# NSS4330 Series L3 MPLS Aggregation Switch Datasheet

## Overview

NSS4330 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 10GE/40GE/100GE uplinks, RIP/OSPF/BGP/IS-IS, L2&L3 Multicast, VST/M-LAG stacking enabled and flexible management.

NSS4330 series switch can be used as L3 access devices on large-sized campus networks. They can also be used as aggregation devices on small and medium-sized campus networks. The switches help build highly reliable enterprise campus networks that are easy to expand and manage.

NSS4330 series switch includes NSS4330-32TXF, NSS4330-32TXP, NSS4330-56TXF, NSS4330-56TXP, NSS4330-36GXF, NSS4330-60GXF, NSS4330-36TXF, NSS4330-60TXF eight models.

| Model Name | Specification |
|---|---|
| <br>**NSS4330-32TXF(V2)** | • 24*10/100/1000M Base-T + 6*10G SFP+<br>• One Extension Slot (10G/40G/100G Extension Card)<br>• Dual Power Slots<br>• RJ45 Console/RJ45 Management/USB2.0 Port<br>• Switching Capacity: 448Gbps |
| <br>**NSS4330-32TXP(V2)** | • 24*10/100/1000M Base-T + 6*10G SFP+<br>• One Extension Slot (10G/40G/100G Extension Card)<br>• Dual Power Slots<br>• 380W/760W PoE+<br>• RJ45 Console/RJ45 Management/USB2.0 Port<br>• Switching Capacity: 448Gbps |
| <br>**NSS4330-56TXF(V2)** | • 48*10/100/1000M Base-T + 6*10G SFP+<br>• One Extension Slot (10G/40G/100G Extension Card)<br>• Dual Power Slots<br>• RJ45 Console/RJ45 Management/USB2.0 Port<br>• Switching Capacity: 496Gbps |
| <br>**NSS4330-56TXP(V2)** | • 48*10/100/1000M Base-T + 6*10G SFP+<br>• One Extension Slot (10G/40G/100G Extension Card)<br>• Dual Power Slots<br>• RJ45 Console/RJ45 Management/USB2.0 Port<br>• 380W/760W PoE+<br>• Switching Capacity: 496Gbps |

| Model Name | Specification |
| --- | --- |
| <br>**NSS4330-36GXF(V2)** | ● 24*1G SFP + 4*10G SFP+<br>● Two Extension Slots (10G/40G/100G Extension Card)<br>● Dual Power Slots<br>● RJ45 Console/RJ45 Management/USB2.0 Port<br>● Switching Capacity: 688Gbps |
| <br>**NSS4330-60GXF(V2)** | ● 48*1G SFP + 4*10G SFP+<br>● Two Extension Slots (10G/40G/100G Extension Card)<br>● Dual Power Slots<br>● RJ45 Console/RJ45 Management/USB2.0 Port<br>● Switching Capacity: 736Gbps |
| <br>**NSS4330-36TXF(V3)** | ● 24*10/100/1000M Base-T + 4*10G SFP+<br>● Two Extension Slots (10G/40G/100G Extension Card)<br>● Dual Power Slots<br>● Dual FAN Slots<br>● RJ45 Console/RJ45 Management/USB2.0 Port<br>● Switching Capacity: 688Gbps |
| <br>**NSS4330-60TXF(V3)** | ● 48*10/100/1000M Base-T + 4*10G SFP+<br>● Two Extension Slots (10G/40G/100G Extension Card)<br>● Dual Power Slots<br>● Dual FAN Slots<br>● RJ45 Console/RJ45 Management/USB2.0 Port<br>● Switching Capacity: 736Gbps |

# Key Features

- **Versatile Aggregation Switch with Modular Expansion**

The NSS4330 series switch features a modular expansion capability that offers a wide range of options for connecting to upstream networks. Choose from 2*40G ports, 4*10G ports, or a combination of 1*40G+1*100G ports on its expansion modules. This flexibility empowers your network infrastructure to adapt seamlessly to various deployment scenarios, making it an ideal choice for diverse networking needs.

- **Intelligent Stacking Technology**

The NSS4330 series switch is equipped with Maipu VST stacking function. VST (Virtual Switching Technology) stacking combines multiple switches to form a logical virtual switch via the 10G SFP+ ports, improving device and link reliability, network expansion, and simplifying configuration and management.

The NSS4330 series switch also support M-LAG, aggregating links of multiple switches to ensure link backup and uninterrupted services during upgrade.

- **Software Defined Network**

The NSS4330 series switch is capable of being managed by Maipu's BD-Campus 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-Campus controller platform. When compared with traditional methods, implementing a BD-Campus 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 NSS4330 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 NSS4330 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 NSS4330 series switch an ideal choice for scalable and dynamic network environments.

