

H3C S5500-SI Series Ethernet Switches

Product Overview

The H3C S5500-SI Series Ethernet Switches are Gigabit Ethernet switching products developed by Huawei-3Com Technology Co., Ltd. S5500-SI series have abundant service features. They provide the IPv6 forwarding function and 10GE uplink interfaces. Through H3C-specific cluster management, you can streamline network management.

S5500-SI series are designed as convergence and access devices for intranets and metropolitan area networks (MANs), and can also be used for connecting server groups in data centers.

The H3C S5500-SI Series Switches are available, offering a cost-effective path for meeting current and future service requirements from enterprises and commercial businesses. The abundant features include advanced quality of service (QoS), rate-limiting, access control lists (ACLs), static and Routing Information Protocol (RIP) routing, RIPng, QinQ (VLAN-VPN), Selective QinQ, SSH V2 (Secure Shell V2), and HGMP V2 (Huawei group management protocol V2), DHCP Relay, etc.

With the rich features, S5500-SI series support the following services: Broadband Internet access, Access of MAN and intranet users, and Multimedia services, such as VOD Delay-sensitive voice services, such as VoIP Multicast audio and video services.

The H3C S5500-SI Series Ethernet Switches include the following models: S5500-28C-SI S5500-52C-SI, S5500-28C-PWR-SI and S5500-52C-PWR-SI.



H3C S5500-28C-SI / S5500-28C-PWR-SI



H3C S5500-52C-SI / S5500-52C-PWR-SI.

H3C S5500-28C-SI/S5500-24C-PWR-SI has 24 Ethernet 10/100/1000 Base-T ports, 4 1000BASE-X SFP (combo) and two expansion slots. H3C S5500-48C-SI/S5500-48C-PWR-SI have 48 Ethernet 10/100/1000 Base-T ports, 4 1000BASE-X SFP (combo) and two expansion slots.

S5500-24C-PWR-SI/S5500-48C-PWR-SI model supports PoE, which transmit Power over Ethernet to endpoint-devices.

Key Features and Benefits

➤ Support both IPv4 and IPv6

- H3C S5500-SI series switches support IPv4/IPv6 dual stack and hardware forwarding.

➤ Full wire-speed, multi-layer switching

- H3C S5500-SI series switches offer L2/L3 wire-speed switching capacity. The product series offers 10GE uplink speed, satisfies the most demanding.
- The hardware supports L3 wire-speed switching, and is able to identify and process the traffic flows from L4-L7.
- With independent packet filters, all ports distinguish different flows and forward them with corresponding priority.

➤ Excellent PoE (Power over Ethernet) Supply Function

H3C S5500-SI series supply PoE function for endpoint devices, providing power over copper Ethernet cable to endpoint (Powered Device, such as IP phone, WLAN AP).

- H3C S5500-SI series switches provide up to 48 simultaneous full-powered PoE ports at 15.4W for maximum powered-device support, such as IP telephony and wireless LAN deployments. As PSE (Power Sourcing Equipment) devices, all H3C S5500-SI series Switches are 802.3af compliant PoE switches.
- With PoE and Voice VLAN technology, these innovative switches can provide the perfect solution for a converged voice and data network.
- H3C S5500-SI series Switches supports PoE Profile, that means PoE policy configurations applicable to different user groups are stored in the corresponding PoE Profiles. When users connect a PD device to the port that currently has PoE Profile stored, the switch will automatically apply the PoE configuration defined in the corresponding port's PoE Profile to the PD device.

➤ Flexible security control policies

- Based on the longest match routing policy, the H3C S5500-SI Series forward packets one by one ensuring equal forwarding performance. This function can guard the network against the attack by Code Red and Worm Blaster, thereby guaranteeing equipment security.
- The H3C S5500-SI Series support 802.1x authentication to identify users who attempt to access the network. With the 802.1x client version checking function enabled on a switch, the switch checks the version and validity of the 802.1x client running on supplicant systems to prevent those that use earlier versions of 802.1x client or illegal clients from logging in.
- The H3C S5500-SI Series support Centralized MAC address authentication, it controls accesses to a network through ports and MAC addresses. This kind of authentication requires no client software. When operating in centralized MAC

address authentication mode, a switch begins to authenticate the user if it detects a new user MAC address. Further more, the H3C S5500-SI Series can Performe 802.1x authentication and MAC address-based authentication simultaneously.

