S5700-HI Series Advanced Gigabit Switches

The S5700-HI series switches are advanced Gigabit Ethernet switches developed by Huawei, providing flexible gigabit access and 10G/40G uplink ports.

Product Overview

Based on next-generation, high-performance hardware and Huawei Versatile Routing Platform (VRP), the S5700-HI provides excellent NetStream function, flexible Ethernet networking, comprehensive VPN tunneling technologies, diversified security mechanisms, mature IPv6 features, and are easy to manage and maintain. All these features make the S5700-HI the best choice as an access switch on large and medium-sized campus networks or data centers and aggregation switch on small campus networks.

📖 NOTE

S5700-HI mentioned in this document refers to the whole S5700-HI series including S5710-HI, and descriptions about S5710-HI are unique features of S5710-HI.

Models and Appearances

Models and Appearance	Description
S5700-28C-HI	• 24x10/100/1000Base-T ports • Subcards supported: 4x1000Base-X SFP subcard, 2x10GE SFP+ subcard, and 4x10GE SFP+ subcard • Double swappable AC/DC power supplies • Forwarding performance: 96 Mpps • Switching capacity: 256Gbps
S5700-28C-HI-24S	• 24x100/1000Base-X ports • Subcards supported: 4x1000Base-X SFP subcard, 2x10GE SFP+ subcard, and 4x10GE SFP+ subcard • Double swappable AC/DC power supplies • Forwarding performance: 96 Mpps • Switching capacity: 256Gbps
S5710-108C-PWR-HI (front)	• 48x10/100/1000BASE-T ports and 8 x 10GE SFP+ ports • Three slots on the front panel: support 16x1000Base-X SFP subcard and 16x10/100/1000Base-T subcard • One slot at the real panel: supports 4x40GE QSFP+ subcard and 4x10GE SFP+ subcard

Models and Appearance	Description
S5710-108C-PWR-HI (back)	• Double swappable AC power supplies • Forwarding performance: 504 Mpps • Switching capacity: 1024Gbps

Features and Highlights

Various Combinations of Ports

• The S5710-HI has four subcard slots that can accommodate various extended subcards to provide high-density 10GE/40GE uplink ports. With its eight fixed 10GE SFP+ ports, the S5710-HI can have different subcards installed to provide flexible combination of ports, including 48xGE+8x10GE, 96xGE+8x10GE, 96xGE+12x10GE, and 96xGE+8x10GE+4x40GE. In addition, the S5710-HI provides both optical and electrical ports for flexible access and supports PoE+. The flexible port combinations meet different bandwidth upgrading requirements and protect customers' investment.

Comprehensive VPN Technologies

• The S5700-HI allows users in different VPNs to connect to the same switch and isolates users through multi-instance routing. The S5700-HI supports Multi-Protocol Label Switching (MPLS) QoS, MPLS Traffic Engineering (TE), Virtual Leased Line (VLL), Virtual Private LAN Service (VPLS), and Layer 3 Virtual Private Network (L3VPN). They can provide high-quality private line access services for enterprises and are cost-effective case-shaped MPLS switches.

Flexible Ethernet Networking

• In addition to traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), the S5700-HI supports Huawei-developed Smart Ethernet Protection (SEP) technology and the latest Ethernet Ring Protection Switching (ERPS) standard. SEP is a ring protection protocol specific to the Ethernet link layer, and applies to various ring network topologies, such as open ring topology, closed ring topology, and cascading ring topology. This protocol is reliable, easy to maintain, and implements fast protection switching within 50 ms. ERPS is defined in ITU-T G.8032. It implements millisecond-level protection switching based on traditional Ethernet MAC and bridging functions.

• The S5700-HI supports Smart Link and Virtual Router Redundancy Protocol (VRRP), which implement backup of uplinks. One S5700-HI switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices. In addition, the S5700-HI provides multiple connection fault detection mechanisms, including Ethernet OAM (IEEE 802.3ah/802.1ag /ITU Y.1731) and Bidirectional Forwarding Detection (BFD). The S5700-HI (except S5710-HI) provides hardware-based 3.3 ms Ethernet OAM detection cycle and 10 ms BFD detection cycle.

