H3C S6520X-SI/S6520X-EI/S6520X-HI Series Intelligent 10GE Switch
Performance Evaluation and Feature Validation
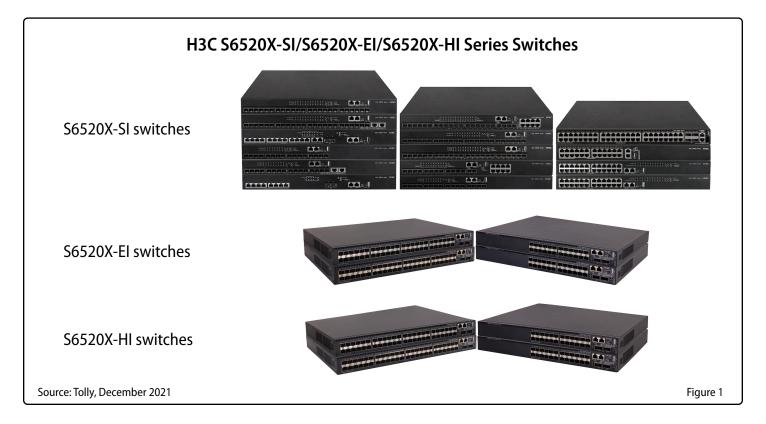
Executive Summary

H3C S6520X Switch Series —Industry-leading high performance and scalable 10GE access switching solution with modular dual power, fixed or modular uplinks (10GE/40GE/100GE) and IRF for resiliency. The S6520X series offers OSPF/BGP, multicast, SDN capability and flexible management.

Some S6520X Series switch models can integrate wireless access controller functions to achieve wireless/wired local forwarding at the access layer, eliminate wireless control bandwidth bottlenecks, expand wireless deployment scale, and save user investment costs.

The S6520X-SI Series Ethernet Switches provide 10M/100M/1000M/2.5G/5G/10GBase-T adaptive Ethernet ports or 10GE SFP+ optical ports, and support 10GBase-T Ethernet ports, 10GE SFP+ optical ports, 25GE SFP28 optical ports, 40GE QSFP+, 100GE QSFP28 optical ports through modular cards. In the enterprise network, it can be used as an access device to provide GE/2.5GE/5GE/10GE to desktop endpoints, or as the core of small and medium-sized enterprises; in Metro networks or industry networks, it can provide GE/10GE access to end users or connect low-end switches, and can provide uplink aggregation to the core switch through 10GE or 40GE fiber or link aggregation.

H3C commissioned Tolly to evaluate S6520X aggregation switch's performance, capacity and features.

H3C S6520X-SI/S6520X-EI/S6520X-HI Series Switches

S6520X-SI switches

S6520X-EI switches

S6520X-HI switches

Source: Tolly, December 2021

Figure 1

Test Results

Tolly engineers tested functions and performance of the H3C S6520X-SI, S6520X-EI and S6520X-HI series switches (hereinafter referred to as the S6520X-SI, S6520X-EI and S6520X-HI.) Test results apply to all H3C S6520X-SI, S6520X-EI and S6520X-HI models. For a summary of the performance test cases, refer to Table 1 to Table 6 on Page 2 to Page 7. For a summary of the feature test cases, refer to Table 7 to Table 11 on Page 14 to Page 18. Test results are as follows.

Performance

Port Performance

Tolly engineers evaluated the port performance of each S6520X-SI, S6520X-EI and S6520X-HI switch model using the RFC2544 test in Spirent TestCenter.

Please see Table 1 to 3 for detailed port performance results of each switch model.

New H3C Technologies Co., Ltd.

S6520X-SI/
S6520X-EI/
S6520X-HI Series Switch

Performance Evaluation and Feature Validation

Tested December 2021

H3C S6520X-EI/S6520X-HI Series Switch Port Performance (Percentage of Line-rate)
(as reported by Spirent TestCenter)

Switch Model	Frame Size	64-Byte	128-Byte	256-Byte	512-Byte	1024-Byte	1280-Byte	1518-Byte	9216-Byte
S6520X-30QC-EI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
	40GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-54QC-EI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
	40GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-30QC-HI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
	40GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-54QC-HI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
	40GE ports	100%	100%	100%	100%	100%	100%	100%	100%

Note: Port performance was tested using two ports of the same type (two 10GE ports or two 40GE ports) with bidirectional traffic.

