H3C S5120V3-LI Gigabit Access Switch Series

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New H3C Technologies Co., Limited

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Product Overview

H3C S5120V3-LI is a Layer 2 Ethernet switch product independently developed by New H3C Technologies Co., Ltd. (H3C). It is a second-generation smart managed switch designed for network environments that require high performance, high port density, and easy installation.

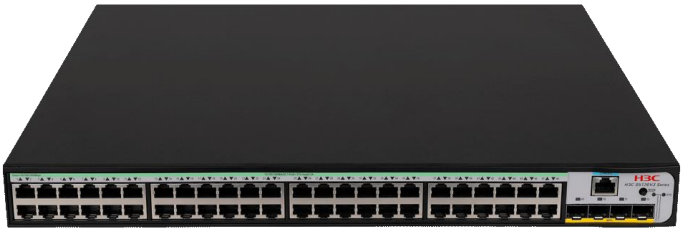
H3C S5120V3-LI Ethernet switch provides 10/100/1000Base-T adaptive Ethernet ports or SFP optical ports. In enterprise networks, it can be used as an access device to provide Gigabit to desktops; in metropolitan area networks or networks of industrial users, it can provide Gigabit access to end users or tandem low-end switches downwards, and connect to high-capacity L3 switches through Gigabit fiber or link aggregation upwards.

H3C S5120V3-LI Ethernet switch series supports the innovative Intelligent Resilient Framework (IRF) technology, which allows users to connect up to nine S5120V3-LI switches to form a logically independent entity to build a highly reliable, easily scalable, and manageable new intelligent network.

H3C S5120V3-LI Ethernet switch series includes the following models:

- S5120V3-28S-PWR-LI: 24*10/100/1000TX + 4*SFP+
- S5120V3-52S-PWR-LI: 48*10/100/1000TX + 4*SFP+
- S5120V3-28S-HPWR-LI: 24*10/100/1000TX + 4*SFP combo+ 4*SFP+

S5120V3-28S-PWR-LI



S5120V3-52S-PWR-LI

S5120V3-28S-HPWR-LI

Features and benefits

Abundant service capabilities

H3C S5120V3-LI Ethernet switch series supports Internet broadband access and offers Gigabit port access and uplink interface for small and medium-sized enterprises. It supports rich features such as Jumbo Frame, 802.1X, MAC authentication, port security, LACP, 4K VLANs, up to 16K MAC address and blackhole MAC address, and abundant functions such as port-based priority auto-mapping of Layer 2 and Layer 3, port-based mirror, redirection, port isolation, access control lists, port speed limit and rich Ethernet IPv6 features.

IRF2 (Second Generation Intelligent Resilient Framework)

H3C S5120V3-LI switch series supports IRF2 technology that allows multiple physical devices it connects to be virtualized into one logical device. In this way, users can manage and use these multiple devices as a single device. IRF can bring the following benefits to users:

- Simplified management: Once an IRF is built, users can log into the unified logical device by connecting to any port of any member. By configuring a single device, users can manage the whole intelligent resilient system and all member devices in the system, without physically connecting to each member device for configuration and management.

- Simplified services: Various control protocols running on the logical device formed by IRF are running as if they are on one device. For example, routing protocols perform the unified calculation as one device. With the application of cross-device link aggregation technology, the original spanning tree protocol will be replaced. This avoids a great number of protocol packet exchanges among the members, simplifies network operation, and shortens the convergence time during network flapping.
- Elastic extension: Elastic extension can be achieved according to user needs to ensure user investment. And the new device can achieve a "hot swap" when adding or leaving IRF, without affecting the normal operation of other devices.
- High reliability: The high reliability of IRF is embodied in three aspects, specifically, links, devices, and protocols. Not only the physical ports of members can be aggregated, but also the physical links between the IRF system and the upper or lower layer devices can be aggregated, and thus the reliability of links is increased through a multi-link backup. An IRF system comprises multiple member devices. As soon as the master fails, the IRF system elects a new master immediately to prevent service interruption and implement 1:N backup. The IRF system has real-time protocol hot backup functions responsible for backing up configuration information of the protocol to all other member devices, achieving 1:N protocol reliability.
- High performance: For high-end switches, performance and port density will be limited by the hardware structure. But for an IRF system, its performance and port density are the sum of the performance and port numbers of all devices within the system. Therefore, the IRF technology can easily expand the switching capability of the device and the density of user ports several times, thereby greatly improving the performance of the device.
- Easy management: The entire resilient framework shares one IP. This simplifies network device and topology management, improves operating efficiency, and reduces maintenance costs.

