



H3C S6800 Series

Data Center Switches

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H3C S6800 Series Data Center Switches

Product overview

H3C S6800 switch series is H3C self-developed cloud ready data center intelligent switches. The S6800 switch series delivers cloud ready features, such as VXLAN, OpenFlow and EVPN, a rich set of features for data centers. As the most compact formed 10G/40G/100G solution in the industry, the S6800 switch series is perfectly matched for high density 10GE access or 40G/100G aggregation in intelligent data centers and cloud computing networks. The S6800 switch series can also fit nicely as the TOR switch of overlay networks.

Product Appearance

The S6800 series come in the following models:

- H3C S6800-54QF: 48*1/10G SFP Plus, 6*QSFP+



S6800-54QF Front View



S6800-54QF Rear View

- H3C S6800-54QT: 48*1/10GBase-T, 6*QSFP+



S6800-54QT Front View



S6800-54QT Rear View

- H3C S6800-32Q: 32*QSFP+ (40G), 2 power supply slots, 2 fans slots,



S6800-32Q Front View



S6800-32Q Rear View

- H3C S6800-2C: 2 interface slots



S6800-2C Front View (Module Installed)



S6800-2C Rear View

- H3C S6800-4C:



S6800-4C Front View (Module Installed)



S6800-4C Rear View

Product Characteristics

Flexible port combination

- H3C S6800-2/4C support various types of interface cards, realize mixed configuration of high-density 10GE optical and copper port / 40GE / 100GE/MACsec/FC interface.
- For S6800-4C , It can support up to 96 10GE ports and 8 40GE ports, or 32 40GE high-speed interfaces.

Data Center-Oriented Features

- The switch supports abundant data center features, including:
- H3C S6800 switch series supports VXLAN (Virtual Extensible LAN), which provides two major benefits, higher scalability of Layer 2 segmentation and better utilization of available network paths.
- H3C S6800 switch series supports MP-BGP EVPN (Multiprotocol Border Gateway Protocol Ethernet Virtual Private Network) which can run as VXLAN control plane to simplify VXLAN configuration, eliminate traffic flooding and reduce full mesh requirements between VTEPs via the introduction of BGP RR.
- H3C S6800 switch series support Fiber Channel over Ethernet (FCoE), which permits storage, data, and computing services to be transmitted on one network, reducing the costs of network construction and maintenance.
- H3C S6800-2C/4C switch series support Fiber Channel interface card, the ports can be switched to FC port to interoperate with FC SAN.
- H3C S6800 switch series support Priority-based Flow Control (PFC), Enhanced Transmission Selection (ETS) and Data Center Bridging eXchange (DCBX). These features ensure low latency and zero packet loss for FC storage and high-speed computing services.
- H3C S6800 switch series support TRILL (Transparent Interconnection of Lots of Links). TRILL is an innovative technology that changes the traditional way to build data center networks. By using TRILL technology, S6800 switch series becomes the ideal choice to build a large, high-performance, and scalable cloud data center networks that support live virtual machines.

H3C Intelligent Resilient Framework 2 (IRF2)

- High scalability: With IRF2, plug-n-play device aggregation can be achieved by adding one or more switches into the IRF2 stack, enabling IRF2 stacking on the new device. New devices can be managed with a single IP, making it possible to build a scalable, easy-to-manage data center network platform.

- High reliability: In IRF2 stack, all information in control plane and data plane has redundant backup to realize uninterrupted layer-3 forwarding which greatly enhances the reliability and high performance of IRF2 group, eliminates single point of failure and avoids business interruption.
- Load balancing: IRF2 supports cross-device link aggregation, allowing upstream and downstream to be connected to more than one physical link. This creates another layer of network redundancy, and boosts the network resource utilization.

