

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 SNMPv1/v2/v3 (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 | | 0°C~45°C |
| 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 |

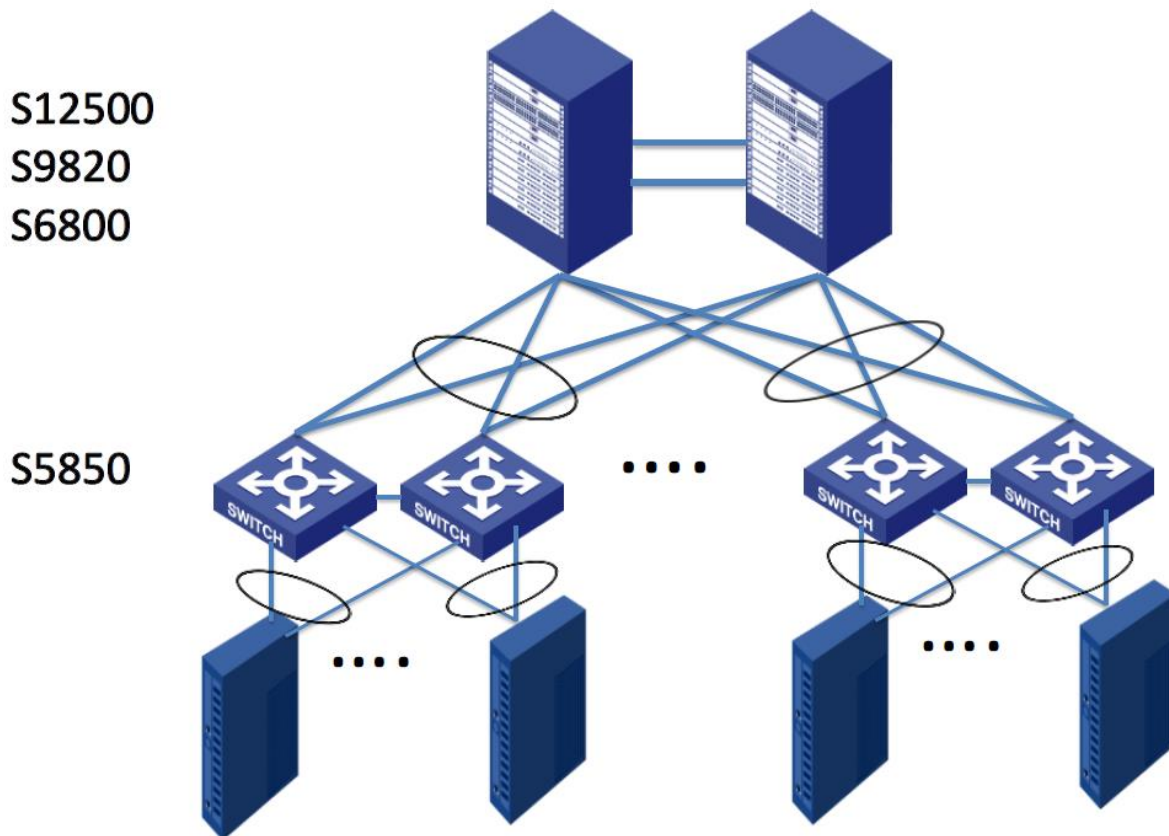
| Support features | S5850-54QS |
|--------------------|--|
| SDN controller | Support VCF Controller |
| Programmable | Support OpenFlow |
| MAC address table | Support dynamic, static, black hole MAC address table entries Support MAC address automatic learning and aging Support source MAC address filtering |
| 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 DLDAP 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 (IPv4/IPv6) address, destination IP (IPv4/IPv6) 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 v1/v2c/v3 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

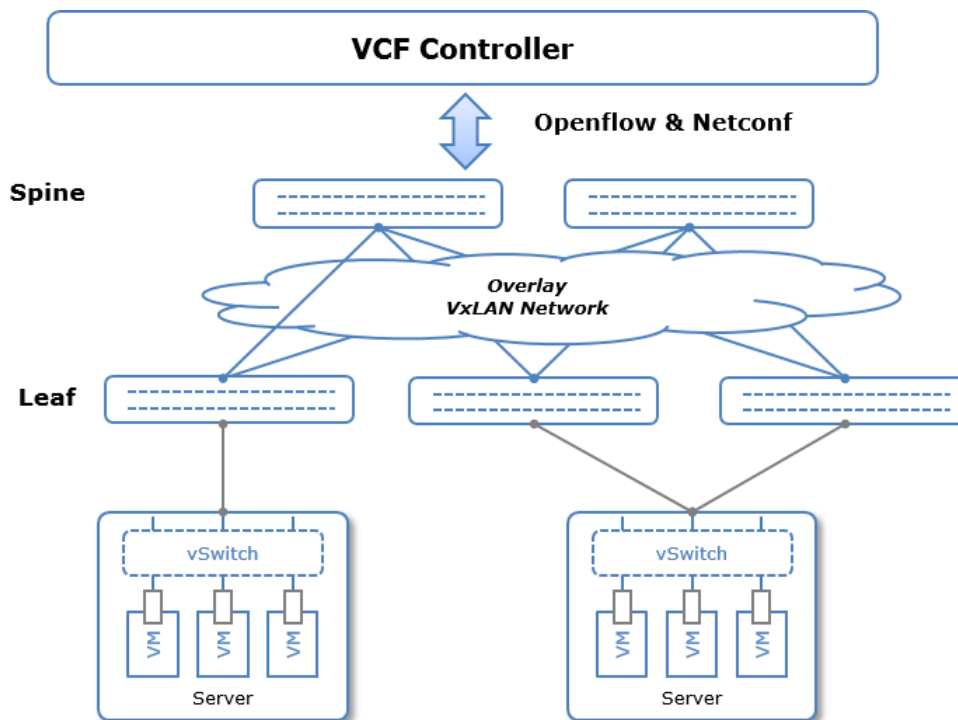
Using H3C's S12500/S9820/S6800 switch based on the 100G platform as the data center core (Spine node), the access layer can use the S6800/S5850 switch as the TOR switch (Leaf node) to provide a high-density 1GEE10GE server access solution. The S5850 switch supports high-density Gigabit ports. It can 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 |

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 | - | SFP+ | SFP+ cable | LSWM1STK | 0.65m |
| | | | | LSWM2STK | 1.2m |
| | | | | LSWM3STK | 3m |
| | | | | LSTM1STK | 5m |
| 10GE AOC cable | - | SFP+ | 10GE AOC cable | SFP-XG-D-AOC-7M | 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 |
| | LSWM1QSFP | 850 nm | MPO | 50/125μm multimode fiber | 300m |
| | LSWM3QSFP | 850 nm | MPO | 50/125μm multimode fiber | 100m |
| | LSWM1QSFPD | 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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Contact Us

Skype: wendycisco

WhatsApp: +852-57008326

E-mail: wendy@donewin.com.hk

Website: <https://www.uritprice.com>