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**Bezpieczeństwo,  
Efektywność,  
Optymalizacja**





# H3C S9825 Series

# Data Center Switches

Release Date: Jan, 2023



New H3C Technologies Co., Limited

# H3C S9825 Series Data Center Switches

## Product overview

H3C S9825 series switches are a new generation of high-performance, high-density 400GE Ethernet switches launched by H3C for data centers. Provides high-density 400GE 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.

The S9825 switch series includes one model:

- H3C S9825-64D: Supports 64 400G QSFP-DD ports



## Features and Benefits

### 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.

## Hardware Specification

Item	S9825-64D
Dimensions (H × W × D)	175 × 440 × 760 mm (6.89 × 17.32 × 29.92 in)
Weight(Full loaded)	LS-9825-64D: ≤ 37 kg (81.57 lb) LS-9825-64D-H1: ≤ 38.4 kg (84.66 lb)
Serial console port	1
Out-of-band management port	1
USB port	1
QSFP-DD port	64
CPU	2.9GHz@4core
Flash/SDRAM	240G/16G
Latency	<1μs
Switching capacity	51.2Tbps
Forwarding capacity	10398.8Mpps
Buffer(byte)	56M
Power module slot	4
Fan tray slot	LS-9825-64D: 6 LS-9825-64D-H1: 8
Air flow direction	From front to rear
Minimum power consumption	LS-9825-64D:

	<ul style="list-style-type: none"> <li>· Dual AC inputs: 243 W</li> <li>· Four AC inputs: 251 W</li> </ul>
	LS-9825-64D-H1: <ul style="list-style-type: none"> <li>· Dual AC inputs: 247 W</li> <li>· Four AC inputs: 256 W</li> </ul>
Typical power consumption	LS-9825-64D: <ul style="list-style-type: none"> <li>· Dual AC inputs: 613 W</li> <li>· Four AC inputs: 630 W</li> </ul> LS-9825-64D-H1: <ul style="list-style-type: none"> <li>· Dual AC inputs: 650 W</li> <li>· Four AC inputs: 680 W</li> </ul>
Maximum power consumption	LS-9825-64D: <ul style="list-style-type: none"> <li>· Dual AC inputs: 1852 W</li> <li>· Four AC inputs: 1855 W</li> </ul> LS-9825-64D-H1: <ul style="list-style-type: none"> <li>· Dual AC inputs: 2500 W</li> <li>· Four AC inputs: 2500 W</li> </ul>
Operating temperature	0°C to 40°C
Operating humidity	5% to 95%, noncondensing
MTBF(year)	50.1
MTTR(hour)	<0.5

## Software Specification

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



Item	Specification
IPv6 routing	OSPFv3
	IPv6 ISIS
	BGP4+
	Routing policy
	VRRP
Reliability	PBR
	LACP
	STP/RSTP/MSTP protocol
	STP Root Guard and BPDU Guard
	BFD for OSPF/OSPFv3, BGP/BGP4, IS-IS/IS-ISv6 and Static route
QOS	VRRP and VRRPE
	Weighted Random Early Detection (WRED) and tail drop
	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.
	Traffic shaping
	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.
Telemetry	Committed access rate (CAR)
	Account by packet and byte
	COPP
	gRPC
	ERSPAN
Security and management	Mirror on drop
	Telemetry Stream
	INT
	Packet capture
	Console telnet and SSH terminals
Safety	SNMPv1/v2/v3
	ZTP
	System log
	File upload and download via FTP/TFTP, BootRom update and remote update
	NQA
	ping,tracert
	NTP
	Hierarchical management and password protection of users
	SSH 2.0
	HTTPS
Boot ROM access control (password recovery)	
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	



Item	Specification
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

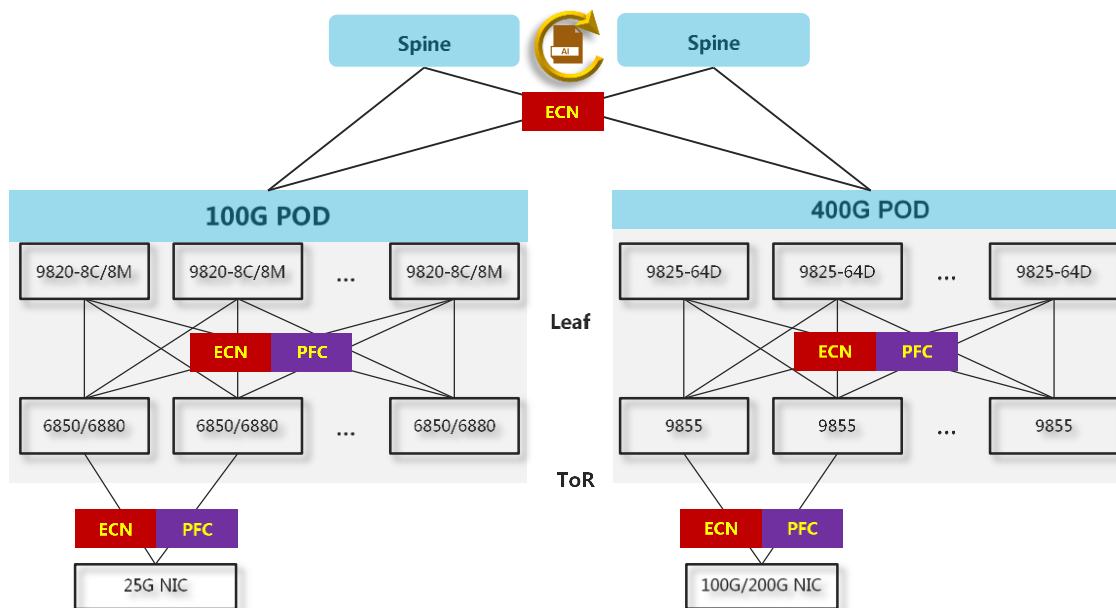
## Performance and scalability

Item	Description	
<b>Virtualization</b>	M-LAG device number	2
<b>ACL</b>	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
<b>Forwarding table</b>	Jumbo frame length(byte)	9216
	Mirroring group	4
	max number of MACs per switch	8K
	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	
<b>Interface</b>	Loopback interface number	1K
	L3 sub interface number	4K
	SVI interface number	4K
	VLAN number	4094
<b>Performance</b>	RIB	4M
	MSTP instance	64
	VRRP VRID	255
	VRRP group	4096
	NQA group	32
<b>Static table</b>	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



## Data Center Application

The typical data center application for S9825 is ROCE scenarios.



## Order information

PID	Description
S9825-64D	H3C S9825-64D L3 Ethernet Switch
<b>Power</b>	
PSR1600C-12A-B	1600W AC Power Supply Module (Power Panel Side Exhaust Airflow)
<b>Fan</b>	
FAN-80B-1-B	Fan Module (Fan Panel Side Exhaust Airflow)
<b>Transceiver</b>	
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)
<b>Cable</b>	
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
QSFPDD-400G-D-CAB-2M	400G QSFPDD to 400G QSFPDD 2m Passive Cable



The Leader in Digital Solutions

## **New H3C Technologies Co., Limited**

### Beijing Headquarters

Tower 1, LSH Center, 8 Guangshun South Street, Chaoyang

District, Beijing, China

Zip: 100102

### Hangzhou Headquarters

No.466 Changhe Road, Binjiang District, Hangzhou, Zhejiang,

China

Zip: 310052

Tel: +86-571-86760000

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