S5720-HI Switch Datasheet

HUAWEI TECHNOLOGIES CO., LTD.

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Product Overview

Huawei S5720-HI series are advanced Gigabit Ethernet switches that provide rich agile features. The switches are developed based on Huawei Versatile Routing Platform (VRP), and use the fully programmable structure to implement software definition and service change on demand. With services and network convergence as the core, the switches provide the ubiquitous service function to ensure consistent user experience. The Super Virtual Fabric (SVF) function virtualizes the entire network into one device. In addition, the switches support flexible Ethernet networking, comprehensive VPN tunnel solutions, various security control methods, intelligent deployment, and simple operation & maintenance. The S5720-HI switches are the best choices for the branches of high-quality large- and middle-sized campus networks, the core layer of small-sized campus networks, and the access layer of data center networks.

Product Appearance

The following models are available in S5720-HI series:

S5720-32C-HI-24S-AC

- 24 Gig SFP,8 of which are dual-purpose 10/100/1000 or SFP
- 4 10 Gig SFP+
- 2 interface slots
- 600W AC power supply
- Forwarding performance: 168 Mpps

S5720-56C-HI-AC

- 48 Ethernet 10/100/1000 ports
- 4 10 Gig SFP+
- 2 interface slots
- 600W AC power supply
- Forwarding performance: 192 Mpps

S5720-56C-PWR-HI-AC

- 48 Ethernet 10/100/1000 POE+ ports
- 4 10 Gig SFP+
- 2 interface slots
- 1150W AC power supply
- Forwarding performance: 192 Mpps

Product Characteristics and Advantages

Enabling networks to be more agile for services

- The high-speed Ethernet Network Processor (ENP) embedded in the S5720-HI is tailored for Ethernet. The chip's flexible packet processing and traffic control capabilities can meet current and future service requirements, helping build a highly scalable network.
- In addition to capabilities of traditional switches, the S5720-HI series provide fully programmable open interfaces and supports user-defined forwarding behaviors. Enterprises can use the open interfaces to develop new protocols and functions independently or jointly with equipment vendors to build campus networks meeting their own needs.
- The ENP has a fully programmable architecture, on which enterprises can define their own forwarding models, forwarding behaviors, and lookup algorithms. Microcode programmability makes it possible to provision new services within six months, without the need of replacing the hardware. In contrast, traditional ASIC chips use a fixed forwarding architecture and follow a fixed forwarding process. For this reason, new services cannot be provisioned until new hardware is developed to support the services 1 to 3 years later.

Delivering abundant services more agilely

- The S5720-HI series integrate the AC function, so customers do not need to buy independent AC devices or hardware components. An S5720-HI switch can manage 1K APs and 16K users, coping with the fast growth of wireless services.
- With the unified user management function, the S5720-HI authenticates both wired and wireless users, ensuring a consistent user experience no matter whether they are connected to the network through wired or wireless access devices. The unified user management function supports various authentication methods, including 802.1x, MAC address, and Portal authentication, and is capable of managing users based on user groups, domains, and time ranges. These functions visualize user and service management and boost the transformation from device-centered management to user-centered management.

Providing fine granular network management more agilely

- The S5720-HI series use the Packet Conservation Algorithm for Internet (iPCA) technology that changes the traditional method of using simulated traffic for fault location. iPCA technology can monitor network quality for any service flow anywhere and anytime, without extra costs. It can detect temporary service interruptions in a very short time and can identify faulty ports accurately. This cutting-edge fault detection technology turns "extensive management" to "fine granular management."
- The S5720-HI using the Super Virtual Fabric (SVF) and functions as a parent switch. It can not only virtualize fixed-configuration switches into line cards of a chassis switch, but also vertically virtualize APs as ports of the chassis switch. With this virtualization technology, a physical network with the "Small-sized core/aggregation switches + Access switches + APs" structure can be virtualized into a "super switch", offering the industry's simplest network management solution.
- With the Easy Deploy function, the S5720-HI series manage access switches in a similar way an AC manages APs. In deployment, access switches and APs can go online with zero-touch configuration. In the Easy Deploy solution, the Commander collects topology information about the connected clients and stores the clients' startup information based on the topology. Clients can be replaced with zero-touch configuration. The Commander can deliver configurations and scripts to clients in batches and query the delivery results. In addition, the Commander can collect and display information about power consumption on the entire network.

