

H3C S9825 Series Data Center Switches

Product overview

H3C S9825 series switches are a new generation of high-performance, high-density 400GE/200GE Ethernet switches launched by H3C for data centers. Provides high-density 400GE/200GE ports; supports redundant pluggable power supplies and fans. The S9825 can be used in the core and aggregation networking of the new generation data center.

Views

The S9825 switch series includes one model:

- S9825-64D
- S9825-128B

S9825-64D

The switch provides 64 *400G QSFP-DD ports.

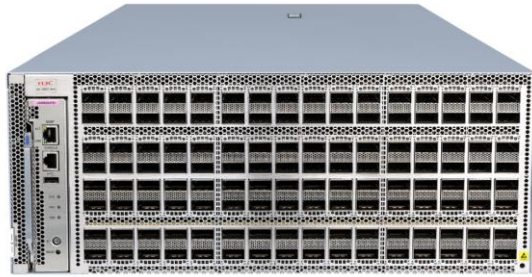


S9825-64D front panel

S9825-64D rear panel

S9825-128B

The switch provides 128* 200GE QSFP56 ports.



S9825-128B front panel



S9825-128B rear panel

Features and highlights

High port density and powerful forwarding capacity

The switch offers high-density 400G ports and a forwarding capacity as high as 51.2Tbps, which enables the switch to provide high-density server access in high-end data centers without oversubscriptions.

Abundant data center features

- The switch supports abundant data center features, including:
- H3C S9825 series switches 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 S9825 series switches support ROCEv2 network, based on Priority-based Flow Control (PFC), ECN Enhanced Transmission Selection (ETS). Which ensures low latency and lossless RDMA applications and high-speed computing services.

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 S9825 switch series conform to the trend of automated data operation and maintenance, and support visualization of data center. H3C S9825 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, 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 capability

- H3C S9825 series switches adopt the next-generation chip with more flexible Openflow flow Table, 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 S9825 series switches can interconnect with H3C SeerEngine-DC Controller for SeerFabric solutions.

Rich QoS features

- H3C S9825 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.
- S9825 switch series supports five queuing modes include SP (Strict Priority), WRR (Weighted Round Robin), SP+WRR, WFQ, and SP+WFQ.
- S9825 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.

Outstanding management capacity

The switch improves system management through the following ways:

- Provides multiple management interfaces, including the serial console port, USB port, one out-of-band management ports.
- Supports configuration and management from CLI or a mainstream network management platform and H3C IMC Intelligent Management Center.
- 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.

Technical specifications

Hardware specifications

Item	S9825-64D	S9825-128B
Dimensions (H x W x D)	175 x 440 x 760 mm (6.89 x 17.32 x 29.92 in)	175 mmx440 mmx800mm(6.89 x 17.32 x 31.50 in)
Weight(Full loaded)	LS-9825-64D: ≤ 37 kg (81.57 lb) LS-9825-64D-H1: ≤ 38.4 kg (84.66 lb)	≤47kg

Item	S9825-64D	S9825-128B
Serial console port	1	1
Out-of-band management port	1	1
USB port	1	1
400GE QSFP-DD port	64	-
200GE QSFP56 port	-	128
CPU	2.9GHz@4core	2.6GHz@8core
Flash/SDRAM	240G/16G	240G/16G
Latency	<1μs	<1μs
Switching capacity	51.2Tbps	51.2Tbps
Forwarding capacity	10398.8Mpps	10398.8Mpps
Buffer(byte)	56M	56M
Power module slot	4	4
Fan tray slot	LS-9825-64D: 6 LS-9825-64D-H1: 8	6
Air flow direction	From front to rear	From front to rear
Minimum power consumption	LS-9825-64D: <ul style="list-style-type: none"> Dual AC inputs: 243 W Four AC inputs: 251 W LS-9825-64D-H1: <ul style="list-style-type: none"> Dual AC inputs: 247 W Four AC inputs: 256 W 	262.23W
Typical power consumption	LS-9825-64D: <ul style="list-style-type: none"> Dual AC inputs: 613 W Four AC inputs: 630 W LS-9825-64D-H1: <ul style="list-style-type: none"> Dual AC inputs: 650 W Four AC inputs: 680 W 	540.07W
Maximum power consumption	LS-9825-64D: <ul style="list-style-type: none"> Dual AC inputs: 1852 W Four AC inputs: 1855 W LS-9825-64D-H1: <ul style="list-style-type: none"> Dual AC inputs: 2500 W Four AC inputs: 2500 W 	1708W
Operating temperature	0°C to 40°C	
Operating humidity	5% to 95%, noncondensing	
MTBF(year)	50.1	25.8