Comprehensive security control policies

- ARP attacks and ARP viruses are major threats to LAN security, so the H3C S5120V3-LI switch series comes with diverse ARP protection functions such as ARP Detection to challenge the legitimacy of clients, validate the ARP packets, and set a speed limit for ARP to prevent ARP swarm attacks from targeting CPU.
- H3C S5120V3-LI switch series supports EAD (End User Admission Domination) function. With the background system, EAD integrates terminal security policies, such as anti-virus and patching, into network access control and access right control policies to form a cooperative security system. By checking, isolating, fixing, managing, and monitoring access terminals, EAD changes passive, single point network protection to active, comprehensive network protection, and changes separate management to centralized management, enhancing the network capability for preventing viruses, worms, and new threats.
- It supports multiple authentication methods such as 802.1X authentication and centralized MAC authentication, and flexibly adapts to the multiple authentication requirements of the network

environment.

Rich QoS policies

- H3C S5120V3-LI switch series supports packet filtering at Layer 2 through Layer 4 and traffic classification. It provides a flexible queue-scheduling algorithm and allows settings to be configured based on ports and queues at the same time. SP, WRR, and SP+WRR modes are supported. It also supports ACL in the inbound and outbound direction, traffic policing, and port and traffic mirroring in the outbound and inbound direction, to monitor packets on specified ports for network detection and troubleshooting.

Outstanding management capacity

- H3C S5120V3-LI switch series supports Simple Network Management Protocol (SNMP) v1/v2/v3, which can be managed by iMC. This series supports CLI command line, Web-based network management, and Telnet for easier device management, as well as encryption methods like SSH2.0 for more secure management.
- H3C S5120V3-LI switch series supports VLAN classification based on MAC address, which is a good solution for intelligent and flexible management of mobile office; combined with ACL policies in the global or VLAN mode, it simplifies configuration and minimizes hardware resources.

Layer 3 routing features

H3C S5120V3-LI switch series provides rich layer 3 routing features and supports static routing, RIP, RIPng, and OSPF V1/V2/V3.

Specifications

Feature	S5120V3-28S-HPWR-LI	S5120V3-28S-PWR-LI	S5120V3-52S-PWR-LI
Switching capacity	128Gbps	128Gbps	176Gbps
Packet forwarding rate	95.232Mpps	95.232Mpps	130.952Mpps
Dimensions (W × D × H)	440×260× 43.6 mm	440×260×43.6 mm	440×400× 43.6 mm
Weight	≤ 4.5 kg	≤ 4.5 kg	≤ 6 kg
Management port	1 console port		
Service ports	24×10/100/1000TX+ 4×SFP combo + 4×SFP+	24×10/100/1000TX+ 4×SFP+	48×10/100/1000TX+ 4×SFP+
Input voltage	AC: The rated voltage range is 100V to 240V, 50/60Hz.		
Total power consumption	MIN: AC: 16W MAX: AC: 445W (PoE 370W)	MIN: AC: 15W MAX: AC: 294W (PoE 240W)	MIN: AC: 36W MAX: AC: 467W (PoE 370W)
Operating temperature	-5℃ to 45℃		