- **Advanced Network Virtualization**

The NSS4330 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 NSS4330 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 NSS4330 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 NSS4330 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 NSS4330 series ideal for large-scale, multi-service, and complex-traffic networks.

- **Advanced QoS**

The NSS4330 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 NSS4330 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 NSS4330 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 NSS4330 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 | NSS4330-32TXF | NSS4330-32TXP | NSS4330-56TXF | NSS4330-56TXP | NSS4330-36GXF | NSS4330-60GXF | NSS4330-36TXF | NSS4330-60TXF |
|---|---|---|---|---|---|---|---|---|
| **Hardware Specification** | | | | | | | | |
| Hardware Version | V2 | V2 | V2 | V2 | V2 | V2 | V3 | V3 |
| Physical Traffic Port | 24*10/100/1000M Base-T interfaces 6*10G SFP+ interfaces | 24*10/100/1000M Base-T interfaces 6*10G SFP+ interfaces | 48*10/100/1000M Base-T interfaces 6*10G SFP+ interfaces | 48*10/100/1000M Base-T interfaces 6*10G SFP+ interfaces | 24*1G SFP interfaces 4*10G SFP+ interfaces | 48*1G SFP interfaces 4*10G SFP+ interfaces | 24*10/100/1000M Base-T interfaces 4*10G SFP+ interfaces | 48*10/100/1000M Base-T interfaces 4*10G SFP+ interfaces |
| Extension Slot | One | One | One | One | Dual | Dual | Dual | Dual |
| Power Slot | Dual | Dual | Dual | Dual | Dual | Dual | Dual | Dual |
| Fan Slot | N/A | N/A | N/A | N/A | N/A | N/A | Dual | Dual |
| PoE Power Consumption | N/A | 380W/760 W | N/A | 380W/760 W/1440W | N/A | N/A | N/A | N/A |
| PoE Standard | N/A | IEEE 802.3af/at | N/A | IEEE 802.3af/at | N/A | N/A | N/A | N/A |
| Power Consumption (Without PoE) | ≤65W | ≤79W | ≤79W | ≤79W | ≤75W | ≤111W | ≤80W | ≤80W |
| Dimension (W*D*H) mm | 442*420*44.2 | | | | | | | |
| Physical Management Port | 1* RJ45 Console Port<br>1* DC0 Port<br>1* USB2.0 Port | | | | | | | |
| Input Voltage | AC: 100V ~ 240V/50Hz ~ 60Hz<br>DC: -40V ~ -57V | | | | | | | |
| Temperature | Work Temperature: -5°C to 50°C<br>Storage Temperature: -40°C to 70°C | | | | | | | |
| Humidity | Work Humidity:10% ~ 90%, non-condensing<br>Storage Humidity:5% ~ 95%, non-condensing | | | | | | | |
| Anti-lightning | 6KV | | | | | | | |
| Anti-Static | 6KV | | | | | | | |
| MTBF | >100000 hours | | | | | | | |
| **Performance Parameters** | | | | | | | | |
| Switching Capacity | 448Gbps | 448Gbps | 496Gbps | 496Gbps | 688Gbps | 736Gbps | 688Gbps | 736Gbps |
| Forwarding Performance | 333.3Mpps | 333.3Mpps | 369Mpps | 369Mpps | 511.8Mpps | 547.5Mpps | 511.8Mpps | 547.5Mpps |
| Flash | 8GB | 8GB | 8GB | 8GB | 8GB | 8GB | 8GB | 8GB |
| RAM | 2GB | 2GB | 2GB | 2GB | 2GB | 2GB | 2GB | 2GB |
| MAC Address Entry | 131K/393K | 131K/393K | 131K/393K | 131K/393K | 131K/393K | 131K/393K | 131K/393K | 131K/393K |
| Jumbo Frame | 12K | 12K | 12K | 12K | 12K | 12K | 12K | 12K |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ARP Entry | 63K | 63K | 63K | 63K | 63K | 63K | 63K | 63K |
| ND Entry | 19K | 19K | 19K | 19K | 19K | 19K | 19K | 19K |
| VLAN Entry | 4K | 4K | 4K | 4K | 4K | 4K | 4K | 4K |
| LACP Group | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 |
| LACP Member in Group | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| MSTP Instance | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 |
| IPv4 Routing Entry | 81K/114K | 81K/114K | 81K/114K | 81K/114K | 81K/114K | 81K/114K | 81K/114K | 81K/114K |
| IPv6 Routing Entry | 40K/57K | 40K/57K | 40K/57K | 40K/57K | 40K/57K | 40K/57K | 40K/57K | 40K/57K |
| L2 Multicast Entry | 8K | 8K | 8K | 8K | 8K | 8K | 8K | 8K |
| L3 Multicast Entry | 8K | 8K | 8K | 8K | 8K | 8K | 8K | 8K |
| VRF Entry | 1K | 1K | 1K | 1K | 1K | 1K | 1K | 1K |
| VRRP Group | 255 | 255 | 255 | 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 BPDU Guard\|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, CPU protection |
| 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, FTP/TFTP, SSH, Debug, Telemetry, ISSU, Hot Patch, Keepalive Gateway, Cloud Management |
| | 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)<br>IEEE 802.3u (100 BASE-T)<br>IEEE 802.3z (1000 BASE-X)<br>IEEE 802.3ab (1000 BASE-T)<br>IEEE 802.3ae (10G BASE-X)<br>IEEE 802.3an (10G BASE-T)<br>IEEE 802.3ba (40G and 100G BASE-X)<br>IEEE 802.3ah (Ethernet in the First Mile Operations, Administration, and Maintenance)<br>IEEE 802.1x (Port-Based Network Access Control)<br>IEEE 802.3ad (Link Aggregation)<br>IEEE 802.3x (Flow Control)<br>IEEE 802.1d (Spanning Tree Protocol)<br>IEEE 802.1ab (Link Layer Discovery Protocol)<br>IEEE 802.1Q (Virtual LAN)<br>IEEE 802.1w (Rapid Spanning Tree Protocol)<br>IEEE 802.1s (Multiple Spanning Tree Protocol) | |