H3C Distributed Resilient Network Interconnection (DRNI)

- H3C S6800 switch series support DRNI, which enables links of multiple switches to aggregate into one to implement device-level link backup. DRNI is applicable to servers dual-homed to a pair of access devices for node redundancy.
- Streamlined topology: DRNI simplifies the network topology and spanning tree configuration by virtualizing two physical devices into one logical device.
- Independent upgrading: The DR member devices can be upgraded independently one by one to minimize the impact on traffic forwarding.
- High availability: The DR system uses a keepalive link to detect multi-active collision to ensure that only one member device forwards traffic after a DR system splits.

RoCE (RDMA over Converged Ethernet)

- Remote Direct Memory Access (RDMA) directly transmits the user application data to the storage space of the servers, and uses the network to fast transmit the data from the local system to the storage of the remote system. RDMA eliminates multiple data copying and context switching operations during the transmission process, and reduces the CPU load.
- RoCE supports RDMA on standard Ethernet infrastructures. H3C S6850 switch support RoCE and can be used to build a lossless Ethernet network to ensure zero packet loss.
- RoCE include the following key features , include PFC(Priority based Flow Control), ECN(Explicit Congestion Notification), DCBX(Data Center Bridging Capability Exchange Protocol), ETS(Enhanced Transmission Selection).

Powerful SDN capacity

- H3C S6800 switch series adopt the next-generation chip with more flexible Openflow FlowTable, more resources and accurate ACL matching, which greatly improves the software-defined network (SDN) capabilities and meet the demand of data center SDN network.
- H3C S6800 switch series support standard Openflow protocol, which can be integrated and managed by H3C VCFC controller or H3C cloud or mainstream cloud platforms or a third-party controller to support flexible network customization and automated management. Users and third-party controllers can use standard interfaces to develop and deploy a dedicated network management strategy for rapid business deployment, functional expansion, and intelligent device management.

MACsec

- H3C S6800 switch series supports hardware level encryption technology MACsec (802.1ae), which is an industry-standard security technology that provides secure communication for all traffic on Ethernet links. Compared with traditional application based software encryption technology, MACsec provides point to-point security on Ethernet links between directly connected nodes and is capable of identifying and preventing most security threats.

Outstanding security control policies

- H3C S6800 switch series supports AAA, RADIUS and user account based authentication, IP, MAC, VLAN, port-based user identification, dynamic and static binding; when working with the H3C iMC platform, it can conduct real time management, instant diagnosis and crackdown on illicit network behavior.
- H3C S6800 switch series supports enhanced ACL control logic, which enables an enormous amount of in-port and out- port ACL, and delegate VLAN based ACL. This simplifies user deployment process and avoids ACL resource wastage. S6800 switch series can also take advantage of Unicast Reverse Path Forwarding (Unicast RPF). When the device receives a packet, it will perform the reverse check to verify the source address from which the packets are supposedly originated, and will drop the packet if such path doesn't exist. This will curb the increasingly common originating address spoofing.

Flexible choice of airflow

- To cope with data center cooling aisle design, the H3C S6800 switch series comes with flexible airflow design, which features bi-cooling aisles in the front and back. Users may also choose the direction of airflow (from front to back or vice versa) by selecting a different fan tray.

Multiple Reliability

- H3C S6800 switch series provides multiple reliability protection at both switch and link levels. With overcurrent, overvoltage, and overheat protection, all models have a redundant pluggable power module, which enables flexible configuration of AC or DC power modules based on actual needs. The entire switch supports fault detection and alarm for power supply and fan, allowing fan speed to change to suit different ambient temperatures.

Excellent manageability

- H3C S6800 switch series provides a rich management interface, including console, external network and USB. Management protocols such as SNMPv1/v2/v3 are supported aside from iMC Management Console. The network administrator may activate control through CLI, TELNET,SSH , SNMP,RESTful API, which gives maximum flexibility in accessing and managing the device. The administrator may also choose SSH2.0 and SSL encryption to shield the management session.

