



H3C S6805 Series

Data Center Switches

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New H3C Technologies Co., Limited

H3C S6805 Series Data Center Switches

Product overview

H3C S6805 high-density intelligent switch series is developed for data centers and cloud computing networks. It provides powerful hardware forwarding capacity and abundant data center features. The switch supports modular power modules and fan trays. By using different fan trays, the switch can provide field-changeable airflows.

The switch is perfectly matched for high density 10GE, it can also operate as a TOR access switch on an overlay or integrated network.

The S6805 switch series has two models:

- S6805-54HF: The switch provides 48 × 10G SFP Plus ports, 6 × 100G QSFP28 ports
- S6805-54HT: The switch provides 48 × 10G Base-T ports, 6 × 100G QSFP28 ports



S6805-54HF Front view



S6805-54HF Rear view



S6805-54HT Front view



S6805-54HT Rear view

Features and Benefits

High port density and powerful forwarding capacity

- The switch offers high-density 100G/40G/10G ports and a forwarding capacity as high as 4 Tbps, it can provide high-density 10G server access in high-end data centers

Flexible programmability

- The switch uses industry-leading programmable switching chips that allow users to define the forwarding logic as needed.
- Users can develop new features that meet the evolving trend of their networks through simple software updates.

Powerful visibility

- With the rapid development of data center, the scale of the data center expands rapidly; reliability, operation and maintenance become the bottleneck of data center for further expansion. H3C S6805 switch series conform to the trend of automated data operation and maintenance, and support visualization of data center. H3C S6805 switch series can send real-time resources information, statistics and alarm of RDMA information to the data center operation and maintenance platform through ERSPAN and GRPC protocols. This can allow the operation and maintenance center to perform real-time analysis in order to achieve network quality tracing, troubleshooting, risk warning and system optimization and etc. Visualization can even adjust network configuration automatically and reduce network congestion which makes it possible to move to automated data center operation and maintenance.

Powerful SDN capacity

- H3C S6805 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 S6805 switch series support standard Openflow protocol, which can be integrated and managed by H3C 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.

Abundant data center features

The switch supports abundant data center features, including:

- FCoE technology leverages Ethernet packet to carry FC packets. This means FC SAN and Ethernet LAN network can share the same network infrastructure, which is a good solution to solve the problems of coexistence between different types of network. S6805 switch series all downstream SFP+ ports can be switched to FCoE port. As the FC SAN and Ethernet network are fully integrated, the entire network infrastructure is greatly simplified.
- H3C S6805 switch series supports DCB (Data Center Bridging), ISSU (In-service Software Upgrade), OAM (Operations, Administration and Maintenance) and Energy-Efficient Ethernet (EEE). It fully meets the high performance data center requirements, and is easy to manage with green energy consumption.

- H3C S6805 switch series supports VXLAN (Virtual Extensible LAN), VXLAN uses a MAC-in-UDP encapsulation method where the original Layer 2 package is added a VXLAN header, and is then placed in a UDP-IP packet. With the help of MAC-in-UDP encapsulation, VXLAN tunnels Layer 2 network over Layer 3 network. This provides two major benefits, higher scalability of Layer 2 segmentation and better utilization of available network paths.
- H3C S6805 switch series supports MP-BGP EVPN (Multiprotocol Border Gateway Protocol Ethernet Virtual Private Network) uses standard-based BGP protocol as the control plane for VXLAN overlay networks, providing BGP based VTEP auto peer discovery and end-host reachability information distribution. MP-BGP EVPN delivers many benefits, such as eliminating traffic flooding, reducing full mesh requirements between VTEPs via the introduction of BGP RR, achieving optimal flow based end to end load sharing and more.
- H3C S6805 switch series support data center feature, such as Puppet and Chef, which can achieve data center automatic operation and management.

Flexible choice of airflow

- To cope with data center cooling aisle design, the H3C S6805 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.