Source: Tolly, December 2021   Table 1

H3C S6520X-EI/S6520X-HI Series Switch Port Performance (Percentage of Line-rate)
(as reported by Spirent TestCenter)

Switch Model	Frame Size	64-Byte	128-Byte	256-Byte	512-Byte	1024-Byte	1280-Byte	1518-Byte	9216-Byte
S6520X-30HC-EI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
	100GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-54HC-EI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
	100GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-30HC-HI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
	100GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-54HC-HI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
	100GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-30HF-EI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
	100GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-54HF-EI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
	100GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-30HF-HI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
	100GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-54HF-HI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
	100GE ports	100%	100%	100%	100%	100%	100%	100%	100%

Note: Port performance was tested using two ports of the same type (two 10GE ports or two 100GE ports) with bidirectional traffic.

Source: Tolly, December 2021   Table 2

H3C S6520X-SI Series Switch Port Performance (Percentage of Line-rate)
(as reported by Spirent TestCenter)

Switch Model	Frame Size	64-Byte	128-Byte	256-Byte	512-Byte	1024-Byte	1280-Byte	1518-Byte	9216-Byte
S6520-16S-SI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520-24S-SI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-18C-SI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-26C-SI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-16ST-SI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-24ST-SI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-26MC-SI	Multi-GE Ports (in 5GE mode)	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-26MC-UPWR-SI	Multi-GE Ports (in 5GE mode)	99.83%	99.83%	99.83%	99.83%	99.83%	99.83%	99.83%	99.83%
S6520-22SG-SI	GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520-22SG-SI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520-30SG-SI	GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520-30SG-SI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-26XC-UPWR-SI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-54XC-UPWR-SI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-54XC-UPWR-SI	40GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-10XT-SI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520X-16XT-SI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520-26Q-SI	10GE ports	100%	100%	100%	100%	100%	100%	100%	100%
S6520-26Q-SI	40GE ports	100%	100%	100%	100%	100%	100%	100%	100%

Note: Port performance was tested using two ports of the same type (two GE ports, or two Multi-GE ports, or two 10GE ports, or two 40GE ports) with bidirectional traffic.

Source: Tolly, December 2021   Table 3

Latency

Tolly engineers evaluated latency between two ports on each S6520X-SI, S6520X-EI and S6520X-HI switch model. Please see Table 4 to 6 for detailed results.

H3C S6520X-EI/S6520X-HI Series Switch Latency (μs)
Port-to-port, LIFO (last-in-first-out) latency type
(as reported by Spirent TestCenter)

Switch Model	Frame Size	64-Byte	128-Byte	256-Byte	512-Byte	1024-Byte	1280-Byte	1518-Byte	9216-Byte
S6520X-30QC-EI	10GE ports	1.98	2.02	2.02	2.02	2.27	2.27	2.25	2.24
	40GE ports	1.73	1.74	1.74	1.74	1.74	1.74	1.78	1.87
S6520X-54QC-EI	10GE ports	2.00	2.04	2.05	2.05	2.28	2.28	2.29	2.28
	40GE ports	1.74	1.74	1.74	1.74	1.74	1.74	1.79	1.87
S6520X-30QC-HI	10GE ports	1.99	2.04	2.04	2.04	2.28	2.27	2.27	2.27
	40GE ports	1.74	1.75	1.75	1.75	1.74	1.74	1.78	1.88
S6520X-54QC-HI	10GE ports	1.94	2.04	2.04	2.04	2.29	2.28	2.26	2.27
	40GE ports	1.74	1.75	1.74	1.75	1.75	1.75	1.78	1.87

Note: 100% line-rate traffic between two ports were used as the test traffic to evaluate the latency between the two ports.

