.

NSS11500 series switch can be used as L3 distribution 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.

NSS11500 series switch includes NSS11500-04, NSS11500-08, NSS11500-12 three models.

NSS11500-04 supports dual control engine slots, six switching engine slots, four line card slots.

NSS11500-08 supports dual control engine slots, six switching engine slots, eight line card slots.

NSS11500-12 supports dual control engine slots, six switching engine slots, twelve line card slots.

Product Features

High-Density Interfaces Line Cards

NSS11500 series provide maximum 384*1GE, 384*10GE, 96*40GE interfaces. The port combination fully satisfies the interface density requirement of campus network scenarios.

Highly Reliable Enterprise-class Hardware Design

NSS11500 has enterprise-class reliability and stability to ensure long-term service continuity. Redundant MPUs work in 1+1 hot backup mode. Redundant SFUs work in N+1 balance mode. Redundant power supplies support work in N+1 hot backup and redundant fan trays design.

Intelligent stacking technology

NSS11500 series switch supports Maipu VST stacking function. Two NSS11500 supporting stacking feature are combined to form a virtual switch logically. VST stacking system improves the device-class reliability by redundant backup among multiple member devices and improves the link-class reliability by the link aggregation function across devices. VST provides a powerful expansion capability for campus network.

High availability

NSS11500 series switch not only supports the traditional STP/RSTP/MSTP spanning tree protocol, but also supports the G.8032 international standard G.8032 protocol issued by ITU-T. This standard can realize 50ms millisecond fast protection switching of Ethernet ring network.

The NSS11500 also supports Virtual Router Redundancy Protocol (VRRP), which implement backup of uplinks. One switch can connect to multiple aggregation switches through multiple links, significantly improving the reliability of access devices.

Perfect security policy

NSS11500 series switch provides various security policies such as user authority/identity authentication, port security, port rate limitation, port monitoring, ACL, loopback detection, and 802.1X authentication; provides various protect mechanisms for user access and network security. It has perfect security function design and supports MAC+IP+VLAN binding and 802.1X authentication security policies, and anti-network storm attack, anti DOS/DDOS attack, anti ARP attack, and anti-network protocol packet attack security technologies. In this way, the attacks and virus can be prevented, and it is more suitable for large-scale, multi-service and complicated-traffic networks.

Advanced QoS

NSS11500 series switch supports eight queues per port and the queue scheduling policies such as SP, RR, WRR, and WDRR; rich priority mappings including 802.1p, COS, DSCP; Kbps-level port traffic rate restriction and carriers can limit the rate according to the time period; Tail Drop and RED packet loss algorithm.

Zero Touch Implementing

NSS11500 series support Zero Touch Provisioning (ZTP). It enables the switch to automatically obtain and load version files from file server through DHCP server or USB flash disk.

IPv4&IPv6 Dual-stack ability

NSS11500 series switch comes with IPv4/IPv6 dual-stack platform which provides hardware-based IPv4/IPv6 wire-speed forwarding and IPv4/IPv6 Layer3 routing protocols (RIPng, OSPFv3, BGP4+ and IS-IS for IPv6). With these IPv6 features, the NSS11500 can be deployed on a pure IPv4 network, a pure IPv6 network, or a shared IPv4/IPv6 network, helping achieve IPv4-to-IPv6 transition.

BD-LAN Controller Management

NSS11500 can be managed by Maipu BD-LAN controller, which is an integrated SDN platform for campus network. It simplifies campus network security, deployment, and management with the latest software-defined network technologies. It helps the network team complete most of the work on the BD-LAN controller platform. Compared with traditional methods, BD-LAN solution can make the network deployment faster, maintain the network easier, troubleshoot much more efficient, and save customer's overall cost.

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.

