

Quidway[®] S2300 Switches





Product Overview

Quidway® S2300 switches (S2300 for short) are next-generation Ethernet intelligent switches developed by Huawei to meet the requirements of IP MAN and enterprise networks for carrying various Ethernet services and accessing Ethernets. Utilizing next-generation high-performance hardware and Huawei Versatile Routing Platform (VRP) software, the S2300 provides abundant and flexible features for customers to effectively improve the operability, manageability, and service expansibility of the S2300 and supports powerful surge protection capability, security features, ACLs, QinQ, 1:1 VLAN switching, and N:1 VLAN switching to meet the requirement for flexible VLAN deployment.

The S2300 is a case-shaped device with a 1 U high chassis, provided in a standard version (SI) and an enhanced version (EI). SI supports simple Lay-2 access functions. Compared with the standard SI, EI provides more powerful VLAN, QoS, multicast, security, authentication, and reliability functions.

Product Appearance

S2309TP-SI/EI



- Provides eight 10/100Base-TX ports and one gigabit Combo port (10/100/1000Base-T or 100/1000Base-X).
- Two models: one supports AC power supplies and the other supports DC power supplies.
SI does not support DC power supplies.

S2309TP-PWR-EI



- Provides eight 10/100Base-TX ports and one gigabit Combo port (10/100/1000Base-T or 100/1000Base-X).
- Supports AC power supplies and PoE.

S2318TP-SI/EI



- Provides sixteen 10/100Base-TX ports and two gigabit Combo ports (10/100/1000Base-T or 100/1000Base-X).
- Two models: one supports AC power supplies and the other supports DC power supplies.
SI does not support DC power supplies.

S2326TP-SI/EI



- Provides twenty-four 10/100Base-TX ports and two gigabit Combo ports (10/100/1000Base-T or 100/1000Base-X).
- Two models: one supports AC power supplies and the other supports DC power supplies. SI does not support DC power supplies.

S2326TP-PWR-EI



- Provides twenty-four 10/100Base-TX ports and two gigabit Combo ports (10/100/1000Base-T or 100/1000Base-X).
- Supports AC power supplies and PoE.

S2352P-EI



- Provides forty-eight 10/100Base-TX ports, two 100/1000Base-X SFP ports, and two 1000Base-X SFP ports.
- Two models: one supports AC power supplies and the other supports DC power supplies.

Product Features

Maintenance-Free, Easy Deployment, and Easy Management

- The S2300 supports automatic configuration and plug-and-play, which dramatically reduces maintenance costs. It adopts a fan-free design, which reduces mechanical faults and protects the device against damages caused by condensed water and dust. According to the reference value, 33% of device failures are caused by fan failures. In this case, this design reduces 53% of the maintenance rate.
- The S2300 supports automatic remote upgrade in batches, which facilitates the usage and deployment of the S2300. It supports diversified management and maintenance modes such as SNMP v1/v2/v3, CLI, Web NMS, Telnet, and HGMP, which make device management more flexible. In addition, the S2300 supports HGMP v2, NTP, SSH v2, HWTACACS+, RMON, port-based traffic statistics, and NQA, which help to better deploy and reconstruct networks.
- The S2300 supports GVRP, which dynamically assigns, registers, and propagates VLAN attributes to reduce the manual configuration workload of network administrators and ensure correct configuration of VLANs. The GVRP technology implements dynamic configuration of VLANs. In a complex networking environment, GVRP can simplify VLAN configuration and reduce network communication faults caused by incorrect configuration of VLANs.
- Deployment, upgrade, and service provisioning of the S2300 can be completed at a time, which simplifies subsequent management and maintenance.

No Noise, Energy Saving, and Low Radiation

- The S2300 adopts next-generation highly-integrated chips and power-saving circuit design to ensure even heat dissipation. It also supports idle port sleep to further reduce power consumption. Compared with products of the same type, the S2300 generates no noise and reduces 40% of power consumption owing to the fan-free design. The power consumption of the S2300 is similar to that of an energy-saving light bulb. The S2300 emits low radiation and complies with the radiation standards of electric appliances, so it has no harm to human body and can be placed in a distribution box in a residential area.

