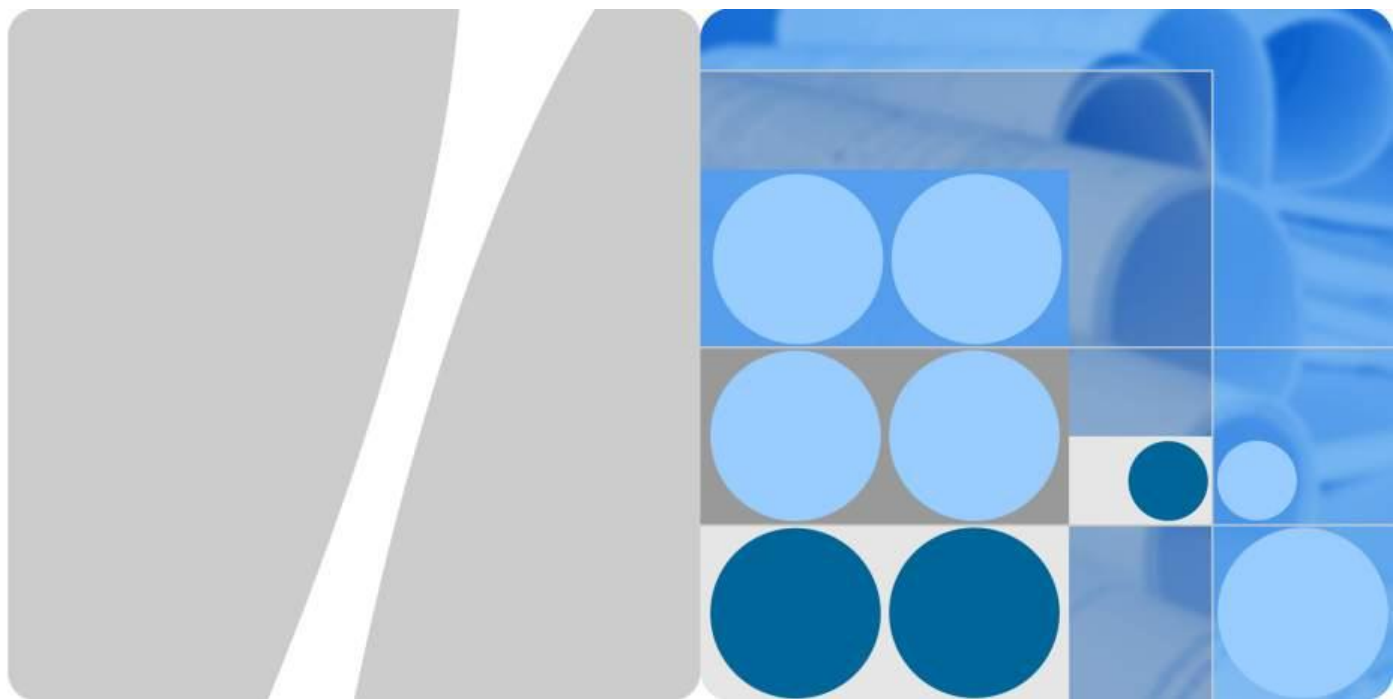


Коммутаторы S5300-LI Series Gigabit Enterprise



Huawei Technologies Co., Ltd.

















S5300-LI Series Gigabit Enterprise Switches

Product Overview

The S5300-LI is a next-generation energy-saving gigabit Layer 2 Ethernet switch that provides flexible GE access ports and extensive services. It supports EEE and device sleeping, providing customers with a green, easy-to-manage, easy-to-expand, and cost-effective gigabit to the desktop solution.

