S5700-SI Series Gigabit Enterprise Switches

HUAWEI

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Product Overview

The S5700-SI series are gigabit Layer 3 Ethernet switches based on new generation of high-performance hardware and Huawei Versatile Routing Platform (VRP). It provides a large switching capacity, high-density GE interfaces, and 10GE uplink interfaces. With extensive service features and IPv6 forwarding capabilities, the S5700-SI is applicable to various scenarios. For example, it can be used as an access or aggregation switch on campus networks or an access switch in data centers. The S5700-SI integrates many advanced technologies in terms of reliability, security, and energy saving. It employs simple and convenient means of installation and maintenance to reduce customers' OAM cost and help enterprise customers build a next-generation IT network.

Product Appearance

S5700-24TP-SI-AC

- 24xEthernet 10/100/1000 ports,4 of which are dual-purpose 10/100/1000 or SFP ports
- AC model
- Forwarding performance: 36 Mpps
- Switching capacity: 256Gbps

S5700-24TP-PWR-SI

- 24xEthernet 10/100/1000 ports, 4 of which are dual-purpose 10/100/1000 or SFP ports
- Double hot swappable AC power supplies
- PoE+
- Forwarding performance: 36 Mpps
- Switching capacity: 256Gbps

S5700-26X-SI-12S-AC

- 12xEthernet 10/100/1000 ports, 12x100/1000Base-X ports, 2x10GE SFP+ ports
- AC power supply, supporting Redundant Power Supply(RPS)
- Forwarding performance: 66Mpps
- Switching capacity: 256Gbps

S5700-48TP-SI-AC

- 48xEthernet 10/100/1000 ports,4 of which are dual-purpose 10/100/1000 or SFP ports
- AC model
- Forwarding performance: 72 Mpps
- Switching capacity: 256Gbps

S5700-48TP-PWR-SI

- 48xEthernet 10/100/1000 ports, 4 of which are dual-purpose 10/100/1000 or SFP ports
- AC power supply
- PoE+
- Forwarding performance: 72 Mpps
- Switching capacity: 256Gbps

S5700-28C-SI

- 24xEthernet 10/100/1000 ports,4 of which are dual-purpose 10/100/1000 or SFP ports
- Subcards supported: 4x1000Base-X SFP subcard, 2x10GE SFP+ subcard, and 4x10GE SFP+ subcard
- Double hot swappable AC/DC power supplies
- Forwarding performance: 96 Mpps
- Switching capacity: 256Gbps

S5700-28C-PWR-SI

- 24xEthernet 10/100/1000 ports,4 of which are dual-purpose 10/100/1000 or SFP ports
- Subcards supported: 4x1000Base-X SFP subcard, 2x10GE SFP+ subcard, and 4x10GE SFP+ subcard
- Double hot swappable AC power supplies
- PoE+
- Forwarding performance: 96 Mpps
- Switching capacity: 256Gbps

S5700-52C-SI

- 48xEthernet 10/100/1000 ports
- Subcards supported: 4x1000Base-X SFP subcard, 2x10GE SFP+ subcard, and 4x10GE SFP+ subcard
- Double hot swappable AC/DC power supplies
- Forwarding performance: 132 Mpps
- Switching capacity: 256Gbps

S5700-52C-PWR-SI

- 48xEthernet 10/100/1000 ports
- Subcards supported: 4x1000Base-X SFP subcard, 2x10GE SFP+ subcard, and 4x10GE SFP+ subcard
- Double hot swappable AC power supplies
- PoE+
- Forwarding performance: 132 Mpps
- Switching capacity: 256Gbps

Product Features and highlights

Powerful support for services

- The S5700-SI supports IGMP v1/v2/v3 snooping, IGMP filter, IGMP fast leave, and IGMP proxy. The S5700-SI supports wire-speed replication of multicast packets between VLANs, multicast load balancing among member interfaces of a trunk, and controllable multicast, meeting requirements for IPTV and other multicast services.