Powerful Surge Protection

- The S2300 adopts the Huawei patented built-in surge protection technology that can effectively defend against lightning induced over-voltage. Each port has a surge protection capability of 7 kV. Compared with the conventional surge protection design, the Huawei patented surge protection technology greatly reduces the possibility of lightning damage on the device in severe environments or even in scenarios where grounding cannot be implemented.

VLAN-based Service Control

- The S2300-EI supports various ACL control modes, especially the delivery of ACL rules based on VLAN IDs. In this manner, the S2300-EI can flexibly control multiple ports in a VLAN and uniformly dispatch resources.
- The S2300-EI supports 1:1 VLAN switching to provide IPTV services with no home gateway configured. In addition, the S2300 is the first switch in the industry to support N:1 VLAN switching. In this manner, VLAN aggregation is implemented on the user side and the number of VLANs is decreased.
- The S2300-EI supports QinQ to encapsulate private VLAN tags into public VLAN tags of packets and transmit the packets over the backbone network of carriers.
- The S2300 supports multiple VLAN division modes: port-based VLAN division (you can specify the VLAN to which a port belongs) and MAC-based VLAN division (which is applied to the networks where there are high requirements for security and mobility).

Rich Multicast Functions

- The S2300 supports rich Layer-2 multicast replication functions, including IGMP snooping, IGMP filter, fast leave, and multicast load balancing among bundled ports. It supports port-based multicast rate limit and traffic statistics, fully meeting the requirements of IPTV services.

PoE Features

- Several models of the S2300 support PoE and comply with IEEE 802.3af and 802.3at (PoE+). By using this function, the S2300 can supply power over the Ethernet to the connected standard PDs such as IP Phones, WLAN APs, and Bluetooth APs. Each port can provide up to 30 W of power. This reduces the power cable layout and management cost for terminal devices. The S2300 can also be configured to provide power for PDs at specified time as required.

Comprehensive QoS Policies

- The S2300 supports complex traffic classification based on VLAN IDs, MAC addresses, IP protocols, source addresses, destination addresses, priorities, or ports to which application programs are applied. It also supports flow-based rate limit to ensure line-speed forwarding on each port, ensuring the high quality of voice, video, and data services. Each port supports four queues and multiple queue scheduling algorithms such as WRR, SP, and WRR+SP.

Excellent Security Features

- The S2300 provides various security protection measures. The S2300 listens to the MAC/IP address, address lease, VLAN ID, and port number about a DHCP user by establishing and maintaining a DHCP snooping binding table. In this way, IP addresses and access ports of DHCP users can be tracked. The S2300 directly discards invalid packets that do not match binding entries, such as ARP spoofing packets and packets with bogus IP addresses, to prevent hackers or attackers from initiating man-in-the-middle attacks to campus networks by using ARP packets. The trusted port feature of DHCP snooping is used to ensure the validity of the DHCP server.
- The S2300 supports strict ARP learning to prevent ARP spoofing attackers from exhausting ARP entries so that authorized users can connect to the Internet. It also supports IP source check to prevent DoS attacks caused by MAC address spoofing, IP address spoofing, and MAC/IP address spoofing.
- The S2300 supports centralized MAC address authentication, 802.1x authentication, and NAC. User information such as the user account, IP address, MAC address, VLAN ID, access port number, and flag indicating whether antivirus software is installed on the client can be bound statically or dynamically, and user policies (VLAN, QoS, and ACL) can be delivered dynamically.
- The S2300 can limit the number of source MAC addresses learned on a port to prevent attackers from exhausting MAC address entries by using bogus source MAC addresses. In this way, MAC addresses of authorized users can be learned and flooding is prevented.

Good Expandability

- The S2300 switches support Intelligent Stacking (iStack) and plug-and-play. Multiple S2300s start to construct a virtual switch automatically after being connected by stacking cables. Stacked switches are classified into active, standby, and slave switches. After a standby switch is configured, the duration of service interruption caused by faults on the active switch is reduced. The S2300 supports intelligent upgrade, freeing customers from upgrading the software version of a switch after adding the switch to a stack. Utilizing the iStack technology, multiple switches can be interconnected to expand the system capacity and can be managed by using a single IP address, which greatly reduces the cost of system expansion, operation, and maintenance. Compared with traditional networking technologies, iStack has advantages in expansibility, reliability, and system architecture.

