



H3C S5135S-EI Series Enhanced Gigabit Access Switches

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New H3C Technologies Co., Limited

Product Overview

H3C S5135S-EI Series Switch – A simple (fixed power design), cost-effective and easy to deploy access switching solution that offers enhanced security, high-density GE uplinks, static route, RIP, OSPF, SDN and IRF enabled, flexible management, which meet the requirements for SME access, enterprise desktop access and high-density campus access.

H3C S5135S-EI series Ethernet switch includes the following models:

S5135S-24T4S-EI-Q: 24 x 10/100/1000BASE-T Ports, 4 x 1000BASE-X SFP Ports, Fanless, (AC);

S5135S-48T4S-EI-Q: 48 x 10/100/1000BASE-T Ports, 4 x 1000BASE-X SFP Ports, Fanless, (AC);



S5135S-24T4S-EI-Q



S5135S-48T4S-EI-Q

Features

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 S5135S-EI series switch 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 reduce network management complexity while substantially lowers network maintenance cost.

IRF2 (Intelligent Resilient Framework 2)

The S5135S-EI series switch supports IRF2 technology that connects multiple physical devices (up to 9) to a logical device, that is to say, users can manage and use these devices as a single device. IRF can bring the following benefits to the user:

- **Simplify the management:** Any one of the ports can be connected to any of the devices to login to a unified logical device, and to manage the whole system and all the members of the system through the configuration of a single device, without the physical connection to each member of the device.
- **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:** IRF2 patented 1: N standby 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 Gigabit Ethernet (1GE) ports which allocates bandwidth for business and application access and reasonably splits local traffic and upstream traffic.

Comprehensive Security Control

H3C S5135S-EI series switch supports innovative single-port multi-authentication function, the access authentication modes supported by different clients are different. For example, some clients can only perform MAC addresses Authentication (such as the printer terminal), and some user host for 802.1X authentication, and some user hosts only want to access through the Web portal authentication. In order to flexibly adapt to the multi-authentication requirements of the network environment, the S5135S-EI switch

series support single-port multi-authentication unified deployment.

H3C S5135S-EI series switch supports SSH V2 (Secure Shell V2) to secure information security, and strong authentication protect the Ethernet network switch from attacks such as IP address spoofing and clear text interception.

ARP attack and ARP virus are major threats to LAN security, so the S5135S-EI switch series comes with diverse ARP protection functions such as ARP Detection to challenge the legitimacy of client, validate the ARP packets, and set a speed limit for ARP to prevent ARP swarm attacks from targeting CPU.

H3C S5135S-EI series switch supports EAD (End User Admission Domination) function. With the iMC (intelligent Management Centre) system, EAD integrates terminal security policies, such as anti-virus and patch update, network access control and access right control policies to form a cooperative security system. By checking, isolating, updating, managing, and monitoring access terminals, EAD changes to passive mode, 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.

High Availability

H3C S5135S-EI series switch features multiple redundancy measures at the device and link levels, support current and voltage surge control, overheat protection, power and fan troubleshooting and alert, as well as fan speed adjustment when the temperature changes.

Apart from device level redundancy, H3C S5135S-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

H3C S5135S-EI series switch 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) and SP+WRR. The S5135S-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 Surge Protection Function

H3C S5135S-EI series switch uses professional built-in surge protection technology and supports the industry-leading 10KV service port surge protection capability, which greatly reduces the damage rate of

surge strikes to equipment even in harsh working environments.

Excellent Manageability

H3C S5135S-EI series switch makes switch management with ease with the support of SNMPv1/v2/v3, which can be managed by NM platforms, such as Open View and iMC. With CLI and Telnet switch management is made easier. And with SSH 2.0 encryption, switch management security is enhanced.

Green Design

The S5135S-EI series switch implements a variety of green energy saving features, including auto-power-down (port automatic energy saving), if the interface status has been down for a period of time, the system automatically stops the interface power and the system enters power-saving mode. They also support EEE energy feature, by which if a port stays idle for a period of time, the system will set the port to energy-saving mode. The S5135S-EI switch series is also compliant with material environmental protection and the EU RoHS safety standard.

The S5135S-EI switch series 24-port (S5135S-24T4S-EI-Q) and 48-port (S5135S-48T4S-EI-Q) switches are fanless design, significantly reduce devices power consumption and noise.

