Huawei S6720-HI Series Switches

S6720-HI series full-featured 10GE routing switches are Huawei's first IDN-ready fixed switches that provide 10GE downlink ports and 40GE/100GE uplink ports.

Product Overview

S6720-HI series full-featured 10 GE routing switches are Huawei's first IDN-ready fixed switches to provide 10 GE downlink ports as well as 40 GE and 100 GE uplink ports.

S6720-HI series switches provide native AC capabilities and can manage 1K APs. They provide a free mobility function to ensure consistent user experience and are Virtual Extensible LAN（VXLAN ）capable to implement network virtualization. S6720-HI series switches also provide built-in security probes and support abnormal traffic detection, Encrypted Communications Analytics (ECA), and network-wide threat deception. The S6720-HI is ideal for enterprise campuses, carriers, higher education institutions, and governments.

Models and Appearance

Appearance	Description
S6720-50L-HI-48S	• 48 x 10 Gig SFP+, 6 x 40 Gig QSFP+ or 44 x 10 Gig SFP+, 4 x 40 Gig QSFP+, 2 x 100 Gig QSFP28 • Dual pluggable power modules, 600W AC or 350W DC (equipped power modules by default not available) • Forwarding performance: 420 Mpps • Switching capacity: 2.56 Tbit/s
S6720-30L-HI-24S	• 24 x 10 Gig SFP+, 4 x 40 Gig QSFP+,and 2 x 100 Gig QSFP28 • Dual pluggable power modules, 600W AC or 350W DC (equipped power modules by default not available) • Forwarding performance: 420 Mpps • Switching capacity: 2.56 Tbit/s

Features and Highlights

Abundant Convergence

The S6720-HI integrates the AC function, so customers are not required to buy independent AC devices or hardware components. An S6720-HI switch can manage 1K APs and 16K users, adapting to the fast growth of wireless services.

The S6720-HI supports SVF and functions as a parent switch. With this virtualization technology, a physical network with the "Small-sized core and aggregation switches + Access switches + APs" structure can be virtualized into a "super switch", offering the industry's simplest network management solution.

Providing Granular Network Management

The S6720-HI uses the Packet Conservation Algorithm for Internet (iPCA) technology that alters the traditional method of using simulated traffic for fault location. iPCA technology can monitor network quality for any service flow anywhere, 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 "granular management."

The S6720-HI supports Two-Way Active Measurement Protocol (TWAMP) to accurately check any IP link and obtain the entire network's IP performance. This protocol eliminates the need of using a dedicated probe or a proprietary protocol.

Flexible Ethernet Networking

In addition to traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), the S6720-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 service switching within 50 milliseconds. ERPS is defined in ITU-T G.8032. It implements millisecond-level protection switching based on traditional Ethernet MAC and bridging functions.

The S6720-HI supports Smart Link and Virtual Router Redundancy Protocol (VRRP), which implement backup of uplinks. One S6720-HI switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.

Intelligent Stack (iStack)

The S6720-HI supports the iStack function that combines multiple switches into a logical switch. Member switches in a stack implement redundancy backup to improve device reliability and use inter-device link aggregation to improve link reliability. iStack provides high network scalability. You can increase a stack's ports, bandwidth, and processing capability by simply adding member switches. iStack also simplifies device configuration and management. After a stack is set up, multiple physical switches can be virtualized into one logical device. You can log in to any member switch in the stack to manage all the member switches in it.

Cloud-based Management

The Huawei cloud management platform allows users to configure, monitor, and inspect switches on the cloud, reducing on-site deployment and O&M manpower costs and decreasing network OPEX. Huawei switches support both cloud management and on-premise management modes. These two management modes can be flexibly switched as required to achieve smooth evolution while maximizing return on investment (ROI).