Product Specifications

Item		S2300-EI	S2300-SI
Port	100-Mbit/s port	9-port device: eight 10/100Base-TX ports 18-port device: sixteen 10/100Base-TX ports 26-port device: twenty-four 10/100Base-TX ports 52-port device: forty-eight 10/100Base-TX ports	
	1000-Mbit/s port	9-port device: one 10/100/1000Base-T or 100/1000Base-X port 18-port device: two 10/100/1000Base-T or 100/1000Base-X ports 26-port device: two 10/100/1000Base-T or 100/1000Base-X ports 52-port device: two 100/1000Base-X ports and two 1000Base-X ports	
Forwarding performance		9-port device: 2.7 Mpps 18-port device: 5.4 Mpps 26-port device: 6.6 Mpps 52-port device: 13.2 Mpps	
Port switching capacity		9-port device: 3.6 Gbit/s 18-port device: 7.2 Gbit/s 26-port device: 8.8 Gbit/s 52-port device: 17.6 Gbit/s	
Backplane switching capacity		32 Gbit/s	
MAC address table		Supports 8 K MAC address entries. Supports manual addition and deletion of a MAC address table. Supports configuration of MAC address aging time. Supports disabling of MAC address learning based on port or aggregation group. Supports limit on the number of MAC addresses to be learned on a port. Supports blackhole MAC addresses.	
VLAN features		Supports IEEE 802.1Q (VLAN) and 4096 VLANs. Supports port-based VLAN.	
		Supports MAC-based VLAN. Supports basic QinQ. Supports 1:1 VLAN switching. Supports N:1 VLAN switching.	N/A
QoS		Supports port rate limit and traffic rate limit. Supports four queues with different priorities on each port. Supports mapping of packets to different queues based on 802.1p. Supports multiple algorithms including SP, WRR, and SP+WRR.	
		Supports traffic classification based on source MAC address, destination MAC address, source IP address, destination IP address, Layer-4 port number, protocol type, VLAN ID, Ethernet frame protocol type, and CoS. Supports traffic-based priority marking and packet redirection.	N/A
IPv6 features		Supports IPv6 host functions. Supports static route configuration. Supports IPv6 ACL. Supports MLD v1/v2 snooping.	Supports IPv6 host functions. Supports static route configuration.
Multicast		Supports IGMP v1/v2/v3 snooping. Supports multicast load sharing among bundled ports. Supports port-based multicast rate limit and traffic statistics.	