Source: Tolly, December 2021 · · · Table 4

Tolly.

H3C S6520X-EI/S6520X-HI Series Switch Latency (μs)
Port-to-port, LIFO (last-in-first-out) latency type
(as reported by Spirent TestCenter)

Switch Model	Frame Size	64-Byte	128-Byte	256-Byte	512-Byte	1024-Byte	1280-Byte	1518-Byte	9216-Byte
S6520X-30HC-EI	10GE ports	1.99	2.03	2.03	2.03	2.27	2.27	2.27	2.26
	100GE ports	1.91	1.92	1.93	1.94	1.93	1.93	1.94	2.01
S6520X-54HC-EI	10GE ports	2.07	2.11	2.12	2.12	2.35	2.35	2.35	2.34
	100GE ports	1.90	1.90	1.91	1.92	1.91	1.91	1.92	2.00
S6520X-30HC-HI	10GE ports	1.98	2.02	2.03	2.03	2.27	2.27	2.27	2.26
	100GE ports	1.90	1.90	1.91	1.92	1.91	1.91	1.92	2.00
S6520X-54HC-HI	10GE ports	2.00	2.04	2.05	2.04	2.30	2.29	2.30	2.28
	100GE ports	1.89	1.90	1.91	1.91	1.90	1.91	1.91	1.99
S6520X-30HF-EI	10GE ports	1.87	1.91	1.92	1.92	2.02	2.02	2.03	2.02
	100GE ports	1.78	1.78	1.79	1.80	1.79	1.80	1.80	1.81
S6520X-54HF-EI	10GE ports	2.01	2.05	2.06	2.06	2.30	2.29	2.30	2.29
	100GE ports	1.90	1.90	1.91	1.92	1.91	1.92	1.92	2.00
S6520X-30HF-HI	10GE ports	2.01	2.05	2.06	2.06	2.30	2.29	2.30	2.29
	100GE ports	1.90	1.90	1.91	1.92	1.91	1.92	1.92	2.00
S6520X-54HF-HI	10GE ports	1.96	2.00	2.01	2.01	2.26	2.25	2.27	2.26
	100GE ports	1.90	1.91	1.92	1.93	1.92	1.92	1.93	2.00

Note: 100% line-rate traffic between two ports were used as the test traffic to evaluate the latency between the two ports.

Source: Tolly, December 2021

Table 5

H3C S6520X-SI Series Switch Latency (µs)
Port-to-port, LIFO (last-in-first-out) latency type
(as reported by Spirent TestCenter)

Switch Model	Frame Size	64-Byte	128-Byte	256-Byte	512-Byte	1024-Byte	1280-Byte	1518-Byte	9216-Byte
S6520-16S-SI	10GE ports	2.00	2.03	2.04	2.03	2.03	2.02	2.03	2.02
S6520-24S-SI	10GE ports	2.00	2.03	2.03	2.03	2.03	2.02	2.03	2.02
S6520X-18C-SI	10GE ports	1.98	2.02	2.02	2.02	2.02	2.01	2.02	2.03
S6520X-26C-SI	10GE ports	2.00	2.04	2.04	2.04	2.03	2.03	2.04	2.05
S6520X-16ST-SI	10GE ports	1.99	2.03	2.03	2.03	2.03	2.02	2.03	2.02
S6520X-24ST-SI	10GE ports	1.99	2.01	2.03	2.02	2.01	2.01	2.01	2.00
S6520X-26MC-SI	Multi-GE Ports (in 5GE mode)	6.21	6.25	6.24	6.24	6.24	6.24	6.24	6.22
S6520X-26MC-UPWR-SI	Multi-GE Ports (in 5GE mode)	4.23	4.32	4.42	4.62	5.03	5.23	5.42	9.14
S6520-22SG-SI	GE ports	3.82	3.84	3.84	3.84	3.83	3.82	3.84	3.82
S6520-22SG-SI	10GE ports	1.98	2.04	2.04	2.04	2.03	2.03	2.03	2.03
S6520-30SG-SI	GE ports	4.19	4.20	4.20	4.19	4.19	4.19	4.20	4.18
S6520-30SG-SI	10GE ports	1.99	2.03	2.04	2.03	2.03	2.02	2.03	2.02
S6520X-26XC-UPWR-SI	10GE ports	3.57	3.59	3.60	3.59	3.59	3.58	3.59	3.58
S6520X-54XC-UPWR-SI	10GE ports	3.40	3.44	3.44	3.44	3.55	3.55	3.55	3.54
S6520X-54XC-UPWR-SI	40GE ports	1.63	1.63	1.63	1.63	1.63	1.63	1.64	1.65
S6520X-10XT-SI	10GE ports	3.50	3.55	3.55	3.55	3.55	3.55	3.55	3.53
S6520X-16XT-SI	10GE ports	3.51	3.54	3.54	3.54	3.54	3.54	3.54	3.53
S6520-26Q-SI	10GE ports	1.99	2.04	2.04	2.04	2.03	2.03	2.02	2.01
S6520-26Q-SI	40GE ports	1.82	1.83	1.82	1.82	1.83	1.82	1.82	1.82