Comprehensive reliability mechanisms

- Besides STP, RSTP, and MSTP, the S5700-SI 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. It also provides Smart Link multi-instance and RRPP multi-instance to implement load balancing among links, optimizing bandwidth usage.

- The S5700-SI 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, ensuring non-stop transmission of services. SEP features simplicity, high reliability, fast switchover, easy maintenance, and flexible topology, facilitating network planning and management.

- The S5700-SI 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.

Well-designed QoS policies and security mechanisms

- The S5700-SI implements complex traffic classification based on packet information such as the 5-tuple, IP precedence, ToS, DSCP, IP protocol type, ICMP type, TCP/UDP port number, VLAN ID, Ethernet protocol type. ACLs can be applied to inbound or outbound direction on an interface. The S5700-SI supports a flow-based two-rate three-color CAR. Each port supports eight priority queues and multiple queue scheduling algorithms such as WRR, DRR, SP, WRR+SP, and DRR+SP. All of these ensure the quality of voice, video, and data services. The S5700-SI supports 802.1x authentication, MAC address authentication, and combined authentication on a per port basis, as well as Portal authentication on a per VLANIF interface basis.

- The S5700-SI provides multiple security measures to defend against Denial of Service (DoS) attacks, and 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, DHCP request flood attacks. DoS attacks that change the CHADDR field in DHCP packets are also attacks against users.

- The S5700-SI supports DHCP snooping, which discards invalid packets that do not match any binding entries, such as ARP spoofing packets and IP spoofing packets. This prevents man-in-the-middle attacks to campus networks that hackers initiate by using ARP packets. The interface connected to a DHCP server can be configured as a trusted interface to protect the system against bogus DHCP server attacks.

- The S5700-SI supports strict ARP learning, which prevents ARP spoofing attacks that will exhaust ARP entries. It also provides IP source check to prevent DoS attacks caused by MAC address spoofing, IP address spoofing, and MAC/IP spoofing.

- The S5700-SI 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 applied to users dynamically.

- The S5700-SI 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 packet flooding that occurs when MAC addresses of users cannot be found in the MAC address table.

Easy deployment and maintenance free

- The S5700-SI supports automatic configuration, plug-and-play, deployment using a USB flash drive, and batch remote upgrade. These capabilities simplify device management and maintenance and reduce

maintenance costs. The S5700-SI supports SNMP v1/v2c/v3 and provides flexible methods for managing devices. Users can manage the S5700-SI using the CLI and Web NMS. The NQA function helps users with network planning and upgrading. In addition, the S5700-SI supports NTP, SSH v2, HWTACACS+, RMON, log hosts, and port-based traffic statistics.

- EasyDeploy: The Commander collects information about the topology of the client connecting to the Commander and saves client startup information based on the topology. The client can be replaced without configuration. Configuration and scripts can be delivered to the client in batches. In addition, the configuration delivery result can be queried. The Commander can collect and display power consumption on the entire network.

- The S5700-SI supports GARP VLAN Registration Protocol (GVRP), which dynamically distributes, registers, and propagates VLAN attributes to reduce manual configuration workloads of network administrators and to ensure correct VLAN configuration. In a complex network topology, GVRP simplifies VLAN configuration and reduces network communication faults caused by incorrect VLAN configuration.

- The S5700-SI supports MUX VLAN. MUX VLAN isolates 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 usually used on an enterprise intranet to isolate user interfaces from each other but allow them to communicate with server interfaces. This function prevents communication between network devices connected to certain interfaces or interface groups but allows the devices to communicate with the default gateway.

PoE function

- The S5700-SI PWR can use PoE power supplies with different power levels to provide -48V DC power for Powered Devices (PDs) such as IP phones, WLAN APs, and Bluetooth APs. In its role as Power Sourcing Equipment (PSE), the S5700-SI PWR complies with IEEE 802.3af and 802.3at (PoE+) and can work with PDs that are incompatible with 802.3af or 802.3at. Each port provides a maximum of 30 W power, complying with IEEE 802.3at. The PoE+ function increases the maximum power of each port and implements intelligent power management for high-power consumption applications. This facilitates the use of PDs. PoE ports can work in power-saving mode. The S5700-SI PWR provides improved PoE solutions. Users can configure whether and when a PoE port supplies power.