Product Specifications

Product model	NSS11500-04	NSS11500-08	NSS1

Version	V2	V2	V
Hardware specification			
Line Card Slots	4	8	
Control Engine Slots	2	2	
Switching Engine Slots	4+2	4+2	
Switching Capacity	3.84T/7.68Tbps	7.68T/15.36Tbps	7.68T/1
Architecture	Crossbar	Crossbar	Cr
Power Slot	4	8	
FAN Array Slot	2	2	
PoE Standard	802.3 af/at/bt	802.3 af/at/bt	802.3
Power Input		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
MTBF		>100, 000 hours

Software Specification		
Standard L2 protocol	Interface	Port Type UNI/NNI, Port Speed, Port MTU, Port Loopback, Loopba Tunnel interface, Null interface, VXLAN interface
	Ethernet Switching	LACP Link aggregation, LACP Port Priority, LACP Load Balance, L LACP Debug, Port isolation, QinQ, VLAN mapping, Super VLAN, P VLAN, STP, MSTP, G.8032, Loopback-detection, Error-disable, GV VLAN isolation
Standard L3 protocol	IP Protocol	ARP, DHCP, DHCPv6, DHCP Server, DHCPv6 Server, DHCPv6 C DHCPv6 Relay, DHCP Option82, DNS, GRE, IPIP, IPv6 over IPv4, IPv6, IPv6 over IPv6
	Routing Protocol	Static route for IPv4&IPv6, RIPv1/v2, RIPng, OSPFv2, OSPFv3, IS BGPv6, Policy Route
Multicast	L2 multicast	IGMPv1/v2/v3 Snooping, multicast VLAN
	L3 multicast	IGMPv1/v2/v3, PIM-SM, IPv6 PIM-SM, IPv6 PIM-SSM, PIM-DM, M snooping

QoS & ACL	QoS	802.1p, DSCP, and other priority mapping, SP, WRED, WDRR, Flo classification, Traffic monitoring, Traffic shaping, Congestion mana Congestion avoidance, Flow-based mirroring
	ACL	Standard IP ACL, extended IP ACL, standard MAC ACL, extended extended Hybrid ACL, Standard IPv6 ACL, extended IPv6 ACL
Virtualization	Stacking	H-VST, M-VST, M-LAG
	MAD	MAD LACP, MAD BFD, MAD Fast-hello
Zero Touch Provisioning	ZTP mode A	ZTP provisioning through DHCP server
	ZTP mode B	ZTP provisioning trough USB flash disk
MPLS VPN	L3 BGP MPLS	MPLS LDP, MPLS L3 VPN, MPLS Option-A & Option-B, MPLS Pin
	MCE	Multi-VRF
Data Center	VxLAN	Static VxLAN, EVPN VxLAN
Security & Network Reliability	Security	ARP Check, AARF, AARF ARP-Guard, CPU Protection, Port Secu Guard, IPv6 Source Guard, ND-Snooping, DHCP Snooping, DHCP Dynamic ARP Inspection, Host Guard, PPPoE+, AAA, 802.1x, Port attack detect|drop|flood|log, URPF, AARF
	Network Reliability	HA, ULFD, G.8032, ULPP, Monitor Link, VRRP, VRRPv3, VBRP, E

| Management and Monitoring | Network Management | SNMP v1/v2/v3, MIB, RMON, SYSLOG, DNS, CLI, Telnet, FTP/TF NTP, Keepalive Gateway |
| | Network Monitoring | SPAN, RSPAN, IPFIX, Netconf, sFlow, LLDP, IP-SLA, CWMP, ND OAM |