- The H3C S5500-SI Series support The Guest VLAN function, this function enables supplicant systems that are not authenticated to access specific resources and thus perform the corresponding operations, such as obtaining 802.1x client, upgrading client, or obtaining other upgrading programs.
- Secure Shell V2 (SSH V2) offers security information protection and powerful authentication function to safeguard the Ethernet switch from attacks such as IP address spoofing and plain text cipher interception.

➤ **High reliability**

- H3C S5500-SI series support STP/RSTP and multi-VLAN based MSTP, greatly improving redundant back-up for links and fault tolerance capability, so that the network can run with high stability.

➤ **Abundant QoS policies**

- The H3C S5500-SI Series support L2~L4 complex flow classification based on source MAC address/destination MAC address/source IP address/destination IP address/ports/protocols.
- The H3C S5500-SI Series support flexible queue scheduling algorithms, which can be set on the basis of port and queue at the same time. They support Strict Priority (SP), Weighted Round Robin(WRR) and SP + WRR.
- The H3C S5500-SI Series support Committed Access Rate (CAR) and limit the traffic speed in the 64Kbit/s granularity.
- The H3C S5500-SI Series support packet redirection
- The H3C S5500-SI Series Support remarking of 802.1p and DSCP priorities.

➤ **Diversified System Configuration and management modes**

- The H3C S5500-SI Series support Simple Network Management Protocol (SNMP) v1/v2/v3 and RMON (Remote Monitoring) v1, 1/2/3/9 groups of MIBs, they be managed by NMS. They can be managed by general network management platform such as OpenView, and Quidview® network management system.
- The H3C S5500-SI Series support Command Line Interface (CLI), Web based network management, modem dial-up and TELNET which make the equipment management more convenient.
- The H3C S5500 Series support HGMP V2 cluster management, After enabling HGMP V2, the network administrator can manage several member switches through one command switch and only the command switch need a public network IP address, it can save public IP address greatly and manage the network more efficiently.

Specifications

Features	S5500-28C-SI	S5500-52C-SI	S5500-28C-PWR-SI	S5500-52C-PWR-SI
Fixed port	24 10/100/1000M electrical ports 4 Gigabit SFP Combo ports	48 10/100/1000M electrical ports 4 Gigabit SFP Combo ports	24 10/100/1000M electrical ports 4 Gigabit SFP Combo ports	48 10/100/1000M electrical ports 4 Gigabit SFP Combo ports
Expansion slot	2	2	2	2
Expansion module	1-port 10GE XFP module 2-port 10GE XFP module 2-port 10GE CX4 module for short haul			
Performance				
Wire speed L2/L3 switching	Port Switch capacity: 128 Gbps Throughput: 95.2 Mpps	Port Switch capacity: 176 Gbps Throughput: 130.9 Mpps	Port Switch capacity: 128 Gbps Throughput: 95.2 Mpps	Port Switch capacity: 176 Gbps Throughput: 130.9 Mpps
Flash	16M			
PoE	No	No	Yes	Yes
Switching mode	Store and forward			
Jumbo frame	Support maximum frame size of 9 KB			
Forwarding Latency	<10us			
SDRAM	128M			
Layer 2 feature				
MAC address table	8K MAC addresses 128 static MAC addresses Blackhole MAC addresses			
VLAN	4k VLAN (IEEE802.1Q) Voice VLAN GVRP Support Port-based VLAN			
ARP	2K entries 64 static entries			
ND	1K entries 64 static entries			
Flow control	IEEE802.3x flow control and back pressure			
VLAN interface	64			
Link aggregation	Dynamic aggregation of GE ports Dynamic aggregation of 10GE ports Dynamic link aggregation through link aggregation control protocol (LACP) Manual link aggregation Static link aggregation Up to 12 aggregation groups, with eight GE or two 10GE ports at most in each group			
Mirroring	Traffic mirroring Port mirroring			

