

Huawei S6320-HI Series Switches

Product Brochure



S6320-HI Series Switches

Product Overview

Huawei S6320-HI series switches are the first-of-their-kind fixed agile switches with 10GE downlink and 40GE/100GE uplink ports. They are ideal for enterprise campus, higher education, government, carrier MAN, and data center scenarios.

The S6320-HI delivers abundant agility features, and uses the fully programmable architecture to implement software-defined functions and on-demand service changes. In addition, the switch provides the free mobility feature to ensure consistent user experience, and the Super Virtual Fabric (SVF) feature to virtualize the entire network into one device.

Product Models

The S6320-HI series provides the following models.

S6320-50L-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 supplies, 600 W AC or 350 W DC (no power supplies are equipped by default)
- Forwarding performance: 420 Mpps
- Switching capacity: 2.56 Tbit/s

S6320-30L-HI-24S



- 24 x 10 Gig SFP+, 4 x 40 Gig QSFP+, 2 x 100 Gig QSFP28
- Dual pluggable power supplies, 600 W AC or 350 W DC (no power supplies are equipped by default)
- Forwarding performance: 420 Mpps
- Switching capacity: 2.56 Tbit/s

Product Features and Highlights

Enabling networks to be more agile for services

- The high-speed Ethernet Network Processor (ENP) embedded in the S6320-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.
- The ENP chip uses a fully programmable architecture, on which customers 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 one to three years later.

Providing fine granular network management more agilely

- The S6320-HI uses 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, anytime, without extra costs. This cutting-edge fault detection technology turns "extensive management" to "fine granular management."
- The S6320-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.
- The S6320-HI supports SVF and functions as a parent switch. With this virtualization technology, a physical network with the "Small-sized core/aggregation switches + Access switches" structure can be virtualized into a single network element (NE) for management, offering the industry's simplest network management solution.

Flexible Ethernet networking

- In addition to traditional Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP), the S6320-HI supports the 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 ms. ERPS is defined in ITU-T G.8032. It implements millisecond-level protection switching based on traditional Ethernet MAC and bridging functions.
- The S6320-HI supports Virtual Router Redundancy Protocol (VRRP), which implements backup of uplinks. One switch can connect to multiple aggregation switches through multiple links, significantly improving reliability of access devices.
- The S6320-HI supports IPv4 and IPv6 routing protocols such as static routing, RIP/RIPng, OSPF/OSPFv3, IS-IS (IPv4)/IS-IS (IPv6), and BGP. The S6320-HI is designed with equal-cost routes, NSR, NSF, and other high-reliability features. The S6320-HI also provides PBR and routing policy functionality.
- The S6320-HI supports a wide range of Layer 2 multicast and Layer 3 multicast features. Typical Layer 2 multicast features include VLAN/VPLS-based IGMP snooping, VLAN-based MLD snooping, multicast VLAN, and controllable multicast. Layer 3 multicast features include IGMP v1/v2/v3, MLD v1/v2, PIM DM/SM/SSM, MSDP, and multicast VPN.

Comprehensive VPN technologies

- The S6320-HI supports Multiprotocol Label Switching (MPLS), and can be used as access devices of high-quality enterprise leased lines. The S6320-HI allows users in different VPNs to connect to the same switch and isolates users through multi-instance routing. Users in multiple VPNs connect to the premises equipment (PE) through the same physical port on the switch, which reduces the cost on VPN network deployment.

Various security control methods

- The S6320-HI supports 802.1X authentication, MAC address authentication, Portal authentication, and hybrid authentication, and can dynamically deliver user policies such as VLANs, QoS policies, and access control lists (ACLs). It also supports user management based on user groups.

Mature IPv6 features

- The S6320-HI supports IPv4/IPv6 dual stacks and IPv6 routing protocols (RIPng, OSPFv3, BGP4+, and IS-IS for IPv6). With these IPv6 features, the S6320-HI can be deployed on a pure IPv4 network, a pure IPv6 network, or a shared IPv4/IPv6 network, helping achieve IPv4-to-IPv6 transition.

Intelligent stack (iStack)

- The S6320-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 capacity 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 the stack.

VXLAN

- The S6320-HI supports VXLAN Layer 2 and Layer 3 gateway functions, which can be configured using NETCONF/YANG. Based on this feature, multiple service networks or multi-tenant networks can be deployed together on the same physical network. Service/tenant networks are isolated from each other, achieving one network for multiple purposes. This helps meet data bearing requirements of different services or customers while reducing network construction costs and improving network resource utilization efficiency.

Clock synchronization

- The S6320-HI supports Synchronous Ethernet (SyncE) and the IEEE 1588v2 standard which implements high-precision and highly reliable time and clock synchronization, meeting strict requirements of electric power and transportation industry customers and carriers on clock synchronization.

