DATA SHEET

H3C S5850 Series Data Center Ethernet Switch

Product description

H3C S5850 series switches are data center-level high-density Ethernet switch products independently developed by H3C. The S5850 series switches are specially designed for data centers, supporting rich data center features, dual power supplies, dual fans, front and rear air ducts. Provide the industry's compact switch flexible dynamic combination of Gigabit and 10 Gigabit ports. The S5850 series are positioned as high-density gigabit access switches in data centers and cloud computing networks, and can also be used for TOR top-of-rack access switches in overlay networks or converged networks.

H3C S5850 series switches currently include the following models:

H3C S5850-54QS: Supports 48 100/1000/1000Base-T ports, 4 1GE/10GE SFP+ ports, 2 40GE QSFP+ ports

S5850-54QS switch front panel diagram

Features

Flexible port combination

The H3C S5850-54QS switch host supports the curing of 48 Gigabit power, 4 10 Gigabit optical and 2 40GE ports, providing the most cost-effective port combination, realizing the lowest cost data center interconnection solution, and meeting users' 1:1 non-convergence network deployment needs ; Meet the needs of small and medium-sized data center network access or core deployment of small and medium-sized park networks, as well as the configuration requirements for optical-electric hybrid networking. Support front panel exit, flexible and convenient wiring.

IRF2 (Second Generation Intelligent Resilient Architecture)

- Facing the application requirements of a unified switching architecture in data centers, the S5850 series switches support IRF2 (second-generation intelligent flexible architecture) technology, virtualizing multiple devices into one logical device, in terms of scalability, reliability, overall architecture and availability It has powerful advantages, mainly reflected in four aspects:
- Scalability: IRF2 technology allows the switch to use interconnect cables to achieve the expansion of multiple devices; it has the advantages of plug and play, single IP management, and simultaneous upgrades, while greatly reducing the cost of system expansion.
- Reliability: Through the patented routing hot backup technology, redundant backup of all information on the control plane and data plane and uninterrupted three-layer forwarding are realized in the entire IRF2 group, which greatly enhances the reliability and high performance of the IRF2 group. At the same time, a single point of failure is eliminated and business interruption is avoided.
- Distribution: Through distributed link aggregation technology, the load sharing and mutual backup of multiple uplinks are realized, thereby improving the redundancy of the entire network architecture and the utilization of link resources.
- Availability: A smart and flexible architecture is realized through a standard 10 Gigabit Ethernet interface, which can allocate business bandwidth and system connection bandwidth according to needs, and reasonably allocate local traffic and uplink traffic; not only can achieve remote distances within the rack, across racks, and even across regions. Distance smart elastic architecture.

Rich data center features

- H3C S5850 supports the VXLAN protocol, which can build a flexible and easily scalable high-performance two-layer network architecture and support the dynamic migration of server virtual machine cloud data center, as the overlay virtual network VXLAN high-performance hardware gateway to support multi-tenant data center operations The network, docking with the H3C cloud management platform, can build a new generation of data centers that are flexible, efficient, on-demand, with high reliability and high scalability.
- Software Defined Network (SDN) is an innovative network architecture system. Its core technology, Openflow, greatly simplifies the management and maintenance of the network by separating the control layer and the data forwarding layer of the network, and more importantly, it realizes the flexible control of network traffic, which provides a good solution for the innovation of core networks and applications. Network platform. The S5850 can cooperate with multiple Openflow controllers to implement SDN solutions.

Flexible air duct direction selection

In order to better match the air duct design of the data center, H3C S5850 series switches provide users with more flexible air duct solutions. While realizing the front and rear air ducts, users can also choose different fan frames to achieve different wind directions (From front to back or from back to front).

Rich QoS strategy

The H3C S5850 switch supports L2(Layer 2)~L4(Layer 4) packet filtering function, and provides based on source MAC address, destination MAC address, source IP address, destination IP address, TCPPUDP port number, protocol type, VLAN flow classification.