Product Specification

Functions and Features

| Features | S6800-32Q | S6800-54QF | S6800-54QT | S6800-2C | S6800-4C |
|-------------------------|--|------------|------------|----------|----------|
| Port Switching Capacity | 2.56Tbps | 1.44Tbps | 1.44Tbps | 1.44Tbps | 2.56Tbps |
| Forwarding performance | 1440Mpps | 1080Mpps | 1080Mpps | 1080Mpps | 1440Mpps |
| Device Virtualization | IRF2 DRNI | | | | |
| Network Virtualization | VXLAN MP-BGP EVPN TRILL SPB | | | | |
| SDN | VCFC Controller | | | | |
| Data center features | FC/FCoE RDMA and RoCE 802.1Qbb PFC, 802.1Qaz ETS, ECN, DCBX SPB TRILL OpenFlow1.3.1 Service chain Netconf , Python | | | | |
| Jumbo Frame | √ | | | | |
| MAC address table | Static MAC address Blackhole MAC address | | | | |
| VLAN | Port-based VLAN (4094) Default VLAN | | | | |
| Traffic monitoring | sFlow | | | | |
| DHCP | DHCP Server/Client DHCP Snooping DHCP Relay DHCP Snooping option82/DHCP Relay option82 | | | | |
| ARP | Static table entry Gratuitous ARP Dynamic ARP Inspection ARP anti-attack ARP source suppression ARP Detection function (check according to DHCP Snooping safety entry, 802.1x table entry or IP/MAC static binding table entry) | | | | |
| IPv4 routing | Static routing, RIP v1/2, OSPFv1/v2/v3, BGP, IS-IS Equal-Cost Multi-Path routing (ECMP), VRRP, policy-based routing | | | | |
| IPv6 routing | RIPng, OSPF v3, IS-IS v6 BGP4 + for IPv6, VRRP, IPv6 routing strategy ND (Neighbor Discovery) PMTU ICMP v6, Telnet v6, SFTP v6, SNMP v6, BFD v6, VRRP v3 IPv6 Portal IPv6 tunnel | | | | |
| Multicast protocol | IGMP Snooping v2/v3 IGMP v1/v2/v3 PIM-DM/SM IPv6 PIM-DM/SM/SSM PIM, MSDP MLD Snooping Multicast policy | | | | |

| Features | S6800-32Q | S6800-54QF | S6800-54QT | S6800-2C | S6800-4C |
|----------------------------|--|------------|------------|----------|----------|
| Zero configuration | Auto-config and Configure Rollback | | | | |
| MPLS | MCE MPLS VPN and VPLS | | | | |
| MSTP | STP/RSTP/MSTP PVST+/RPVST+ STP Root Guard BPDU Guard | | | | |
| QoS/ACL | Flow control Committed Access Rate (CAR) Eight output queues per port Flexible queue scheduling algorithm can be set based on port and queue, support SP, WRR, WFQ, SP + WRR, SP + WFQ and other models 802.1p and DSCP priority re-marking L2 (Layer 2) ~ L4 (Layer 4) packet filtering based on source MAC address, destination MAC address, source IP (IPv4/IPv6) address, destination IP (IPv4/IPv6) address, port, protocol, and VLAN Traffic Classification Time range Weighted Random Early Detection (WRED) | | | | |
| Mirror | Flow Mirroring N: 4 port mirroring Local and remote port mirroring | | | | |
| Security | Hierarchical user management and password protection AAA authentication support RADIUS authentication HWTACACS SSH 2.0 , SCP IP + MAC + port binding IP Source Guard HTTPs SSL Public Key Infrastructure (PKI) Unicast/Multicast/Broadcast Suppression (percent or pps) | | | | |
| Firmware upgrade | Upgrade via the XModem, File Transfer Protocol (FTP) and Trivial File Transfer Protocol (TFTP) | | | | |
| Management and maintenance | Configuration via CLI, Telnet, and Console port Schedule job ISSU SNMP (Simple Network Management Protocol) Remote Monitoring(RMON) alarm, event, and history recording H3C Intelligent Management Centre (iMC) System log , syslog Hierarchical alarm NTP Power, fan and temperature alarms Debug string output Ping, Tracert Track, LLDP, LLDP-MED Telnet remote maintenance Copy switch files to and from a USB flash drive | | | | |
| 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 | | | | |