Power Consumption Specification

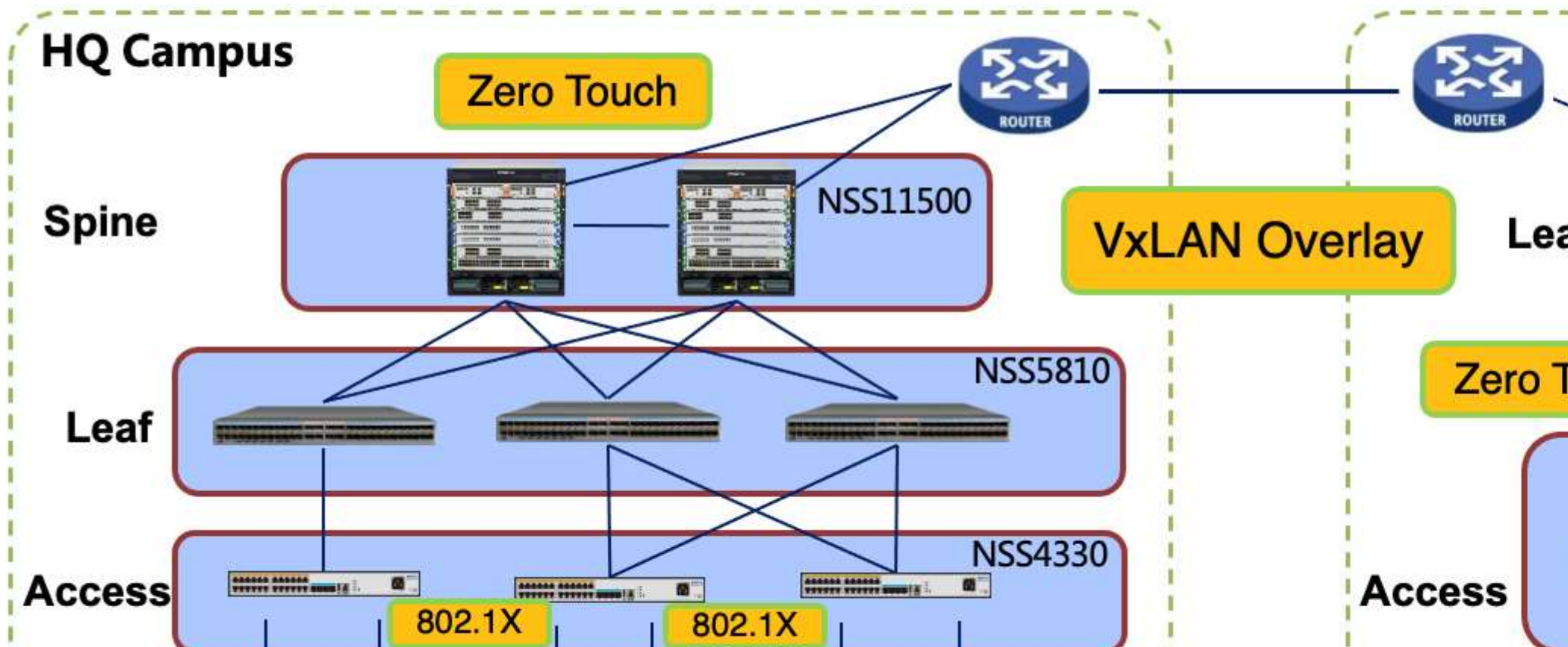| Model Name	Max. Power Consumption	Model Name	Max. Powe
NSM115-MPUB	42W	NSM115-MPUC	
NSM115-SFUB	105W	NSM115-SFUC	
NSM115-SFUF	150W	FAN-06A-01B	
FAN-15B-01B	125W	FAN-20A-01	
NSM115-48GET4XGEF-EC	72W	NSM115-32XGEF-EC	
NSM115-48GEF4XGEF-EC	110W	NSM115-48XGEF-EC	
NSM115-24GET24GEF4XF-EC	94W	NSM115-16XGEF4QXGE-EC	

NSM115-40GETP8LTP4XF-EC	67W (Not including PoE)	NSM115-8QXGE-EC
NSM115-16XGEF-EC	61W	NSM115-12QXGE-EC

Close

☐

Typical Application

SDN Campus Network

BD-LAN Controller

HQ Campus

Zero Touch

Spine NSS11500

VxLAN Overlay Lea

Leaf NSS5810

Zero T

Access NSS4330

802.1X 802.1X

Access

Order Information

Model	Description
NSS11500-04 Host	
NSS11500-04	V2 Version: NSS11500-04 chassis, two control engine slots, six switching engine slots, four line card slots, two fan slots, fo
NSM115-MPUB	NSM115-MPUB Control Engine, for NSS11500-04, supporting active/standby backup function
NSM115-SFUB	NSM115-SFUB Switching Engine, for NSS11500-04 (Note: SFU slot 2,3 are mandatory, the rest are expansion slots)
FAN-06A-01B	FAN-06A-01B Fan module for NSS11500-04
AD800M-HV1B	AD800M-HV1B, 800W AC power module
AD1600M-HV0B	AD1600M-HV0B, 1600W AC power module
DD1600M-5V0B	DD1600M-5V0B, 1600W DC power module
NSS11500-04 Line Cards	