VXLAN

VXLAN is used to construct a Unified Virtual Fabric (UVF). As such, multiple service networks or tenant networks can be deployed on the same physical network, and service and tenant networks are isolated from each other. This capability truly achieves 'one network for multiple purposes'. The resulting benefits include enabling data transmission of different services or customers, reducing the network construction costs, and improving network resource utilization. The S6720-HI series switches are VXLAN-capable and allow centralized and distributed VXLAN gateway deployment modes. These switches also support the BGP EVPN protocol for dynamically establishing VXLAN tunnels and can be configured using NETCONF/YANG.

Clock Synchronization

The S6720-HI supports the IEEE 1588v2 protocol, which implements low-cost, high-precision, and high-reliability time and clock synchronization. This feature can meet strict requirements of power and transportation industry customers on time and clock synchronization.

OPS

Open Programmability System (OPS) is an open programmable system based on the Python language. IT administrators can program the O&M functions of a switch through Python scripts to quickly innovate functions and implement intelligent O&M.

Big Data Powered Collaborative Security

Agile switches use NetStream to collect campus network data and then report such data to the Huawei Cybersecurity Intelligence System (CIS). The purposes of doing so are to detect network security threats, display the security posture across the entire network, and enable automated or manual response to security threats. The CIS delivers the security policies to the Agile Controller. The Agile Controller then delivers such policies to agile switches that will handle security events accordingly. All these ensure campus network security.

The S6720-HI supports Encrypted Communication Analytics (ECA). It uses built-in ECA probes to extract characteristics of encrypted streams based on NetStream sampling and Service Awareness (SA), generates metadata, and reports the metadata to Huawei Cybersecurity Intelligence System (CIS). The CIS uses the AI algorithm to train the traffic model and compare characteristics of extracted encrypted traffic to identify malicious traffic. The CIS displays detection results on the GUI, provides threat handling suggestions, and automatically isolates threats with the Agile Controller to ensure campus network security.

The S6720-HI supports deception. It functions as a sensor to detect threats such as IP address scanning and port scanning on a network and lures threat traffic to the honeypot for further checks. The honeypot performs in-depth interaction with the initiator of the threat traffic, records various application-layer attack methods of the initiator, and reports security logs to the CIS. The CIS analyzes security logs. If the CIS determines that the suspicious traffic is an attack, it generates an alarm and provides handling suggestions. After the administrator confirms the alarm, the CIS delivers a policy to the Agile Controller. The Agile Controller delivers the policy to the switch for security event processing, ensuring campus network security.

Intelligent O&M

The S6720-HI provides telemetry technology to collect device data in real time and send the data to Huawei campus network analyzer CampusInsight. The CampusInsight analyzes network data based on the intelligent fault identification algorithm, accurately displays the real-time network status, effectively demarcates and locates faults in a timely manner, and identifies network problems that affect user experience, accurately guaranteeing user experience.

The S6720-HI supports Enhanced Media Delivery Index (eMDI). It functions as a monitoring node to periodically collect and report eMDI fault data to eSight, and then eSight quickly locates audio and video service quality faults based on monitoring results of multiple nodes.