Diversified Security Control

• With enhanced network admission control (NAC) functions, the S5700-HI supports 802.1x authentication, MAC address authentication, Portal authentication, and hybrid authentication, and can dynamically delivery user policies such as VLANs, QoS policies, and access control lists (ACL).

• The S5700-HI provides a series of mechanisms to defend against DoS attacks and user-targeted attacks. DoS attacks are targeted at switches and include SYN flood, Land, Smurf, and ICMP flood attacks. User-targeted attacks include bogus DHCP server attacks, IP/MAC address spoofing, DHCP request flood, and change of the DHCP CHADDR value. You can specify DHCP snooping trusted and untrusted ports to ensure that users connect only to the authorized DHCP server.

• The S5700-HI supports strict ARP learning. This feature prevents ARP spoofing attackers from exhausting ARP entries so that users can connect to the Internet normally.

Easy-Operation

• The S5700 supports Easy-Operation, a solution that provides auto configuration, plug-and-play, USB-based deployment, and batch remote upgrade. The Easy-Operation solution facilitates device deployment, upgrade, service provisioning, and other management and maintenance operations, and also greatly reduces costs of operation and maintenance.

• The S5700 can be managed and maintained using Simple Network Management Protocol (SNMP) V1, V2, and V3, Command Line Interface (CLI), web-based network management system, or Secure Shell (SSH) V2.0. Additionally, it supports

remote network monitoring (RMON), multiple log hosts, port traffic statistics collection, and network quality analysis that help in network consolidation and reconstruction.

- The S5700-HI can use the GARP VLAN Registration Protocol (GVRP) to implement dynamic distribution, registration, and propagation of VLAN attributes. GVRP reduces manual configuration workload and ensures correct configuration. Besides, the S5700-HI supports the MUX VLAN function, which involves a principal VLAN and multiple subordinate VLANs. Subordinate VLANs are classified into group VLANs and separate VLANs. Ports in the principal VLAN can communicate with ports in subordinate VLANs. Ports in a subordinate group VLAN can communicate with each other, whereas ports in a subordinate separate VLAN can communicate only with ports in the principal VLAN.

- 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.

Mature IPv6 Technologies

- The S5700-HI uses the mature, stable Versatile Routing Platform (VRP) and supports IPv4/IPv6 dual stacks, IPv6 routing protocols (RIPng, OSPFv3, BGP4+, and IS-IS for IPv6), and IPv6 over IPv4 tunnels including manual, 6-to-4, and Intra-Site Automatic Tunnel Addressing Protocol (ISATAP) tunnels. With these IPv6 features, the S5700-HI can be deployed on a pure IPv4 network, a pure IPv6 network, or a shared IPv4/IPv6 network, helping realize IPv4-to-IPv6 transition.

Excellent Network Traffic Analysis

- The S5700-HI provides the NetStream function and can function as a NetStream data exporter. It periodically collects data traffic statistics, encapsulates the statistics in standard V5, V8, or V9 packets, and sends the packets to the NetStream data collector according to NetStream configuration. The collected statistics are then processed to dynamically generate reports, analyze traffic attributes, and generate alarms on abnormal traffic. The NetStream function helps you optimize network structure and adjust resource deployment in a timely manner.

- The S5700-HI supports the sFlow function. It uses a method defined in the sFlow standard to sample traffic passing through it and sends sampled traffic to the collector in real time. The collected traffic statistics are used to generate statistical reports, helping enterprises maintain their networks.

Product Specifications

Item	S5700-28C-HI	S5700-28C-HI-24S	S5710-108C-PWR-HI
Fixed ports	24 10/100/1000Base-T	24 100/1000Base-X	48 10/100/1000BASE-T, 8 10GE SFP+
Extended slots	1 extended slot: - Optional subcard 1: 2 10GE SFP+ interface card - Optional subcard 2: 4 10GE SFP+ interface card - Optional subcard 3: 4 1000BASE-X interface card	1 extended slot: - Optional subcard 1: 2 10GE SFP+ interface card - Optional subcard 2: 4 10GE SFP+ interface card - Optional subcard 3: 4 1000BASE-X interface card	3 front extended slots: - Optional subcard 1: 16 10/100/1000BASE-T interface card - Optional subcard 2: 16 1000BASE-X interface card 1 rear extended slot: - Optional subcard 1: 4 10GE SFP+ interface card (no GE auto adaption) - Optional subcard 2: 4 40GE QSFP+ interface card
MAC address table	IEEE 802.1d compliance 32K MAC address entries	IEEE 802.1d compliance 32K MAC address entries	IEEE 802.1d compliance 456K MAC address entries MAC address learning and