Features	S5500-28C-SI	S5500-52C-SI	S5500-28C-PWR-SI	S5500-52C-PWR-SI
STP/RSTP/MSTP	IEEE 802.1D Spanning Tree Protocol (STP) IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) IEEE 802.1s Multiple Spanning Tree Protocol instances (MSTP), 16 instances STP Root Guard BPDU Guard			
Broadcast / Multicast / Unicast storm suppression	Storm control based on port rate percentage PPS-based storm control			
IGMP Snooping	IGMP snooping v1/v2/v3 128 multicast groups			
MLD Snooping	MLDv1 Snooping 128 multicast groups			
QinQ	Y			
Selective QinQ	Y			
Layer 3 feature				
IPv4 routing	64 static routes RIPv1/v2, up to 512 IPv4 routes			
IPv6 routing	Support 64 static routes RIPng, up to 256 IPv6 routes			
Network Protocol	DHCP Client DHCP Snooping (Dynamic Host Configuration Protocol Snooping) DHCP Relay (Dynamic Host Configuration Protocol Relay) NTP			
Convergence				
Quality of service (QoS)/ Access control list (ACL)	Restriction of the rates at which a port sends packets, with a granularity of 64 kbps. Support packet redirection Support inbound committed access rate (CAR), with a granularity of traffic limit 64 kbps. Eight output queues for each port Flexible queue scheduling algorithms based on port and queue, including strict priority (SP), weighted round robin (WRR), and SP + WRR. Support remarking of 802.1p and DSCP priorities Layer 2 to Layer 4 packet filtering. Traffic classification based on source MAC addresses, destination MAC address, source IP address, destination IP address, port, protocol, and VLAN Time range based ACL VLAN based Service Policy(function like VACL) L4 port range check.			
Security				
Network Login	Support Centralized MAC address authentication Support Port isolation Support MAC address black hole Support MAC Address Learning Limit Support SSH(Secure Shell) V2			

Features		S5500-28C-SI	S5500-52C-SI	S5500-28C-PWR-SI	S5500-52C-PWR-SI
802.1X	Up to 1024 users Port-based and MAC address-based authentication Guest VLAN Trunk port authentication				
AAA&Radius	Separated authentication, authorization, and accounting Authenticated users need to be authenticated again when the device restarts				
Management/ Maintenance					
System Configuration and Management	Support CLI (Command Line Interface) configuration mode Support Configuration via the console port Support Local/Remote configuration via Telnet Support Remote configuration via modem dial-up Support loading and upgrading through XModem protocol Loading and upgrading through FTP Loading and upgrading through the trivial file transfer protocol (TFTP) Support System configuration with SNMP v1, 2 and 3 Support SNMP Agent logging Support HGMP V2 Support RMON (Remote Monitoring) v1, 1/2/3/9 groups of MIBs Support Quidview® network management system Web-based network management				
System Maintenance and debugging	LEDs are available on the switches and optional modules, indicating the board running status. Remote maintenance through Telnet Hierarchical management of user authorities and operation logs, as well as online help function Hierarchical alarm management and alarm filtering System status query, version query, debugging and tracing functions, to monitor system running status System log Power supply alarm function Fan and temperature alarms Debugging information output Ping and Tracert Support loopback detection Support VCT				
Hardware configuration					
Outline dimension	43.6 × 300 × 440 mm (1.72 × 11.8 × 17.3 in.)			43.6 × 420 × 440 mm (1.72 × 16.5 × 17.3 in.)	
Weight	4 kg (8.1 lb)	4.5 kg (9.9 lb)	6 kg (13.2 lb)	6.5 kg (14.3 lb)	
Power supply	AC	Rated voltage: 100 VAC to 240 V AC, 50/60 Hz Input voltage: 90 VAC to 264 VAC, 47/63 Hz			

Features		S5500-28C-SI	S5500-52C-SI	S5500-28C-PWR-SI	S5500-52C-PWR-SI
	DC	Rated voltage range: 10.8 VDC to 13.2 VDC		Rated voltage range: -52 VDC to 55 VDC The S5500-28C-PWR-SI/S5600-52C-PWR-SI must use the external PoE PSU recommended by Huawei-3Com as its DC input, but not the -48VDC power supply generally available in the equipment room. Otherwise, the device may be damaged. DC input of the PoE power module: Rated voltage: - 53.5 V Max voltage range: - 52 to - 55 V	
Maximum power consumption	S5500-28C-SI: 80 W S5500-52C-SI: 120 W S5500-28C-PWR-SI: 455 W: System power consumption 85 W and PoE power consumption 370 W S5500-52C-PWR-SI: When no remote power supply RPS is connected, full-load power consumption is 500 W including system power consumption 130 W and PoE power consumption 370 W. When an RPS is connected, full-load power consumption is 870 W including system power consumption 130 W and PoE power consumption 740 W.				
MTBF (Years)	23	14.9	19.8	13.4	
MTTR (hours)	2	2	2	2	
Noise parameter	50.9 (fast speed) 41.2 (slow speed)	50.2 (fast speed) 38.7 (slow speed)	54.6 (fast speed) 49.9 (slow speed)	53.7 (fast speed) 48.3 (slow speed)	
Environment	Operation temperature: 0°C ~ 45°C Storage temperature: -40°C ~ 70°C Operating and Storage humidity: 10% ~ 90% (Relative), non-condensing				

