

S4530 Series 2.5GE mGig L3 Aggregation Switch

Datasheet

Overview

The S4530 series switch is a high-performance stackable 2.5GE mGig L3 aggregation routing switch developed by Maipu. It is applied in enterprise campus network and easy to deploy Layer3 switching solution that offers enhanced security, 100M/1000M/2.5GE mGig downlink and 10GE uplinks, RIP/OSPF/BGP/IS-IS, L2&L3 Multicast, VST/M-LAG stacking enabled and flexible management like SDN management and Cloud managed.

The S4530 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.

The S4530 series switch includes two models, S4530-30MLTXP and S4530-30MLTXF.

Model Name	Specification
 S4530-30MLTXF	● 24*100M/1000M/2.5G Base-T + 6*1/10G SFP+ ● Dual Modular Power Slots ● RJ45 Console/USB2.0 Port ● Switching Capacity: 240Gbps ● SDN & Cloud Management
 S4530-30MLTXP	● 24*100M/1000M/2.5G Base-T + 6*1/10G SFP+ ● Max. 1440W 802.3bt PoE++ ● Dual Modular Power Slots ● RJ45 Console/USB2.0 Port ● Switching Capacity: 240Gbps ● SDN & Cloud Management

Key Features

- **100M/1000M/2.5GE mGig Interfaces**

With the rise of Wi-Fi 7, the limitations of traditional gigabit switch ports are becoming increasingly evident. To meet the growing demand for higher bandwidth in next-generation wireless and wired networks, 2.5GE switches are poised to become the mainstream in the future. The S4530 series switch is designed for such kind of scenarios, it provides 24*100M/1000M/2.5GE RJ45 interfaces and 6*1/10G SFP+ uplinks.

- **Intelligent stacking technology**

The S4530 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.

- **SDN Ready**

The S4530 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.

- **Zero Touch Provisioning**

The S4530 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 S4530 series switch an ideal choice for scalable and dynamic network environments.

- **High availability**

The S4530 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.

- **Perfect security policy**

The S4530 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 S4530 series ideal for large-scale, multi-service, and complex-traffic networks.

- **Advanced QoS**

The S4530 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 S4530 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 S4530 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 S4530 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 both locally and via the cloud.

- **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	S4530-30MLTXF	S4530-30MLTXP
Hardware Specification		
Physical Traffic Port	24*100M/1000M/2.5GE Base-T interfaces 6*1/10G SFP+ interfaces	24*100M/1000M/2.5GE Base-T interfaces 6*1/10G SFP+ interfaces
Power Slot	Dual	Dual
Fixed Fan	Yes	Yes
PoE Standard	N/A	IEEE 802.3 af/at/bt
PoE Power Consumption	N/A	760W/1520W
Power Consumption (Without PoE)	≤46.5W	≤58W
Dimension(W*D*H)mm	442*420*43.6mm	442*420*43.6mm
Physical Management Port	1*RJ45 Console 1*USB2.0 Port	
Input Voltage	AC :100-240V/50-60Hz	
Temperature	Work Temperature : -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 Capability	240Gbps	
MAC Address Entry	32K	
Jumbo Frame	12K	
ARP Entry	8K	
ND Entry	8K	
VLAN Entry	4K	
LACP Group	64	
LACP Member in Group	8	
MSTP Instance	64	
IPv4 Routing Entry	12K	
IPv6 Routing Entry	4K	
L2 Multicast Entry	6K	
L3 Multicast Entry	6K	
VRF Entry	256	
VRRP Group	255	
Software Specification		

Interface	Physical Interface	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
	MAC Address Management	Storm Control, Flood Control, MAC Address Aging Time, Mac Address Learning on off, Mac Address Learning Limitation, Mac Address VLAN Bundling, 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, 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
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 Guard, 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
	Multi-Active Detection	MAD LACP, MAD BFD, MAD Fast-Hello, MAD LACP
	High Availability Protocols	HA, ULFD, UDLD,G.8032, ULPP, Monitor Link, VRRP, VRRPv3, VBRP, EEP, BFD with Static RIP OSPF BGP ISIS
	Monitoring and Diagnostics	SPAN, RSPAN, VLAN SPAN, sFlow, Telemetry, LLDP, IP-SLA