| Item	S5700-28C-HI	S5700-28C-HI-24S	S5710-108C-PWR-HI
	MAC address learning and aging	MAC address learning and aging	aging
	Static, dynamic, and blackhole MAC address entries	Static, dynamic, and blackhole MAC address entries	Static, dynamic, and blackhole MAC address entries
	Packet filtering based on source MAC addresses	Packet filtering based on source MAC addresses	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		
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) BFD for OSPF, BFD for IS-IS, BFD for VRRP, and BFD for PIM STP(IEEE 802.1d), RSTP(IEEE 802.1w), and MSTP(IEEE 802.1s) BPDU protection, root protection, and loop protection		
MPLS features	MPLS L3VPN MPLS L2VPN(VPWS/VPLS) MPLS-TE MPLS QoS		
IP routing	Static routing, RIPv1/v2, OSPF, IS-IS, BGP, and ECMP		
IPv6 features	Neighbor Discovery (ND) Path MTU (PMTU) IPv6 ping, IPv6 tracert 6to4 tunnel, ISATAP tunnel, and manually configured tunnel ACLs based on the source IPv6 address, destination IPv6 address, Layer 4 ports, or protocol type IPv6 Static routing, RIPng, OSPFv3, IS-ISv6, BGP4+, ECMP		
Multicast	IGMP v1/v2/v3 snooping and IGMP fast leave MLD v1/v2 snooping 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 IGMPv1/v2/v3, MLDv1/v2, PIM-SM, PIM-DM, PIM-SSM, MSDP		
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		

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	WRED		
	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		
OAM	Hardware OAM: • EFM OAM • CFM OAM • Y.1731 performance test (hardware-level delay and jitter detection)	Hardware OAM: • EFM OAM • CFM OAM • Y.1731 performance test (hardware-level delay and jitter detection)	Software OAM: • EFM OAM • CFM OAM • Y.1731 performance test
Management and maintenance	iStack		
	MAC Forced Forwarding (MFF)		
	Virtual cable test		
	SNMP v1/v2c/v3		
	RMON		
	Web-based NMS		
	System logs and alarms of different levels		
	802.3az EEE		
	sFlow		
	NetStream		
	Dying gasp		
Operating environment	• Operating temperature: 0°C to 50°C • Relative humidity: 5% to 95% (non-condensing)	• Operating temperature: 0°C to 50°C • Relative humidity: 5% to 95% (non-condensing)	• 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	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	AC: • Rated voltage range: 100 V to 240 V AC, 50/60 Hz • Maximum voltage range: 90 V to 264 V

Item	S5700-28C-HI	S5700-28C-HI-24S	S5710-108C-PWR-HI
	DC: • Rated voltage range: –48 V to –60 V, DC • Maximum voltage range: –36 V to –72 V, DC	DC: • Rated voltage range: –48 V to –60 V, DC • Maximum voltage range: –36 V to –72 V, DC	AC, 50/60 Hz DC: • Rated voltage range: –48 V to –60 V, DC • Maximum voltage range: –36 V to –72 V, DC
Power consumption	<76 W	<80 W	< 1680 W (Device: 240W, PoE: 1440W)

