

NSS6600 Series L3 Distribution Switch

Datasheet

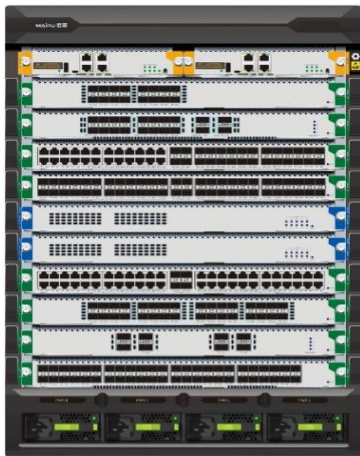
Overview

NSS6600 series switch is a high-performance stackable L3 distribution routing switch developed by Maipu. It is applied in enterprise campus network and easy to deploy Layer3 switching solution that offers enhanced security and 10GE/40GE uplinks, RIP/OSPF/BGP/IS-IS, L2&L3 Multicast, VST stacking enabled and flexible management.

NSS6600 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.

NSS6600 series switch includes NSS6600-04, NSS6600-06, NSS6600-10 three models.

Modem Name	Specification
 NSS6600-04(V1)	● Dual Control Engine Slots ● Four Service Slots ● Dual Power Slots ● One FAN Array Slots ● Maximum 1G interfaces: 192 ● Maximum 10G interfaces: 64
 NSS6600-06(V2)	● Dual Control Engine Slots ● Dual Switching Engine Slots ● Four Service Slots ● Four Power Slots ● Dual FAN Array Slots ● Maximum 1G interfaces: 192 ● Maximum 2.5G interfaces: 32 ● Maximum 10G interfaces: 192 ● Maximum 40G interfaces: 48



NSS6600-10(V2)

- Dual Control Engine Slots
- Dual Switching Engine Slots
- Eight Service Slots
- Four Power Slots
- Dual FAN Array Slots
- Maximum 1G interfaces: 384
- Maximum 2.5G interfaces: 64
- Maximum 10G interfaces: 384
- Maximum 40G interfaces: 96

Key Features

● High-Density Interfaces Line Cards

NSS6600 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

NSS6600 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 1+1 balance mode. Redundant power supplies support work in N+1 hot backup and redundant fan trays design.

● Intelligent stacking technology

NSS6600 series switch supports Maipu VST stacking function. Two NSS6600 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

NSS6600 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 NSS6600 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

NSS6600 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

NSS6600 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**

NSS6600 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**

NSS6600 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 NSS6600 can be deployed on a pure IPv4 network, a pure IPv6 network, or a shared IPv4/IPv6 network, helping achieve IPv4-to-IPv6 transition.

- **SDN Controller Management**

NSS6600 can be managed by Maipu BD-Campus 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-Campus controller platform. Compared with traditional methods, BD-Campus 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.