Item	S9825-64D	S9825-128B
MTTR(hour)	<0.5	<0.5

Software specifications

Item	Feature description
Device virtualization	M-LAG(DRNI) S-MLAG
Network virtualization	BGP-EVPN
SDN	H3C SeerEngine-DC for SeerFabric
Lossless network	PFC and ECN DCBX RDMA and ROCE PFC deadlock watchdog ROCE stream analysis
Programmability	Openflow1.3 Netconf Python/TCL/Restful API to realize DevOps automated operation and maintenance
Traffic analysis	Sflow
VLAN	Port-based VLANs
MAC address	Dynamic learning and aging of mac address entries Dynamic, static and blackhole entries
IPv4 routing	OSPF (Open Shortest Path First) v1/v2 ISIS(Intermediate System to Intermediate system) BGP (Border Gateway Protocol) Routing policy VRRP PBR
IPv6 routing	OSPFv3 IPv6 ISIS BGP4+ Routing policy VRRP PBR

Item	Feature description
Reliability	<p>LACP</p> <p>STP/RSTP/MSTP protocol</p> <p>STP Root Guard and BPDU Guard</p> <p>BFD for OSPF/OSPFv3, BGP/BGP4, IS-IS/IS-ISv6 and Static route</p> <p>VRRP and VRRPE</p>
QoS	<p>Weighted Random Early Detection (WRED) and tail drop</p> <p>Flexible queue scheduling algorithms based on port and queue, including strict priority (SP), Weighted Deficit Round Robin (WDRR), Weighted Fair Queuing (WFQ), SP + WDRR, and SP + WFQ.</p> <p>Traffic shaping</p> <p>Packet filtering at L2 (Layer 2) through L4 (Layer 4); flow classification based on source MAC address, destination MAC address, source IP (IPv4/IPv6) address, destination IP (IPv4/IPv6) address, port, protocol, and VLAN to apply qos policy, including mirroring, redirection, priority remark etc.</p> <p>Committed access rate (CAR)</p> <p>Account by packet and byte</p> <p>COPP</p>
Telemetry	<p>gRPC</p> <p>ERSPAN</p> <p>Mirror on drop</p> <p>Telemetry Stream</p> <p>INT</p> <p>Packet capture</p>
Security and management	<p>Console telnet and SSH terminals</p> <p>SNMPv1/v2/v3</p> <p>ZTP</p> <p>System log</p> <p>File upload and download via FTP/TFTP, BootRom update and remote update</p> <p>NQA</p> <p>ping, tracer</p> <p>NTP</p> <p>Hierarchical management and password protection of users</p> <p>SSH 2.0</p> <p>HTTPS</p> <p>Boot ROM access control (password recovery)</p>

Item	Feature description
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
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

- The options may be different depending on the specific requirement. Restrictions and limitations may apply. To confirm availability, refer to related user guide or visit H3C website <https://www.h3c.com/en/home/htb/>.