Flexible Ethernet networking

- In addition to traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), the S5720-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. ERPS is defined in ITU-T G.8032. It implements millisecond-level protection switching based on traditional Ethernet MAC and bridging functions.
- The S5720-HI supports Smart Link and Virtual Router Redundancy Protocol (VRRP), which implement backup of upstream links. One S5720-HI switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.
- The S5720-HI series have large tables, coping with the fast growth of data volume in the big data era. With the support for 128K MAC addresses, 1M FIB entries, the S5720-HI series switch meets the requirements of educational networks and metro area networks and allows the access of a large number of terminals. The S5720-HI is the best choice in cloud computing era.

Various security control methods

- The S5720-HI series support MAC address authentication and 802.1x authentication and implement dynamic delivery of VLAN, QoS, and ACL policies to users. They support port-based 802.1x, MAC address, and hybrid authentications and VLANIF interface-based portal authentication.
- The S5720-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.
- The S5720-HI series set up and maintain the DHCP snooping binding tables, and discard the packets that do not match the table entries. Users can specify DHCP snooping trusted ports to ensure that users connect only to the authorized DHCP server.
- The S5720-HI supports strict ARP learning, which prevents ARP spoofing attackers from exhausting ARP entries.

Mature IPv6 features

- The S5720-HI is developed based on the mature, stable VRP and supports IPv4/IPv6 dual stacks, IPv6 routing protocols (RIPng, OSPFv3, BGP4+, and IS-IS for IPv6). With these IPv6 features, the S5720-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.

Product Specifications

Item	S5720-32C-HI-24S-AC	S5720-56C-HI-AC	S5720-56C-PWR-HI-AC
Fixed port	24x1000Base-X, 8xCombo (10/100/1000Base-T), 4x10GE SFP+	48x10/100/1000Base-T, 4x10GE SFP+	48x10/100/1000Base-T, 4x10GE SFP+
Extended slot	One port extended slot with optional subcard 4x10GE SFP+ One slot reserved for the stack card		
MAC address table	IEEE 802.1d standards compliance 128K MAC address entries MAC address learning and aging Static, dynamic, and blackhole MAC address entries Packet filtering based on source MAC addresses		
VLAN	4K VLANs Guest VLAN, Voice VLAN GVRP MUX VLAN VLAN assignment based on MAC addresses, protocols, IP subnets, policies, and ports VLAN mapping		
Wireless AC	AP access control, AP domain management, and AP configuration template management Radio management, unified static configuration, and dynamic centralized management WLAN basic services, QoS, security, and user management CAPWAP, Tag/terminal location, and spectrum analysis		
Reliability	RRPP ring topology and RRPP multi-instance Smart Link tree topology and Smart Link multi-instance, providing the millisecond-level protection switchover SEP G.8032 Ethernet Ring Protection Switching (ERPS) 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		
IP routing	Static routes, RIP v1/2, RIPng, OSPF, OSPFv3, IS-IS, IS-ISv6, BGP, BGP4+, ECMP, routing policy		
Interoperability	VLAN-Based Spanning Tree (VBST), working with PVST, PVST+, and RPVST Link-type Negotiation Protocol (LNP), similar with DTP VLAN Central Management Protocol (VCMP), similar with VTP		
IPv6 features	Neighbor Discover (ND) PMTU IPv6 Ping, IPv6 Tracert, IPv6 Telnet ACLs based on source IPv6 addresses, destination IPv6 addresses, Layer 4 ports, or protocol types Multicast Listener Discovery snooping (MLDv1/v2)		