Product Appearance

Appearance	Description
 S5300-28P-LI-AC  S5300-28P-LI-DC	<ul style="list-style-type: none"> ● Twenty-four 10/100/1000Base-T ports and four 1000Base-X SFP ports ● Two models: AC model and DC model, supporting RPS (redundant power supply) ● Forwarding performance: 42 Mpps
 S5300-52P-LI-AC  S5300-52P-LI-DC	<ul style="list-style-type: none"> ● Forty-eight 10/100/1000 Base-T ports and four 1000Base-X ports ● Two models: AC model and DC model, supporting RPS (redundant power supply) ● Forwarding performance: 78Mpps
 S5306TP-LI-AC	<ul style="list-style-type: none"> ● Four 10/100/1000 Base-T ports and two combo ports ● Forwarding performance: 9Mpps
 S5300-10P-LI-AC	<ul style="list-style-type: none"> ● Eight 10/100/1000 Base-T ports and two GE SFP ports ● Forwarding performance: 15Mpps
 S5300-28X-LI-AC	<ul style="list-style-type: none"> ● Twenty-four 10/100/1000Base-T ports and four 10GEBASE-X SFP+ ports ● Forwarding performance: 95.2Mpps

Appearance	Description
 S5300-28X-LI-DC	
 S5300-28X-LI-24S-AC  S5300-28X-LI-24S-DC	<ul style="list-style-type: none"> ● Twenty-four 100/1000Base-X ports and four 10GBase-X SFP+ ports ● Forwarding performance:95.2Mpps
 S5300-52X-LI-AC  S5300-52X-LI-DC	<ul style="list-style-type: none"> ● Forty-eight 10/100/1000Base-T ports and four 10GBase-X SFP+ ports ● Forwarding performance:130.94Mpps
 S5300-52X-LI-48CS-AC  S5300-52X-LI-48CS-DC	<ul style="list-style-type: none"> ● Forty-eight 1000Base-X CSFP ports or Twenty-four 1000Base-X SFP ports, four GE combo and four 10GBase-X SFP+ ports ● Forwarding performance:130.94Mpps

Product Features

- **Innovative Energy Saving Design**

The S5300-LI offer customers extensive selection of energy-saving with standard mode, basic mode and advanced mode that accommodates most needs. By matching port link down/up, optical-module in-place/out of place, port shut down/undo shutdown, idle period, busy period to increase the proportion of the dynamic energy-saving to reduce the power consumption.

The S5300-LI series reduces energy consumption without compromising system performance, ensuring good user experience. The S5300-LI adopts multiple cutting-edge energy-saving designs, including Energy Efficient Ethernet (EEE), port energy detection, dynamic CPU frequency adjustment, and device sleeping.



- **Comprehensive reliability mechanisms**

Besides STP, RSTP, and MSTP, the S5300-LI supports enhanced Ethernet reliability technologies, such as Smart Link and RRPP (Rapid Ring Protection Protocol), which implement millisecond-level protection switchover and ensure network reliability. The S5300 also provides Smart Link multi-instance and RRPP multi-instance to implement load balancing among links, optimizing bandwidth usage.

The S5300-LI supports the Smart Ethernet Protection (SEP) protocol, a ring network protocol applied to the link layer on an Ethernet network. SEP can be used on open ring networks and can be deployed on upper-layer aggregation devices to provide fast switchover (within 50 ms), ensuring continuous transmission of services. SEP features simplicity, high reliability, fast switchover, easy maintenance, and flexible topology, facilitating network planning and management.

The S5300-LI supports Ethernet Ring Protection Switching (ERPS), also referred to as G.8032. As the latest ring network protocol, ERPS was developed based on traditional Ethernet MAC and bridging functions and uses mature Ethernet OAM function and a ring automatic protection switching (R-APS) mechanism to implement millisecond-level protection switching. ERPS supports various services and allows flexible networking, helping customers build a network with lower OPEX and CAPEX.

Complying with IEEE 802.3ah and 802.1ag, the S5300-LI supports point-to-point Ethernet fault management and can detect faults in the last mile of an Ethernet link to users. The S5300-LI supports Y.1731. Besides fast end-to-end service fault detection, the S5300-LI can use the performance measurement tools defined in Y.1731 to monitor network performance, providing accurate data about network quality.