Technical Specifications

Product model	NSS6600-04	NSS6600-06	NSS6600-10
Version	V1	V2	V2
Hardware specification			
Hardware Architecture	Full Mesh	Distribution	Distribution
Control Engine Slots	2	2	2
Switching Engine Slots	N/A	2	2
Service Card Slots	4	4	8
Control Engine Model	NSM66-MPUB	NSM66-MPUE	NSM66-MPUE
Switching Engine Model	N/A	NSM66-SFUB NSM66-SFUD	NSM66-SFUB NSM66-SFUD
Switching Capacity	1Tbps	3.84Tbps	7.68Tbps
Flash	8G		
Memory	4G		
Jumbo Frame	12K		
MAC Address Entry	131K/383K		
IPv4 Routing Entry	81K/131K		
IGMP Snooping Entry	3K/5K		
PIM Entry	3K/5K		
ARP Entry	63K		
MSTP Instance	64		
Max. ECMP Path	64		
VRF Entry	1K		
VRRP Group	255		
Power Slots	2	4	4
FAN Array Slots	1	2	2
Air Flow	Front-to-Back	Front-to-Back	Front-to-Back
PoE Standard	N/A	802.3 af/at/bt	802.3 af/at/bt
Power Input	Input voltage AC: 100V ~ 240V, 50Hz ~ 60Hz		
	N/A	Input voltage DC:42V~72V	
Temperature	Work temperature: 0°C to 50°C		
	Storage temperature: -40°C to 70°C		
Humidity	Work humidity: 10% to 90%, no-condensing		
	Storage humidity: 5% to 95%, no-condensing		
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 mapping, Super VLAN, PVLAN, Voice VLAN, STP, MSTP, G.8032, Loopback-detection, Error-disable, GVRP, MLAG, 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
Multicast	L2 multicast	IGMPv1/v2/v3 Snooping, multicast VLAN
	L3 multicast	IGMPv1/v2/v3, PIM-SM, IPv6 PIM-SM, IPv6 PIM-SSM, PIM-DM, MSDP, MLD-snooping
QoS & ACL	QoS	802.1p, DSCP, and other priority mapping, SP, WRED, WDRR, 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
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 through USB flash disk
MPLS VPN	L3 BGP MPLS	MPLS LDP, MPLS L3 VPN, MPLS Option-A & Option-B, MPLS Ping/traceroute
	MCE	Multi-VRF
Data Center	VxLAN	Static VxLAN, EVPN VxLAN
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, Host Guard, PPPoE+, AAA, 802.1x, Portal, Anti-attack detect[drop flood log], URPF, AARF
	Network Reliability	HA, ULFD, G.8032, ULPP, Monitor Link, VRRP, VRRPv3, VBRP, BFD, EEP, CPU protection
Management and Monitoring	Network Management	SNMP v1/v2/v3, MIB, RMON, SYSLOG, DNS, CLI, Telnet, FTP/TFTP, Debug, NTP, Keepalive Gateway
	Network Monitoring	SPAN, RSPAN, IPFIX, Netconf, sFlow, LLDP, IP-SLA, CWMP, NDSP, Telemetry, OAM

Power Consumption Specification

Model Name	Max. Power Consumption	Model Name	Max. Power Consumption
NSM66-MPUB	42W	NSM66-MPUE	55W
NSM66-SFUB	125W	NSM66-SFUD	150W
FAN-05C-01B	47W	FAN-11A-01	50W
FAN-15B-01	75W	NSM66-16XGEF-EA	55W
NSM66-48GET4XGEF-EA	65W	NSM66-16XGEF-EB	61W
NSM66-48GEF4XGEF-EA	100W	NSM66-32XGEF-EB	110W
NSM66-24GET24GEF4XF-EA	85W	NSM66-48XGEF-EB	145W
NSM66-48GEF4XGEF-EB	110W	NSM66-16XGEF4QXGE-EB	92W
NSM66-48GET4XGEF-EB	72W	NSM66-8QXGE-EB	74W
NSM66-24GET24GEF4XF-EB	94W	NSM66-12QXGE-EB	111W
NSM66-40GETP8LTP4XF-EB	67W (Not including PoE)		

