H3C S6530X Series 25GE Switches Datasheet

Release Date: Oct, 2022

New H3C Technologies Co., Limited

Product overview

H3C S6530X series switches provide industry-leading high performance and scalable 25GE access switching solution with modular dual power, fixed uplinks (40GE/100GE) and IRF for resiliency. The series offers OSPF/BGP and multicast, SDN enabled and flexible management.

The S6530X switch series contains the following models:

- S6530X-24Y8C: 24×SFP28 Ports, 8×QSFP28 Ports, 5×fan tray slots, and 2×power module slots.
- S6530X-48Y8C: 48×SFP28 Ports, 8×QSFP28 Ports, 5×fan tray slots, and 2×power module slots.

S6530X-24Y8C

S6530X-48Y8C

Features and benefits

High-density 25GE forwarding

The switch offers high-density 25GE forwarding. It provides powerful hardware forwarding capacity and abundant campus features. It provides up to 48/24*1GE/10GE/25GE autosensing SFP28 ports and 8*100G ports. The switch supports modular power modules and fan trays. By using different fan trays, the switch can provide field changeable airflows.

Embedded Access Controller

H3C S6530X implements the WLAN function by installing an AC feature pack on the main control unit, thereby implementing both the wired function and the WLAN function on a single device. Embedded AC is a low-cost WLAN solution, save overall investment, improve forwarding capacity, realized a true unified wired and wireless solution in Campus. Max 2K AP supported on one single switches.

H3C Intelligent Resilient Framework 2 (IRF2)

H3C Intelligent Resilient Framework 2 (IRF 2) virtualizes multiple S6530X switches into one virtual switch and provides the following benefits:

- **Scalability**—IRF 2 allows you to add devices to the IRF 2 system easily. It provides a single point of management, enables switch plug-and-play, and supports software auto-update for software synchronization from the master to the new member devices. It brings business agility with lower total cost of ownership by allowing new switches to be added to the fabric without network topology change as business grows.
- **High availability**—The H3C proprietary routing hot backup technology ensures redundancy and backup of all information on the control and data planes and non-stop Layer 3 data forwarding in an IRF 2 fabric. It also eliminates single point of failure and ensures service continuity.
- **Redundancy and load balancing**—The distributed link aggregation technology supports load sharing and mutual backup among multiple uplinks, which enhances the network redundancy and improves link resources usage.
- **Flexibility and resiliency**—The switch uses standard GE ports instead of specialized ports for IRF links between IRF member devices. This allows customers to assign bandwidth as needed between uplink, downlink, and IRF system connections. In addition, an S6530X IRF fabric can span a rack, multiple racks, or multiple campuses.

Wide range of advanced features

The switch offers a wide range of features, including:

- **Modular hardware and software design**: The switch uses modular, hot swapping, and redundancy design for hardware, including power modules and fan trays. The switch also uses modular design for software, which enables feature installation and removal on an as-needed basis. Refined physical architecture and optimized software workflows greatly reduce the end-to-end packet processing delay.
- **Software-defined networking (SDN)**: An innovative network architecture that separates the control plane from the forwarding plane, typically by using OpenFlow. SDN significantly simplifies network management, reduces maintenance complexities and costs, enables flexible traffic management, and offers a good platform for network and application innovations.
- **Virtual eXtensible LAN (VXLAN)**: A MAC-in-UDP technology that provides Layer 2 connectivity between distant network sites across an IP network. VXLAN enables long-distance virtual machine and data mobility and is typically used in data centers and the access layer of campus networks for multitenant services. The H3C implementation of VXLAN supports automatic VXLAN tunnel establishment with EVPN.
- **Ethernet Virtual Private Network (EVPN)** is a Layer 2 VPN technology that provides both Layer 2 and Layer 3 connectivity between distant network sites across an IP network. EVPN uses MP-BGP in the control plane and VXLAN in the data plane. EVPN provides the following benefits: Configuration automation; Separation of the control plane and the data plane; Integrated routing and bridging (IRB).
- **In-Service Software Upgrade (ISSU)** and Operation, Administration, and Maintenance (OAM)—Ensure business continuity and improve Ethernet management and maintainability.