Multiple reliability protection

- H3C S5850 series switches have multiple reliability protections at the device level and link level. It adopts over-current protection, over-voltage protection and over-heat protection technologies, and supports pluggable redundant power modules, which means that AC or DC power modules can be flexibly configured according to the needs of the actual environment. In addition, the whole machine also supports power supply and fan failures Detection and warning can automatically adjust the speed of the fan according to temperature changes. These designs make the equipment have high reliability.
- In addition to equipment-level reliability, S5850 also supports a wealth of link-level reliability technologies, such as VRRPE. When the network is carrying multiple services and large traffic, it does not affect the convergence time of the network and ensures the normal development of services.

Excellent management

- H3C S5850 series switches support rich management interfaces, such as Console port, Mini USB port, USB port and two out-of-band management electrical ports.
- Support SNMPv11v22v3 (Simple Network Management Protocol), which can support the industry's general network management platform and iMC intelligent management center. Support CLI command line, Telnet, FTP, and support SSH2.0, SSL and other encryption methods, making management more secure.
- It supports the standard Netconf interface and provides a programmable method for configuring and managing network devices. It makes it very convenient in the development of third-party software, and meets the user's needs for the openness and flexibility of the equipment.
- Support sFlow function, can carry out refined statistics of messages, support SPAN/RSPAN/ERSPAN mirroring and multiple mirror observation ports, can analyze network traffic to take corresponding management and maintenance measures, so that the originally invisible network business application traffic becomes clear at a glance. Provide users with a variety of network flow analysis reports to help users optimize network structure and adjust resource deployment in time.

Perfect security control strategy

- The H3C S5850 switch supports AAA and RADIUS authentication, and supports dynamic or static binding of user identification elements such as user accounts, IP, MAC, VLAN, and ports; supports real-time management of online users, timely diagnosis and Disrupt illegal online behavior.
- The H3C S5850 switch provides enhanced ACL control logic, supports large-capacity ingress and egress port ACLs, and supports VLAN-based ACL issuance.

During the user configuration process, the waste of ACL resources is avoided.

Product specifications

S5850 series system features

project		**S5850-54QS**
Dimensions (W×D×H) (Unit: mm)		440×360×44
Full weight		≤7.5kg
Serial Console port		1 piece
Out-of-band management Ethernet port		2 pcs
USB port		1 piece
Mini USB Console port		1 piece
1000BASE-T port		48 pcs
SFP+ port		4
QSFP+ port		2 pcs
Card slot		-
Input voltage	AC	100~240V
	DC	-48~ -60V
Power module		Dual modular power supply
Fan module		Dual hot-swappable fan modules, front and rear ventilation
Working temperature		0ºC～45ºC
Working environment humidity (non-condensing)		5%～95%

S5850 series business features

Support features	**S5850-54QS**
Exchange capacity	1.28Tbps/11.52Tbps
Packet forwarding rate	252Mpps
Forwarding mode	Support store-forward mode
Device virtualization	Support IRF2 horizontal virtualization, support local and remote stacking, support distributed device management, distributed link aggregation Support cross-device link aggregation DRNI
Network virtualization	Support VxLAN Layer 2 and Layer 3 gateways Support BGP-EVPN Support QinQ in VxLAN Support GRE Tunnel