Product Specifications

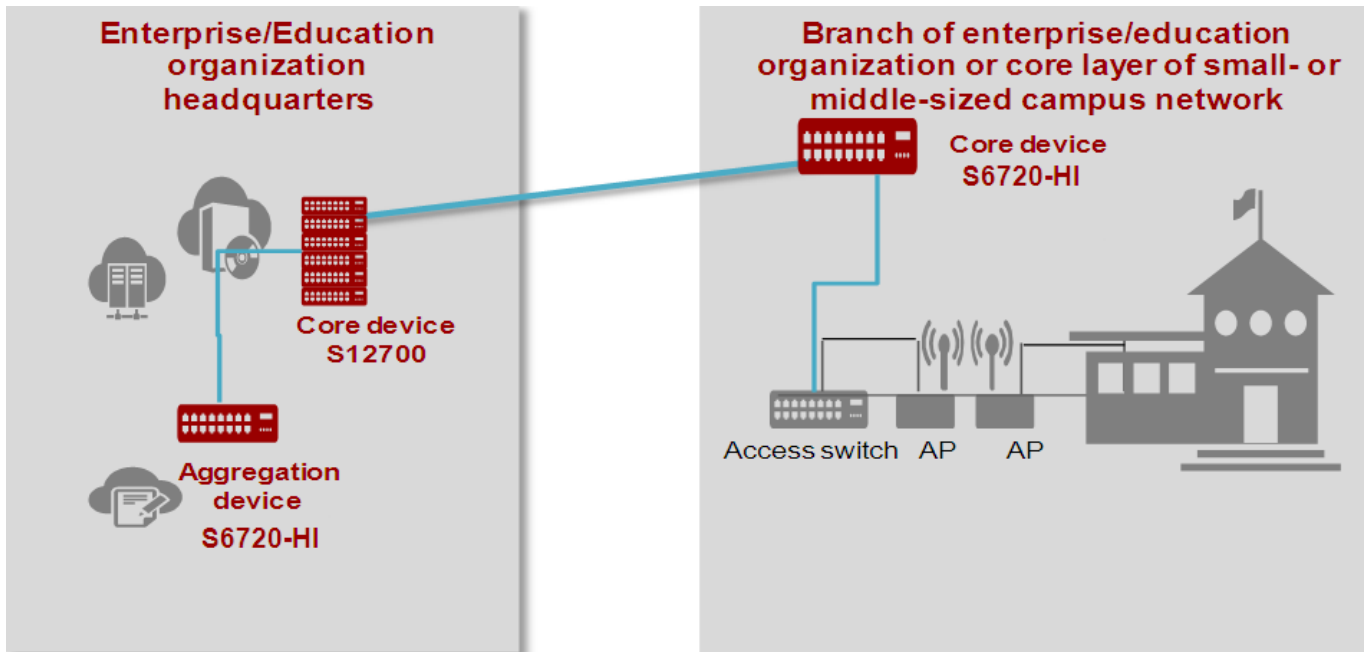| Item	S6720-50L-HI-48S	S6720-30L-HI-24S
Fixed ports	48 x 10 Gig SFP+, 6 x 40 Gig QSFP+ or 44 x 10 Gig SFP+, 4 x 40 Gig QSFP+, 2 x 100 Gig QSFP28	24 x 10 Gig SFP+, 4 x 40 Gig QSFP+, 2 x 100 Gig QSFP28
MAC	64K MAC address entries IEEE 802.1d standards compliance MAC address learning and aging Static, dynamic, and blackhole MAC address entries Packet filtering based on source MAC addresses	
VLAN	4K VLANs Guest VLANs and voice VLANs GVRP MUX VLAN VLAN assignment based on MAC addresses, protocols, IP subnets, policies, and ports VLAN mapping	
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 to DTP VLAN Central Management Protocol (VCMP), similar to VTP	

Item	S6720-50L-HI-48S	S6720-30L-HI-24S
Wireless service	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	
Ethernet loop protection	RRPP ring topology and RRPP multi-instance	
	Smart Link tree topology and Smart Link multi-instance, providing 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	MPLS L3VPN	
	MPLS L2VPN (VPWS/VPLS)	
	MPLS-TE	
	MPLS QoS	
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)	
	IPv6 addresses configured for sub-interfaces, VRRP6, DHCPv6, and L3VPN	
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	
	IGMP v1/v2/v3, PIM-SM, PIM-DM, and PIM-SSM	
	MSDP	
	Multicast VPN	
QoS/ACL	Rate limiting in the inbound and outbound directions of a port	
	Packet redirection	
	Port-based traffic policing and two-rate three-color CAR	
	HQoS	
	Eight queues on each port	
	DRR, SP, and DRR+SP queue scheduling algorithms	
	WRED	
	Re-marking of the 802.1p and DSCP fields of packets	
	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 source/destination port number, protocol type, and VLAN ID	
	Queue-based rate limiting and shaping on ports	
Security	Hierarchical user management and password protection	