- **Well-designed QoS policies and security mechanisms**

The S5300-LI implements complex traffic classification based on packet information, such as the 5-tuple, IP preference, ToS, DSCP, IP protocol type, ICMP type, TCP source port, VLAN ID, Ethernet protocol type, and CoS. ACLs can be applied to inbound or outbound directions on an interface. The S5300 supports a flow-based two-rate three-color CAR. Each port supports eight priority queues and multiple queue scheduling algorithms, such as WRR, DRR, PQ, WRR+PQ, and DRR+PQ. All of these ensure the quality of voice, video, and data services.

The S5300-LI provides multiple security measures to defend against Denial of Service (DoS) attacks, as well as attacks against networks or users. DoS attack types include SYN Flood attacks, Land attacks, Smurf attacks, and ICMP Flood attacks. Attacks to networks refer to STP BPDU/root

attacks. Attacks to users include bogus DHCP server attacks, man-in-the-middle attacks, IP/MAC spoofing attacks, and DHCP request flood attacks. DoS attacks that change the CHADDR field in DHCP packets are also attacks against users.

The S5300-LI supports DHCP snooping, which generates user binding entries based on MAC addresses, IP addresses, IP address leases, VLAN IDs, and user access interfaces. DHCP snooping discards invalid packets that do not match any binding entries, such as ARP spoofing packets and IP spoofing packets. This prevents hackers from using ARP packets to initiate man-in-the-middle attacks on campus networks. The interface connected to a DHCP server can be configured as a trusted interface to protect the system against bogus DHCP server attacks.

The S5300-LI supports strict ARP learning, which prevents ARP spoofing attacks that exhaust ARP entries. It also provides IP source checks to prevent DoS attacks caused by MAC address spoofing, IP address spoofing, and MAC/IP spoofing.

The S5300-LI supports centralized MAC address authentication, 802.1x authentication, and NAC. It authenticates users based on statically or dynamically bound user information, such as the user name, IP address, MAC address, VLAN ID, access interface, and flag indicating whether antivirus software is installed. VLANs, QoS policies, and ACLs can be dynamically applied to users.

The S5300-LI can limit the number of MAC addresses learned on an interface to prevent attackers from exhausting MAC address entries by using bogus source MAC addresses. This function minimizes the packet flooding that occurs when users' MAC addresses cannot be found in the MAC address table.

- **Maintenance-free design and manageability**

The S5300-LI supports automatic configuration, plug-and-play features, and batch remote upgrades. These capabilities simplify device management and maintenance and reduce maintenance costs.

The S5300 supports SNMP v1/v2/v3 and provides flexible methods for managing devices. Users can manage the S5300 using the CLI, Web NMS and Telnet. The NQA function assists users with network planning and upgrades. In addition, the S5300 supports NTP, SSH v2, HWTACACS, RMON, log hosts, and port-based traffic statistics.

The S5300-LI supports GARP VLAN Registration Protocol (GVRP), which dynamically distributes, registers, and propagates VLAN attributes to reduce manual configuration workloads of network administrators and ensure correct VLAN configuration. In a complex network topology, GVRP simplifies VLAN configuration and reduces network communication faults caused by incorrect VLAN configuration.



The S5300-LI supports MUX VLAN. MUX VLAN isolates the Layer 2 traffic between interfaces in a VLAN. Interfaces in a subordinate separate VLAN can communicate with ports in the principal VLAN, but cannot communicate with each other. MUX VLAN is typically used on an enterprise intranet to isolate user interfaces from each other while still allowing them to communicate with server interfaces. This function prevents communication between network devices connected to certain interfaces or interface groups, but allows these devices to communicate with the default gateway.

- **High scalability**

The S5300-LI supports intelligent stacking (iStack). Multiple S5300s can be connected with stack cables to set up a stack, which functions as a virtual switch. A stack consists of a master switch, a backup switch, and several slave switches. The backup switch takes over services when the master switch fails, reducing service interruption time. Stacks support intelligent upgrades so that users do not need to change the software version of a switch when adding it to a stack. The iStack function allows users to connect multiple switches with stack cables to expand the system capacity. These switches can be managed using a single IP address, which greatly reduces the costs of system expansion, operation, and maintenance. Compared with traditional networking technologies, iStack has distinct advantages regarding scalability, reliability, and system architecture.