Comprehensive security control policies

The switch supports AAA authentications (including RADIUS authentication) and dynamic or static binding of user identifiers such as user account, IP address, MAC address, VLAN, and port number. Using the switch in conjunction with H3C IMC, you can manage and monitor online users in real time and take prompt action on illegitimate behaviors.

The switch offers a large number of inbound and outbound ACLs and VLAN-based ACL assignment. This simplifies configurations and saves ACL resources.

MACsec

MACsec is an ideal hop-by-hop link-layer security protocol for Ethernet networks, which are typically insecure. It provides the following services:

- **Data encryption**: Encrypts data over the Ethernet link to protect data against security issues such as eavesdropping.
- **Anti-replay**: Prevents packets from being intercepted and modified on the route to protect the network

against unauthorized access.

- **Tampering protection**: prevents packet tampering to protect data integrity.

MACsec supports the following deployments:

- **Client-oriented**: Protects data transmission over the link between the client and its access device.
- **Device-oriented mode**: Protects data transmission over the link between two peering devices.

The switch can cooperate with H3C iNode client and core switches such as S10500X-G and S7500X-G to provide a complete MACsec solution.

High availability

In addition to node and link protection, the switch offers the following hardware high availability features:

- 1+1 power module redundancy and 5 fan tray redundancy.
- Automatic power and fan tray status monitoring and alarming mechanisms.
- Automatic fan speed adjustment based on the change in temperature.
- Self-protection mechanisms that protect power modules against overcurrent, overvoltage, and overtemperature conditions.

Outstanding management capacity

The switch provides a variety of management features and is easy to manage. It offers the following device management features:

- Provides multiple management interfaces, including the console port, out-of-band management Ethernet port, and USB port.
- Supports configuration and management from CLI or H3C IMC Intelligent Management Center.
- Supports multiple access methods, including SNMPv1/v2/v3, Telnet, and more secure SSH 2.0 and SSL.
- Uses OAM to enhance system management capability.
- Supports FTP for system upgrade.

Smart Management Center (SmartMC)

SmartMC is H3C's latest offering and innovation that helps small and middle size enterprise network to address management issue and is free of charge, easy to use web management tool. SmartMC is embedded

network management tool into the switch, it includes commander switches and other access switches.

SmartMC delivers the following benefits:

- Intelligent operation: once the switch is powered on and SmartMC function is enabled, topology will be created automatically, and user can go enhanced web GUI to check the latest status.
- Centralized management: all management can be achieved via commander switch such as centralized configuration backup, and software version management, increasing working efficiency.
- One key device replacement: in case of one switch failure, the new added same type switch can download the same configuration and work as old switch immediately

Multichassis Link Aggregation Group (M-LAG)

H3C S6550X switch series support M-LAG, which enables links of multiple switches to aggregate into one to implement device-level link backup. M-LAG is applicable to servers dual-homed to a pair of access devices for node redundancy.

- Streamlined topology: M-LAG 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.

Visualization ability

H3C S6530X series switches support Telemetry technology, which can send the switch's real-time resource information and alarm information to the O&M platform through the gRPC protocol.

The platform can realize network quality backtracking, troubleshooting, risk early warning, architecture optimization and other functions to accurately guarantee user experience by analyzing real-time data.

Technical specifications

Item	S6530X-24Y8C	S6530X-48Y8C
CPU	Quad core, 2GHz	
Flash/SDRAM	4GB/4GB	
Packet Buffer	36M	
Box Switching capacity	4Tbps	