| | |
|---|---|
| | IEEE 802.1p (Class of Service Priority)<br>IEEE 802.1ag (Connectivity Fault Management) |

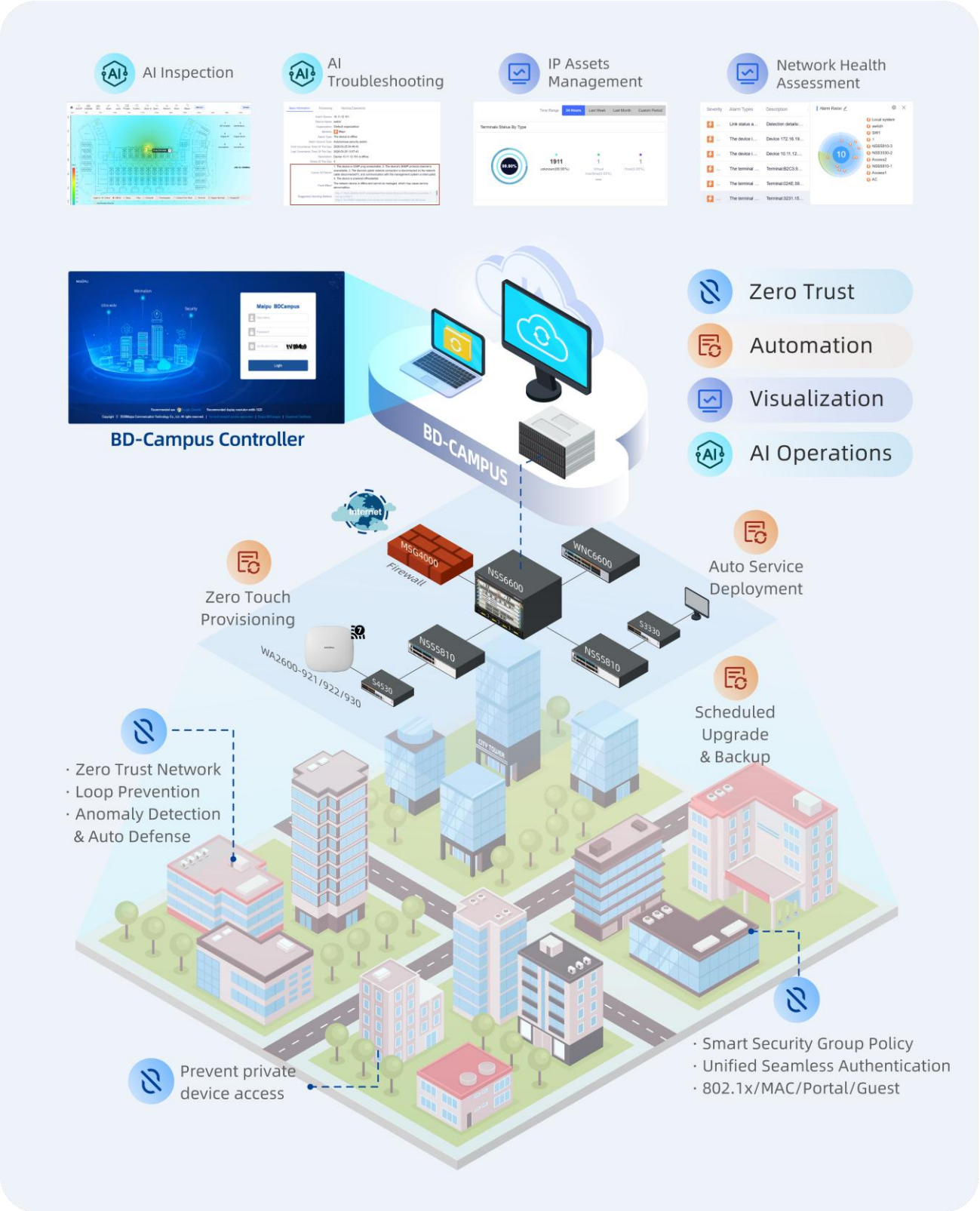
# Order Information

| Model | Description |
|---|---|
| **NSS4330 Series** | |
| NSS4330-32TXF | V2 Version: 24*10/100/1000M Base-T interfaces, 6*10G SFP+ interfaces, One Extension Slot, Dual hot-swappable Power Slots. |
| NSS4330-56TXF | V2 Version: 48*10/100/1000M Base-T interfaces, 6*10G SFP+ interfaces, One Extension Slot, Dual hot-swappable Power Slots. |
| AD120-1S005E | 120W AC Power Supply Module |
| AD150M-HS0N | 150W AC Power Supply Module |
| DD250-5D005E | 120W DC Power Supply Module |
| | |
| NSS4330-32TXP | V2 Version: 24*10/100/1000M Base-T interfaces, 6*10G SFP+ interfaces, PoE Enable, One Extension Slot, Dual hot-swappable Power Slots. |
| NSS4330-56TXP | V2 Version: 48*10/100/1000M Base-T interfaces, 6*10G SFP+ interfaces, PoE Enable, One Extension Slot, Dual hot-swappable Power Slots. |
| AD500-1D005E | 500W AC Power Supply Module |
| AD880-1D005E | 880W AC Power Supply Module (Only for NSS4330-56TXP) |
| DD500-5D005E | 500W DC Power Supply Module |
| | |
| NSS4330-36GXF | V2 Version: 24*10/100/1000M SFP interfaces, 4*10G SFP+ interfaces, Dual Expansion Slots, Dual hot-swappable Power Slots. |
| AD120M-HS0N | 120W AC Power Supply Module |
| AD150M-HS0N | 150W AC Power Supply Module |
| DD250M-5S0N | 120W DC Power Supply Module |
| | |
| NSS4330-60GXF | V2 Version: 48*10/100/1000M SFP interfaces, 4*10G SFP+ interfaces, Dual Extension Slots, Dual hot-swappable Power Slots. |
