

H3C S5560S-EI Series Enhanced Gigabit Switches

Product overview

H3C S5560S-EI Switch Series is robust (modular dual power), and easy to deploy Layer 3 access switching solution that offers enhanced security and 10GbE uplinks, BGP and Multicast, SDN and IRF enabled, flexible management.

It offers the following benefits:

- Rich layer 3 features with H3C's state-of-the-art Comware 7 operating system.
- Reliable hardware design with modular dual power supply.
- Embedded SmartMC delivers the easiest and simplest network operation and management solution.
- High-density 10/100/1000Base-T autosensing Ethernet ports and GE/10GE SFP + fiber ports onboard

As an access device on enterprise networks, this switch can provide high-density GE connections for desktop applications.

The S5560S-EI switch series has the following models:

- S5560S-28S-EI—Provides 24 × 10/100/1000BASE-T ports (including 8 × combo interfaces) and 4 × 10G/1G BASE-X SFP+ ports.
- S5560S-52S-EI—Provides 48 × 10/100/1000BASE-T ports and 4 × 10G/1G BASE-X SFP+ ports.
- S5560S-28P-EI—Provides 24 × 10/100/1000BASE-T ports (including 8 × combo interfaces) and 4 × SFP ports.
- S5560S-52P-EI—Provides 48 × 10/100/1000BASE-T ports and 4 × SFP ports.



S5560S-28S-EI



S5560S-52S-EI



S5560S-28P-EI



S5560S-52P-EI

Features and benefits

Intelligent Resilient Framework 2 (IRF2)

H3C S5560S-EI switch series is pre-built with Intelligent Resilient Framework 2 (IRF2). IRF2 provides the following benefits:

- **High scalability:** With IRF2, plug-n-play device aggregation can be achieved by adding one or more switches into the IRF2 stack and enabling IRF2 stacking on the new device. New devices can be managed with a single IP, and upgraded at the same time to reduce network expansion cost.
- **High reliability:** The IRF2 patented 1:N backup technology allows each slave device in the IRF2 stack to serve as the backup of the master, creating control and data link redundancy, as well as uninterrupted layer-3 forwarding. This improves the reliability, avoids unplanned business downtime and serves to improve overall performance. When the master device fails, traffic remains uninterrupted.
- **Load balancing:** IRF2 supports cross-device link aggregation, upstream and downstream can be connected to more than one physical link, which creates another layer of network redundancy and boosts the network resource utilization.
- **Availability:** H3C implements IRF2 through standard Forty Gigabit Ethernet (40GE) or Ten Gigabit Ethernet (10GE) ports which allocates bandwidth for business and application access and reasonably splits local traffic and upstream traffic. IRF2 rules not only able to obeyed within and across the rack, but also across the LAN.

Intelligent Resilient Framework 3.1 (IRF 3.1)

Intelligent Resilient Framework 3.1 technology (IRF 3.1) is implemented based on IEEE 802.1BR. It integrates lower-layer devices (PEXs) such as access devices with a higher-layer IRF fabric (parent fabric) to provide high-density, low-cost connectivity at the access layer. You can manage and configure the PEXs from the parent fabric as if they were interface modules on the parent fabric.

IRF 3.1 brings the following benefits:

- **Single point of management**—An IRF 3.1 system is accessible at a single IP address on the network. You can use this IP address to log in through any network port to configure and manage all the devices in the system.
- **Unified security policy**—The whole IRF 3.1 system enforces the same security policy, avoiding the policy conflicts that typically occur when the network devices are configured one by one.
- **Simplified network topology**—IRF 3.1 combines the access and distribution layers, streamlining the conventional three-layer network model to two layers and making cabling easier.
- **Simplified service deployments**—An IRF 3.1 system is a single node for IP services, routing protocols, VLANs, and other services. You can deploy services on it in the same way you work with a single device. This significantly reduces service deployment complexities and the risks of inadvertent deployment errors when numerous devices are involved.
- **Easy scalability and maintenance**—IRF 3.1 enables plug-and-play of PEXs without network topology changes and automatically pushes configuration and software from the parent fabric to the PEXs. IRF 3.1 also reduces the numerous points of failure into one, improving the efficiency in troubleshooting.