Item	S6530X-24Y8C	S6530X-48Y8C
Port Switching capacity	2.8Tbps	4Tbps
Packet forwarding rate	1024Mpps	
Dimensions (H × W × D)	43.6 × 440 × 400 mm (1.72 × 17.32 × 15.75 in)	
Weight	≤ 10 kg	≤ 10 kg
Console ports	1	
Management Ethernet ports	1	
USB ports	1	
SFP25	24	48
QSFP28	8	8
Stacking bandwidth	Maximum 800 Gbps	
Maximum stacking num	4	
Input voltage range	Rated: 100 VAC to 240 VAC @ 50 Hz/60 Hz Max.: 90 VAC to 264 VAC @ 47 Hz to 63 Hz Rated voltage range: –48 to –60 VDC Max voltage range: –36 to –72 VDC	
Power supply slots	2	
Fan trays	5 hot swappable fan trays, invertible airflow	
Power consumption	MIN: Single AC: 78W; Dual AC: 84W MAX: Single AC: 186W. Dual AC: 188W	MIN: Single AC: 88W; Dual AC: 94W MAX: Single AC: 206W. Dual AC: 208W
Operating temperature	0ºC to 45ºC (32°F to 113°F) -60m-5000m altitude: From 0m, the maximum operating temperature reduce by 0.33℃ for every time 100 the altitude increases by 100m.	
Storage temperature	-40℃ to 70℃(-40℉ to 158℉)	
Operating & storage humidity	5% RH to 95% RH, non-condensing	
MTBF(Year)	60.8	60.2
MTTR(Hour)	1	1

Item	S6530X-24Y8C	S6530X-48Y8C
VXLAN	VXLAN Layer 2 switching VXLAN routing switching VXLAN gateway Centralized VXLAN control through OpenFlow+Netconf	
Virtualization	Intelligent Resilient Framework 2 (IRF2) Distributed device management Distributed link aggregation Distributed resilient routing Stacking through standard Ethernet ports Local device stacking and remote device stacking LACP-, BFD-, and ARP-based multi-active detection (MAD)	
Link aggregation	10GE/40GE/100GE port aggregation Static aggregation Dynamic aggregation	
Jumbo frame	Supported	
MAC address table	Max. 576K MAC address entries Static MAC address Blackhole MAC address MAC learning limit	
Openflow	Openflow1.3	
VLAN	Port-based VLAN (up to 4094 VLANs) Default VLAN QinQ and flexible QinQ VLAN mapping PVST+ and RPVST+	
Traffic monitoring	sFLOW	
LLDP	LLDP/LLDP-MED	
DHCP	DHCP client DHCP snooping DHCP relay	

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	DHCP server DHCP snooping Option 82/DHCP relay Option 82	
ARP	Max. 78K ARP Static entry Gratuitous ARP Common proxy ARP and local proxy ARP Dynamic ARP inspection ARP anti-attack ARP source suppression ARP detection based on DHCP snooping safety entries, 802.1X entries, and IP/MAC static binding entries	
Routing	Max. 768K IPV4 routing entries Max. 64K IPV6 routing entries IPv4/IPv6 static routing Dynamic routing such as RIP v1/2 and RIPng Policy routing Equal-cost multi-path routing (ECMP) VRRP OSPFv1/v2/v3 BGP IS-IS	
IPv6	Neighbor Discovery (ND) PMTU ICMP v6, Telnet v6, SFTP v6, SNMP v6, BFD v6, VRRP v3 IPv6 Portal IPv6 tunnel IPV6 SAVI	
Multicast	IGMP Snooping v2/v3 IGMP Snooping fast-leave IGMP Snooping group-policy	

Item	S6530X-24Y8C	S6530X-48Y8C
	PIM-SM and PIM-SSM PIM snooping MVRP (GVRP analog) MFF Enhanced Layer 3 multicast	
MPLS	Support MPLS Support MCE Support MPLS VPN, VPLS	
Zero configuration	DHCP auto-config CWMP-TR069	
Broadcast/Multicast/Unicast storm suppression	Storm suppression based on port bandwidth percentage Storm suppression based on PPS Storm suppression based on BPS	
Loop-free redundant Layer 2 topology	STP/RSTP/MSTP STP Root Guard BPDU Guard BPDU Blocking and Root Guard Link Detection (UDLD) Digital Diagnostic Monitor (DDM) G.8032 Ethernet ring protection switching (ERPS)	
QoS/ACL	Rate limit for receiving and transmitting packets CAR Eight output queues per port Flexible queue scheduling algorithms based on both port and queue, including SP, WDRR, WRR, WFQ, and SP+WRR 802.1p priority and DSCP priority Layer 2 to Layer 4 packet filtering Traffic classification based on source MAC, destination MAC, source IP, destination IP, port, protocol, and VLAN Time range WRED	