Industry standards support

● Ethernet Protocol

- IEEE802.3 10BASE-T Ethernet
- IEEE802.3u 100BASE-TX Fast Ethernet
- IEEE802.3ab 1000BASE-T Gigabit Ethernet
- IEEE802.3z 1000BASE-X Gigabit Ethernet
- IEEE 802.3ae 10 Gigabit Ethernet
- IEEE802.1Q Virtual bridged Local Area Network (VLAN)
- IEEE 802.1P QoS
- IEEE802.3x Flow control
- IEEE 802.1w Rapid Spanning Tree Protocol
- IEEE802.1D Bridging, GVRP

- IEEE802.1S MSTP
- IEEE 802.1X Port-based Access Control
- IEEE 802.3ad Link Aggregation

- **Administration Protocol**

- RFC 1812 (IPv4)
- RFC 826 (ARP)
- RFC 959 (FTP)
- RFC 783 (TFTP)
- RFC 768 (UDP)
- RFC 791 (IP)
- RFC 792 (ICMP)
- RFC 793 (TCP)
- RFC 2622 (Routing policy)
- RFC 2474 (Diffserv)
- RFC 2131 (DHCP)
- RFC 1058 (RIPv1)
- RFC1723 (RIPv2)
- RFC 2138 (Radius Authentication)
- RFC 2139 (Radius Accounting)
- RFC 2267 (Network Ingress Filtering)
- RFC 1157 (SNMP)
- RFC 1902 (SNMPv2)
- RFC854 (Telnet)
- RFC896 (Congestion control in IP/TCP network)
- RFC925 (Multi-LAN ARP/Proxy ARP)
- RFC1122 (Requirements for Internet Hosts)
- RFC1156 (TCP/IP MIB)
- RFC1212 (Concise MIB definitions)
- RFC1213 (MIB for Network Management of TCP/IP based internets (MIB II))
- RFC1757 (RMON (groups 1 2 3 and 9))
- RFC1901 (Community based SNMPv2)
- RFC2573 (SNMPv3 Applications)
- RFC2576 (Coexistence between SNMP V1, V2, V3)
- RFC2597 (Assured Forwarding PHB group (partial support))
- RFC2618 (Radius Authentication Client MIB)
- RFC2620 (Radius Accounting MIB)

RFC2819 (Remote Network Monitoring MIB (group 1,2,3,9))
RFC2865 (Remote Authentication Dial In User Service)
RFC2869 (Radius Support for Extensible Authentication Protocol (EAP))
RFC3046 (DHCP/BootP Relay)
RFC2461 (Neighbor Discovery for IPv6)
RFC2462 (IPv6 Stateless Address Autoconfiguration)
RFC2464 (Transmission of IPv6 over Ethernet)
RFC2466 (MIB for IP Version 6)
RFC2767 (Dual stacks IPv4 & IPv6)
RFC2765 (Stateless IP/ICMP Translation Algorithm)
RFC2080 (RIPng)

Safety and Compliance

● **Emissions / Agency Approvals**

CISPR 22 Class A
FCC Part 15 Class A
EN 55022 Class A
ICES -003 Class A
VCCI Class A
AS/NZS 3548 Class A
EN 61000-3-2
EN 61000-3-3

● **Immunity**

Product conforms to:

EN 55024: 1998
EN 61000-4-2
EN 61000-4-3
EN 61000-4-4
EN 61000-4-5
EN 61000-4-6
EN 61000-4-11

● **Safety Agency Certifications**

UL 60950 3rd ed.
IEC 60950: 1999, corr. Feb. 2000; all national deviations
EN 60950: 2000, ZB and ZC deviations

CSA 22.2 No. 950 3rd ed., 1995

AS/NZS 60950:2000, Australia;

Typical Application

1. Application in the convergent layer of large enterprise/campus network

In a large enterprise or campus network, the S5500-SI series are located at the convergent layer. They are downlinked to layer 2 switches, such as S3000 series, and uplinked to a high-performance core layer switch through the 10GE aggregation. They can provide high performance, high capability service and higher bandwidth to the access equipments.

