



## H3C S5560-EI High Performance Ethernet Switch



S5560-30S-EI



S5560-30C-EI



S5560-34C-EI



S5560-30C-PWR-EI



S5560-30F-EI



S5560-54S-EI



S5560-54C-EI



S5560-54C-PWR-EI



S5560-54QS-EI

### Overview

**H**3C S5560-EI is the latest development of Gigabit speed Layer 3 Ethernet switch. This powerful and highly secure series switch is built based on industry-leading high performance hardware architecture and H3C Comware V7 platform. It supports diversified services, high capacity GE access port as well as high density 10GE uplink, which meet the requirements for high density campus access and high performance aggregation. H3C S5560-EI Series Ethernet switch includes the following models:

- S5560-30S-EI: 24 10/100/1000BASE-T Ethernet ports, 4 10G/1G BASE-X SFP+ ports; 2 40G QSFP+ ports;
- S5560-54S-EI: 48 10/100/1000BASE-T Ethernet ports, 4 10G/1G BASE-X SFP+ ports; 2 40G QSFP+ ports;
- S5560-30C-EI: 24 10/100/1000BASE-T Ethernet ports, 4 10G/1G BASE-X SFP+ ports; 1 expansion slot; 2 fan module slots; 2 power module slots;
- S5560-34C-EI: 28 10/100/1000 BASE-T Ethernet ports, 8 SFP (Combo) ports, 4 10G/1G BASE-X SFP+ ports; 1 expansion slot; 2 fan module slots; 2 power module slots;
- S5560-54C-EI: 48 10/100/1000BASE-T Ethernet ports, 4 10G/1G BASE-X SFP+ ports; 1 expansion slot; 2 fan module slots; 2 power module slots;
- S5560-30C-PWR-EI: 24 10/100/1000BASE-T Ethernet ports, 4 10G/1G BASE-X SFP+ ports; 1 expansion slot; 2 fan module slots; 2 power module slots;
- S5560-54C-PWR-EI: 48 10/100/1000BASE-T Ethernet ports, 4 10G/1G BASE-X SFP+ ports; 1 expansion slot; 2 fan module slots; 2 power module slots;
- S5560-30F-EI: 24 SFP ports; 8 10/100/1000BASE-T Ethernet (Combo) ports; 4 10G/1G BASE-X SFP+ ports; 1 expansion slot; 2 fan module slots; 2 power module slots;

### Features

#### High scalability and high port

- S5560-EI has 4 fixed 10GE ports with expansion slots, supporting multiple types of interface cards: 2-port 10GBaseT / SFP+; 8-port 10GBaseT / SFP+ card; 2-port 40G QSFP+ card. The switch supports up to 12 10G ports or 2 40G ports. The scaling flexibility and the high port density satisfy the requirements for

hybrid configuration of copper ports and fiber ports at the distribution layer in large sized networks or at the core layer in SMB sized networks.

### High-performance IPv4/IPv6 service capabilities

- The S5560-EI switch comes with IPv4/IPv6 dual-stack platform which provides sophisticated IPv4/IPv6 solutions by supporting multiple tunnels, IPv4/IPv6 Layer 3 routing protocols, multicasting, and policy-based routing. The S5560-EI switch is a mature commercial IPv6 product that has passed the IPv6 network access certification of the Chinese Ministry of Industry and Information Technology and the IPv6 Ready Phase II certification.

### Intelligent Resilient Framework 2 (IRF2)

H3C S5560-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 can not only be obeyed within and across the rack, but also across the LAN.

### Software Defined Network (SDN)

- Software Defined Network (SDN) is an innovative network architecture that simplifies network management and reduces maintenance complexity by separating network control layer and network forwarding layer through Openflow. More importantly, it implements flexible network flow control and provides a well-defined network platform for core network application and innovation.
- The S5560-EI network switch series supports a large network flow table. Combined with H3C SDN controller, it can easily implement a two-layer network architecture and quickly add functions in existing network in order to drastically reduces network management complexity while substantially lowers network maintenance cost.

### Support for multiple services

- The S5560-EI switch supports Multi-VRF and can operate as an MCE device. It supports Layer 3 MPLS VPN and Layer 2 MPLS VPN in Martini mode and Kompella mode. Working with the H3C MPLS VPN Manager, the switch can implement graphical MPLS deployment and maintenance. The switch also supports VPLS, providing end-to-end Layer 2 VPN access solutions and MPLS/VPLS wire-speed forwarding, satisfying large scaled VPLS deployment requirements.