NSM115-48GET4XGEF-EC	48-Port 100/1000M electric interfaces, 4-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUB Switching Engines)
NSM115-48GEF4XGEF-EC	48-Port 1000M SFP interfaces, 4-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUB Switching Engines)
NSM115-24GET24GEF4XF-EC	24-Port 100/1000M electric interfaces, 24-Port 1000M SFP interfaces, 4-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUB Switching Engines)
NSM115-40GETP8LTP4XF-EC	40-Port 100/1000M electric PoE+ interfaces (Support 802.3af/at), 8-Port 100M/1G/2.5G electric PoE++ interfaces (Support Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUB Switching Engines)
NSM115-16XGEF-EC	16-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUB Switching Engines)
NSM115-32XGEF-EC	32-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUB Switching Engines)
NSM115-48XGEF-EC	48-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUB Switching Engines)
NSM115-8QXGE-EC	8-Port 40G QSFP+ interfaces line card (Note: Configure 2*NSM115-SFUB Switching Engines)
NSM115-12QXGE-EC	12-Port 40G QSFP+ interfaces line card (Note: Configure 2*NSM115-SFUB Switching Engines)

NSS11500-08 Host	
NSS11500-08	V2 Version: NSS11500-08 chassis, two control engine slots, six switching engine slots, eight line card slots, two fan slots, e
NSM115-MPUC	NSM115-MPUC Control Engine, for NSS11500-08, supporting active/standby backup function
NSM115-SFUC	NSM115-SFUC Switching Engine, for NSS11500-08 (Note: SFU slot 2,3 are mandatory, the rest are expansion slots)
FAN-15B-01B	FAN-15B-01B Fan module for NSS11500-08
AD800-1D005M	AD800-1D005M, 800W AC power module
AD1600-1D005M	V2 Version: AD1600-1D005M, 1600W AC power module
DD1600M-5V1F	DD1600M-5V1F, 1600W DC power module
NSS11500-08 Line Cards	
NSM115-48GET4XGEF-EC	48-Port 100/1000M electric interfaces, 4-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUC Switching Engines)
NSM115-48GEF4XGEF-EC	48-Port 1000M SFP interfaces, 4-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUC Switching Engines)

NSM115-24GET24GEF4XF-EC	24-Port 100/1000M electric interfaces, 24-Port 1000M SFP interfaces, 4-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUC Switching Engines)
NSM115-40GETP8LTP4XF-EC	40-Port 100/1000M electric PoE+ interfaces (Support 802.3af/at), 8-Port 100M/1G/2.5G electric PoE++ interfaces (Support Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUC Switching Engines)
NSM115-16XGEF-EC	16-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUC Switching Engines)
NSM115-32XGEF-EC	32-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUC Switching Engines)
NSM115-48XGEF-EC	48-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUC Switching Engines)
NSM115-8QXGE-EC	8-Port 40G QSFP+ interfaces line card (Note: Configure 2*NSM115-SFUC Switching Engines)
NSM115-12QXGE-EC	12-Port 40G QSFP+ interfaces line card (Note: Configure 2*NSM115-SFUC Switching Engines)
NSS11500-12 Host	
NSS11500-12	V2 Version: NSS11500-12 chassis, two control engine slots, six switching engine slots, twelve line card slots, four fan slots

NSM115-MPUC	NSM115-MPUC Control Engine, for NSS11500-12, supporting active/standby backup function
NSM115-SFUF	NSM115-SFUF Standard Switching Engine, for NSS11500-12 (Note: SFU slot 2,3 are mandatory, the rest are expansion slots)
FAN-20A-01	FAN-20A-01 Fan module for NSS11500-12
AD1600-1D005M	V2 Version: AD1600-1D005M, 1600W AC power module
DD1600M-5V1F	DD1600M-5V1F, 1600W DC power module
NSS11500-12 Line Cards	
NSM115-48GET4XGEF-EC	48-Port 100/1000M electric interfaces, 4-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUF Switching Engines)
NSM115-48GEF4XGEF-EC	48-Port 1000M SFP interfaces, 4-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUF Switching Engines)
NSM115-24GET24GEF4XF-EC	24-Port 100/1000M electric interfaces, 24-Port 1000M SFP interfaces, 4-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUF Switching Engines)

NSM115-40GETP8LTP4XF-EC	40-Port 100/1000M electric PoE+ interfaces (Support 802.3af/at), 8-Port 100M/1G/2.5G electric PoE++ interfaces (Support Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUF Switching Engines)
NSM115-16XGEF-EC	16-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUF Switching Engines)
NSM115-32XGEF-EC	32-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM115-SFUF Switching Engines)
NSM115-8QXGE-EC	8-Port 40G QSFP+ interfaces line card (Note: Configure 2*NSM115-SFUF Switching Engines)