| AD150M-HS0N | 150W AC Power Supply Module |
| AD250-1S005E-B | 250W AC Power Supply Module |
| DD500M-5S0B | 500W DC Power Supply Module |
| | |
| NSS4330-36TXF | V3 Version: 24*10/100/1000M Base-T interfaces, 4*10G SFP+ interfaces, Dual Extension Slots, Dual FAN Slots, Dual hot-swappable Power Slots. |
| NSS4330-60TXF | V3 Version: 48*10/100/1000M Base-T interfaces, 4*10G SFP+ interfaces, Dual Extension Slots, Dual FAN Slots, Dual hot-swappable Power Slots. |
| FAN-01F-01B | FAN-01F-01B FAN Module |
| AD120M-HS0N | 120W AC Power Supply Module |
| AD150M-HS0N | 150W AC Power Supply Module |

| | |
|---|---|
| DD250M-5S0N | 120W DC Power Supply Module |
| **Extension Module** | |
| NM4A-1QXGE1QFP | 1-Port 40G QSFP+ and 1-Port 100G QSFP28 Extension Module for NSS4330 Series |
| NM4A-2QXGEF | 2-Port 40G QSFP+ Extension Module for NSS4330 Series |
| NM4A-4XGEF | 4-Port 10G SFP+ Extension Module for NSS4330 Series |

# Application Scenario

## SDN Campus Network


AI Inspection
AI Troubleshooting
IP Assets Management
Network Health Assessment
BD-Campus Controller
BD-CAMPUS
Zero Trust
Automation
Visualization
AI Operations
Internet
MSG4000
Firewall
NSS6600
WNC6600
NSS5810
NSS5810
S3330
S4630
WA2600-921/922/930
Zero Touch Provisioning
Auto Service Deployment
Scheduled Upgrade & Backup
· Zero Trust Network
· Loop Prevention
· Anomaly Detection & Auto Defense
Prevent private device access
· Smart Security Group Policy
· Unified Seamless Authentication
· 802.1x/MAC/Portal/Guest

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