### Multiple high availability

- The S5560-EI switch series supports high availability at device level and link level.
- The S5560-EI switch series adopts hot swappable dual-power supply and dual fan module design, which allows you to configure AC or DC power supplies as needed. The switch can detect faults in power supplies and fans, and will if any such faults are found, respond with an alarm. It can automatically adjust fan speed according to the temperature.
- Apart from device level redundancy, the S5560-EI series switch also provides diverse link redundancy support such as LACP/STP/RSTP/MSTP/Smart Link protocols. It supports IRF2 and 1:N redundancy backup as well as cross-device link aggregation which substantially increases network reliability.

### Abundant QoS policies

- The S5560-EI switch series supports packet filtering at Layer 2 through Layer 4, and traffic classification based on source MAC addresses, destination MAC addresses, source IP addresses, destination IP addresses, TCP/UDP port numbers, protocol types, and VLANs. It supports flexible queue scheduling algorithms based on ports and queues, including strict priority (SP), weighted round Robin (WRR), SP+WRR, weighted fair queuing (WFQ), and WDRR. The S5560-EI switch series enables committed access rate (CAR) with the minimum granularity of 8 kbps. It supports port mirroring in the outbound and inbound directions, to monitor the packets on the specific ports, and to mirror the packets to the monitor port for network detection and troubleshooting.

### Professional Anti-lighting function

- The S5560-EI switch series uses built-in lighting protection technology and supports industry leading switch port 6KV anti-lighting capability, which can greatly reduce the rate of lightning damage to the equipment.

### Enhanced PoE+ capability

- H3C S5560-EI switch series supports 802.3af/802.3at PoE function, single port can provide maximum 30w, providing power to connected devices, such as IP phones, wireless APs, and high power cameras. H3C S5560-EI switch series supports multiple PoE modules for flexible PoE output selections, single switch can provide total 1440W PoE power, 30w per port and total 48 ports PoE+ function.

### Excellent manageability

- The S5560-EI switch series supports abundant management ports, such as the console port, mini-USB and the out-of-band network management port. It supports the Simple Network Management Protocol (SNMP) v1/v2/v3, Open View, IMC, CLI, Web-based NMS and Telnet allowing easy device management. It also supports SSH2.0 to provide better protection management.
- The S5560-EI switch supports SPAN/RSPAN/ERSPAN mirroring, and multiple mirroring ports so that network traffic can be analyzed to carry out corresponding management and maintenance measures and traffic of network services and applications is visible. The S5500-HI switch provides network stream analysis reports, which help users to promptly optimize the network structure and adjust resource deployment.

## Specifications

Features	S5560-30S-EI	S5560-54S-EI	S5560-30C-EI	S5560-34C- EI	S5560-54C-EI	S5560-30F-EI	S5560-30C-PWR-EI	S5560-54C-PWR-EI	S5560-54QS-EI
Switching capacity	598G								
Forwarding capacity	216Mpps	252Mpps	216Mpps	222Mpps	252Mpps	216Mpps	216Mpps	252Mpps	252Mpps
Dimensions (W x D x H)	440x260x43.6	440x260x43.6	440x360x43.6	440x360x43.6	440x360x43.6	440x360x43.6	440x460x43.6	440x460x43.6	440x260x43.6
Weight	≤5kg	≤5kg	≤5kg	≤5kg	≤5kg	≤5kg	≤10kg	≤10kg	≤5kg
Out of band management	0	0	1	1	1	1	1	1	2
Management ports	RJ-45 Console port, One Mini USB Console port (Mini USB first priority)								
Front panel data ports	24 10/100/1000 BASE-T Ethernet ports, 4 10G/1G BASE-X SFP+ ports; 2 40G QSFP+ ports	48 10/100/1000 BASE-T Ethernet ports, 4 10G/1G BASE-X SFP+ ports; 2 40G QSFP+ ports	24 10/100/1000 BASE-T Ethernet ports, 4 10G/1G BASE-X SFP+ ports	28 10/100/1000 BASE-T Ethernet ports, 8 SFP (Combo) ports, 4 10G/1G BASE-X SFP+ ports	48 10/100/1000 BASE-T Ethernet ports, 4 10G/1G BASE-X SFP+ ports	24 SFP ports; 8 10/100/1000 BASE-T Ethernet (Combo) ports; 4 10G/1G BASE-X SFP+ ports	24 10/100/1000 BASE-T Ethernet ports, 4 10G/1G BASE-X SFP+ ports	48 10/100/1000 BASE-T Ethernet ports, 4 10G/1G BASE-X SFP+ ports	48 10/100/1000 BASE-T Ethernet ports; 4 10G/1G BASE-X SFP+ ports; 2 40G QSFP+ ports
Expansion slots	0		One						0
Interface Card	0		2-port 40GE QSFP+/2-port 10G SFP+/2-port 10G BASE-T/8-port 10G SFP+/8-port 10G BASE-T						0
SDN / OpenFlow	OpenFlow 1.3								
	Multiple controllers (EQUAL, master/slave)								
	Multiple tables flow								
	Group table								
	Meter								
Port aggregation	GE/10GE/40GE port aggregation								
	Dynamic aggregation								
	Static aggregation								
	Cross-device aggregation								
Port features	IEEE802.3x flow control (full duplex)								
	Storm control based on port rate percentage								
	PPS/BPS-based storm control								
Jumbo frame	10000								
MAC table	Blackhole MAC address								
	Configurable maximum number of MAC addresses that can be learned by a port								
VLAN	Port-based VLAN								
	MAC-based VLAN								
	Protocol-based VLAN								
	Subnet-based VLAN								