Hardware Specifications

Features	S5135S-24T4S-EI-Q	S5135S-48T4S-EI-Q
Port Switching Capacity	56Gbps	104Gbps
Forwarding Capacity	42Mpps	78Mpps
System Switching Capacity	336Gbps	
CPU	Dual Core, 1.2MHz	
Flash	512MB	
SDRAM	1G	
Dimensions(W× D×H)	440×160×44 mm	440×260×44 mm
Weight	≤2.5kg	≤3.5kg
10/100/1000 Base-T port	24	48
SFP port	4	4
Console Ports	1	

Features	S5135S-24T4S-EI-Q	S5135S-48T4S-EI-Q
Management Ethernet Ports	1	
Maximum Stacking Bandwidth	16Gbps	16Gbps
Maximum Stacking Num	9	9
Input Voltage	AC: Rated voltage range: 100V~240V AC, 50/60Hz	AC: Rated voltage range: 100V~240V AC, 50/60Hz
Power Consumption	MIN: AC:6W MAX: AC:18W	MIN: AC:13W MAX: AC:37W
Fan NUM	Fanless	Fanless
MTBF(Year)	122.1	114.7
MTTR(Hour)	1	1
Operating Temperature	-5°C ~ 50°C(normal operating temperature) -5°C ~ 45°C(When using transceiver modules with maximum transmission distance < 80km) -5°C ~ 40°C(When using transceiver modules with maximum transmission distance ≥ 80km)	
Storage Temperature	-40°C ~ 70°C	
Operating & Storage Relative Humidity(Noncondensing)	5% ~ 95%	

Software Specifications

Feature	S5135S-EI switch series
Port aggregation	GE port aggregation Dynamic aggregation Static aggregation Cross-device aggregation
Broadcast/Multicast/Unicast storm suppression	Storm suppression based on port bandwidth percentage Storm suppression based on PPS Storm suppression based on BPS Broadcast traffic/Multicast traffic/Unknown unicast traffic suppression

Feature	S5135S-EI switch series
IRF2	Distributed device management, distributed link aggregation, and distributed resilient routing Stacking through standard Ethernet interfaces Local device stacking and remote device stacking
MAC address table	Static MAC address Blackhole MAC address
VLAN	Port-based VLAN MAC-based VLAN Protocol-based VLAN QinQ and selective QinQ VLAN mapping Voice VLAN Private VLAN Dynamic VLAN Guest VLAN GVRP LLDP/LLDP-MED
DHCP	DHCP Client DHCP Snooping DHCP Snooping option82 DHCP Relay DHCP Server DHCP auto-config
IP routing	Static routing RIPv1/v2 and RIPng OSPFv1/v2 and OSPFv3 Inter-VLAN routing Dynamic ARP inspection
Multicast	IGMP Snooping V2/V3 MLD Snooping Multicast VLAN
Layer 2 ring network protocol	STP/RSTP/MSTP/PVST/PVST+ BPDU/root/TC-BPDU/PVST BPDU guard Smart Link

Feature	S5135S-EI switch series
	RRPP G.8032 ERPS (Ethernet Ring Protection Switching)
ACL	Packet filtering at Layer 2 through layer 4 Traffic classification based on source MAC addresses, destination MAC addresses, source IPv4/IPv6 addresses Time range-based ACL VLAN-based ACL Bidirectional ACL
QoS	Port rate limit (receiving and transmitting) Packet redirection Committed access rate (CAR) Eight output queues on each port Flexible queue scheduling algorithms based on ports and queues, including SP, WRR and SP+WRR 802.1p DSCP remarking IPv4 and IPv6 Class of Service (CoS)
Traffic Statistic	Sflow
Forwarding	Wire-speed/Line-rate architecture Hardware-based Forwarding
Mirroring	Port mirroring N:1 Traffic Mirroring N:1 RSPAN
Security	Hierarchical user management and password protection User-based authentication AAA authentication support RADIUS authentication HWTACACS SSH2.0 SCP Port isolation 802.1X authentication, centralized MAC authentication Port security CPU protection IP Source Guard HTTPs



Feature	S5135S-EI switch series
	EAD
Management and maintenance	Loading and upgrading through XModem/FTP/TFTP Multiple Images Stored Zero Touch Provisioning Configuration through CLI, Telnet, and console port SNMPv1/v2c/v3 and Web-based NMS SNMP for IPv6 Restful Python Remote monitoring (RMON) alarm, event, history, and recording IMC NMS System log, alarming based on severities, and output of debugging information MDI/MDIX (medium-dependent interface/MDI crossover) NTP Ping, Tracert Virtual cable test (VCT) Device link detection protocol (DLDP) Loopback-detection
EMC	FCC Part 15 Subpart B CLASS A ICES-003 CLASS A VCCI CLASS A CISPR 32 CLASS A EN 55032 CLASS A CISPR 35 AS/NZS CISPR 32 EN 55035 EN 61000-3-2 EN 61000-3-3 ETSI EN 300 386
Safety	UL 62368-1 CSA C22.2 No. 62368-1-14 IEC 62368-1 EN 62368-1 EN 60825-1