Smart Management Center (SmartMC)

SmartMC is H3C's latest offering and innovation that helps small and middle size enterprise network to address management issue and is free of charge, easy to use web management tool. SmartMC is embedded network management tool into the switch, it includes commander switches and other access switches.

SmartMC delivers the following benefits:

- Intelligent operation: once the switch is powered on and SmartMC function is enabled, topology will be created automatically and user can go enhanced web GUI to check the latest status.
- Centralized management: all management can be achieved via commander switch such as centralized configuration backup, and software version management, increasing working efficiency.
- One key device replacement: in case of one switch failure, the new added same type switch can download the same configuration and work as old switch immediately

Software-defined networking

Software-defined networking (SDN) is an innovative network architecture that separates the control plane from the forwarding plane, typically by using OpenFlow. SDN significantly simplifies network management, reduces maintenance complexity and cost, enables flexible traffic management, and offers a good platform for core network and application innovations.

The switch supports large flow tables and provides data plane functionality of SDN. You can use the switch in conjunction with the H3C SDN controller to set up a large-scale Layer 2 network and quickly add users to the network.

Comprehensive security control policies

Endpoint Admission Defense (EAD), in conjunction with the backend system, integrates endpoint security (including anti-virus and patching) and network security (including network access control and access right control) into an interactive security system. By checking, isolating, repairing, managing, and monitoring the endpoints, this system turns reactive single-point defense to proactive, all-round defense, and dispersed management to centralized policy management. This system enhances the overall network protection against numerous security threats and improves the responsiveness to new threats.

The switch supports unified MAC address authentication, 802.1x authentication, and portal authentication; dynamic or static binding of user identifiers such as user account, IP address, MAC address, VLAN, and port number; and dynamic application of user profiles or policies (such as VLAN, QoS, and ACL) on users. Using the switch in conjunction with H3C IMC, you can manage and monitor online users in real time and take prompt action on illegitimate behaviors.

The switch offers a large number of inbound and outbound ACLs and VLAN-based ACL assignment.

The switch supports Unicast Reverse Path Forwarding (uRPF), which protects a network against source spoofing attacks, preventing DoS and DDoS attacks.

High availability

The switch supports 1+1 power module redundancy and 1+1 fan tray redundancy. You can select AC or DC power modules for the switch as needed. The switch automatically monitors power module and fan tray status and adjusts fan speed based on the change in temperature. When a power or temperature event occurs, the switch generates alarms.

In addition to hardware redundancy, the switch provides a variety of node and link redundancy and protection mechanisms,

including:

- Ethernet link aggregation, including LACP.
- Spanning tree protocols, including STP, RSTP and MSTP.
- Smart Link, which protects faster link switchover for dual uplink network.
- Rapid Ring Protection Protocol (RRPP).
- IRF 2 ring topology in conjunction with multichassis link aggregation.

Abundant QoS features

The switch offers abundant QoS features, including:

- Packet filtering based on packet header fields from Layer 2 through Layer 4, including source MAC, destination MAC, source IP, destination IP, TCP/UDP port number, protocol type, and VLAN.
- Flexible queuing and scheduling algorithms configured on a per-port or per-queue basis, including strict priority (SP), weighted round robin (WRR), and SP+WRR.
- Committed access rate (CAR) with the minimum granularity at 8 kbps.
- Port mirroring in both outbound and inbound directions for network monitoring and troubleshooting.

Outstanding management capacity

The switch provides a variety of management features and is easy to manage. It offers the following device management features:

- Provides multiple management interfaces, including the console port, micro USB port, and out-of-band management Ethernet port.
- Supports configuration and management from CLI or a general-purpose Web-based manager, including H3C IMC Intelligent Management Center and OpenView.
- Supports multiple access methods, including SNMPv1/v2c/v3, Telnet, and more secure SSH 2.0.