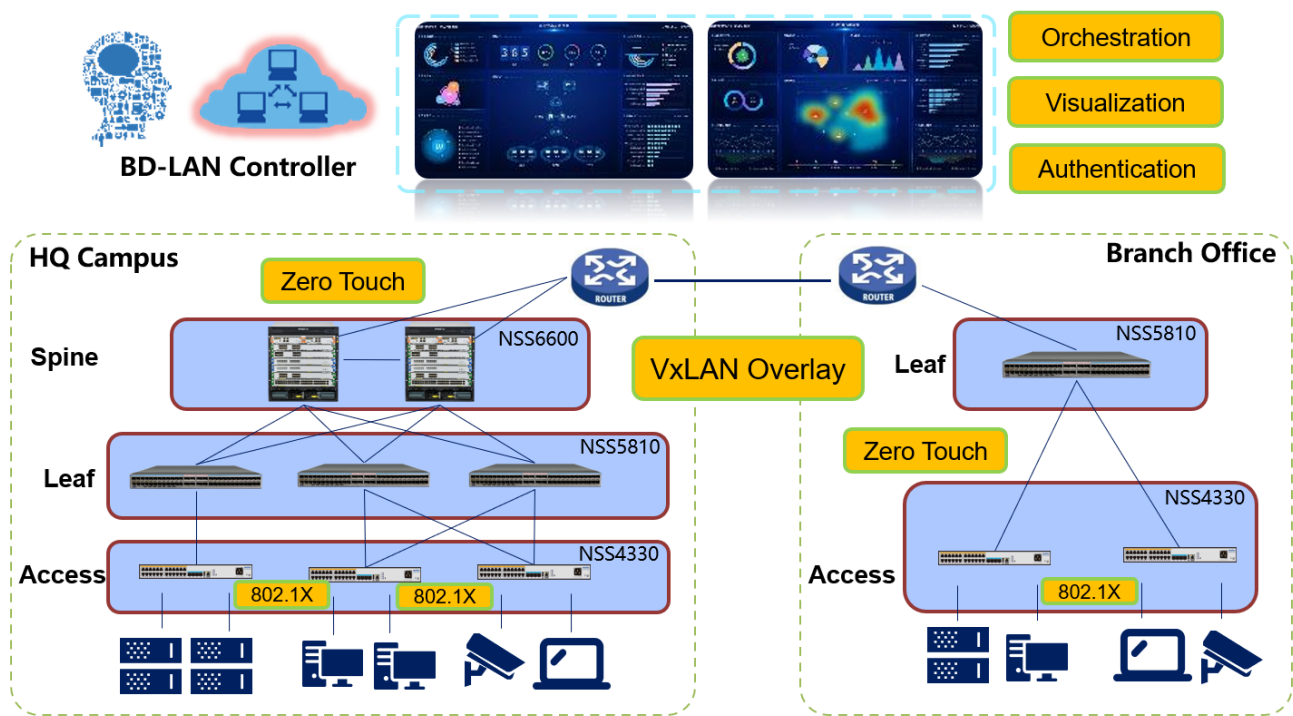
Order Information

Model	Description
NSS6600-04 Host	
NSS6600-04	V1 Version: NSS6600-04 chassis, two control engine slots, four service slots, one fan slot, two power slots.
NSM66-MPUB	V1 Version: NSM66-MPUB Control Engine, supporting active/standby backup function (one is mandatory, 1+1 redundancy is optional) For NSS6600-04
FAN-05C-01B	V1 Version: FAN-05C-01B Fan Module for NSS6600-04
AD500M-HS0F	V1 Version: AD500M-HS0F,500W AC power module
NSS6600-04 Line Cards	
NSM66-16XGEF-EA	V1 Version: 16-Port 10G SFP+ interfaces line card
NSM66-24GET24GEF4XF-EA	V1 Version: 24-Port 100/1000M electric interfaces, 24-Port 1000M SFP interfaces, 4-Port 10G SFP+ interfaces line card
NSM66-48GEF4XGEF-EA	V1 Version: 48-Port 1000M SFP interfaces, 4-Port 10G SFP+ interfaces line card
NSM66-48GET4XGEF-EA	V1 Version: 48-Port 100/1000M electric interfaces, 4-Port 10G SFP+ interfaces line card
NSS6600-06 Host	
NSS6600-06	V2 Version: NSS6600-06 chassis, two control engine slots, two switching engine slots, four service slots, two fan slots, four power slots.
NSM66-MPUE	V2 Version: NSM66-MPUE Control Engine, for NSS6600-06/10, supporting active/standby backup function
NSM66-SFUB	V2 Version: NSM66-SFUB Standard Switching Engine, for NSS6600-06/10
NSM66-SFUD	V2 Version: NSM66-SFUD Advanced Switching Engine, for NSS6600-06/10
FAN-11A-01	V1 Version: FAN-11A-01 Fan module for NSS6600-06
AD800-1D005M	V1 Version: AD800-1D005M, 800W AC power module