Note: 100% line-rate traffic between two ports were used as the test traffic to evaluate the latency between the two ports on all switch models other than S6520X-26MC-UPWR-SI. For S6520X-26MC-UPWR-SI, 99.83% line-rate traffic was used.

Source: Tolly, December 2021   Table 6

IRF Stack

Intelligent Resilient Framework (IRF) is H3C's stacking technology to stack multiple switches into one for management and forwarding with high availability.

IRF Stacking Bandwidth

With up to 6*40GE links as the stacking links between two S6520X-SI switches, the stack supports up to 240Gbps stacking bandwidth.

Because of the stacking overhead on packets, the stack with two S6520X-54XC-UPWR-SI supported up to 461.7Gbps bidirectional aggregated stacking throughput in the test;

With 5*100GE links as the stacking links between two S6520X-EI/S6520X-HI switches, the stack supports 500Gbps stacking bandwidth.

Because of the stacking overhead on packets, the stack with two S6520X-54HC-EI supported up to 936Gbps bidirectional aggregated stacking throughput in the test; the stack with two S6520X-54HF-EI supported up to 936Gbps bidirectional aggregated stacking throughput in the test; the stack with two S6520X-54HC-HI supported up to 936Gbps bidirectional aggregated stacking throughput in the test; the stack with two S6520X-54HF-HI supported up to 933Gbps bidirectional aggregated stacking throughput in the test.

Load Balancing

In an IRF stack with S6520X-SI/S6520X-EI/S6520X-HI switches, the stacking links support load balancing for the traffic between IRF members.

Single-point Management

Administrators can connect to any one of the stack members to manage the entire stack of S6520X-SI/S6520X-EI/S6520X-HI switches.

Layer 2 Features

STP/RSTP/MSTP/PVST

The S6520X-SI/S6520X-EI/S6520X-HI switch supports the Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), Multiple Spanning Tree Protocol (MSTP), and Spanning Tree in Per VLAN Mode (PVST mode.)

ERPS

The S6520X-SI/S6520X-EI/S6520X-HI switch supports the Ethernet Ring Protection Switching (ERPS) protocol with less than 50ms failover time.

RRPP

The S6520X-SI/S6520X-EI/S6520X-HI switch supports the Rapid Ring Protection Protocol (RRPP) with less than 50ms failover time.

Smart Link

The S6520X-SI/S6520X-EI/S6520X-HI switch supports the Smart Link with less than 50ms failover time.

Link Aggregation High Availability

With link aggregation from the IRF stack members to the uplink or downlink device, traffic is load balanced between the IRF members with S6520X-SI/S6520X-EI/S6520X-HI switches. When one IRF member is rebooted or one link in the aggregation group is shutdown, there is 0 packet loss. (Note: The zero loss feature needs to be enabled on the switch.)

VLAN

The S6520X-SI/S6520X-EI/S6520X-HI switch supports 4,094 VLANs.