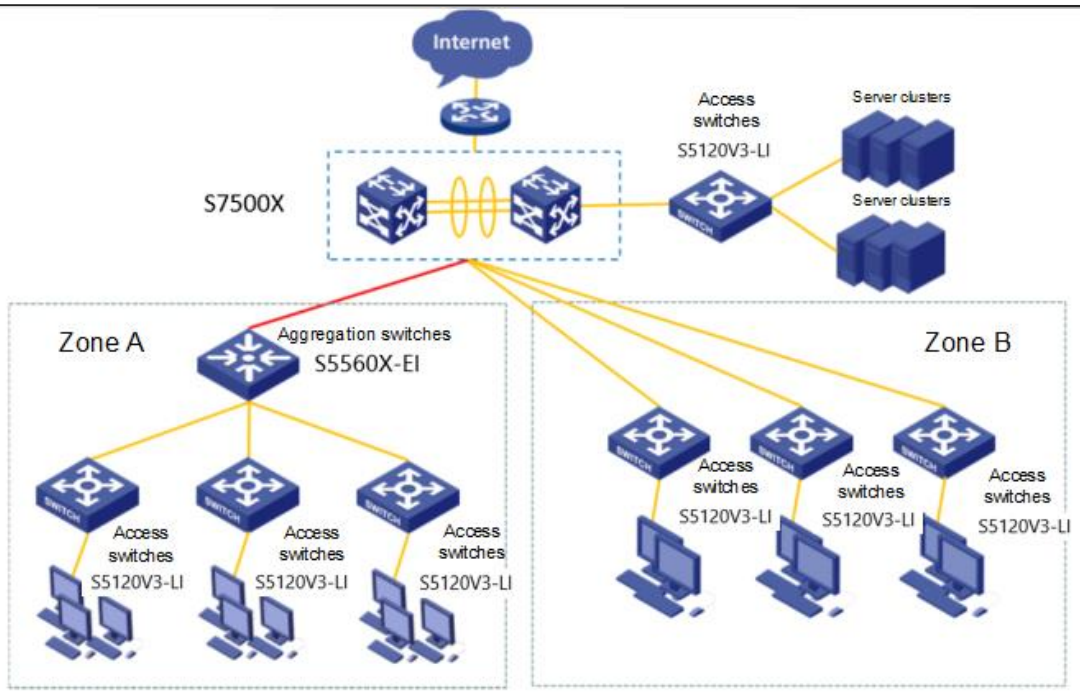
Feature	S5120V3-28S-HPWR-LI	S5120V3-28S-PWR-LI	S5120V3-52S-PWR-LI
Relative humidity (non-condensing)	5% RH to 95% RH, non-condensing		
Link aggregation	GE port aggregation Static aggregation Dynamic aggregation Multichassis link aggregation		
Stacking	IRF2		
Traffic control	802.3x traffic control and half-duplex backpressure		
Jumbo Frame	Supported		
MAC address table	Blackhole MAC address Setting the maximum number of port MAC addresses to be learned		
VLAN	Port-based VLAN QinQ Voice VLAN Protocol VLAN MAC VLAN		
ARP	ARP Detection ARP speed limit		
ND	Supported		
VLAN virtual port	Supported		
DHCP	DHCP Client DHCP Snooping DHCP Relay DHCP Server DHCP Option 82		
DNS	Static domain name resolution Dynamic domain name resolution for the client IPv4 and IPv6 address		
Routing protocols	IPv4/IPv6 static routing RIP/RIPng, OSPFV1/V2/V3		
Broadcast/ Multicast/ Unicast storm suppression	Storm suppression based on port bandwidth rate percentage Storm suppression based on PPS		
Smart Link	Supported		
Layer 2 ring network protocols	STP/RSTP/MSTP protocols STP Root Protection RRPP		
QoS/ACL	Packet filter SP/WRR/SP+WRR queue scheduling Bidirectional ACL Port-based speed limit Traffic-based redirection		
Mirroring	Port mirroring Traffic mirroring		