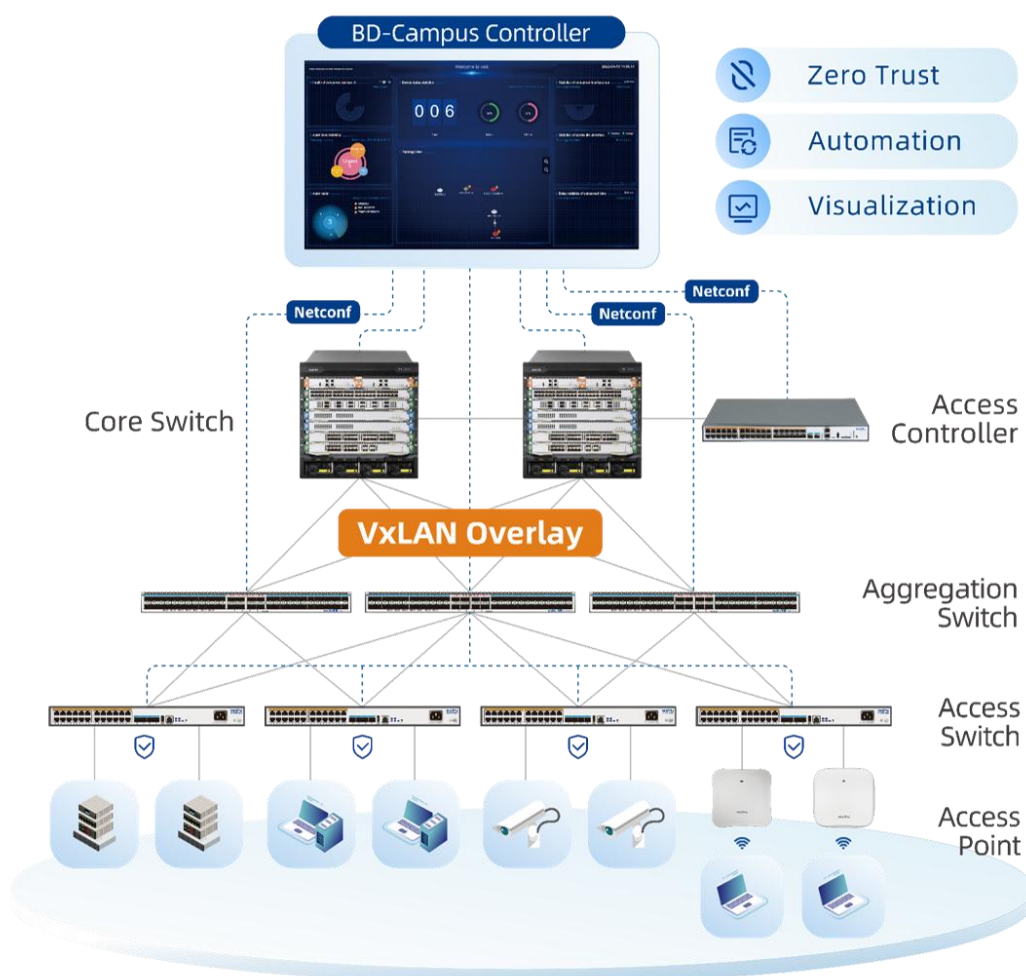
Configuration and Maintenance	Device Management	TR069, SNMP v1/v2/v3, MIB, RMON, SYSLOG, WEB(HTTP/HTTPS), CLI, Telnet, FTP/SFTP/TFTP/FTPS, Debug, Telemetry, ISSU, Hot Patch, Keepalive Gateway, Cloud Management
	Zero Touch Provisioning	ZTP Provisioning Through DHCP Server, ZTP Provisioning Through USB Flash Disk
Network Virtualization	Software Defined Networking (SDN)	Netconf/Yang, BD-Campus Controller
IEEE Standard	IEEE 802.3 (10BASE-T) IEEE 802.3u (100BASE-T) IEEE 802.3z (1000BASE-X) IEEE 802.3ab (1000BASE-T) IEEE 802.3bz (2500BASE-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 802.3af/at/bt (PoE/PoE+/PoE++) IEEE 802.3az (Energy Efficient Ethernet) 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
S4530 Series Host	
S4530-30MLTXF	V1 Version: 24*100M/1000M/2.5GE Base-T interfaces, 6*1/10G SFP+ interfaces, Dual Power Slots.
S4530-30MLTXP	V1 Version: 24*100M/1000M/2.5GE Base-T interfaces, 6*1/10G SFP+ interfaces, Dual Power Slots, PoE/PoE+/PoE++ Enable.
Power Module	
AD75M-HV0N	V1 Version: 75W AC Power Module (For S4530-30MLTXF)
AD500M-1D0B	V1 Version: 500W AC Power Module (For S4530-30MLTXP)
AD880M-1D0B	V1 Version: 880W AC Power Supply Module (For S4530-30MLTXP)
Stacking Cable	
SFP-STACK-15	High speed stacking cable, SFP+ to SFP+,10Gbps, L=1.5m
SFP-STACK-30	High speed stacking cable, SFP+ to SFP+,10Gbps, L=3.0m
SFP-STACK-50	High speed stacking cable, SFP+ to SFP+,10Gbps, L=5.0m

Typical Application

• SDN Campus Network



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