Product Specifications

Item	S5300-LI				
Item	S5306TP-LI-AC	S5300-10P-LI-AC	S5300-28P-LI S5300-28X-LI S5300-28X-LI-24S	S5300-52P-LI S5300-52X-LI	S5300-52X-LI-48CS
Interfaces	S5306TP-LI-AC: 4*10/100/1000Base-T + 2* GE combo S5300-10P-LI-AC: 8*10/100/1000Base-T + 2*1000Base-X SFP S5300-28P-LI: 24*10/100/1000Base-T + 4*100/1000Base-X SFP S5300-28X-LI: 24*10/100/1000Base-T + 4*10GE SFP+ S5300-28X-LI-24S: 24*100/1000Base-X SFP + 4*10GE SFP+ S5300-52P-LI:				



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Item	S5306TP-LI-AC	S5300-10P-LI-AC	S5300-28P-LI S5300-28X-LI S5300-28X-LI-24S	S5300-52P-LI S5300-52X-LI	S5300-52X-LI-48CS
	48*10/100/1000Base-T + 4*100/1000Base-X SFP S5300-52X-LI: 48*10/100/1000Base-T + 4*10GE SFP+ S5300-52X-LI-48CS: 48*GE CSFP or 24*GE SFP + 4*GE combo + 4*10GE SFP+				
MAC address table	16K MAC address entries IEEE 802.1d compliance MAC address learning and aging Static, dynamic, and blackhole MAC address entries Packet filtering based on source MAC addresses				
VLAN	4K VLANs Guest VLAN and voice VLAN VLAN assignment based on MAC addresses, protocols, IP subnets, policies, and ports 1:1 and N:1 VLAN Mapping				
Reliability	RRPP ring topology and RRPP multi-instance Smart Link tree topology and Smart Link multi-instance, providing the millisecond-level protection switchover SEP ERPS(G.8032 v2) STP(IEEE 802.1d), RSTP(IEEE 802.1w), and MSTP(IEEE 802.1s) BPDU protection, root protection, and loop protection				
IP routing	Static routing; S5300-10P-LI supports IPv4 static routing and Layer3 hardware forwarding.				
IPv6 features	Neighbor Discovery (ND) Path MTU (PMTU) IPv6 ping, IPv6 traceroute, and IPv6 Telnet ACLs based on the source IPv6 address, destination IPv6 address, Layer 4 ports, or protocol type MLD v1/v2 snooping 6to4 tunnel, ISATAP tunnel, and manually configured tunnel (supported by the S5310-LI)				



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multicast	IGMP v1/v2/v3 snooping and IGMP fast leave Multicast forwarding in a VLAN and multicast replication between VLANs Multicast load balancing among member ports of a trunk Controllable multicast Port-based multicast traffic statistics				
QoS/ACL	Rate limiting on packets sent and received by an interface Packet redirection Port-based traffic policing and two-rate three-color CAR Eight queues on each port WRR, DRR, PQ, WRR+PQ, and DRR+PQ queue scheduling algorithms Re-marking of the 802.1p priority and DSCP priority Rate limiting in each queue and traffic shaping on ports				
Surge protection	2 KV surge protection capability on service ports	6 KV surge protection capability on service ports			
Security	User privilege management and password protection DoS attack defense, ARP attack defense, and ICMP attack defense Binding of the IP address, MAC address, interface, and VLAN Port isolation, port security, and sticky MAC Blackhole MAC address entries Limit on the number of learned MAC addresses 802.1x authentication and limit on the number of users on an interface AAA authentication, RADIUS authentication, HWTACACS authentication, and NAC SSH v2.0 Hypertext Transfer Protocol Secure (HTTPS) CPU defense Blacklist and whitelist				
Management	NA		iStack		