Layer 3 Features

BFD for VRRP

The S6520X-SI/S6520X-EI/S6520X-HI switch supports BFD for VRRP. With the 3ms BFD sending interval, the traffic failover time is about 13ms when the link to the VRRP master fails.

BFD for IPv4 Routing Protocols

The S6520X-SI/S6520X-EI/S6520X-HI switch supports BFD for IPv4 routing protocols to quickly detect the forwarding path failure with the current active routes and trigger the route and traffic failover.

The failover time for each IPv4 routing protocol in the test is as follows:
BFD for static route: 12.4ms;
BFD for RIP FRR: 14.2ms;
BFD for OSPF FRR LFA: 11.3ms;
BFD for IS-IS FRR LFA: 11.6ms;
BFD for BGP FRR: 14.9ms.

BFD for IPv6 Routing Protocols

The S6520X-SI/S6520X-EI/S6520X-HI switch supports BFD for IPv6 routing protocols to quickly detect the forwarding path failure with the current active routes and trigger the route and traffic failover.

The failover time for each IPv4 routing protocol in the test is as follows:
BFD for static route: 16.3ms;
BFD for RIPng FRR: 13.2ms;
BFD for OSPFv3 FRR LFA: 12.3ms;
BFD for IS-IS IPv6 FRR LFA: 12.2ms;
BFD for BGP4+ FRR: 12.1ms.

OSPF Fast Re-Route (FRR)

The S6520X-SI/S6520X-EI/S6520X-HI switch supports OSPF FRR with less than 20ms failover time.

Policy Route

The S6520X-SI/S6520X-EI/S6520X-HI switch supports policy route.

ECMP

The S6520X-SI/S6520X-EI/S6520X-HI switch supports Equal-cost Multi-path Routing (ECMP.)

IP Fragmentation and Reassembly

The S6520X-SI/S6520X-EI/S6520X-HI switch supports IP fragmentation and reassembly.

Multicast Features

IGMP/MLD Snooping

The S6520X-SI/S6520X-EI/S6520X-HI switch supports IGMP snooping and MLD snooping for Layer 2 multicast.

IPv4 IGMP and PIM

The S6520X-SI/S6520X-EI/S6520X-HI switch supports IPv4 IGMP and PIM multicast routing protocol for IPv4 Layer 3 multicast.

IPv6 MLD and PIM

The S6520X-SI/S6520X-EI/S6520X-HI switch supports IPv6 MLD and PIM multicast routing protocol for IPv6 Layer 3 multicast.

VXLAN

Basic VXLAN Functions

H3C S6520X-SI/S6520X-EI/S6520X-HI supports the VXLAN overlay network which is widely used to build modern campus networks and data center networks.

Tolly engineers verified that H3C S6520X-SI/S6520X-EI/S6520X-HI can provide Layer 2 and Layer 3 endpoint connectivity over the VXLAN overlay network.

EVPN VXLAN with Distributed Gateways

VXLAN with the BGP-EVPN control plane and distributed gateways is the most popular VXLAN implementation with many advantages including high scalability and easy deployment. H3C S6520X-SI/S6520X-EI/S6520X-HI supports EVPN VXLAN with distributed gateways.

S6520X-SI/S6520X-EI/S6520X-HI also supports centralized L3 gateway for traditional VXLAN deployment.

MPLS

MPLS L2VPN/L3VPN

H3C S6520X-SI/S6520X-EI/S6520X-HI supports MPLS L2VPN and MPLS L3VPN to provide Layer 2 and Layer 3 connectivity over the MPLS network;

MPLS BFD

H3C S6520X-SI/S6520X-EI/S6520X-HI supports MPLS BFD to fast detect MPLS L2VPN PW connectivity failures.

Security Features

User Authentication

H3C S6520X-SI/S6520X-EI/S6520X-HI supports 802.1X authentication, MAC authentication, and Web Portal authentication. It also supports triple authentication with all three user authentication methods. Users can use either one of the method to log in to the network.