## Specifications

Features	S5560-30S-EI	S5560-54S-EI	S5560-30C-EI	S5560-34C-EI	S5560-54C-EI	S5560-30F-EI	S5560-30C-PWR-EI	S5560-54C-PWR-EI	S5560-54QS-EI
	QinQ and selective QinQ								
	VLAN mapping								
	Voice VLAN								
	GVRP								
Layer 2 ring network protocol	STP/RSTP/MSTP								
	RRPP								
	Smart Link								
Port features	DHCP client								
	DHCP snooping								
	DHCP relay								
	DHCP server								
	DHCP snooping option82/DHCP Relay option82								
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	Static routing								
	RIPv1/v2 and RIPv6								
	OSPFv1/v2 and OSPFv3								
	BGP4 and BGP4+ for IPv6								
	ECMP and policy-based routing								
	VRRP/VRRPv3								
IPv6	Neighbor discovery (ND)								
	PMTU								
	IPv6-Ping, IPv6-Tracert, IPv6-Telnet, and IPv6-TFTP								
	Manual tunnel configuration								
	6to4 tunnel								
	ISATAP tunnel								
	IPv6 in IPv6 tunnel								
	IPv4 in IPv6 tunnel								
	GRE tunnel								
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	Traffic mirroring								
	N:4 port mirroring								
	Local and remote port mirroring								

## Specifications (continued)

Features	S5560-30S-EI	S5560-54S-EI	S5560-30C-EI	S5560-34C-EI	S5560-54C-EI	S5560-30F-EI	S5560-30C-PWR-EI	S5560-54C-PWR-EI	S5560-54QS-EI
OAM	802.1ag								
	802.3ah								
ACL/QoS	Packet filtering at Layer 2 through layer 4								
	Traffic classification based on source MAC addresses, destination MAC addresses, source IPv4/IPv6 addresses, destination IPv4/IPv6 addresses, TCP/UDP port numbers, protocol types, and VLANs								
	Time range-based ACL								
	Bidirectional ACL								
	VLAN-based ACL								
	Port rate limit (receiving and transmitting)								
	Packet redirection								
	802.1p DSCP remarking								
	Committed access rate (CAR)								
	Eight output queues on each port, and 48 queues on the CPU port								
	Flexible queue scheduling algorithms based on ports and queues, including SP, WRR, WFQ, SP+WRR, and WDRR WRED								
Security	Hierarchical user management and password protection								
	802.1X authentication, centralized MAC authentication								
	Guest VLAN								
	RADIUS authentication								
	SSH 2.0								
	Port isolation								
	Port security								
	Portal authentication								
	EAD								
	DHCP snooping and anti-fraud DHCP server								
	Dynamic ARP inspection, preventing man-in-the-middle attacks and ARP DoS attacks								
	BPDU guard and Root guard								
	URPF, prevent source IP spoofing, viruses and attacks								
	IP/Port/MAC binding								
	Plaintext and MD5 authentication of OSPF and RIPv2 packets								
PKI									
CPU protection									
MACSec									
Management and Maintenance	Loading and upgrading through XModem/FTP/TFTP								
	Configuration through CLI, Telnet, and console port								
	SNMPv1/v2/v3 and Web-based NMS								
	Remote monitoring (RMON ) alarm, event, and history recording								
	IMC NMS								
	System log, alarming based on severities, and output of debugging information								
	NTP								
	Alarm for power supplies, fans, and temperature								
	Ping and Tracert								
Virtual cable test (VCT)									