Feature	S5135S-EI switch series
	AS/NZS 62368-1 GB 4943.1
RoHS	EU RoHS2.0 Directive China RoHS 2.0

Performance Specification

Entries	S5135S-EI series switches
MAC address entries	16K
VLAN	4096 (VLAN 0 and 4095 are reserved)
Active VLAN	4094
VLAN interface	32
IPv4 routing entries	3000
IPv4 ARP entries	2048
IPv4 ACL entries	1024
IPv6 unicast routing entries	750
IPv6 ACL entries	1024
IPv6 ND entries	750
Multicast L2 entries	999
Jumbo frame length	10000
QOS forward queues	8
MAX num in one link group	8
Link group num	124
Multicast Group	500
Groups of RMON	4

Standards and Protocols Compliance

Organization	Standards And Protocols
IEEE	802.1x Port based network access control protocol
	802.1ab Link Layer Discovery Protocol
	802.1ak MVRP and MRP
	802.1ax Link Aggregation

Organization	Standards And Protocols
	802.1d Media Access Control Bridges 802.1p Priority 802.1q VLANs 802.1s Multiple Spanning Trees 802.1ag Connectivity Fault Management 802.1v VLAN classification by Protocol and Port 802.1w Rapid Reconfiguration of Spanning Tree 802.3ad Link Aggregation Control Protocol 802.3af Power over Ethernet 802.3at Power over Ethernet 802.3bt Power over Ethernet 802.3az Energy Efficient Ethernet 802.3ah Ethernet in the First Mile 802.3x Full Duplex and flow control 802.3z 1000BASE-SX,1000BASE-LX 802.3u 100BASE-T 802.3ab 1000BASE-T
IETF	RFC 768 User Datagram Protocol (UDP) RFC 791 Internet Protocol (IP) RFC 792 Internet Control Message Protocol (ICMP) RFC 793 Transmission Control Protocol (TCP) RFC 813 Window and Acknowledgement Strategy in TCP RFC 815 IP datagram reassembly algorithms RFC 8201 Path MTU Discovery for IP version 6 RFC 826 Address Resolution Protocol (ARP) RFC 879 TCP maximum segment size and related topics RFC 896 Congestion control in IP/TCP internetworks RFC 917 Internet subnets RFC 919 Broadcasting Internet Datagrams RFC 922 Broadcasting Internet Datagrams in the Presence of Subnets (IP_BROAD)

Organization	Standards And Protocols
	RFC 951 BOOTP
	RFC 1027 Proxy ARP
	RFC 1122 Requirements for Internet Hosts - Communications Layers
	RFC 1213 MIB-2 Stands for Management Information Base
	RFC 1215 Convention for defining traps for use with the SNMP
	RFC 1256 ICMP Router Discovery Messages
	RFC 1350 TFTP Protocol (revision 2)
	RFC 1393 Traceroute Using an IP Option
	RFC 1519 Classless Inter-Domain Routing (CIDR)
	RFC 1542 BOOTP Extensions
	RFC 1583 OSPF Version 2
	RFC 1591 Domain Name System Structure and Delegation
	RFC 1757 Remote Network Monitoring Management Information Base
	RFC 1772 Application of the Border Gateway Protocol in the Internet
	RFC 1812 Requirements for IP Version 4 Router
	RFC 1918 Address Allocation for Private Internet
	RFC 2131 Dynamic Host Configuration Protocol (DHCP)
	RFC 2132 DHCP Options and BOOTP Vendor Extensions
	RFC 2273 SNMPv3 Applications
	RFC 2328 OSPF Version 2
	RFC 2375 IPv6 Multicast Address Assignments
	RFC 2401 Security Architecture for the Internet Protocol
	RFC 2402 IP Authentication Header
	RFC 2460 Internet Protocol, Version 6 (IPv6) Specification
	RFC 2464 Transmission of IPv6 over Ethernet Networks
	RFC 2576 (Coexistence between SNMP V1, V2, V3)
	RFC 2579 Textual Conventions for SMIv2
	RFC 2580 Conformance Statements for SMIv2
	RFC 2711 IPv6 Router Alert Option
	RFC 2787 Definitions of Managed Objects for the Virtual Router Redundancy Protocol