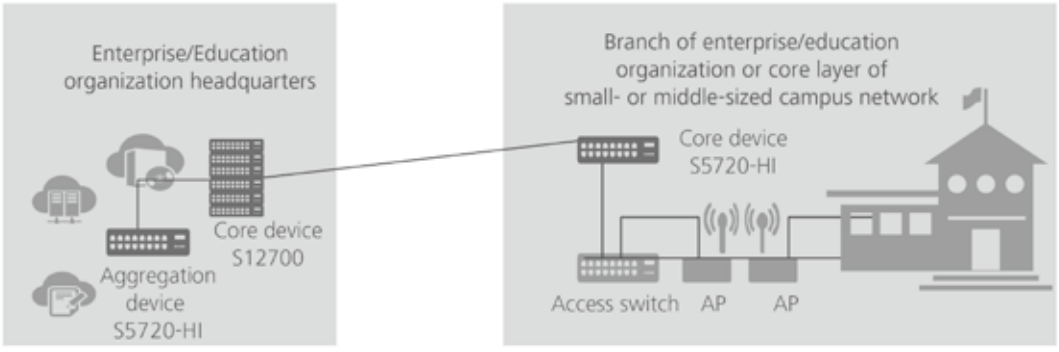
Item	S5720-32C-HI-24S-AC	S5720-56C-HI-AC	S5720-56C-PWR-HI-AC
Multicast	IGMPv1/v2/v3 snooping and IGMP prompt leave Multicast forwarding in a VLAN and multicast replication between VLANs Multicast load balancing among member ports of a trunk Controllable multicast Port-based multicast traffic statistics collection IGMP v1/v2/v3, PIM-SM, PIM-DM, PIM-SSM MSDP		
QoS/ACL	Rate limitation in the inbound and outbound directions of a port Packet redirection Port-based traffic policing and two-rate and three-color CAR Eight queues on each port DRR, SP and DRR+SP queue scheduling algorithms WRED HQoS Re-marking of the 802.1p and DSCP fields of packets Packet filtering on 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 source/destination port number, protocol number, or VLAN Queue-based rate limitation and shaping on ports		
Security	Hierarchical user management and password protection DoS attack defense, ARP attack defense, and ICMP attack defense Binding of the IP address, MAC address, interface number, and VLAN ID Port isolation, port security, and sticky MAC MAC Forced Forwarding (MFF) Blackhole MAC address entries Limitation on the number of learned MAC addresses IEEE 802.1x authentication and limitation on the number of users on a port AAA authentication, RADIUS authentication, HWTACACS authentication, and NAC SSH V2.0 HTTPS CPU protection Blacklist and whitelist DHCP relay/server/snooping/client/security MACSec ready		
OAM	EFM OAM CFM OAM Y.1731 performance monitoring		
Super Virtual Fabric (SVF)	Working as the parent node to vertically virtualize downlink switches and APs as one device for management Supports a two-layer client architecture		
iPCA	Directly coloring service packets to collect real-time statistics on the number of lost packets and packet loss ratio Collection of statistics on the number of lost packets and packet loss ratio at network and device levels		

Item	S5720-32C-HI-24S-AC	S5720-56C-HI-AC	S5720-56C-PWR-HI-AC
Management and maintenance	Virtual Cable Test SNMP v1/v2c/v3 RMON Network management system (NMS) and Web management System logs and multi-level alarms	GVRP MUX VLAN 802.3az Energy Efficient Ethernet (EEE) NetStream Dying Gasp upon power-off	
Operating environment	Operating temperature: 0°C to 45°C Relative humidity: 5% to 95% (non-condensing)		
Dimensions mm (width x depth x height)	442x 420x 43.6		
Input voltage	AC rated voltage: 100 V AC to 240 V AC, 50/60 Hz Maximum voltage range: 90 V AC to 264 V AC, 47/63 Hz		
Power consumption	<172.7W	<183.3W	without PD: <188.74W, with PD: <1739W(device: 299W, PD: 1440W)

Networking and Applications

Application on enterprise campus networks

Huawei S5720-HI is the industry's first fixed-configuration agile switch. The S5720-HI has large tables and buffers, avoiding packet loss in burst traffic. It supports in-depth wired and wireless convergence and unified management on devices, users, and services. The S5720-HI can be used as the core device in an enterprise branch network or a small- or middle-sized campus network or as the aggregation device in a large-sized campus network, to achieve a manageable and reliable enterprise campus network with scalable services.



Ordering Information

Ordering list of S5720-HI series agile switches

Product Description
S5720-32C-HI-24S-AC(24 Gig SFP,8 of which are dual-purpose 10/100/1000 or SFP,4 10 Gig SFP+,with 2 interface slots,with 600W AC power supply)
S5720-56C-HI-AC(48 Ethernet 10/100/1000 ports,4 10 Gig SFP+,with 2 interface slots,with 600W AC power supply)
S5720-56C-PWR-HI-AC(48 Ethernet 10/100/1000 POE+ ports,4 10 Gig SFP+,with 2 interface slots,with 1150W AC power supply)
4 10 Gig SFP+ Interface Card (used in S5720-HI series)
350W DC Power Module
600W AC Power Module
1150W AC POE Power Module
Resource-ES1SWL512AP0-WLAN Access Controller AP Resource License-512AP (used in S5720HI series)
Resource-ES1SWL128AP0-WLAN Access Controller AP Resource License-128AP (used in S5720HI series)
Resource-ES1SWL64AP00-WLAN Access Controller AP Resource License-64AP (used in S5720HI series)
Resource-ES1SWL16AP00-WLAN Access Controller AP Resource License-16AP (used in S5720HI series)
Resource-ES5SF4512K00-FIBv4 Resource License-128K (used in S5720HI series)
Resource-ES5SF4128K00-FIBv4 Resource License-512K (used in S5720HI series)
Function-S5700-ES5FEA1-ES5SSVFF0000-SVF Function License (used in S5720HI series)

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

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