AD1600-1D005M	V2 Version: AD1600-1D005M, 1600W AC power module
NSS6600-10 Host	
NSS6600-10	V2 Version: NSS6600-10 chassis, two control engine slots, two switching engine slots, eight service slots, two fan slots, four power slots.
NSM66-MPUE	V2 Version: NSM66-MPUE Control Engine, for NSS6600-06/10, supporting active/standby backup function
NSM66-SFUB	V2 Version: NSM66-SFUB Standard Switching Engine, for NSS6600-06/10
NSM66-SFUD	V2 Version: NSM66-SFUD Advanced Switching Engine, for NSS6600-06/10
FAN-15B-01	V1 Version: FAN-15B-01 Fan module for NSS6600-10
AD800-1D005M	V1 Version: AD800-1D005M, 800W AC power module
AD1600-1D005M	V2 Version: AD1600-1D005M, 1600W AC power module
NSS6600-06/10 Line Cards	
NSM66-12QXGE-EB	V2 Version:12-Port 40G QSFP+ interfaces line card (Note: Configure 2*NSM66-SFUD Switching Engines)
NSM66-48XGEF-EB	V2 Version:48-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM66-SFUD Switching Engines)
NSM66-8QXGE-EB	V2 Version:8-Port 40G QSFP+ interfaces line card (Note: Configure 2*NSM66-SFUD Switching Engines)
NSM66-32XGEF-EB	V2 Version:32-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM66-SFUD Switching Engines)
NSM66-16XGEF4QXGE-EB	V2 Version:16-Port 10G SFP+ interfaces, 4-Port 40G QSFP+ interfaces line card (Note: Configure 2*NSM66-SFUD Switching Engines)
NSM66-16XGEF-EB	V2 Version:16-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM66-SFUB Switching Engines)
NSM66-48GEF4XGEF-EB	V2 Version:48-Port 1000M SFP interfaces, 4-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM66-SFUB Switching Engines)
NSM66-48GET4XGEF-EB	V2 Version:48-Port 100/1000M electric interfaces, 4-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM66-SFUB Switching Engines)
NSM66-24GET24GEF4XF-EB	V2 Version:24-Port 100/1000M electric interfaces, 24-Port 1000M SFP interfaces, 4-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM66-SFUB Switching Engines)
NSM66-40GETP8LTP4XF-EB	V2 Version:40-Port 100/1000M electric PoE+ interfaces (Support 802.3af/at), 8-Port 100/1000M/2.5G electric PoE++ interfaces (Support 802.3af/at/bt), 4-Port 10G SFP+ interfaces line card (Note: Configure 2*NSM66-SFUB Switching Engines)

Typical Application

SDN Campus Network



All rights reserved. Printed in the People's Republic of China.

No part of this document may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual or otherwise without the prior written consent of Maipu Communication Technology Co., Ltd.

Maipu makes no representations or warranties with respect to this document contents and specifically disclaims any implied warranties of merchantability or fitness for any specific purpose. Further, Maipu reserves the right to revise this document and to make changes from time to time in its content without being obligated to notify any person of such revisions or changes.

Maipu values and appreciates comments you may have concerning our products or this document. Please address comments to:

Maipu Communication Technology Co., Ltd
Maipu Mansion, No.16, Jiuxing Avenue
Hi-Tech Zone
Chengdu, Sichuan Province
P. R. China
610041
Tel: (86) 28-65544850,
Fax: (86) 28-65544948,
URL: [http:// www.maipu.com](http://www.maipu.com)
Email: overseas@maipu.com

All other products or services mentioned herein may be registered trademarks, trademarks, or service marks of their respective manufacturers, companies, or organizations.