Networking and Applications

On Medium-sized Enterprise Networks

The S5710-HI can function as a core switch on a medium-sized enterprise network. With four extended slots, the S5710-HI can have various subcards installed to provide more interfaces and bandwidth for fast increasing services.
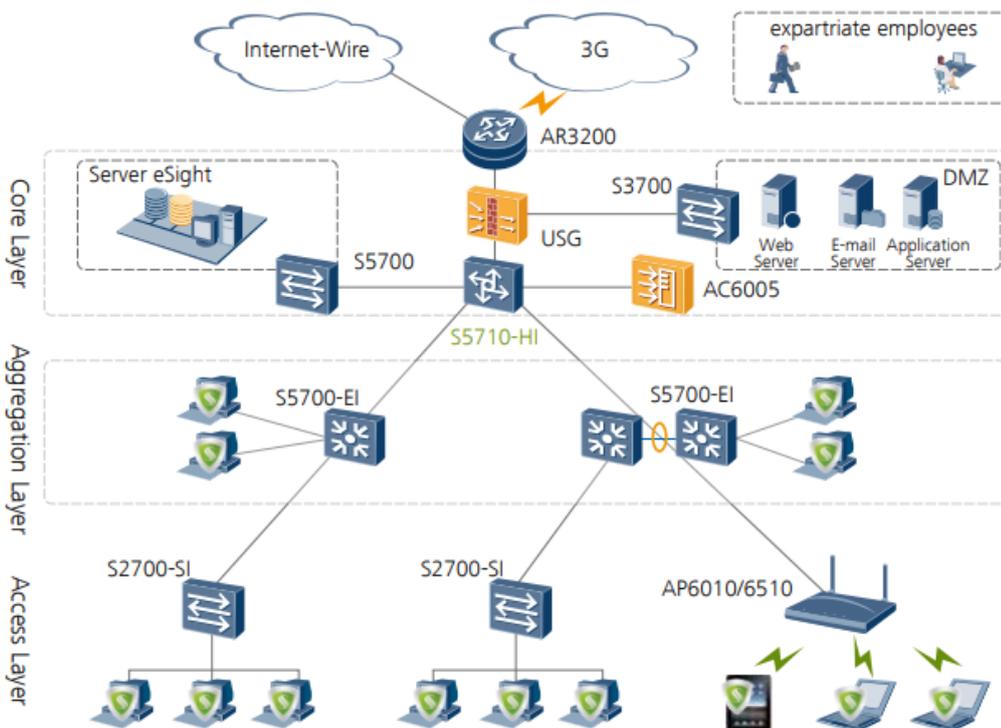
On Large-sized Enterprise Networks

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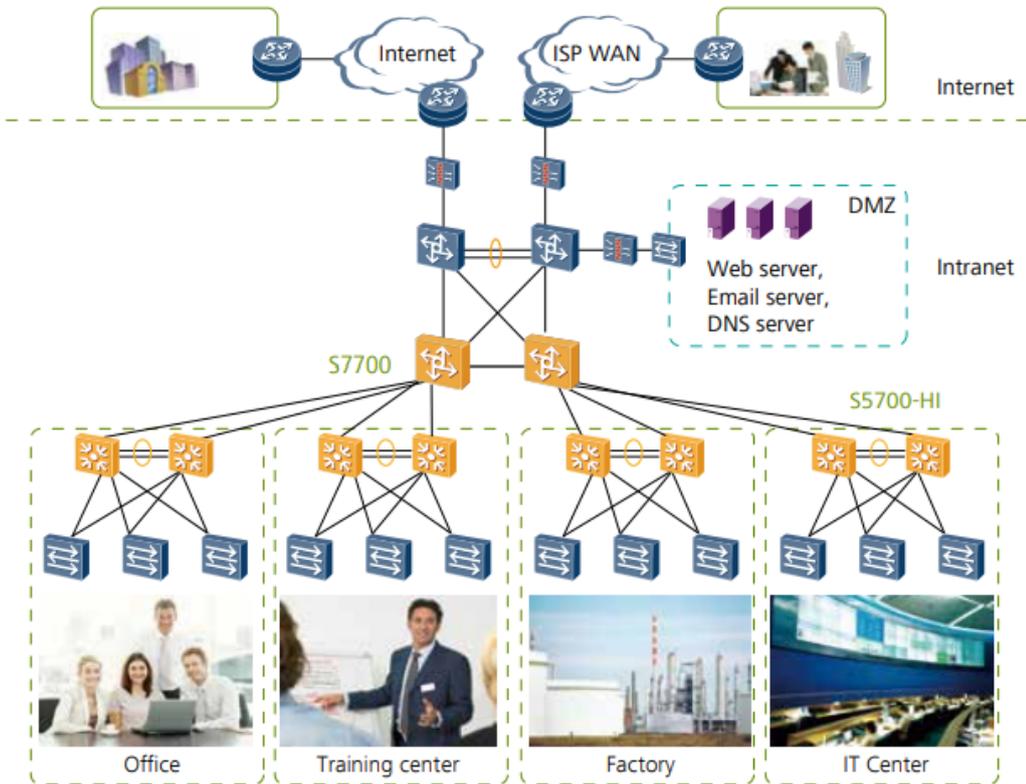
In Data Centers