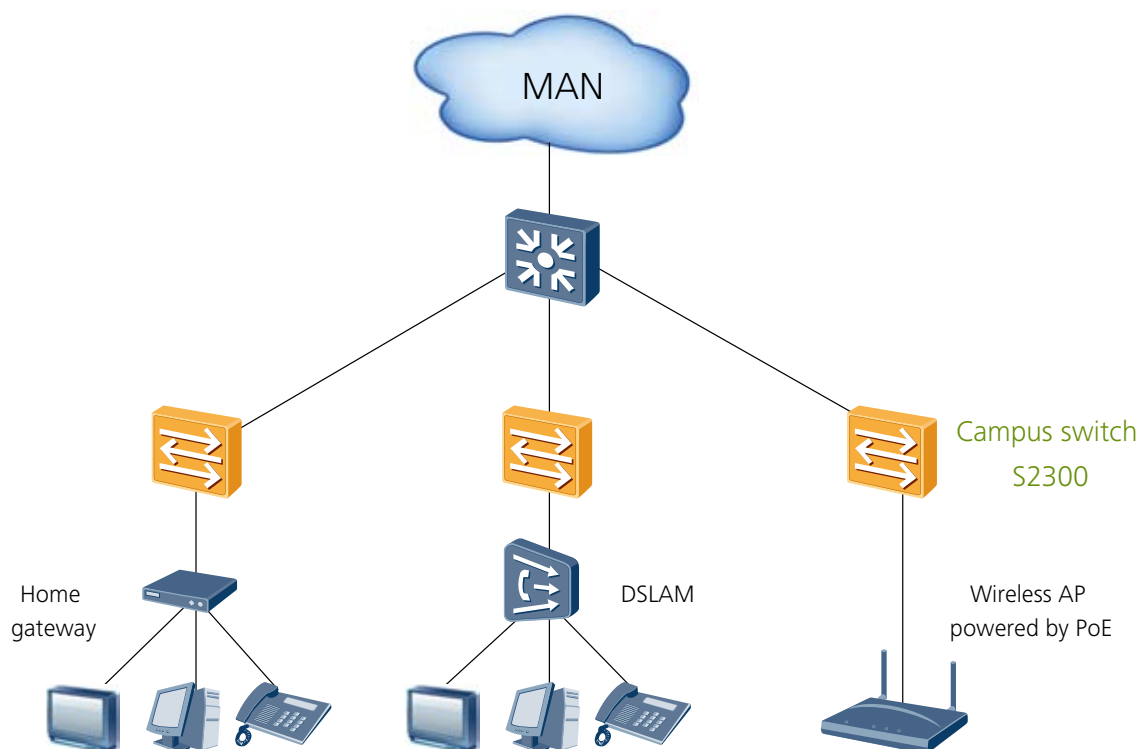
Item	S2300-EI	S2300-SI
Port mirroring	Supports 1:1 or N:1 port mirroring.	
	Supports Remote Switched Port Analyzer (RSPAN) and traffic-based mirroring.	N/A
	Supports packet forwarding on an observing port.	
Security	Supports IEEE 802.1X authentication and the limit on the maximum number of users on a port. Supports dynamic ARP detection. Supports IP Source Guard.	N/A
	Supports multiple authentication methods including AAA, RADIUS, HWTACACS+, and NAC. Supports binding of the IP address, MAC address, port number, and VLAN ID. Support port rate limit. Supports port isolation, port security, and sticky MAC. Supports packet filtering. Supports packet filtering based on MAC addresses. Supports suppression of multicast, broadcast, and unknown single-cast packets. Supports limit on the number of MAC addresses to be learned. Supports CPU protection.	Supports port isolation. Supports suppression of multicast, broadcast, and unknown single-cast packets. Supports CPU protection.
Surge protection	Each port has a surge protection capability of 7 kV. Each port has a surge protection capability of 15 kV after an extra surge protection device is added.	
Management	Supports iStack. Supports automatic configuration. Supports CLI configuration. Supports remote configuration and maintenance by using Telnet. Supports SNMP v1/v2/v3. Supports RMON. Supports HGMP v2. Supports SSH v2. Supports Web management. Supports GVRP.	
Operating environment	Operating temperature: 0° C to 50° C (long term); -5° C to 55° C (short term); relative humidity: 10% to 90% (non-condensing)	
Power supply	AC: Rated voltage: 100 V to 240 V, 50/60 Hz Maximum voltage: 90 V to 264 V, 50/60 Hz	
	DC: Rated voltage: -48 V to -60 V Maximum voltage: -36 V to -72 V Note: Models supporting PoE do not use DC power supplies.	N/A

Item	S2300-EI	S2300-SI
Dimensions: width x depth x height	S2309TP-EI/SI: 250 mm x 180 mm x 43.6 mm S2309TP-PWR-EI: 320 mm x 220 mm x 43.6 mm S2318TP-EI/SI, S2326TP-EI/SI: 442 mm x 220 mm x 43.6 mm S2326TP-PWR-EI: 442 mm x 420 mm x 43.6 mm S2352P-EI: 442 mm x 220 mm x 43.6 mm	
Weight	S2309TP-EI/SI < 1.4 kg S2309TP-PWR-EI < 2.5 kg S2318TP-EI/SI < 2.4 kg S2326TP-EI/SI < 2.4 kg S2326TP-PWR-EI < 4 kg S2352P-EI < 3 kg	
Power consumption	S2309TP-EI/SI < 12.8 W S2309TP-PWR-EI < 154 W, PoE power = 124 W S2318TP-EI/SI < 14.5 W S2326TP-EI/SI < 15.5 W S2326TP-PWR-EI < 868 W, PoE power = 740 W S2352P-EI < 38 W	

Applications

Serving as Access Devices in Buildings

The S2300-EI can connect to 100-Mbit/s DSLAMs as an aggregation switch in buildings. In this case, the selective QinQ function is configured on the S2300-EI; outer VLAN tags identify the locations of the DSLAMs or campus, and the inner VLAN tags identify users. The S2300-EI can also connect to home gateways directly or supply power to PSEs such as wireless APs or IP phones through PoE. This enables the S2300-EI to better support multi-service deployment, unified planning, fine management, and convenient maintenance of customers.