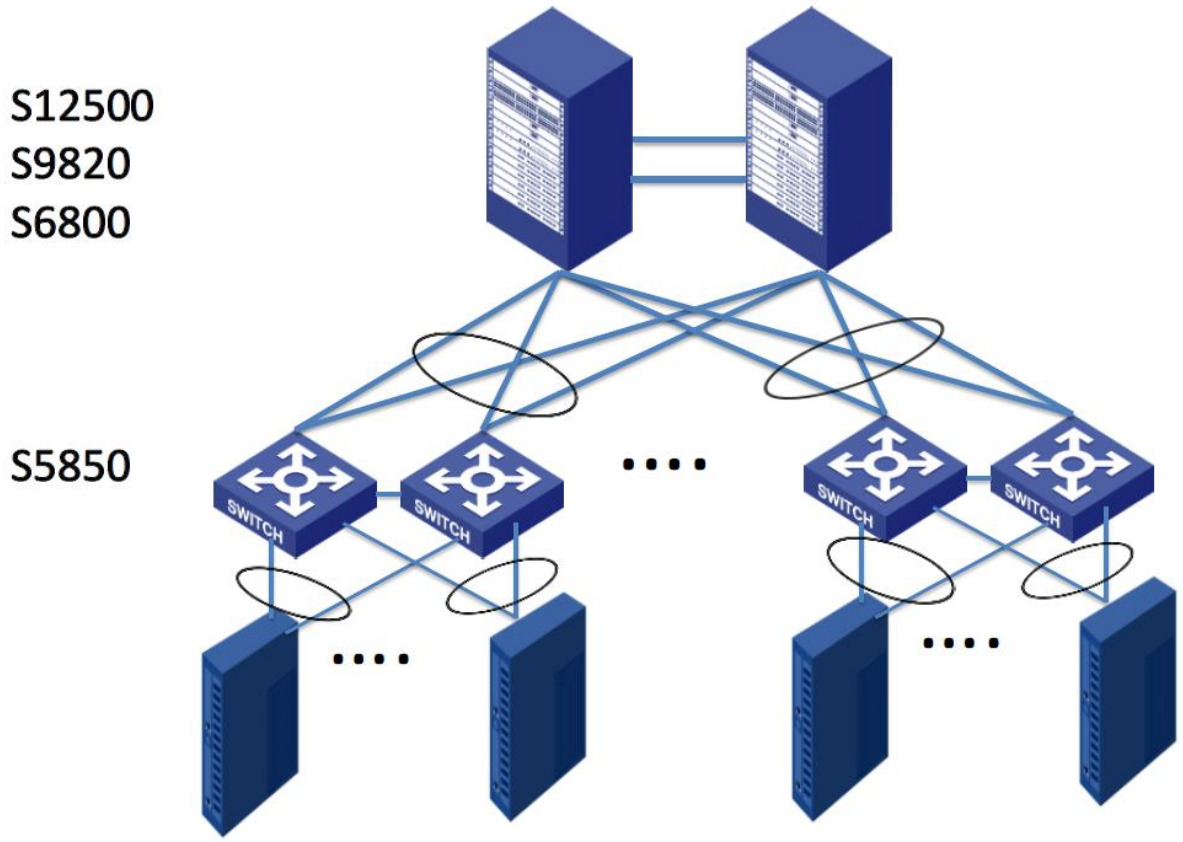
Support features	**S5850-54QS**
SDN controller	Support VCF Controller
Programmable	Support OpenFlow
MAC address table	Support dynamic, static, black hole MAC address table entries Support MAC address automatic learning and aging Support source MAC address filtering
VLAN	Support port-based, protocol-based, and MAC-based VLAN Support Default VLAN Support PVLAN Support Super VLAN Support Voice VLAN Support QinQ and flexible QinQ
data monitoring	Support sFlow Support Telemetry
DHCP	DHCP Server and DHCP Client DHCP Snooping and DHCP Relay
ARP	Support ARP, RARP, Gratuitous ARP Support Dynamic ARP Inspection Support ARP anti-attack Support ARP source suppression Support ARP Detection function
IP routing	Support static routing and default routing Support IPv4 dynamic routing protocols such as RIP, OSPF, BGP, ISIS, etc. Supports IPv6 dynamic routing protocols such as RIPng, OSPFv3, BGP4+, ISISv6, etc. Supports equal cost routing and policy routing
IPV6 features	Support IPv6 ND (Neighbor Discovery) Support IPv6 VxLAN over IPv4 Support PMTU Discovery (Path MTU Discovery) Support ICMPv6, Telnetv6, SFTPv6, SNMPv6, BFDv6, VRRPv3 Support IPv6 Portal and IPv6 Tunnel
Multicast protocol	Support IGMP Snooping v22v3 Support IGMP v11v22v3 Support PIM-DM, PIM-SM, PIM-SSM, MSDP, MBGP Support MLD Snooping Support multicast strategy support multicast VLAN
MPLS	Support MPLS Support MCE Support MPLS VPN, VPLS Support MPLS TE