High scalability

- The S5700-SI supports intelligent stacking (iStack). Multiple S5700-SI 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 upgrade 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 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 advantages in scalability, reliability, and system architecture.

Various IPv6 features

- The S5700-SI supports IPv4/IPv6 dual stack and can migrate from an IPv4 network to an IPv6 network. S5700-SI hardware supports IPv4/IPv6 dual stack, IPv6 over IPv4 tunnels (including manual tunnels, 6to4 tunnels, and ISATAP tunnels), and Layer 3 line-speed forwarding. The S5700 can be deployed on IPv4 networks, IPv6 networks, or networks that run both IPv4 and IPv6. This makes networking flexible and enables easy migration from IPv4 to IPv6.

Product Specifications

Item	S5700-24TP-SI**/ S5700-24TP-PWR-SI	S5700-28C-SI/ S5700-28C-PWR-SI	S5700-26X-SI-12S-AC	S5700-48TP-SI/ S5700-48TP-PWR-SI	S5700-52C-SI/ S5700-52C-PWR-SI
Fixed port	24 × 10/100/1000Base-T ports, 4 of which are dual-purpose 10/100/1000 or SFP		12 × 10/100/1000Base-T, 12 × 100/1000 Base-X, 2 × 10GE SFP+	48 × 10/100/1000Base-T ports, 4 of which are dual-purpose 10/100/1000 or SFP	48 × 10/100/1000Base-T
Extended slot	The S5700TP provides one extended slot for a stack card The S5700-28C and S5700-52C provide two extended slots, one for an uplink subcard and the other for a stack card.				
MAC address table	IEEE 802.1d compliance MAC address learning and aging Static, dynamic, and blackhole MAC address entries Packet filtering based on source MAC addresses 16K MAC address entries				
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				
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) STP(IEEE 802.1d), RSTP(IEEE 802.1w), and MSTP(IEEE 802.1s) BPDU protection, root protection, and loop protection				
IP routing	Static routing, RIPv1, RIPv2, RIPng, ECMP				
IPv6 features	Neighbor Discovery (ND) Path MTU (PMTU) IPv6 ping, IPv6 tracert, 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				
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				

Item	S5700-24TP-SI**/ S5700-24TP-PWR-SI	S5700-28C-SI/ S5700-28C-PWR-SI	S5700-26X-SI-12S-AC	S5700-48TP-SI/ S5700-48TP-PWR-SI	S5700-52C-SI/ S5700-52C-PWR-SI
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, SP, WRR+SP, and DRR+SP 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 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 802.1x authentication, MAC address authentication, and combined authentication on a per port basis Portal authentication on a per VLANIF interface basis				
Management and maintenance	Stacking (not supported by S5700-26X-SI-12S-AC) MAC Forced Forwarding (MFF) Virtual cable test SNMP v1/v2c/v3 RMON Web-based NMS System logs and alarms of different levels				
Interoperability	Supports VBST (Compatible with PVST/PVST+/RPVST) Supports LNP (Similar to DTP) Supports VCMP (Similar to VTP)				
Operating environment	Operating temperature: 0°C to 50°C Relative humidity: 5% to 95% (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.				