Organization	Standards And Protocols
	RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations
	RFC 3101 OSPF Not-so-stubby-area option
	RFC 3046 DHCP Relay Agent Information Option
	RFC 3056 Connection of IPv6 Domains via IPv4 Clouds
	RFC 3137 OSPF Stub Router Advertisement sFlow
	RFC 3416 (SNMP Protocol Operations v2)
	RFC 3417 (SNMP Transport Mappings)
	RFC 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
	RFC 3484 Default Address Selection for IPv6
	RFC 3509 Alternative Implementations of OSPF Area Border Routers
	RFC 3580 IEEE 802.1X Remote Authentication Dial In User Service (RADIUS) Usage Guidelines
	RFC 3623 Graceful OSPF Restart
	RFC 3768 Virtual Router Redundancy Protocol (VRRP)
	RFC 4022 MIB for TCP
	RFC 4113 MIB for UDP
	RFC 4213 Basic Transition Mechanisms for IPv6 Hosts and Routers
	RFC 4251 The Secure Shell (SSH) Protocol
	RFC 4252 SSHv6 Authentication
	RFC 4253 SSHv6 Transport Layer
	RFC 4254 SSHv6 Connection
	RFC 4291 IP Version 6 Addressing Architecture
	RFC 4292 IP Forwarding Table MIB
	RFC 4293 Management Information Base for the Internet Protocol (IP)
	RFC 4419 Key Exchange for SSH
	RFC 4443 ICMPv6
	RFC 4541 IGMP & MLD Snooping Switch
	RFC 4552 Authentication/Confidentiality for OSPFv3
	RFC 4750 OSPFv2 MIB partial support no SetMIB
	RFC 4861 IPv6 Neighbor Discovery

Organization	Standards And Protocols
	RFC 4862 IPv6 Stateless Address Auto-configuration
	RFC 4940 IANA Considerations for OSPF
	RFC 5095 Deprecation of Type 0 Routing Headers in IPv6
	RFC 5187 OSPFv3 Graceful Restart
	RFC 5340 OSPFv3 for IPv6
	RFC 5424 Syslog Protocol
	RFC 5798 VRRP (exclude Accept Mode and sub-sec timer)
	RFC 5880 Bidirectional Forwarding Detection
	RFC 5905 Network Time Protocol Version 4: Protocol and Algorithms Specification
	RFC 6987 OSPF Stub Router Advertisement
	RFC 5280 Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
	RFC 5381 Experience of Implementing NETCONF over SOAP

Ordering Information

Product ID	Product Description
LS-5135S-24T4S-EI-Q	H3C S5135S-24T4S-EI-Q L2 Ethernet Switch with 24*10/100/1000BASE-T Ports and 4*1000BASE-X SFP Ports,(AC)
LS-5135S-48T4S-EI-Q	H3C S5135S-48T4S-EI-Q L2 Ethernet Switch with 48*10/100/1000BASE-T Ports and 4*1000BASE-X SFP Ports,(AC)
Transceivers	
SFP-FE-LX-SM1310-A	100BASE-LX SFP Transceiver, Single Mode (1310nm, 15km, LC)
SFP-FE-SX-MM1310-A	100BASE-FX SFP Transceiver, Multi-Mode (1310nm, 2km, LC)
SFP-FE-LH40-SM1310	100BASE-LH40 SFP Transceiver, Single Mode (1310nm, 40km, LC)
SFP-GE-LX-SM1310-D	1000BASE-LX SFP Transceiver, Single Mode (1310nm, 10km, 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-LH100-SM1550	1000BASE-LH100 SFP Transceiver, Single Mode (1550nm, 100km, LC)
SFP-GE-LH40-	1000BASE-LH40 SFP Transceiver, Single Mode (1550nm, 40km, LC)



SM1550	
SFP-GE-LH80-SM1550	1000BASE-LH80 SFP Transceiver, Single Mode (1550nm, 80km, LC)
SFP-GE-SX-MM850-A	1000BASE-SX SFP Transceiver, Multi-Mode (850nm, 550m, 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	SFP GE Copper Interface Transceiver Module (100m,RJ45)
SFP-GE-T-D	SFP GE Copper Interface Transceiver Module (100m,RJ45)



The Leader in Digital Solutions

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