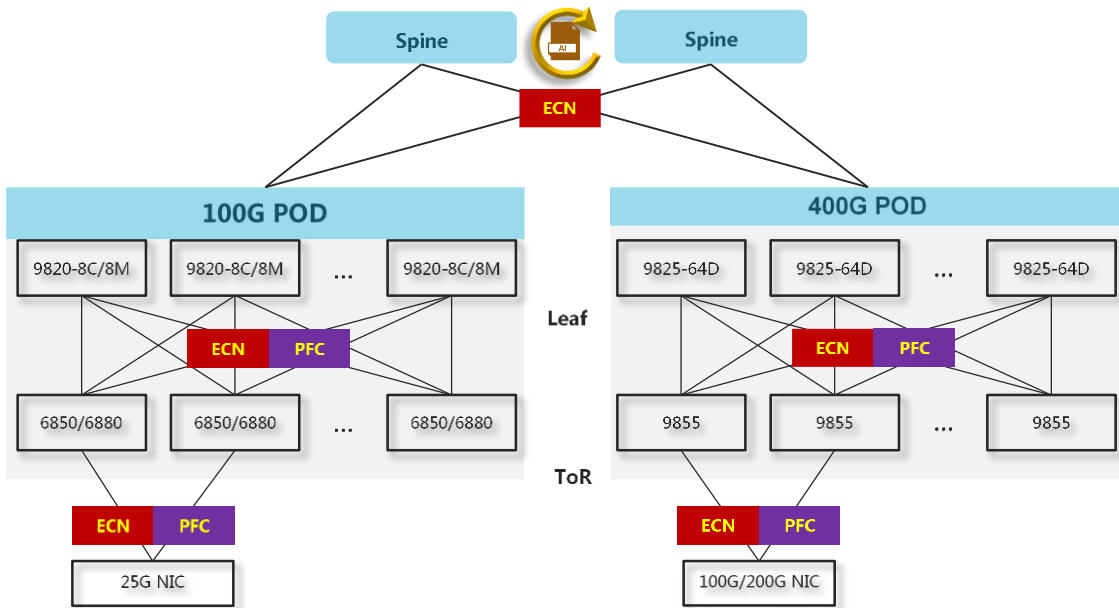
Performance and scalability

Item		Description
Virtualization	M-LAG device number	2
ACL	max number of ingress ACLs	3k-1@160bits/pipe,4pipes
	max number of ingress Car	512*4
	max number of ingress Counter	8K-4
	max number of egress ACLs	512-1@160bit/pipe, 4 pipes
	max number of egress Car	None
	max number of egress Counter	2K-4
Forwarding table	Jumbo frame length(byte)	9216
	Mirroring group	4
	max number of MACs per switch	8K

Item		Description
	max number of ARP entries IPv4	32K-1
	max ND table size for IPv6	32K-1
	max number of unicast routes IPv4	980000(24B); 1000000(32B)
	max number of unicast routes IPv6	248
	LAGG group	64
	LAGG member per group	Max Group: 4095 2/4/8(member)--4095; 16--4000; 32--2000; 64--1000; 128--500
	ECMP group	2-128
	ECMP member per group	248
	Interface	Loopback interface number
L3 sub interface number		4K
SVI interface number		4K
VLAN number		4094
Performance	RIB	4M
	MSTP instance	64
	VRRP VRID	255
	VRRP group	4096
	NQA group	32
Static table	static mac-address	16K
	static ARP	32K-1
	static ND	32K-1
	static IPv4 routing table	same as FIB
	static IPv6 routing table	same as FIB

Application scenarios

The typical data center application for S9825 is ROCE scenarios.



Ordering information

Item		Description
Chassis	S9825-64D	H3C S9825-64D L3 Ethernet Switch
Power	PSR1600C-12A-B	1600W AC Power Supply Module (Power Panel Side Exhaust Airflow)
Fan	FAN-80B-1-B	Fan Module (Fan Panel Side Exhaust Airflow)
Transceiver	QSFP-100G-LR4-WDM1300	100G QSFP28 Optical Transceiver Module(1310nm,10km,LR4,WDM,LC)
	QSFP-100G-LR4L-WDM1300	100G QSFP28 Optical Transceiver Module (1310nm,2km,LR4L,CWDM4,LC)
	QSFP-100G-PSM4-SM1310	100G QSFP28 Optical Transceiver Module (1310nm,500m,PSM4,MPO/APC)
	QSFP-100G-SR4-MM850	100G QSFP28 Optical Transceiver Module (850nm,100m OM4,SR4,MPO)
	QSFP-100G-SWDM4-MM850	100G QSFP28 Optical Transceiver Module (850nm,100m OM4,SWDM4,LC)
	QSFP-100G-eSR4-MM850	100G QSFP28 Optical Transceiver Module (850nm,300m OM4,eSR4,MPO)
	QSFP56-200G-SR4-MM850	200G QSFP56 Optical Transceiver Module (850nm,100m OM4,SR4,MPO12/UPC)
	QSFPDD-400G-SR8-MM850	400G QSFPDD Optical Transceiver Module(850nm,100m OM4,SR8,MPO16/APC)
	QSFPDD-400G-FR4-WDM1300	400G QSFPDD Optical Transceiver Module(1300nm,2km,FR4,LC)
Cable	QSFP-100G-D-AOC-10M	100G QSFP28 to 100G QSFP28 10m Active Optical Cable
	QSFP-100G-D-CAB-1M	100G QSFP28 to 100G QSFP28 1m Passive Cable
	QSFP-100G-D-AOC-20M	100G QSFP28 to 100G QSFP28 20m Active Optical 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 Active Optical Cable

Item	Description
QSPDD-400G-D-CAB-2M	400G QSPDD to 400G QSPDD 2m Passive Cable



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