Excellent manageability

The switch improves system management through the following ways:

- Provides multiple management interfaces, including the serial console port, mini USB console port, USB port, two out-of-band management ports, and two SFP ports. The SFP ports can be used as in-band management port through which encapsulated sampling packets are sent to the controller or other management devices for deep analysis.
- Supports multiple access methods, including SNMPv1/v2c/v3, Telnet, SSH 2.0, SSL, and FTP.
- Supports GRPC that provides flexible programming interfaces for customization.
- Supports Telemetry to perform real-time, high-speed, and precise device statistics collection.

Multiple reliability protection

- The S6805 switch series provides multiple reliability protection at both switch and link levels. With over current, 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.
- The switch supports diverse link redundancy technologies such as H3C proprietary RRPP, VRRPE, and Smart Link. These technologies ensure quick network convergence even when large amount of traffic of multiple services runs on the network.

Rich QoS features

- H3C S6805 switch series support Layer 2 to Layer 4 packet filtering, which can provide traffic classification based on source MAC address, destination MAC address, source IP address, destination IP address, TCP/UDP port number, protocol type, and VLAN.
- Each 100G port provides a flexible queues scheduling algorithm, which can be set based on ports and queues at the same time.
- S6805 switch series supports five queuing modes include SP (Strict Priority), WRR (Weighted Round Robin), SP+WRR, WFQ, and SP+WFQ.
- S6805 switch series supports CAR (Committed Access Rate) function with a minimum granularity of 8Kbps, and port mirroring on both directions used to monitor packets on the specified port and forward the packets to the monitoring port for network detection and troubleshooting.

Comprehensive security control policies

- H3C S6805 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 S6805 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. S6805 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 can effectively prevent the source address spoofing in the network

Hardware Specification

Item	S6805-54HF	S6805-54HT
Dimensions (H × W × D)	44 × 440 × 400 mm (1.74×17.32×15.74 in)	44 × 440 × 460 mm (1.74×17.32×18.11 in)
Weight	≤ 10 kg (22.04 lb)	≤ 10 kg (22.04 lb)
Serial console port	1	
Out-of-band management port	One GE copper port and one GE fiber port	
Mini USB console port	1	
USB port	1	
QSFP28 port	6	
SFP+ port	48	-
10G Base-T port	-	48
CPU Main frequency	2.4 GHz	
CPU Cores	4	
Buffer	32M	
Latency	<1μs (64 byte)	
MTBF(years)	35.4	
MTTR(hours)	1	
AC-input voltage	90v AC to 290v AC	
DC-input voltage	-36v DC to -72v DC	
Power module slot	2	
Fan tray slot	5 Hot-swappable fan, fan speed adjustable and wind invertible	
Air flow direction	From front to rear or from rear to front	
Operating temperature	0°C to 45°C (32°F to 113°F)	
Operating humidity (noncondensing)	5% to 95%	

Software Specification

Item	S6805-54HF	S6805-54HT
Line-rate switching	Switching capacity	2.16 Tbps
	Forwarding capacity	1000 Mpps
Interface Latency	< 1μs	
MAC address table	288K max	
IPv4 routing table	324K max	
IPv6 routing table	162K max	
Dynamic ARP table	272K max	
LLDP	LLDP	
	LLDP-MED	
LACP	LACP	
	LACP local forwarding first	
	LACP short-time	
	LACP Stack split detection	
IEEE Standard	802.3x/802.3ad/802.3AH/802.1P/802.1Q/802.1X/802.1D/802.1w/802.1s/802.1AG 802.1x/802.1Qbb/802.1az/802.1Qaz	
Virtualization	Distributed device management, distributed link aggregation, and distributed resilient routing	
	Stacking through standard Ethernet port	
	Local and remote stacking	
Link aggregation	10GE/40GE/100GE port aggregation	
	Static aggregation, dynamic aggregation	
Data center	EVPN distributed gateway	
	VXLAN	
	Service chain	
	RDMA and RoCE	
	FCoE	
	802.1Qbb PFC, 802.1Qaz ETS, ECN, QCN, DCBX	
	OpenFlow 1.3.1 NETCONF, Python, Ansible	
Jumbo Frame	Supported	
MAC address table	Static MAC address	
	Blackhole MAC address	
VLAN	Port-based VLAN (quantity: 4094)	
	Default VLAN	
Traffic monitoring	sFlow/NetStream	
	Telemetry	
	INT (In-band Network Telemetry)	
DHCP	DHCP server/client	
	DHCP snooping/DHCP relay	
ARP	Gratuitous ARP	
	Dynamic ARP inspection, ARP source-suppression	
	ARP blackhole, Multicast ARP, ARP detection	