To help customers gain visibility into network application traffic, the switch provides a variety of traffic monitoring and analytic tools, including local port mirroring and Layer 2 remote port mirroring. With these tools, customers can specify multiple monitor ports and collect network traffic data to evaluate network health status, create traffic analysis reports, perform traffic engineering, and optimize resource allocation.

Technical specifications

Item	S5560S-28S-EI	S5560S-52S-EI	S5560S-28P-EI	S5560S-52P-EI
Switching capacity	128Gbps	176Gbps	56Gbps	104Gbps
Packet forwarding rate	96 Mpps	132 Mpps	42 Mpps	78 Mpps
Dimensions (H × W × D)	43.6 × 440 × 360 mm (1.72 × 17.32 × 14.17)	43.6 × 440 × 360 mm (1.72 × 17.32 × 14.17)	43.6 × 440 × 360 mm (1.72 × 17.32 × 14.17)	43.6 × 440 × 360 mm (1.72 × 17.32 × 14.17 in)

Item	S5560S-28S-EI in)	S5560S-52S-EI in)	S5560S-28P-EI in)	S5560S-52P-EI
Weight	≤ 8 kg (17.64 lb)	≤ 8.5 kg (18.74 lb)	≤ 8 kg (17.64 lb)	≤ 8.5 kg (18.74 lb)
Flash/SDRAM	256MB/512MB			
Management Ethernet ports	1			
Console ports	1 × RJ-45 console port 1 × Micro-USB port Only the Micro-USB port is available if you connect both ports.			
Service ports	24 × 10/100/1000Base-T autosensing Ethernet ports (including 8 combo interfaces) 4 × 10G SFP+ ports	48 × 10/100/1000Base-T autosensing Ethernet ports 4 × 10G SFP+ ports	24 × 10/100/1000Base-T autosensing Ethernet ports (including 8 combo interfaces) 4 × GE SFP ports	48 × 10/100/1000Base-T autosensing Ethernet ports 4 × GE SFP ports
Rated input voltage	AC: 100 VAC to 240 VAC @ 50 Hz/60 Hz DC: -36 VDC to -72 VDC			
Min. power consumption	Single 75 W AC input: 12 W Dual 75 W AC inputs: 14 W Single 150 W AC input: 16 W Dual 150 W AC inputs: 22 W Single 150 W DC input: 15 W Dual 150 W DC inputs: 21 W	Single 75 W AC input: 21 W Dual 75 W AC inputs: 24 W Single 150 W AC input: 25 W Dual 150 W AC inputs: 30 W Single 150 W DC input: 26 W Dual 150 W DC inputs: 32 W	Single 75 W AC input: 12 W Dual 75 W AC inputs: 13 W Single 150 W AC input: 15 W Dual 150 W AC inputs: 20 W Single 150 W DC input: 15 W Dual 150 W DC inputs: 21 W	Single 75 W AC input: 21 W Dual 75 W AC inputs: 23 W Single 150 W AC input: 24 W Dual 150 W AC inputs: 29 W Single 150 W DC input: 25 W Dual 150 W DC inputs: 30 W
Max. power consumption	Single 75 W AC input: 33 W Dual 75 W AC inputs: 36 W Single 150 W AC input: 35 W Dual 150 W AC inputs: 42 W Single 150 W DC input: 40 W Dual 150 W DC inputs: 47 W	Single 75 W AC input: 47 W Dual 75 W AC inputs: 49 W Single 150 W AC input: 49 W Dual 150 W AC inputs: 56 W Single 150 W DC input: 58 W Dual 150 W DC inputs: 60 W	Single 75 W AC input: 29 W Dual 75 W AC inputs: 32 W Single 150 W AC input: 32 W Dual 150 W AC inputs: 39 W Single 150 W DC input: 35 W Dual 150 W DC inputs: 44 W	Single 75 W AC input: 44 W Dual 75 W AC inputs: 46 W Single 150 W AC input: 46 W Dual 150 W AC inputs: 52 W Single 150 W DC input: 57 W Dual 150 W DC inputs: 59 W
Operating temperature	0°C to 45°C (32°F to 113°F)			
Operating humidity	5% RH to 95% RH, non-condensing			
SDN/OpenFlow	OpenFlow 1.3 Multiple controllers (equal/master/slave controller role) Concurrent processing of multiple flow tables Group table Meter			
Link	1G/10G/40G port aggregation			