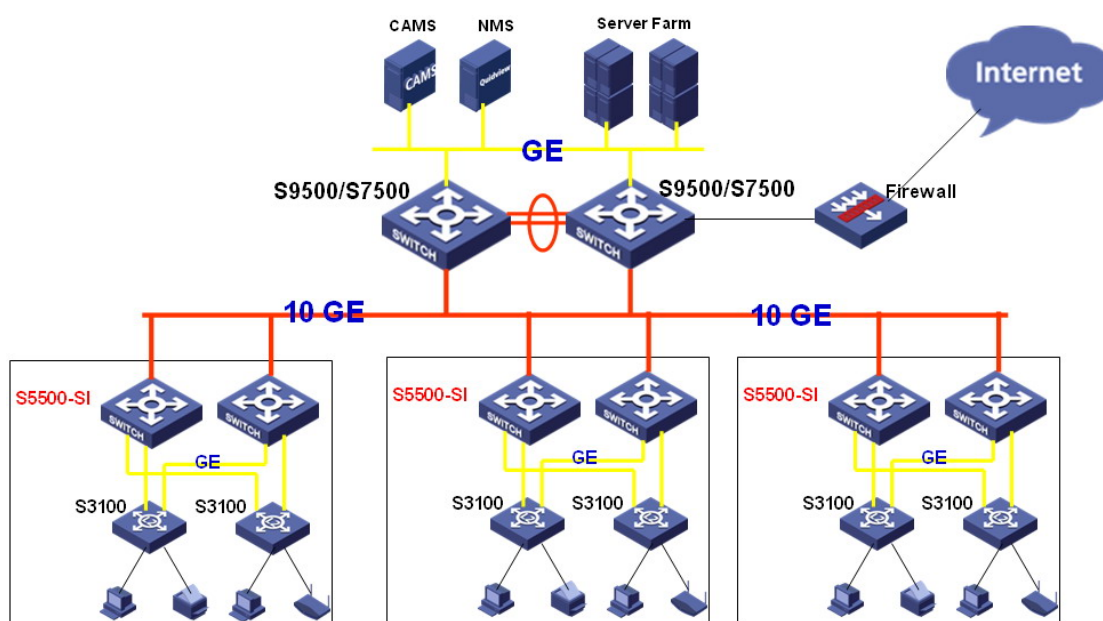


Figure 1: Application in the convergent layer of large enterprise/campus network

2. Application in the access layer

S5500-SI series can serve as access switches to provide the high port density and high bandwidth. Meanwhile, they have the Power over Ethernet (PoE) function. They can service as the Power Supply Device to the IEEE 802.3af Power Device (PD), such as IP Phone, WLAN AP.

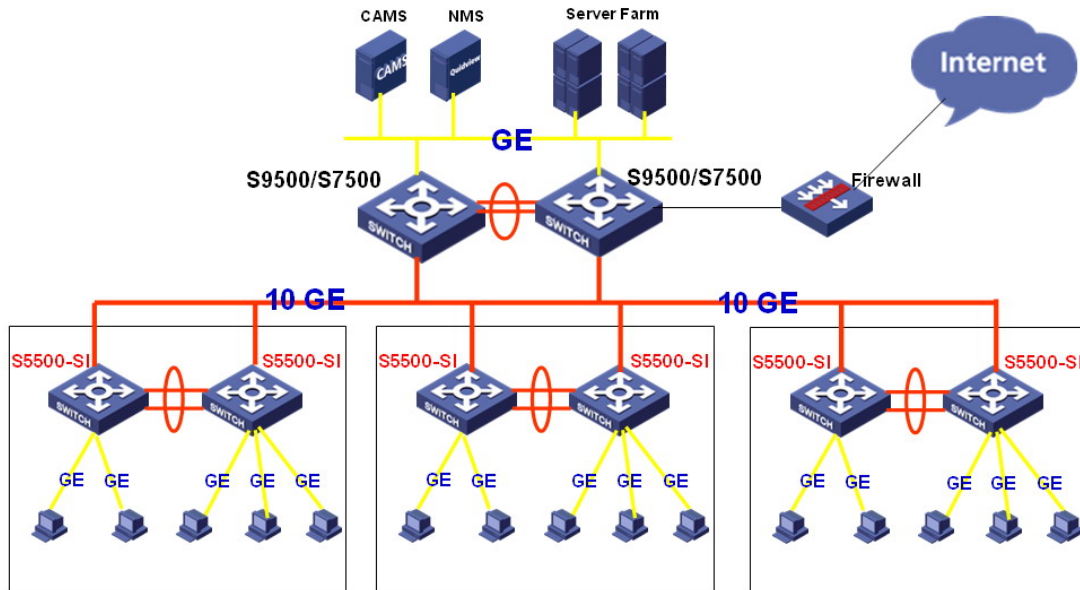


Figure 2: Application in the access layer

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