Open Programmability System (OPS)

- The S6320-HI supports Python-based OPS to provide an open programming language and simple operation methods for customers, implementing intelligent O&M.

Product Specifications

Item	S6320-50L-HI-48S	S6320-30L-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/v2, RIPng, OSPF, OSPFv3, IS-IS, IS-ISv6, BGP, BGP4+, ECMP, routing policy	

Item	S6320-50L-HI-48S	S6320-30L-HI-24S
Interoperability	VLAN-Based Spanning Tree (VBST) interworking with PVST, PVST+, and RPVSTRPP ring topology and RRPP multi-instance Smart Link tree topology and Smart Link multi-instance, providing millisecond-level protection switching 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	
Ethernet loop protection	MPLS L3VPN MPLS L2VPN (VPWS/VPLS/VLL) MPLS-TE MPLS QoS	
MPLS	MPLS L3VPN MPLS L2VPN (VPWS/VPLS/VLL) MPLS-TE MPLS QoS	
IPv6	Neighbor Discovery (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 snooping) IPv6 addresses configured for sub-interfaces, VRRP6, DHCPv6	
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 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	

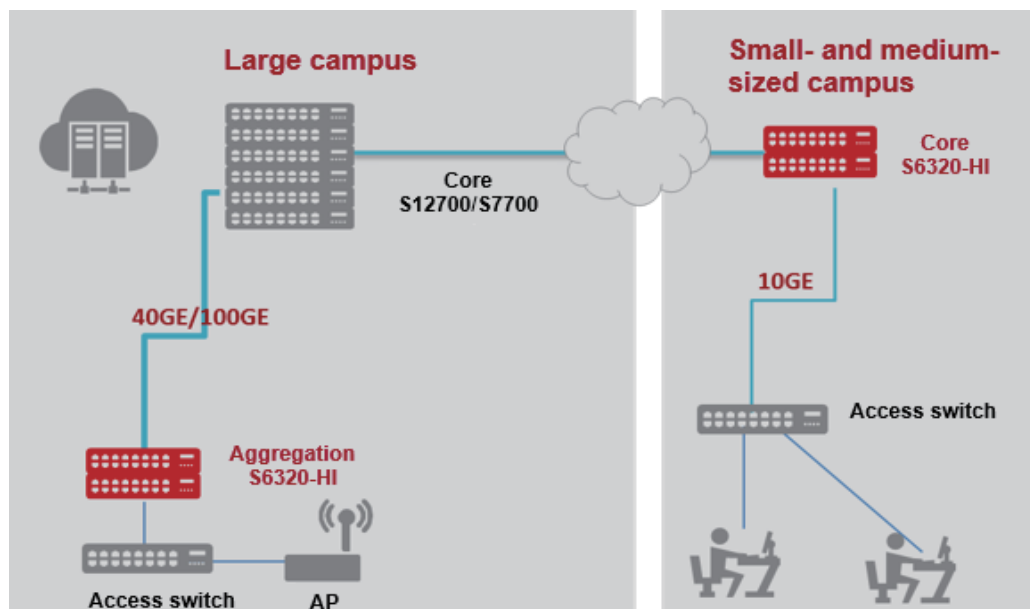
Item	S6320-50L-HI-48S	S6320-30L-HI-24S
Security	Hierarchical user management and password protection DoS attack defense, ARP attack defense, and ICMP attack defense Binding of the IP address, MAC address, port number, and VLAN ID Port isolation, port security, and sticky MAC MAC Forced Forwarding (MFF) 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 static routes/static routes (IPv6) BFD for RIP BFD for OSPF/OSPFv3 BFD for IS-IS/IS-IS (IPv6) BFD for BGP/BGP4+ BFD for PIM/PIM (IPv6) BFD for VRRP Hardware-based BFD and OAM	
VXLAN	VXLAN function, VXLAN L2 and L3 gateways, BGP EVPN VXLAN configuration using NETCONF/YANG	
SVF	Acting as the parent switch to vertically virtualize connected switches and APs into a single device for management Two-layer client architecture ASs can be independently configured. Services not supported by templates can be configured on the parent switch. Hybrid networking with third-party devices	
iPCA	Marking service packets to obtain the number of lost packets and packet loss ratio in real time Statistics on the number of lost packets and packet loss ratio on networks and devices	
Clock synchronization	Synchronous Ethernet and IEEE 1588v2	
OPS	OPS	
Management and maintenance	Virtual cable test SNMP v1/v2c/v3 RMON Web-based NMS System logs and alarms of different levels GVRP MUX VLAN 802.3az Energy Efficient Ethernet (EEE) NetStream Dying gasp upon power-off	
Dimensions (W x D x H)	442 mm x 420 mm x 43.6 mm	442 mm x 420 mm x 43.6 mm