Support features	**S5850-54QS**
reliability	Support STP, RSTP, MSTP Support BPDU protection, root protection, loop protection, support PVST Support LACP Support DLDP Support RRPP Support ERPS Ethernet Ring Protection Protocol (G.8032) Support SmartLink Support VRRP
QoS	Support port sending and receiving message rate limit Support ACL, CAR, priority re-marking, queue Support SP, WRR, WFQ, SP+WRR, SP+WFQ and other queue scheduling Support Layer 2~Layer 4 packet filtering function Support flow classification based on source MAC, destination MAC, source IP (IPv44IPv6) address, destination IP (IPv44IPv6) address, port, protocol, VLAN, support traffic shaping Support congestion avoidance mechanisms such as WRED and tail drop
Mirror	Support traffic mirroring Support N:4-port mirroring Support local mirroring and remote port mirroring ERSPAN
Safety features	Support user hierarchical management and password protection Supports multiple authentications such as 802.1x, AAA, Radius, HWTACACS, etc.Supports combination binding of IP, MAC, port, and VLAN Support to prevent DOS, ARP, ICMP and other attacks Support IP Source Guard, port isolation support HTTPs, SSL
Management and maintenance	Support Telemetry visualization function Support zero configuration Auto-config and configuration rollback Support command line interface (CLI) configuration Support RMON (Remote Monitoring) through Console, Telnet, SSH and other configuration methods Support SNMP v11v2ccv3 Support network management system Support Netconf and Python Support system log and user operation log, support hierarchical alarm Support power supply, fan, temperature alarm function, support NTP network time protocol Support Jumbo Frame Support Ping, Tracert and other debugging information output Support FTP, TFTP, USB and other methods to upload and download files, support XModem protocol upload and upgrade

Typical networking

Typical applications in classic data centers

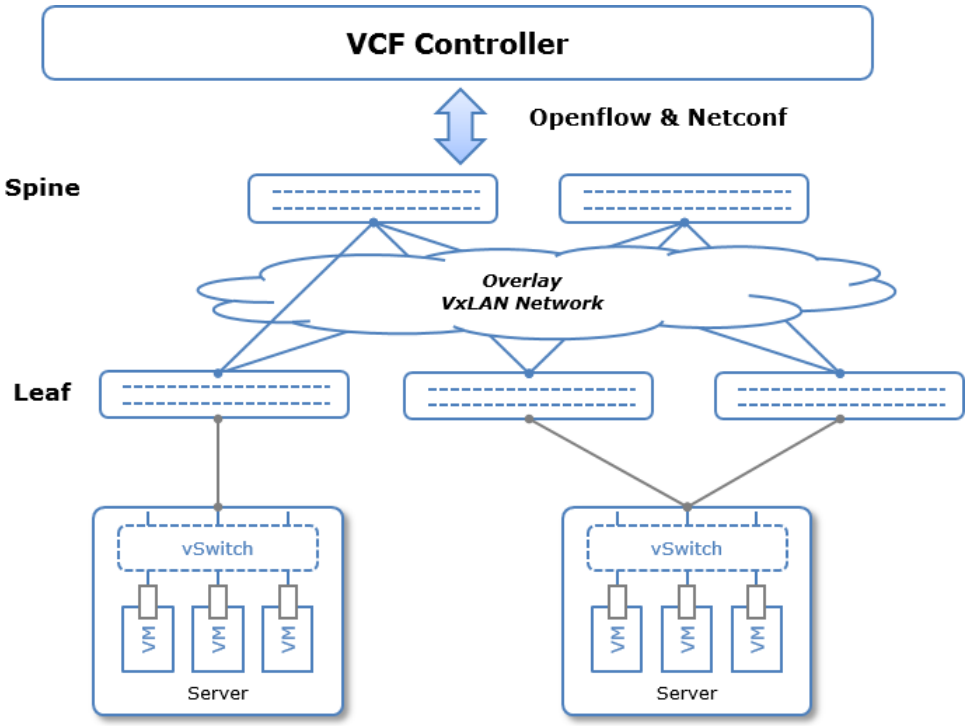
Using H3C's S12500/S9820/S6800 switch based on the 100G platform as the data center core (Spine node), the access layer can use the S68000S5850 switch as the TOR switch (Leaf node) to provide a high-density 1GEE10GE server access solution. The S5850 switch supports high-density Gigabit ports. It can be used as an access TOR switch in the three-tier data center architecture. It is connected to the S12500/S9820/S6800 through the 10GE/40GE link in the uplink, providing 10GEE40GE server access, building a highly reliable, highly redundant ultra-large scale Data center network.