H3C S6800 Series Data Center Switches

| Features | S6800-32Q | S6800-54QF | S6800-54QT | S6800-2C | S6800-4C |
|----------|---|------------|------------|----------|----------|
| 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 | | | | |

Performance and Scalability

| Item | S6800-32Q | S6800-54QF | S6800-54QT | S6800-2C | S6800-4C |
|--|--------------------------|------------|------------|----------|----------|
| Maximum number of MAC address entries | 288K | | | | |
| Maximum number of IPv4 Forwarding routes (FIB IPv4) | 250K | | | | |
| Maximum number of IPv6 Forwarding routes (FIB IPv6) | 120K | | | | |
| Dynamic ARP table size | 208K | | | | |
| IPv6 ND (Neighbor Discovery) table size | 104K | | | | |
| Maximum Number of multicast routes (Multicast FIB IPv4/IPv6) | 16K/8K | | | | |
| Maximum ACL number | 16K ingress 1K egress | | | | |
| Maximum number of VSI-interface | (8k-1) (4K-1 border) | | | | |
| Maximum number of tunnel endpoints (VTEP) | 4K | | | | |
| Maximum number of VLAN-interface | 2K | | | | |
| Maximum number of lag group | 1024 | | | | |
| Maximum number of links in a lag group | 32 | | | | |
| Jumbo | 10,000 | | | | |

Hardware Specification

| Features | S6800-32Q | S6800-54QF | S6800-54QT | S6800-2C | S6800-4C |
|---------------------------------------|--|---|---|---|--|
| Dimensions (H × W × D) | 43.6×440×660 mm (1U) 1.72×17.32×18.11 in | 44×440×400 mm (1U) 1.73×17.32×15.75 in | 44×440×460 mm (1U) 1.73×17.32×18.11 in | 44.2×440×660 mm (1U) 1.74×17.32×18.11 in | 88.1×440×660 mm (2U) 3.4×17.32×18.11 in |
| Weight | ≤13kg (28.66 lb) | ≤13kg (28.66 lb) | ≤13kg (28.66 lb) | ≤16Kg (35.27 lb) | ≤27Kg (59.52 lb) |
| Console port | Console :1; Mini USB Console: 1 | | | | |
| Flash/Memory | 1GB/4GB | | | | |
| Ethernet port for management | 1 | 10M/100M/1000M Base-T: 1 SFP 1000Base-X: 1 | | 1 | 1 |
| 111111USB port | 1 | 1 | 1 | 1 | 1 |
| 1/10G Base-T port | - | - | 48 | - | - |
| 1/10G SFP+ port | - | 48 | - | - | - |
| QSFP port | 32 | 6 | 6 | 2 | - |
| QSFP28 port | - | - | - | - | - |
| Module slot | - | - | - | 2 | 4 |
| Input Voltage – AC | Related voltage range: 100V to 240V AC, 50/60Hz Maximum voltage range: 90V to 290V AC, | | | | |
| Input Voltage – DC | Related voltage range: -38.4V to -72V DC | | | | |
| Power module | Two | Two | Two | Two | Four |
| Fan | Two hot-swappable fan, fan speed adjustable and wind invertible | Three hot-swappable fan, fan speed adjustable and wind invertible | Five hot-swappable fan, fan speed adjustable and wind invertible | Two hot-swappable fan, fan speed adjustable and wind invertible | |
| Power consumption (idle) | Single AC: 132W Dual AC: 145W Single DC: 128W Dual DC: 142W | PSR250-12A /PSR250-12A1 : Single AC : 65W Dual AC : 71W PSR450-12A1 : Single AC : 68W Dual AC : 79W PSR450-12D : Single DC : 67W Dual DC : 76W | PSR450-12A1 : Single AC : 103W Dual AC : 109W PSR450-12D : Single DC : 107W Dual DC : 113W | Single AC: 95W Dual AC: 110W Single DC: 91W Dual DC: 105W | Dual AC: 135W Three AC: 150W Four AC: 165W Dual DC: 131W Three DC: 145W Four DC: 155W |
| Power consumption (fully loaded) | Single AC: 291W Dual AC: 301W Single DC: 291W Dual DC: 299W | PSR250-12A/PSR250-12A1 : Single AC : 165W Dual AC : 175W PSR450-12A1 : Single AC : 166W Dual AC : 175W PSR450-12D : Single DC : 166W Dual DC : 171W | PSR450-12A1 : Single AC : 103W Dual AC : 109W PSR450-12D : Single DC : 107W Dual DC : 113W | Single AC:439W Dual AC: 450W Single DC : 443W Dual DC: 445W | Dual AC: 827W Three AC: 837W Four AC: 856W Dual DC: 823W Three DC: 825W Four DC: 828W |
| Operating temperature | 0°C to 45°C (32°F to 113°F) | | | | |
| Operating humidity (noncondensing) | 10% to 90% | | | | |