Item	S5560S-28S-EI	S5560S-52S-EI	S5560S-28P-EI	S5560S-52P-EI
aggregation	Static aggregation Dynamic aggregation Multichassis link aggregation			
Port features	802.3x flow control (full-duplex) Storm suppression based on port bandwidth percentage Storm suppression based on PPS Storm suppression based on BPS			
Jumbo frame	Supported			
MAC address table	16K MAC address entries Blackhole MAC address MAC learning limit			
VLAN	Port-based VLAN MAC-based VLAN Protocol-based VLAN IP subnet based VLAN QinQ and flexible QinQ VLAN mapping Voice VLAN MVRP			
Loop-free redundant Layer 2 topology	STP/RSTP/MSTP and PVST Smart Link RRPP G.8032 Ethernet ring protection switching (ERPS)			
DHCP	DHCP client DHCP snooping DHCP relay DHCP server DHCP snooping Option 82/DHCP relay Option 82			
IRF2	IRF2 Distributed device management, distributed link aggregation, and distributed resilient routing Stacking through standard Ethernet interfaces Local device stacking and remote device stacking			
IP routing	12K IPV4 routing entries Static routing RIPv1/v2 and RIPng OSPFv1/v2/v3 BGP and BGP4+ for IPv6 IS-IS VRRP/VRRPv3			
IPv6	Neighbor Discovery (ND) PMTU IPv6-Ping, IPv6-Tracert, IPv6-Telnet, and IPv6-TFTP Manual tunnel 6to4 tunnel ISATAP tunnel			

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Multicast	IGMP Snooping v1/v2/v3 and MLD Snooping v1/v2 PIM Snooping MLD Proxy Multicast VLAN IGMP v1/v2/v3 and MLD v1/v2 PIM-DM, PIM-SM, and PIM-SSM MSDP and MSDP for IPv6 MBGP and MBGP for IPv6			
Mirroring	Flow mirroring N:4 port mirroring Local port mirroring and remote port mirroring			
OAM	802.1ag 802.3ah			
QoS/ACL	Layer 2 to Layer 4 packet filtering Traffic classification based on source MAC, destination MAC, source IP, destination IP, TCP/UDP port number, and VLAN Time range-based ACL Bi-directional ACLs (inbound and outbound) VLAN-based ACL issuing Rate limit for receiving and transmitting packets (a minimum CIR of 8 Kbps) Packet redirection 802.1p priority and DSCP priority Committed Access Rate (CAR) Eight queues per port (including the CPU port) Flexible queue scheduling algorithms based on both port and queue, including SP, WRR, WFQ, SP+WRR, and WDRR WRED			
Security	Hierarchical user management and password protection 802.1X authentication and centralized MAC address authentication Guest VLAN RADIUS authentication SSH 2.0 Port isolation Port security Portal authentication EAD DHCP snooping Dynamic ARP detection BPDU guard and root guard uRPF IP/Port/MAC binding Plaintext authentication and MD5 authentication for OSPF and RIPv2 packets Public Key Infrastructure (PKI)			
Management and maintenance	Loading and upgrading through XMODEM/FTP/TFTP Configuration through CLI, Telnet, and console ports SNMPv1/v2/v3			