Item	S6720-50L-HI-48S	S6720-30L-HI-24S
	DoS attack defense, ARP attack defense, and ICMP attack defense	
	Binding of the IP address, MAC address, port number, and VLAN ID	
	Port isolation, port security, and sticky MAC	
	MAC Forced Forwarding (MFF)	
	Blackhole MAC address entries	
	Limit on the number of learned MAC addresses	
	IEEE 802.1X authentication and limit on the number of users on a port	
	AAA authentication, RADIUS authentication, and HWTACACS authentication	
	NAC	
	SSH V2.0	
	HTTPS	
	CPU protection	
	Blacklist and whitelist	
	Attack source tracing and punishment for IPv6 packets such as ND, DHCPv6, and MLD packets	
	IPSec for management packet encryption	
Reliability	LACP	
	E-Trunk	
	Ethernet OAM (IEEE 802.3ah and IEEE 802.1ag)	
	ITU-Y.1731	
	DLDP	
	LLDP	
	BFD for BGP, BFD for IS-IS, BFD for OSPF, BFD for static routes	
VXLAN	VXLAN functions, VXLAN L2 and L3 gateways, BGP EVPN	
	VXLAN configuration using NETCONF/YANG	
SVF	Acting as the parent node to vertically virtualize downlink switches and APs as one device for management	
	Two-layer client architecture	
	ASs can be independently configured. Services not supported by templates can be configured on the parent node.	
	Third-party devices allowed between SVF parent and clients	
iPCA	Marking service packets to obtain the packet loss ratio and number of lost packets in real time	
	Measurement of the number of lost packets and packet loss ratio on networks and devices	
Management and maintenance	Cloud-based management	
	Virtual cable test	
	SNMP v1/v2c/v3	
	RMON	
	Web-based NMS	
	System logs and alarms of different severities	
	GVRP	
	MUX VLAN	
	802.3az Energy Efficient Ethernet (EEE)	
	NetStream	
	Dying gasp upon power-off	

Item	S6720-50L-HI-48S	S6720-30L-HI-24S
Dimensions (W x D x H)	442 mm x 420 mm x 43.6 mm	442 mm x 420 mm x 43.6 mm
Input voltage	AC: • Rated AC voltage: 100V to 240V AC; 50/60 Hz • Max. AC voltage: 90V to 264V AC; 47–63 Hz	
	DC: • Rated DC power: –48V to 60V DC • Max. DC voltage: –38.4V to 72V DC	
Maximum power consumption	279W	232W
Power consumption (30% traffic load)	194W	138W
Operating temperature	• 0–1800 m altitude: 0°C to 45°C • 1800–5000 m altitude: The operating temperature reduces by 1°C every time the altitude increases by 220 m.	
Relative humidity	5% to 95% (non-condensing)	
Heat dissipation	Heat dissipation with fan, intelligent fan speed adjustment	

Networking and Applications

Huawei S6720-HI is the first fixed agile switch with 10GE downlink and 40GE/100GE uplink ports. It supports in-depth wired and wireless convergence and unified management on devices, users, and services. The S6720-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. The switch helps achieve a manageable and highly reliable enterprise campus network with scalable services.

Ordering Information

The following table lists ordering information of the S6720-HI series switches.

Model	Product Description
S6720-50L-HI-48S	S6720-50L-HI-48S (48 x 10 Gig SFP+, 6 x 40 Gig QSFP+ or 44 x 10 Gig SFP+, 4 x 40 Gig QSFP+, 2 x 100 Gig QSFP28; without power module)
S6720-30L-HI-24S	S6720-30L-HI-24S (24 x 10 Gig SFP+, 4 x 40 Gig QSFP+, 2 x 100 Gig QSFP28; without power module)
PAC-600WA-B	600W AC power module
PDC-350WA-B	350W DC 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

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