Order information

| PID | Description |
|----------------------|--|
| LS-6800-54QT-H3 | H3C S6800-54QT L3 Ethernet Switch with 48 10GBASE-T and 6 QSFP Plus Ports |
| LS-6800-54QF-H3 | H3C S6800-54QF L3 Ethernet Switch with 48 SFP Plus Ports and 6 QSFP Plus Ports, No Power |
| LS-6800-2C-H1 | H3C S6800-2C L3 Ethernet Switch with 2*QSFP Plus Ports and 2*Interface Module Slots |
| LS-6800-4C-H1 | H3C S6800-4C L3 Ethernet Switch with 4*Interface Module Slots |
| LS-6800-32Q-H1 | H3C S6800-32Q L3 Ethernet Switch with 32 QSFP+ Ports |
| Power | |
| LSVM1AC650 | 650W AC Power Supply Module, for 2C/4C/32Q/54HT/54HF |
| LSVM1DC650 | 650W DC Power Supply Module, for 2C/4C/32Q/54HT/54HF |
| PSR250-12A | 250W AC Power Supply Module, for 54QF, Power to Port Airflow |
| PSR250-12A1 | 250W AC Power Supply Module, for 54QF, Port to Power Airflow |
| PSR450-12D | 450W DC Power Supply Module, for 54QT/54QF |
| PSR450-12A1 | 450W AC Power Supply Module, for 54QT/54QF |
| Fan | |
| LSWM1HFANSCB | Fan Module with Port to Power Airflow for 2C/32Q/54HF/54HT |
| LSWM1HFANSC | Fan Module with Power to Port Airflow for 2C/32Q/54HF/54HT |
| LSWM1BFANSCB | Fan Module with Port to Power Airflow for 4C |
| LSWM1BFANSC | Fan Module with Power to Port Airflow for 4C |
| LSPM1FANSA | Fan Module(Power to Port Airflow) for 54QF/54QT |
| LSPM1FANSB | Fan Module(Port to Power Airflow) for 54QF/54QT |
| Module | |
| LSWM18QC | 8-Port QSFP Plus Interface Card |
| LSWM124XG2Q | 24-Port SFP Plus and 2-Port QSFP Plus Interface Card with MACSec |
| LSWM124XGT2Q | 24-Port 10GBASE-T and 2-Port QSFP Plus Interface Card with MACSec |
| LSWM124XG2QL | 24-Port SFP Plus and 2-Port QSFP Plus Interface Card |
| LSWM124XG2QFC | 24 Ports SFP Plus and 2 Ports QSFP Plus Interface Card with FC |
| Transceiver | |
| SFP-FE-SX-MM1310-A | 100BASE-FX SFP Transceiver, Multi-Mode (1310nm, 2km, LC) |
| SFP-FE-LX-SM1310-A | 100BASE-LX SFP Transceiver, Single Mode (1310nm, 15km, LC) |
| SFP-FE-LH40-SM1310 | 100BASE-LH40 SFP Transceiver, Single Mode (1310nm, 40km, LC) |
| SFP-GE-T | 1000BASE-T SFP |
| 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-XG-SX-MM850-A | SFP+ Module(850nm,300m,LC) |
| SFP-XG-LX-SM1310 | SFP+ Module(1310nm,10km,LC) |
| QSFP-40G-LR4-WDM1300 | 40GBASE-LR4 QSFP+ Optical Transceiver Module |
| QSFP-40G-CSR4-MM850 | QSFP+ 40GBASE Optical Transceiver Module (850nm,300m,CSR4,Support 40G to 4*10G) |