Order Information

Product Description

S2309TP-EI (supports AC and DC power supplies, with the input voltage of 220 VAC or –48 VDC)
S2309TP-SI (supports AC power supplies, with the input voltage of 220 V)
S2318TP-EI (supports AC and DC power supplies, with the input voltage of 220 VAC or –48 VDC)
S2318TP-SI (supports AC power supplies, with the input voltage of 220 V)
S2326TP-EI (supports AC and DC power supplies, with the input voltage of 220 VAC or –48 VDC)
S2326TP-SI (supports AC power supplies, with the input voltage of 220 V)
S2352P-EI (supports AC and DC power supplies, with the input voltage of 220 VAC or –48 VDC)
S2309TP-PWR-EI (supports two pluggable AC power supplies and PoE supplies, with the input voltage of 220 V)
S2326TP-PWR-EI (supports two pluggable AC power supplies and PoE supplies, with the input voltage of 220 V)
GE-SFP Optical Module
Electrical module, SFP, GE, electrical port modules (100 m, RJ45)
Optical module, ESFP, GE, multimode modules (850 nm, 0.5 km, LC)
Optical module, SFP, GE, single-mode modules (1310 nm, 10 km, LC)
Optical module, eSFP, GE, single-mode modules (1310 nm, 40 km, LC)
Optical module, eSFP, GE, single-mode modules (1550 nm, 40 km, LC)
Optical module, eSFP, GE, single-mode modules (1550 nm, 80 km, LC)
Optical module, ESFP, GE, single-mode modules (1550 nm, 100 km, LC)
FE/STM-1-SFP Optical Module
Optical module, SFP, 100M/155M, multimode modules (1310 nm, 2 km, LC)
Optical module, ESFP, 100M/155M, single-mode modules (1310 nm, 15 km, LC)
Optical module, eSFP, FE, single-mode modules (1310 nm, 40 km, LC)
Optical module, eSFP, FE, single-mode modules (1550 nm, 80 km, LC)
BIDI-SFP Optical Module
Optical module, SFP, GE, BIDI, single-mode modules (TX1490/RX1310, 10 km, LC)
Optical module, SFP, GE, BIDI, single-mode modules (TX1310/RX1490, 10 km, LC)
Optical module, SFP, FE, BIDI, single-mode modules (TX1310/RX1550, 15 km, LC)
Optical module, SFP, FE, BIDI, single-mode modules (TX1550/RX1310, 15 km, LC)
CWDM-SFP Optical Module
Optical transceiver, eSFP, 1571 nm, 100 Mbit/s to 2.67 Gbit/s, 0 dBm, 5 dBm, –28 dBm, LC, 80 km
Optical transceiver, eSFP, 1591 nm, 100 Mbit/s to 2.67 Gbit/s, 0 dBm, 5 dBm, –28 dBm, LC, 80 km
Optical transceiver, eSFP, 1551 nm, 100 Mbit/s to 2.67 Gbit/s, 0 dBm, 5 dBm, –28 dBm, LC, 80 km
Optical transceiver, eSFP, 1511 nm, 100 Mbit/s to 2.67 Gbit/s, 0 dBm, 5 dBm, –28 dBm, LC, 80 km
Optical transceiver, eSFP, 1611 nm, 100 Mbit/s to 2.67 Gbit/s, 0 dBm, 5 dBm, –28 dBm, LC, 80 km
Optical transceiver, eSFP, 1491 nm, 100 Mbit/s to 2.67 Gbit/s, 0 dBm, 5 dBm, –28 dBm, LC, 80 km
Optical transceiver, eSFP, 1531 nm, 100 Mbit/s to 2.67 Gbit/s, 0 dBm, 5 dBm, –28 dBm, LC, 80 km
Optical transceiver, eSFP, 1471 nm, 100 Mbit/s to 2.67 Gbit/s, 0 dBm, 5 dBm, –28 dBm, LC, 80 km

For more information, visit www.huawei.com or contact the local sales office of Huawei.



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