S5850 series switch access network in classic data center

Typical application in Overlay data center

Use H3C's S12500/S9820/S6800 series switch based on 100GE platform as the Spine node of the Overlay data center, and S6800/S5850 series switch as the leaf nodes implement VxLAN data center networking.



Application of S5850 Series Switches in Overlay Data Center

Ordering Information

Host purchase

Device name	Quantity range	Remarks
S5850-54QS Ethernet Switch	1	Host without power supply and fan
150W DC power module	0-2	Optional
150W AC power module	0-2	Optional
LSPM1FANSB fan module (air from the power supply side)	0-2	Optional
LSPM1FANSA fan module (air from the port side)	0-2	Optional

Optical module and cable purchase

SFP module purchase

SFP module type	SFP module name	Center wavelength (unit: nm)	SFP module interface connector type	Interface cable specifications	Maximum transmission distance of optical fiber
Gigabit SFP module	SFP-GE-SX-MM850-A	850nm	LC	500/125μm multimode fiber	550m

SFP module type	SFP module name	Center wavelength (unit: nm)	SFP module interface connector type	Interface cable specifications	Maximum transmission distance of optical fiber
				62.5/125μm multimode fiber	275m
	SFP-GE-LX-SM1310-A	1310nm		9/125μm single mode fiber	10km
	SFP-GE-LH40-SM1310				40km
	SFP-GE-LH40-SM1550	1550nm			40km
	SFP-GE-LH80-SM1550				80km
	SFP-GE-T	not involving	RJ-45	Twisted pair	100m

SFP+ optical module purchase

SFP+ interface module name		Center wavelength	SFP+ module interface connector type	Interface fiber specification	Maximum transmission distance of optical fiber
SFP-XG-SX-MM850-A		850nm	LC	50/125μm multimode fiber	300m
SFP-XG-LX-SM1310		1310nm		9μm/125μm single mode fiber	10km
SFP+ cable	LSWM1STK	-	SFP+	SFP+ cable	0.65m
	LSWM2STK				1.2m
	LSWM3STK				3m
	LSTM1STK				5m
10GE AOC cable	SFP-XG-D-AOC-7M	-	SFP+	10GE AOC cable	7m
	SFP-XG-D-AOC-10M				10m
	SFP-XG-D-AOC-20M				20m

40G QSFP module cable option

S5850 series switch QSFP port support module block cable list

Module block cable type	Module block cable name	Center wavelength	Module interface connector type	Interface cable specifications	Maximum transmission distance
QSFP module	LSTM1QSFP0	1300nm	LC	9/125μm single mode fiber	10km
	LSWM1QSFPP	850 nm	MPO	50/125μm multimode fiber	300m
	LSWM3QSFPP	850 nm	MPO	50/125μm multimode fiber	100m
	LSWM1QSFPPD	1300nm	LC	9/125μm single mode fiber	2km
40GE QSFP cable	LSWM1QSTK0	-	-	QSFP cable	1m
	LSWM1QSTK1				3m
	LSWM1QSTK2				5m

40GE AOC cable	QSFP-40G-D-AOC-7M	-	-	40GE AOC cable	7m
	QSFP-40G-D-AOC-10M				10m
	QSFP-40G-D-AOC-20M				20m
40G QSFP to 4*10G SFP+ cable	LSWM1QSTK3	-	-	QSFP cable	1m
	LSWM1QSTK4				3m
	LSWM1QSTK5				5m

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*This series is on limited scale.