| PID | Description |
|------------------------|--|
| Transceiver | |
| QSFP-40G-SR4-MM850 | QSFP+ 40GBASE Optical Transceiver Module (850nm,100m,SR4,Support 40G to 4*10G) |
| QSFP-40G-BIDI-SR-MM850 | QSFP+ 40GBASE BIDI Optical Transceiver Module (850nm,100m,SR) |
| QSFP-40G-LR4L-WDM1300 | QSFP+ 40GBASE Optical Transceiver Module (1310nm,2km,LR4L,LC) |
| QSFP-40G-LR4-PSM1310 | QSFP+ 40GBASE Optical Transceiver Module (1310nm,10km,MPO/APC,LR4,Parallel Single Mode) |
| QSFP-100G-SR4-MM850 | 100G QSFP28 Optical Transceiver Module (850nm,100m OM4,SR4,MPO) |
| QSFP-100G-PSM4-SM1310 | 100G QSFP28 Optical Transceiver Module (1310nm,500m,PSM4,MPO/APC) |
| QSFP-100G-LR4L-WDM1300 | 100G QSFP28 Optical Transceiver Module (1310nm,2km,LR4L,CWDM4,LC) |
| QSFP-100G-LR4-WDM1300 | 100G QSFP28 Optical Transceiver Module(1310nm,10km,LR4,WDM,LC) |
| Cable | |
| LSWM1STK | SFP+ Cable 0.65m |
| LSWM2STK | SFP+ Cable 1.2m |
| LSWM3STK | SFP+ Cable 3m |
| LSTM1STK | SFP+ Cable 5m |
| SFP-XG-D-AOC-7M | SFP+ to SFP+7m AOC |
| SFP-XG-D-AOC-10M | SFP+ to SFP+10m AOC |
| SFP-XG-D-AOC-20M | SFP+ to SFP+20m AOC |
| LSWM1QSTK0 | 40G QSFP+ Cable 1m |
| LSWM1QSTK1 | 40G QSFP+ Cable 3m |
| LSWM1QSTK2 | 40G QSFP+ Cable 5m |
| QSFP-40G-D-AOC-7M | 40G QSFP+ to 40G QSFP+7m AOC |
| QSFP-40G-D-AOC-10M | 40G QSFP+ to 40G QSFP+10m AOC |
| QSFP-40G-D-AOC-20M | 40G QSFP+ to 40G QSFP+20m AOC |
| QSFP-100G-D-CAB-1M | 100G QSFP28 to 100G QSFP28 1m Passive Cable |
| QSFP-100G-D-CAB-3M | 100G QSFP28 to 100G QSFP28 3m Passive Cable |
| QSFP-100G-D-CAB-5M | 100G QSFP28 to 100G QSFP28 5m Passive Cable |
| License | |
| LIS-S6800-DC | H3C S6800 Data Center License FCoE, FC, SPB, Trill, EVB require a software license. Only one license is required even if multiple features are installed on the switch. |



The Leader in Digital Solutions

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