The S5700-HI can be used in a data center. It connects to gigabit servers and aggregates traffic from the servers to uplink devices through trunk links. If multiple servers are available, an S5700 stack can be used to facilitate network maintenance and improve network reliability.
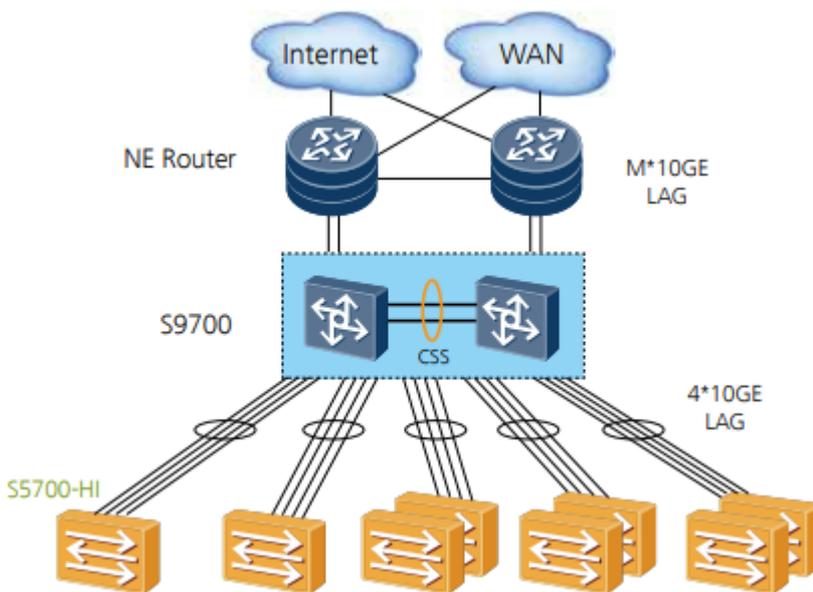
Ordering Information

The following table lists ordering information of the S5700-HI series switches.

Part Number	Description

Part Number	Description
02353631	S5700-28C-HI-24S (24xGig SFP, with 1 interface slot)
02353630	S5700-28C-HI (24xEthernet 10/100/1000 ports, with 1 interface slot)
02354043	S5710-108C-PWR-HI (48xEthernet 10/100/1000 ports, 8x10 Gig SFP+, PoE+, with 4 interface slots)
03021JYN	2x10 Gig SFP+ Interface Card (used in S5700-HI series)
03021JYM	4x10 Gig SFP+ Interface Card (used in S5700-HI series)
03021JYP	4xGig SFP Interface Card (used in S5700-HI series)
03021PED	16xGig SFP Interface Card (used in S5710-HI series)
03021NXB	16xEthernet 10/100/1000 ports Interface Card (used in S5710-HI series)
03021NKW	4x40 Gig QSFP+ Interface Card (used in S5710-HI series)
03021PHQ	4x10 Gig SFP+ Interface Card (used in S5710-HI series)
02310GBM	170W DC Power Module (used in S5700-HI series)
02130966	170W AC Power Module (used in S5700-HI series)
02130971	350W AC Power Module (used in S5710-HI series)
02130984	1150W AC PoE Power Module

More Information

For more information about Huawei Campus Switches, visit http://e.huawei.com or contact us in the following ways:

- Global service hotline: http://e.huawei.com/en/service-hotline
- Logging in to the Huawei Enterprise technical support website: http://support.huawei.com/enterprise/
- Sending an email to the customer service mailbox: support_e@huawei.com