Item	S6320-50L-HI-48S	S6320-30L-HI-24S
Input voltage	Input voltage AC: Rated voltage: 100 V to 240 V; 50/60 Hz Maximum voltage: 90 V to 264 V; 47–63 Hz	
	DC: Rated voltage: –48 V to –60 V Maximum voltage: –38.4 V to –72 V	
Maximum power consumption	279 W	232 W
Power consumption (30% traffic load)	194 W	138 W
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.	
Operating humidity	5% to 95% (non-condensing)	
Heat dissipation	Heat dissipation with fans, intelligent fan speed adjustment	

Typical Networking and Application Scenarios

On campus networks

Huawei S6320-HI series switches are the first-of-their-kind fixed agile switches with 10GE downlink and 100GE uplink ports. The S6320-HI supports unified management on devices, users, and services. The S6320-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 S6320-HI helps achieve an easy-to-manage and highly reliable enterprise campus network with scalable services.

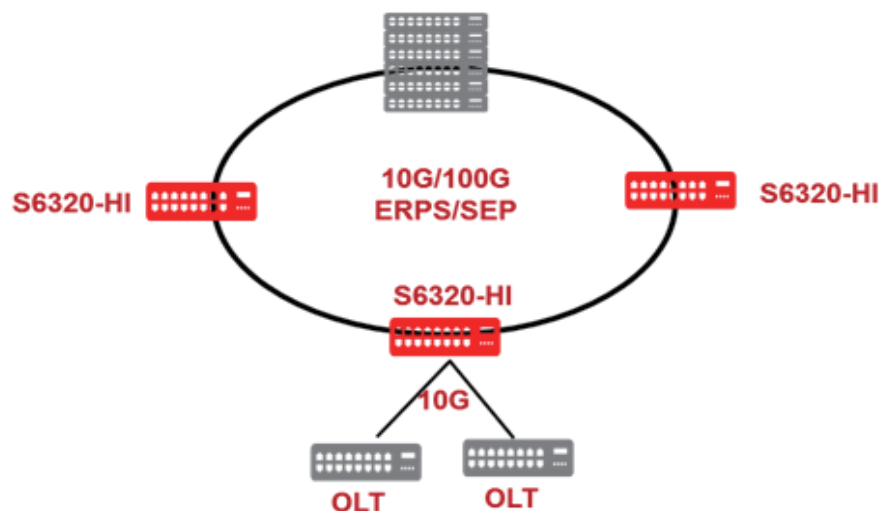


On MANs

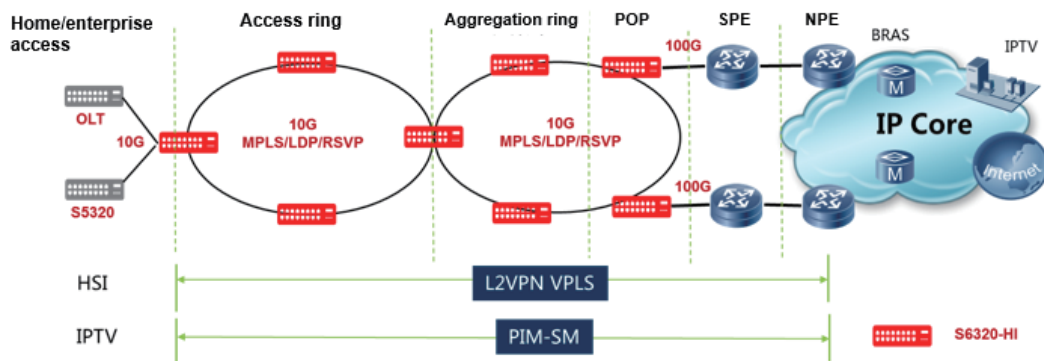
In Layer 2 port aggregation scenarios, the S6320-HI supports hardware-based OAM and ERPS/SEP Layer 2 ring network protocol, achieving fast convergence of Layer 2 ring networks within 50 ms. The S6320-HI can be used to build 10G/100G ring networks.

In MAN scenarios, the S6320-HI supports L2VPN (VLL/PWE3/VPLS), L3VPN, Layer 2 multicast, and Layer 3 multicast. The S6320-HI provides VPLS access for HSI services and provides Layer 2/Layer 3 multicast for IPTV services. The S6320-HI supports hardware-based BFD and MPLS TE. The S6320-HI can quickly detect link and device faults and achieve fast convergence within 50 ms.

Layer 2 port aggregation scenario



MAN scenario



Ordering Information

Model	Description
S6320-50L-HI-48S	S6320-50L-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)
S6320-30L-HI-24S	S6320-30L-HI-24S (24 x 10 Gig SFP+, 4 x 40 Gig QSFP+, 2 x 100 Gig QSFP28; without power module)
PAC-600WA-B	600 W AC power module
PDC-350WA-B	350 W DC power module

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

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

www.huawei.com