Feature	S5120V3-28S-HPWR-LI	S5120V3-28S-PWR-LI	S5120V3-52S-PWR-LI
Security	Hierarchical user management and password protection SSH2.0 Port isolation 802.1X Port security MAC address authentication IP Source Guard HTTPs EAD		
Loading and upgrading	Loading and upgrading through File Transfer Protocol (FTP) Loading and upgrading through Trivial File Transfer Protocol (TFTP)		
Management	Configuration from Command Line Interface (CLI) Remote configuration from Telnet Configuration through the console port Simple Network Management Protocol (SNMP) Remote Monitoring (RMON) alarms, events, and historical records iMC network management system WEB network management System log Alarming based on severity IRF NTP		
Maintenance	Debugging information output Ping and Tracert Telnet remote maintenance NQA DLDP Virtual Cable Test		

Typical networking

Typical applications in small and medium-sized campus networks

In small and medium-sized enterprise campus networks, the S5120V3-LI series Ethernet switch can be used as access switches, providing high-performance and high-capacity switching services and supporting GE uplink interfaces to provide stable bandwidth for access devices. In addition, the entire network core layer, aggregation layer, and high-performance access layer all adopt H3C's innovative IRF2 technology, which achieves multiple advantages such as simplification of network topology, services and management, exponential improvement of 1:N reliability, and significant improvement of network operation performance by virtualizing multiple devices into one unified logical device while the original network topology remains unchanged.



S5120V3-LI access switch application diagram

Ordering Information:

H3C S5120V3-LI switch series ordering list

Item	Quantity	Remarks
S5120V3-28S-PWR-LI Ethernet Switch Host	1	Optional
S5120V3-52S-PWR-LI Ethernet Switch Host	1	Optional
S5120V3-28S-HPWR-LI Ethernet Switch Host	1	Optional

Optical module purchase

SFP module name	Center wavelength	Interface connector type	Interface cable specification	Maximum transmission distance of optical fiber	Remarks
SFP-GE-T	-	RJ-45		100m	-
SFP-GE-SX-MM850-A	850nm	LC	50/125 μm multimode fiber	550 m	
			62.5/125 μm multimode fiber	275 m	
SFP-GE-LX-SM1310-A	1310nm	LC	9/125 μm single mode fiber	10 km	
			50/125 μm multimode fiber	550 m	
			62.5/125 μm multimode fiber	550 m	
SFP-GE-LH40-SM1310	1310nm	LC	9/125 μm single mode fiber	40 km	
SFP-GE-LH40-SM1550	1550nm	LC	9/125 μm single mode fiber	40 km	
SFP-GE-LH80-SM1550	1550nm	LC	9/125 μm single mode fiber	80 km	
SFP-GE-LH100-SM1550	1550nm	LC	9/125 μm single mode fiber	100 km	
SFP-GE-LX-SM1310-BIDI	TX:	LC	9/125 μm single mode fiber		Note:

SFP module name	Center wavelength	Interface connector type	Interface cable specification	Maximum transmission distance of optical fiber	Remarks
	1310 nm RX: 1490 nm				These two types of modules must be used in pairs.
SFP-GE-LX-SM1490-BIDI	TX: 1490 nm RX: 1310 nm	LC	9/125 μm single mode fiber		Note: These two types of modules must be used in pairs.
SFP cable 1.5m	-	-		Transmission distance 1.5m	
100M optical module (S5120V3-28P-HPWR-LI)					
SFP-FE-SX-MM1310-A	1310nm	LC	50/125 μm multimode fiber/62.5/125 μm multimode fiber	2 km	
SFP-FE-LX-SM1310-A	1310nm	LC	9/125 μm single mode fiber	15 km	
SFP-FE-LH40-SM1310	1310nm	LC	9/125 μm single mode fiber	40 km	
SFP-FE-LX-SM1310-BIDI	TX: 1310 nm RX: 1550 nm	LC	9/125 μm single mode fiber	15 km	Note: These two types of modules must be used in pairs.
SFP-FE-LX-SM1550-BIDI	TX: 1550 nm RX: 1310 nm	LC	9/125 μm single mode fiber		Note: These two types of modules must be used in pairs.

The Leader in Digital Solutions

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