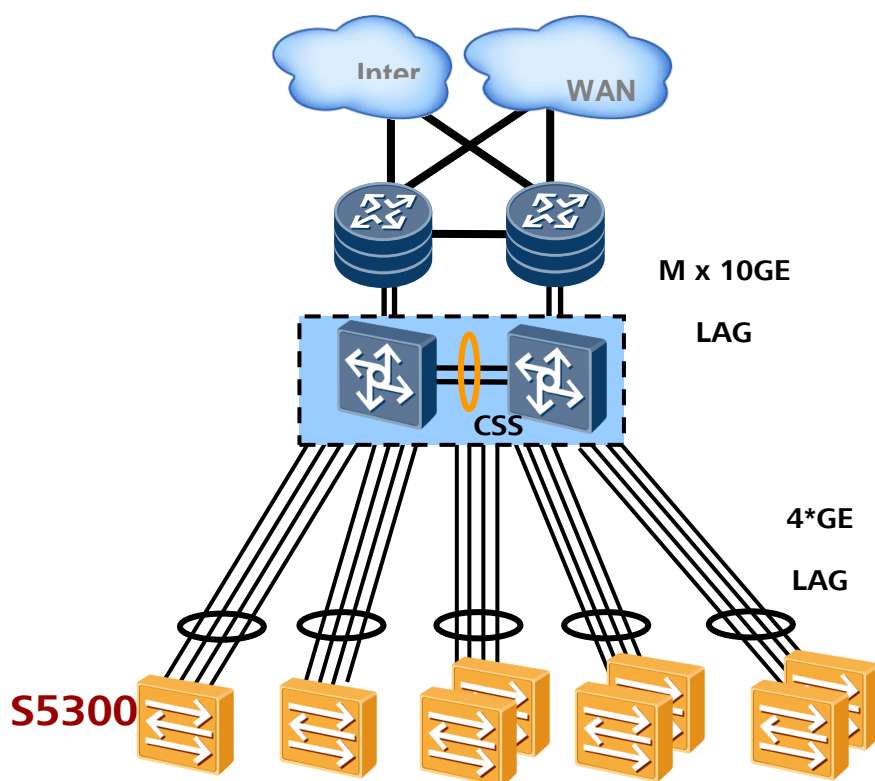


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and maintenance	MAC Forced Forwarding (MFF) Virtual cable test Port mirroring and RSPAN (remote port mirroring) Remote configuration and maintenance using Telnet SNMP v1/v2/v3 RMON Web NMS System logs and alarms of different levels GVRP MUX VLAN 802.3az EEE Dying gasp				
Operating environment	Operating temperature: 0°C–50°C (long term); -5°C–55°C (short term) Relative humidity: 10%–90% (non-condensing)				
Input voltage	AC: Rated voltage range: 100 V to 240 V AC, 50/60 Hz Maximum voltage range: 90 V to 264 V AC, 50/60 Hz DC: Rated voltage range: -48 V to -60 V, DC Maximum voltage range: -36 V to -72 V, DC Note: PoE-support switches do not use DC power supplies.				
Dimensions (W x D x H)	S5300-28P-LI/S5300-28X-LI-AC/S5300-28X-LI-DC/S5300-28X-LI-24S-AC/S5300-28X-LI-24S-DC: 442 mm x 220 mm x 43.6 mm S5300-52P-LI: 442 mm x 310 mm x 43.6 mm S5300-10P-LI-AC/S5306TP-LI-AC: 250mm x 180mm x 43.6mm				
Power consumption	S5300-28P-LI<25W	S5300-52P-LI<52W	S5306TP-L-ACI<29W	S5300-10P-LI-AC<11.5W	S5300-28X-LI<25.5W S5300-28X-LI-24S<54W

Applications

- **Application in Data Centers**

The S5300 can be used in a data center to access the gigabit server and connect to upper-layer devices by link aggregation. If multiple servers are available, you can use the iStack technology to improve network reliability.



- **Application in 1000 Mbit/s Access Rate for Terminals**

