H3C S6825 Series

Data Center Switches

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New H3C Technologies Co., Limited

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Product overview

H3C S6825 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. It provides up to 48*25G ports and 6*100G ports and two out-of-band management ports (one fiber port and one copper port). The 100G ports are 100G/40G autosensing. The switch supports hot-swappable power supplies and fan trays. The switch supports front-back and back-front airflow.

The switch is an ideal product for high-density 25GE switching and aggregation at data centers and cloud computing networks. It can also operate as a TOR access switch on an overlay or integrated network.

Product Appearance

The S6825 series come in the following models.

- S6825-54HF: The switch provides 48 × 25G SFP28 ports, 6 × 100G QSFP28 ports

S6825-54HF front panel

S6825-54HF rear panel

Product Characteristics

High-Density 25GE Access

- The switch offers high-density 25G/10G ports, meet the high-density access requirements of 25GE servers in high-performance data centers.

Abundant Data Center Features

The switch supports abundant data center features, including:

- H3C S6825 series switch supports VXLAN (Virtual Extensible LAN), which provides two major benefits, higher scalability of Layer 2 segmentation and better utilization of available network paths.
- H3C S6825 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 S6825 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 S6825 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.

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 S6825 switch series conform to the trend of automated data operation and maintenance, and support visualization of data center.

- INT (Inband-Telemetry) is a network monitoring technology used to collect data from the device. Compared with the traditional network monitoring technology featuring one query, one reporting, INT requires only one-time configuration for continuous data reporting, thereby reducing the request processing load of the device. INT can collect timestamp information, device ID, port information, and buffer information in real time. INT can be implemented in IP, EVPN, and VXLAN networks.
- Provides a variety of traffic monitoring and analytic tools, including sFlow, NetStream, SPAN/RSPAN/ERSPAN mirroring, and port mirroring to help customers perform precise traffic analysis and gain visibility into network application traffic. With these tools, customers can collect network traffic data to evaluate network health status, create traffic analysis reports, perform traffic engineering, and optimize resource allocation.
- Supports realtime monitoring of buffer and port queues, allowing for visible and dynamic network optimization.
- Supports PTP (Precision Time Protocol) to achieve highly precise clock synchronization.

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 S6825 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 S6825 switch series adopt the next-generation chip with more flexible Openflow, 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 S6825 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.

Comprehensive security control policies

- H3C S6825 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 S6825 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. S6825 switch series can also take advantage of Unicast Reverse Path Forwarding (Unicast RFP). 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.

Multiple reliability protection

- The S6825 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.

Flexible choice of airflow

- To cope with data center cooling aisle design, the H3C S6825 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 standard NETCONF APIs that allow users to configure and manage the switch, enhancing the compatibility with third-party applications.

Product Specifications

Hardware Specification

Item	S6825-54HF
Dimensions (H × W × D)	44 × 440 × 400 mm
Weight	≤ 10 kg (22.05 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
Flash/SDRAM	4GB/4GB
QSFP28 port	6
SFP28 port	48
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 fans
Air flow direction	Front to rear or rear to front
Static power consumption	Single AC: 78 W Dual AC: 87 W Single DC: 79 W Dual DC: 88 W
Typical power consumption	Single AC: 223 W Dual AC: 228 W Single DC: 224 W Dual DC: 227 W
Operating temperature	0°C to 45°C (32°F to 113°F)
Operating humidity	5% to 95%, noncondensing

Software Specification

Item	S6825-54HF
Switching capacity	3.6 Tbps
Forwarding capacity	1004 Mpps
Device Virtualization	DRNI
Network Virtualization	VXLAN
	MP-BGP EVPN
SDN	VCFC Controller
Data center	FCoE
	RDMA and RoCEv2
	802.1Qbb PFC, 802.1Qaz ETS, ECN, DCBX
	OpenFlow 1.3.1
	Service Chain
	NETCONF, Python
O&M	INT (Inband Telemetry)
	ERSPAN
	GRPC
	Microburst monitoring in buffer
	Netstream
	Sflow
MAC address table	Static MAC address Blackhole MAC address
VLAN	Port-based VLAN (quantity: 4094) Default VLAN
DHCP	DHCP server/client DHCP snooping/DHCP relay DHCP Snooping option82/DHCP Relay option82 IPv6 DHCP server/client IPv6 DHCP snooping/DHCP relay
ARP	Gratuitous ARP Dynamic ARP inspection ARP source-suppression ARP blackhole Multicast ARP ARP detection
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 RIPng, OSPFv3, ISISv6

Item	Specification
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 IPv6 PIM-DM/SM/SSM Bi-directional -PIM, MSDP MLD snooping Multicast VPN MBGP Bidirectional PIM Multicast policy
Zero-configuration	Auto-config
MPLS	MPLS L3VPN VPLS
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, source IPv4/IPv6 address, destination IPv4/IPv6 address, port number, protocol type, and VLAN Time range Inbound and outbound ACL VLAN-based ACL WRED
Mirroring	Traffic mirroring N:4 port mirroring Local port mirroring Remote port mirroring (multiple ports and reflector port)
Security	Hierarchical user management and password protection AAA /RADIUS/HWTACACS SSH 2.0 IP address+MAC address+port number binding IP source guard HTTPs/SSL

Item	Specification
Security	PKI
	802.1X
	MAC authentication
	EAD
	IPv6 RADIUS server
	IPv6 port binding
Loading and upgrading	Loading/upgrading through the XMODEM protocol
	Loading/upgrading through FTP and TFTP
Management and maintenance	Configuration via CLI, Telnet, and Console port
	SNMPv1/v2c/v3
	Telemetry
	GRPC
	PTP
	IMC
	System logs
	Hierarchical alarms
	NTP, SNTP
	Power, fan and temperature alarms
	Debugging information output
	Ping and tracert
	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-6825-54HF	H3C S6825-54HF L3 Ethernet Switch with 48*25G SFP28 Ports and 6*100G QSFP28 Ports
Power	
PSR450-12A	450W AC Power Supply Module (Air Inlets in Panel)
PSR450-12AHD	450W HVDC Power Supply Module (AC/336V HVDC Input Supported, Air Outlets in Panel)
PSR450-12D	450W DC Power Supply Module (Air Outlets in Panel)
PSR450-12A1	450W AC Power Supply Module (Air Outlets in Panel)
Fan	
LSPM1FANSB	H3C Fan Module with Port to Power Airflow
LSPM1FANSA	H3C Fan Module with Power to Port Airflow
Transceiver	
SFP-GE-T	SFP GE Copper Interface Transceiver Module (100m, RJ45)
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-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-XG-SX-MM850-A	SFP+ Module(850nm,300m,LC)
SFP-XG-LX-SM1310	SFP+ Module(1310nm,10km,LC)
SFP-25G-SR-MM850	25G SFP28 Optical Transceiver Module (850nm,100m,SR,MM,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-40G-ER4-WDM1300	QSFP+ 40GBASE Optical Transceiver Module (1310nm,40km,ER4,LC)
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)

PID	Description
Transceiver	
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
SFP-25G-D-CAB-1M	25G SFP28 to 25G SFP28 1m Passive Cable
SFP-25G-D-CAB-3M	25G SFP28 to 25G SFP28 3m Passive Cable
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
QSFP-100G-D-AOC-7M	100G QSFP28 to 100G QSFP28 7m AOC
QSFP-100G-D-AOC-10M	100G QSFP28 to 100G QSFP28 10m AOC

The Leader in Digital Solutions

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