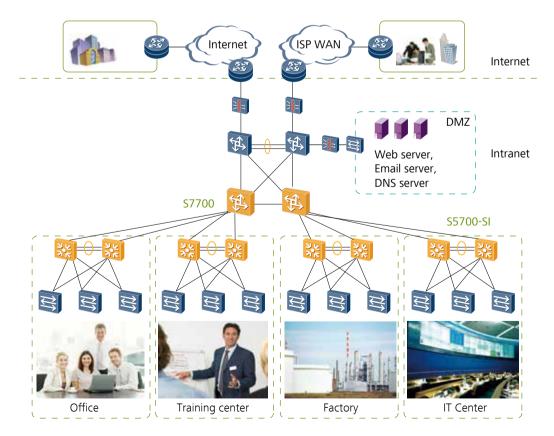| Item	S5700-24TP-SI**/ S5700-24TP- PWR-SI	S5700-28C-SI/ S5700-28C- PWR-SI	S5700-26X-SI- 12S-AC	S5700-48TP-SI/ S5700-48TP- PWR-SI	S5700-52C-SI/ S5700-52C- PWR-SI
Dimensions (W x D x H)	S5700-24TP-SI: 442 mm x 220 mm x 43.6 mm S5700-26X-SI-12S-AC: 442 mm x 310mm x 43.6 mm Others: 442 mm x 420 mm x 43.6 mm				
Power consumption	Non-PoE model: < 40 W PoE model: < 455 W (PoE: 370 W)	Non-PoE model: < 56 W PoE model: <836 W (PoE: 740 W)	<42.3 W	Non-PoE model: < 64 W PoE model: < 907 W (PoE: 740 W)	Non-PoE model: < 78 W PoE model: <917 W (PoE: 740 W)

*:The S5700 switches of the SI series are collectively called S5700-SI.

**:S5700-24TP-SI is short for S5700-24TP-SI-AC and S5700-24TP-SI-DC. As product versions are irrelevant to the power supply mode, the product names mentioned in product specifications do not contain AC or DC. This rule also applies to other product models.

Applications

On Large-sized Enterprise Networks

The S5700-SI can function as an access device on a large-sized or medium-sized enterprise network or an aggregation device on a small-sized campus network. It supports link aggregation and dual-homing to improve network reliability.

Product List

Product Description
S5700-24TP-PWR-SI(24x Ethernet 10/100/1000 PoE+ ports, 4 of which are dual-purpose 10/100/1000 or SFP,AC 110/220V)
S5700-24TP-SI-AC(24x Ethernet 10/100/1000 ports, 4 of which are dual-purpose 10/100/1000 or SFP,AC 110/220V)
S5700-24TP-SI-DC(24x Ethernet 10/100/1000 ports,4 of which are dual-purpose 10/100/1000 or SFP,DC -48V)
S5700-28C-SI(24x Ethernet 10/100/1000 ports,4 of which are dual-purpose 10/100/1000 or SFP, with 1 interface slot, DC -48V or AC 110/220V)
S5700-28C-PWR-SI(24xEthernet 10/100/1000 PoE+ ports,4 of which are dual-purpose 10/100/1000 or SFP, with 1 interface slot, AC 110/220V)
S5700-48TP-SI-AC(48xEthernet 10/100/1000 ports,4 of which are dual-purpose 10/100/1000 or SFP,AC 110/220V)
S5700-48TP-SI-DC(48x Ethernet 10/100/1000 ports,4 of which are dual-purpose 10/100/1000 or SFP,DC -48V)
S5700-48TP-PWR-SI(48x Ethernet 10/100/1000 PoE+ ports,4 of which are dual-purpose 10/100/1000 or SFP, AC 110/220V)
S5700-52C-SI(48x Ethernet 10/100/1000 ports,with 1 interface slot, DC -48V or AC 110/220V)
S5700-52C-PWR-SI(48x Ethernet 10/100/1000 PoE+ ports,with 1 interface slot, AC 110/220V)
S5700-26X-SI-12S-AC(12x Ethernet 10/100/1000 ports,12x Gig SFP,2x10 Gig SFP+,AC 110/220V)
4xGig SFP interface card(including 4xGig SFP optical interface, extend channel card)
2x10GE SFP+ interface card
4x10GE SFP+ interface card(including 4x10GE SFP+ interface, extend channel card)
Ethernet Stack Interface Card(including stack sard,100cm stack cable)
Ethernet Stack Interface Card(including stack card,300cm stack cable)
150W AC Power Module
150W DC Power Module
500W AC PoE Power Module
RPS1800 Redundant Power System

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