Item	Specification
IP routing	Stating routing, RIPv1/v2, OSPFv1/v2/v3, BGP, IS-IS ECMP, VRRP, policy-based routing BGP4+ for IPv6, VRRP, IPv6 policy-based routing RIPv6, OSPFv3, ISISv6
IPv6	IPv6 ND IPv6 PMTU ICMPv6, Telnetv6, SFTpv6, SNMPv6, BFDv6, VRRPv3 IPv6 portal/IPv6 tunnel
Multicast	IGMP snooping v2/v3 IGMPv1/v2/v3 PIM-DM/SM MLD snooping Multicast policy Multicast VLAN Multicast VLAN Multicast over VXLAN
MPLS	MPLS MCE MPLS VPN, VPLS MPLS TE
MSTP	STP/RSTP/MSTP PVST+/RPVST+ STP Root Guard BPDU Guard
QoS/ACL	Inbound and outbound traffic rate limit CAR Eight output queues on each port Flexible port-and queue-based queuing and scheduling algorithms SP, WRR, WFQ, SP+WRR, and SP+WFQ queuing 802.1p and DSCP priority re-marking Packet filtering at Layer 2 to Layer 4 Traffic classification based on source MAC address, destination MAC address, VLAN, source IP(IPv4/IPv6) address, destination IP(IPv4/IPv6) address, port number, protocol type Time range Inbound and outbound ACL VLAN-based ACL WRED
Mirroring	Traffic mirroring N:4 port mirroring Local port mirroring Remote port mirroring (ERSPAN)



Item	Specification
Security	Hierarchical user management and password protection AAA /RADIUS/HWTACACS IP address+MAC address+port number binding IP source guard HTTPs/SSL
Loading and upgrading	Loading/upgrading through the XMODEM protocol Loading/upgrading through FTP and TFTP
Management and maintenance	Telemetry Micro-burst detection Auto-config Configuration via CLI, Telnet, and Console port RMON (Remote Monitoring) SNMPv1/v2c/v3 IMC Netconf, Python System logs Hierarchical alarms NTP, SNTP Jumbo Frame Ping and tracer Debugging information output File uploading and downloading through the USB port
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 GB/T 9254 YD/T 993
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

Order information

PID	Description
LS-6805-54HF	H3C S6805-54HF L3 Ethernet Switch with 48 SFP Plus Ports and 6 QSFP28 Ports
LS-6805-54HT	H3C S6805-54HT L3 Ethernet Switch with 48 10G BASE-T Ports and 6 QSFP28 Ports
Power	
PSR450-12D	450W DC Power Supply Module
PSR450-12A1	450W AC Power Supply Module
PSR450-12AHD	450W AC Power Supply Module,Support 240V/336V HVDC Input
Fan	
LSPM1FANSA	Ethernet Switch Fan Module(Power to Port Airflow)
LSPM1FANSB	Ethernet Switch Fan Module(Port to Power Airflow)
Transceiver	
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)
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)



PID	Description
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
LSWM1QSTK3	40G QSFP+ to 4x10G SFP+ Cable 1m
LSWM1QSTK4	40G QSFP+ to 4x10G SFP+ Cable 3m
LSWM1QSTK5	40G QSFP+ to 4x10G SFP+ Cable 5m
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
QSFP-100G-D-AOC-7M	100G QSFP28 to 100G QSFP28 7m AOC
QSFP-100G-D-AOC-10M	100G QSFP28 to 100G QSFP28 10m AOC
QSFP-100G-D-AOC-20M	100G QSFP28 to 100G QSFP28 20m AOC
QSFP-100G-4SFP-25G-CAB-3M	100G QSFP28 to 4x25G SFP28 3m Passive Cable
QSFP-100G-4SFP-25G-CAB-1M	100G QSFP28 to 4x25G SFP28 1m Passive Cable



The Leader in Digital Solutions

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