Huawei S2320-EI Series Switches
Product Brochure

HUAWEI TECHNOLOGIES CO., LTD.

HUAWEI

S2320-EI Series Switches

Product Overview

The S2320-EI is a next-generation energy-saving 100M Ethernet switch that provides flexible 100M access ports and GE uplink ports. Building on next-generation, high-performance hardware and the Huawei Versatile Routing Platform (VRP), the S2320-EI supports intelligent stack (iStack), flexible Ethernet networking, and diversified security control.

The models with front power sockets can be installed in the 300 mm deep cabinet. They can be maintained through the front panel, saving space in small equipment rooms.

The models that use a fan-free design reduce power consumption and noise.

Product Appearance

S2320-12TP-EI-AC
S2320-12TP-EI-DC

- 8 × Ethernet 10/100 Base-Tx ports, 2 × Gig SFP ports, 2 × combo Gig ports
- Two models: AC model and DC model
- Forwarding performance: 7.2 Mpps
- Switching Capacity: 68Gbps

S2320-12TP-PWR-EI-AC

- 8 × Ethernet 10/100 Base-Tx ports, 2 × Gig SFP ports, 2 × combo Gig ports
- AC power supply
- PoE+
- Forwarding performance: 7.2 Mpps
- Switching Capacity: 68Gbps

S2320-28TP-EI-AC
S2320-28TP-EI-DC

- 20 × Ethernet 10/100 Base-Tx ports, 4 × Ethernet 10/100/1000 Base-T ports, 2 × Gig SFP ports, 2 × combo Gig ports
- Two models: AC model and DC model
- Forwarding performance: 15 Mpps
- Switching Capacity: 68Gbps

S2320-28TP-PWR-EI-AC

- 20 × Ethernet 10/100 Base-Tx ports, 4 × Ethernet 10/100/1000 Base-T ports, 2 × Gig SFP ports, 2 × combo Gig ports
- AC power supply
- PoE+
- Forwarding performance: 15 Mpps
- Switching Capacity: 68Gbps

S2320-28P-PWR-EI-ACF

- 20 × Ethernet 10/100 Base-Tx ports, 4 × Ethernet 10/100/1000 Base-T ports, 4 × Gig SFP ports
- AC power supply
- PoE+
- Forwarding performance: 15 Mpps
- Switching Capacity: 68Gbps

S2320-52TP-EI-AC
S2320-52TP-EI-DC

- 44 × Ethernet 10/100 Base-Tx ports, 4 × Ethernet 10/100/1000 Base-T ports, 4 × Gig SFP ports
- Two models: AC model and DC model
- Forwarding performance: 18.6 Mpps
- Switching Capacity: 336Gbps

S2320-52TP-PWR-EI-AC

- 44 × Ethernet 10/100 Base-Tx ports, 4 × Ethernet 10/100/1000 Base-T ports, 4 × Gig SFP ports
- AC power supply
- PoE+
- Forwarding performance: 18.6 Mpps
- Switching Capacity: 336Gbps

Product Features and Highlights

Comprehensive reliability mechanisms

- Besides STP, RSTP, and MSTP, the S2320-EI 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 S2320-EI also provides Smart Link multi-instance and RRPP multi-instance to implement load balancing among links, optimizing bandwidth usage.
- The S2320-EI 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 S2320-EI 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 S2320-EI supports point-to-point Ethernet fault management and can detect faults in the last mile of an Ethernet link to users. The S2320-EI supports Y.1731. Besides fast end-to-end service fault detection, the S2320-EI 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 S2320-EI 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 S2320-EI 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 S2320-EI 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 S2320-EI 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 S2320-EI 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 S2320-EI 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 S2320-EI 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 S2320-EI supports automatic configuration, plug-and-play features, and batch remote upgrades. These capabilities simplify device management and maintenance and reduce maintenance costs. The S2320-EI supports SNMP v1/v2/v3 and provides flexible methods for managing devices. Users can manage the S2320-EI using the CLI, Web NMS and Telnet. The NQA function assists users with network planning and upgrades. In addition, the S2320-EI supports NTP, SSH v2, HWTACACS, RMON, log hosts, and port-based traffic statistics.
- The S2320-EI 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 S2320-EI 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 S2320-EI supports intelligent stacking (iStack). Multiple S2320s 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. S2320-EI support electrical ports stacking.