Item	S5560S-28S-EI	S5560S-52S-EI	S5560S-28P-EI	S5560S-52P-EI
	Web network management Remote Monitoring (RMON) alarm, event, and history recording IMC network management system System log, alarming based on severity, debugging information output NTP Power, fan, and temperature alarming Ping and Tracert Virtual Cable Test (VCT) Device Link Detection Protocol (DLDP) LLDP Loopback detection			
Power saving	802.3az EEE Automatic port power-down Scheduled port power-down (schedule job)			
EMC	FCC Part 15 Subpart B CLASS A ICES-003 CLASS A VCCI CLASS A CISPR 32 CLASS A EN 55032 CLASS A AS/NZS CISPR32 CLASS A CISPR 24 EN 55024 EN 61000-3-2 EN 61000-3-3 ETSI EN 300 386 for telecommunications center installations GB/T 9254 YD/T 993			
Safety	UL 60950-1 CAN/CSA C22.2 No 60950-1 IEC 60950-1 EN 60950-1 AS/NZS 60950-1 FDA 21 CFR Subchapter J GB 4943.1			

Ordering Information

Product ID	Product Description
LS-5560S-28S-EI-GL	H3C S5560S-28S-EI Ethernet Switch with 24*10/100/1000BASE-T Ports and 8*100/1000BASE-X SFP Combo Ports and 4*1G/10G BASE-X SFP Plus Ports
LS-5560S-52S-EI-GL	H3C S5560S-52S-EI Ethernet Switch with 48*10/100/1000BASE-T Ports and 4*1G/10G BASE-X SFP Plus Ports
LS-5560S-28P-EI-GL	H3C S5560S-28P-EI Ethernet Switch with 24*10/100/1000BASE-T Ports and 8*100/1000BASE-X SFP Combo Ports and 4*1000BASE-X SFP Ports

LS-5560S-52P-EI-GL	H3C S5560S-52P-EI Ethernet Switch with 48*10/100/1000BASE-T Ports and 4*1000BASE-X SFP Ports
Power supply	
PSR75-12A-GL	75W AC Pluggable Power Module
PSR150-A1-GL	150W Asset-manageable AC Power Module
PSR150-D1-GL	150W Asset-manageable DC Power Module
Transceivers	
SFP-GE-SX-MM850-A	1000BASE-SX SFP Transceiver, Multi-Mode (850nm, 550m, LC)
SFP-GE-LX-SM1310-A	1000BASE-LX SFP Transceiver, Single Mode (1310nm, 10km, LC)
SFP-GE-LH40-SM1310	1000BASE-LH40 SFP Transceiver, Single Mode (1310nm, 40km, LC)
SFP-GE-LH40-SM1550	1000BASE-LH40 SFP Transceiver, Single Mode (1550nm, 40km, LC)
SFP-GE-LH80-SM1550	1000BASE-LH80 SFP Transceiver, Single Mode (1550nm, 80km, LC)
SFP-GE-LH100-SM1550	1000BASE-LH100 SFP Transceiver, Single Mode (1550nm, 100km, LC)
SFP-GE-LX-SM1310-BIDI	1000BASE-LX BIDI SFP Transceiver, Single Mode (TX1310/RX1490, 10km, LC)
SFP-GE-LX-SM1490-BIDI	1000BASE-LX BIDI SFP Transceiver, Single Mode (TX1490/RX1310, 10km, LC)
SFP-GE-T	1000BASE-T SFP
SFP-XG-LX-SM1310-E	SFP+ Module(1310nm,10km,LC)
SFP-XG-SX-MM850-E	SFP+ Module(850nm,300m,LC)
Cables	
CAB-CON-1.8m	Single Cable, Console Serial Port Cable, 1.8m, D9F, 28UL20276(4P)(P296U), MPH-8P8C
LSWM1STK	SFP+ Cable 0.65m
LSWM2STK	SFP+ Cable 1.2m
LSWM3STK	SFP+ Cable 3m
LSTM1STK	SFP+ Cable 5m
SFP-STACK-Kit	SFP Stacking Cable (150cm, including two 1000BASE-T SFP module and one stacking cable)

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