Item	S6530X-24Y8C	S6530X-48Y8C
Mirroring	Flow mirroring N:4 port mirroring Local port mirroring and remote port mirroring Policy-based Mirroring Traffic Mirroring	
Security	Hierarchical user management and password protection MAC-based authentication 802.1X Storm constrain AAA authentication RADIUS authentication HWTACACS SSH2.0 Port isolation IP/Port/MAC binding IP source guard HTTPs SSL Public Key Infrastructure (PKI) CPU protection Control Plane Protection (CoPP), Wireless Intrusion Prevention System (WIPS)	
IEEE	IEEE 802.3x IEEE 802.3ad IEEE 802.3bz IEEE 802.1p IEEE 802.1x IEEE 802.1q IEEE 802.1d IEEE 802.1w IEEE 802.1s	

Item	S6530X-24Y8C	S6530X-48Y8C
Loading and upgrading	Loading and upgrading through XMODEM/FTP/TFTP Loading and upgrading from USB	
Management and maintenance	Configuration from CLI Login through Telnet, and the console port Job scheduler ISSU VCT 802.1ag and 802.3ah Simple Network Management Protocol (SNMP) IMC network management system System log Alarming based on severity NTP Power, fan, and temperature alarming Debugging information output Ping and Tracert Track Telnet-based remote maintenance	
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 GB/T 9254 YD/T 993	

Item	S6530X-24Y8C	S6530X-48Y8C
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	

Ordering Information

Product ID	Product Description
LS-6530X-24Y8C	H3C S6530X-24Y8C L3 Ethernet Switch with 24*SFP28 Ports,8*QSFP28 Ports, Without Power Supplies
LS-6530X-48Y8C	H3C S6530X-48Y8C L3 Ethernet Switch with 48*SFP28 Ports,8*QSFP28 Ports, Without Power Supplies
PSR250-12A	250W AC Power Supply Module (Power Panel Side Intake Airflow)
PSR250-12A1	250W AC Power Supply Module (Power Panel Side Exhaust Airflow)
PSR450-12D	450W DC Power Supply Module (Power Panel Side Exhaust Airflow)
LSPM1FANSB-SN	H3C Fan Module (Fan Panel Side Exhaust Airflow)
LSPM1FANSA-SN	H3C Fan Module (Fan Panel Side Intake Airflow)
SFP-GE-SX-MM850-A	Optical Module -SFP-GE - Multimode Module- (850nm,0.55km,LC)
SFP-GE-LX-SM1310-A	Optical Module-SFP-GE-Single Mode Module-(1310nm,10km,LC)
SFP-GE-LH40-SM1310	Optical Module-SFP-GE-Single Mode Module-(1310nm,40km,LC)
SFP-GE-LH40-SM1550	Optical Module -SFP-GE- Single Mode Module- (1550nm,40km,LC)
SFP-GE-LH80-SM1550	Optical Module -SFP-GE- Single Mode Module- (1550nm,80km,LC)
SFP-GE-LH100-SM1550	Optical Module-SFP-GE-Single Mode Module-(1550nm,100km,LC)
SFP-GE-LX-SM1310-BIDI	Optical Module-SFP Gigabit BIDI Optical Module-TX1310/RX1490,10km,LC
SFP-GE-LX-SM1490-BIDI	Optical Module-SFP Gigabit BIDI Optical Module-TX1490/RX1310,10km,LC
SFP-GE-T	SFP GE electrical port module (100m, RJ45)
SFP-GE-TD	Electrical Module-SFP-GE-(RJ45)
SFP-GE-LH40-SM1310-D	Optical Module-SFP-GE-Single Mode Module-(1310nm,40km,LC)
SFP-GE-LH80-SM1550-D	Optical Module-SFP-GE-Single Mode Module-(1550nm,80km,LC)