Product Specifications

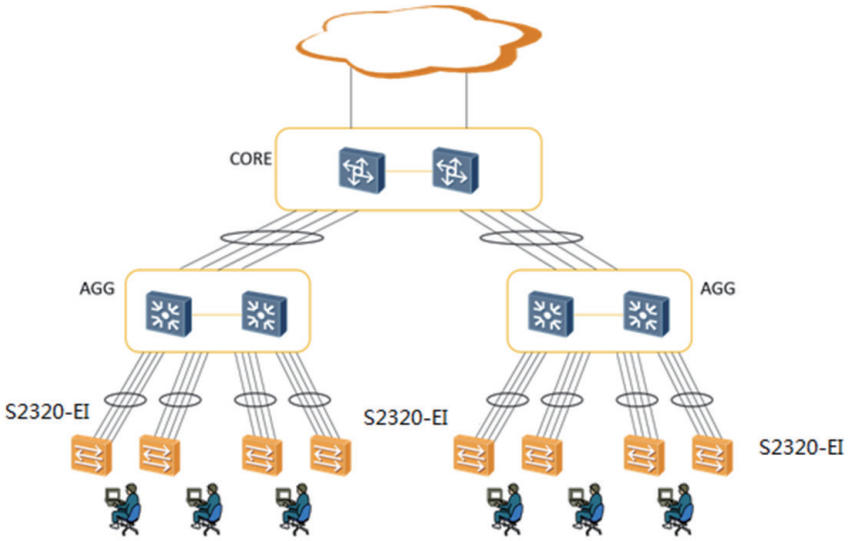
Item	Description
Interfaces	S2320-12TP-EI-AC/S2320-12TP-EI-DC/S2320-12TP-PWR-EI-AC: 8 × Ethernet 10/100 Base-Tx ports, 2 × Gig SFP ports, 2 × combo Gig ports S2320-28TP-EI-AC/S2320-28TP-EI-DC/S2320-28TP-PWR-EI-AC: 20 × Ethernet 10/100 Base-Tx ports, 4 × Ethernet 10/100/1000 Base-T ports, 2 × Gig SFP ports, 2 × combo Gig ports S2320-28P-PWR-EI-ACF: 20 × Ethernet 10/100 Base-Tx ports, 4 × Ethernet 10/100/1000 Base-T ports, 4 × Gig SFP ports S2320-52TP-EI-AC/ S2320-52TP-EI-DC /S2320-52TP-PWR-EI-AC: 44 × Ethernet 10/100 Base-Tx ports, 4 × Ethernet 10/100/1000 Base-T ports, 4 × Gig SFP ports
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 GVRP MUX VLAN VLAN assignment based on MAC addresses, protocols, IP subnets, policies, and ports 1:1 and N:1 VLAN Mapping
Ethernet loop protection	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, RIP, RIPng,OSPF
IPv6 features	Neighbor Discovery (ND) Path MTU (PMTU) IPv6 ping, IPv6 tracert, and IPv6 Telnet
multicast	IGMP v1/v2/v3 snooping Controllable multicast Port-based multicast traffic statistics MLD v1/v2 snooping (Multicast Listener Discovery snooping)

Item	Description
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 Packet filtering at Layer 2 to Layer 4, filtering out invalid frames based on the source MAC address, destination MAC address, source IP address, destination IP address, TCP/UDP port number, protocol type, and VLAN ID Rate limiting in each queue and traffic shaping on 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 MAC Forced Forwarding (MFF) 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 DHCP relay, DHCP server, DHCP snooping DHCPv6 relay, DHCPv6 server, DHCPv6 snooping
Reliability	EFM OAM (802.3ah) CFM OAM (802.1ag) ITU-Y.1731
Management and maintenance	iStack 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 802.3az EEE sFlow easy operation
Surge protection	service ports: ± 7kV in common mode
Operating environment	Long-term perating temperature: 0° C to 45° C Relative humidity: 5% to 95% (non-condensing)

Item	Description
Input voltage	AC: Rated voltage range: 100 V to 240 V AC, 50/60 Hz Maximum voltage range: 90 V to 264 V AC, 47/63 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)	S2320-12TP-EI-AC/S2320-12TP-EI-DC: 250mm x 180mm x 43.6mm S2320-12TP-PWR-EI-AC: 320mm x 220mm x 43.6mm S2320-28TP-EI-AC/S2320-28TP-EI-DC/ S2320-52TP-EI-AC/ S2320-52TP-EI-DC: 442mm x 220mm x 43.6mm S2320-28TP-PWR-EI-AC/ S2320-28P-PWR-EI-ACF/S2320-52TP-PWR-EI-AC: 442mm x 310mm x 43.6mm
Power Consumption	S2320-12TP-EI-AC: 12.85W S2320-12TP-EI-DC: 12.8W S2320-12TP-PWR-EI-AC: without PD :15.61W; with PD: 160.5W(PD: 123.2W) S2320-28TP-EI-AC: 20.1W S2320-28TP-EI-DC: 20.1W S2320-28TP-PWR-EI-AC: without PD: 37.8W; with PD: 444.9W(PD: 369.6W) S2320-28P-PWR-EI-ACF: without PD: 41.2W; with PD: 984W(PD: 739.2W) S2320-52TP-EI-AC: 40.3W S2320-52TP-EI-DC: 41.8W S2320-52TP-PWR-EI-AC: without PD: 53.7W; with PD: 435W(PD: 369.6W)
Heat dissipation	S2320-12TP-EI-AC/ S2320-12TP-EI-DC / S2320-12TP-PWR-EI-AC /S2320-28TP-EI-AC/ S2320-28TP-EI-DC: Natural heat dissipation without fans Others: Heat dissipation with fan, intelligent fan speed adjustment

Applications

Application in 100 Mbit/s Access Rate for Terminals



For more information, visit http://www.huawei.com or contact your local Huawei sales office.

HUAWEI TECHNOLOGIES CO.,LTD.
Huawei Industrial Base
Bantian Longgang
Shenzhen 518129,P.R.China
Tel: +86 755 28780808

www.huawei.com