SFP-GE-LX-SM1310-D	Optical Module-SFP-GE-Single Mode Module-(1310nm,10km,LC)
SFP-GE-SX-MM850-D	Optical Module-SFP-GE- Multimode Module-(850nm,0.55km,LC)
SFP-GE-LH40-SM1310-BIDI	SFP Gigabit BIDI Optical Module (TX1310/RX1550nm, 40km, LC)
SFP-GE-LH40-SM1550-BIDI	SFP Gigabit BIDI Optical Module (TX1550/RX1310nm, 40km, LC)
SFP-XG-SX-MM850-A	SFP+ 10 Gigabit Module (850nm, 300m, LC)
SFP-XG-LX-SM1310	SFP+ 10 Gigabit Module (1310nm, 10km, LC)
SFP-XG-LH40-SM1550	SFP+ 10 Gigabit Module (1550nm, 40km, LC)
SFP-XG-LH80-SM1550	SFP+ 10 Gigabit Module (1550nm, 80km, LC)
SFP-XG-LX-SM1310-E	SFP+ 10 Gigabit Module (1310nm, 10km, LC)
SFP-XG-SX-MM850-E	SFP+ 10 Gigabit Module (850nm, 300m, LC)
SFP-XG-LH40-SM1550-D	SFP+ 10 Gigabit Module (1550nm, 40km, LC)
SFP-XG-LX-SM1310-D	SFP+ 10 Gigabit Module (1310nm, 10km, LC)
SFP-XG-SX-MM850-D	SFP+ 10 Gigabit Module (850nm, 300m, LC)
SFP-XG-LH80-SM1550-D	SFP+ 10 Gigabit Module (1550nm, 80km, LC)
LSTM2STK	SFP+ cable 7m
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-SR-MM850	25G SFP28 optical module (850nm, 100m, SR, MM, LC)
SFP-25G-LR-SM1310	25G SFP28 optical module (1310nm, 10km, LR, SM, LC)
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
SFP-25G-D-CAB-5M	25G SFP28 to 25G SFP28 5m passive cable
QSFP-40G-LR4-WDM1300	QSFP+ 40G Optical Module (1310nm, 10km, LR4, LC)
QSFP-40G-BIDI-SR-MM850	QSFP+ 40G BIDI Optical Module (850nm, 100m, SR)
QSFP-40G-LR4L-WDM1300	QSFP+ 40G Optical Module (1310nm, 2km, LR4L, LC)
LSWM1QSTK0	40G QSFP+ 1m cable

LSWM1QSTK1	40G QSFP+ 3m cable
LSWM1QSTK2	40G QSFP+ 5m cable
QSFP-40G-D-AOC-7M	40G QSFP+ to 40G QSFP+7m AOC
QSFP-40G-D-AOC-20M	40G QSFP+ to 40G QSFP+20m AOC
QSFP-100G-LR4L-WDM1300	100G QSFP28 optical module (1310nm, 2km, LR4L, CWDM4, LC)
QSFP-100G-eSR4-MM850	100G QSFP28 optical module (850nm, 300m OM4, eSR4, MPO)
QSFP-100G-SR4-MM850	100G QSFP28 optical module (850nm, 100m OM4, SR4, MPO)
QSFP-100G-LR4-WDM1300	100G QSFP28 optical module (1310nm, 10km, LR4, WDM, LC)
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 (Need be tested)
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
LSV-SL-S5830	Slide, slide assembly-HH3C4.150.0232MX-1U long slide-H3C S5830-52C-0-408mm
LSW-SL-A	Slide, slide assembly-HH3C4.150.0529MX-1U ultra-short slide-H3C S6820-56HF-0-117mm
CAB-CON-1.8m	Single cable-configured serial cable-1.8m-(D9 female)-(28UL20276(4P)(P296U))-(network port plug-8P8C)
CAB-Console-1.8m-W31R	Single Cable-Configuration Port Cable-1.8m-(RJ45P 8/8P)-(UL2725(3C28AWG)Black)-(USB AP 4P+PCBA)

The Leader in Digital Solutions

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