DHCP Snooping/DHCPv6 Snooping/ND Snooping

H3C S6520X-SI/S6520X-EI/S6520X-HI supports the DHCP snooping feature to make sure that only the DHCP server connected to the trusted port can distribute IPv4 addresses. It also creates the DHCP user-bind table to record the mapping of each client's IPv4 address, MAC address, VLAN and port.

H3C S6520X-SI/S6520X-EI/S6520X-HI also supports DHCPv6 snooping and ND snooping for IPv6.

DHCP Server and DHCPv6 Server

H3C S6520X-SI/S6520X-EI/S6520X-HI supports working as the DHCP server and DHCPv6 server to allocate dynamic IPv4 and IPv6 addresses to DHCP clients.

PPPoE Relay

PPPoE Relay is deployed on the switch that is located between the PPPoE client and the PPPoE server. It binds the user authentication information with the interface information to provide security for PPPoE access.

The S6520X-SI/S6520X-EI/S6520X-HI switch supports PPPoE Relay.

CPU Defend

H3C S6520X-SI/S6520X-EI/S6520X-HI supports CPU defend to limit the rate of certain protocol packets (e.g. ARP) that need to be processed by the device CPU to prevent the CPU from overloading.

Attack Source Tracing

H3C S6520X-SI/S6520X-EI/S6520X-HI supports attack source tracing to identify the attacker and respond with certain actions (interface error down, alarm, etc.)

MFF

MAC-forced Forwarding (MFF) isolates user devices in a broadcast domain at Layer 2. MFF ensures that all traffic, including traffic in the same VLAN, is sent to the gateway, so that the gateway can monitor data traffic and prevent malicious attacks between users. H3C S6520X-SI/S6520X-EI/S6520X-HI supports MFF.

IP Source Guard

H3C S6520X-SI/S6520X-EI/S6520X-HI supports IP source guard to prevent IP address spoofing attacks (unauthorized hosts access and attack the network with forged IP addresses). The device validates IP packets' source IP, source MAC, VLAN ID and interface with the binding table (static or DHCP snooping) for forwarding.

DAI

H3C S6520X-SI/S6520X-EI/S6520X-HI supports Dynamic ARP Inspection (DAI) to prevent man-in-the-middle attacks and theft on authorized users' information. The device validates ARP packets' source IP, source MAC, VLAN ID and interface with the binding table (static or DHCP snooping) for forwarding.

SAVI

With the Source Address Validation Improvements (SAVI) feature, the S6520X-SI/S6520X-EI/S6520X-HI switch is able to check the validity of the source addresses in the Neighbor Discovery (ND) packets, DHCPv6 packets, and IPv6 data packets. The S6520X-SI/S6520X-EI/S6520X-HI switch is able to filter out invalid packets based on the user-bind table. The user-bind table is generated by ND snooping and DHCPv6 snooping. To check the validity of the source addresses in IPv6 data packets, the IP source guard feature needs to be enabled.

Secure Boot

H3C S6520X-SI/S6520X-EI/S6520X-HI supports secure boot with multiple methods to ensure the switch boots from a legit image.

O&M

Port Mirroring

H3C S6520X-SI/S6520X-EI/S6520X-HI supports local port mirroring on the switch, and Remote Switched Port Analyzer (RSPAN) for remote port mirroring. It supports total seven mirroring groups including local and remote ones.

NQA

H3C S6520X-SI/S6520X-EI/S6520X-HI supports Network Quality Analyzer (NQA) for network connectivity monitoring.

iNQA

H3C S6520X-SI/S6520X-EI/S6520X-HI supports Intelligent Network Quality Analyzer (iNQA) which uses the actual service packets to directly measure end-to-end or hop-by-hop packet loss in a large-scale IP network.

TWAMP-light

H3C S6520X-SI/S6520X-EI/S6520X-HI supports TWAMP-light for round trip latency, jitter and packet loss monitoring.

Encrypted Traffic Analysis

H3C S6520X-SI/S6520X-EI/S6520X-HI can interoperate with third-party tools such as the VIEWINTECH ENS system for encrypted traffic analysis.

Threat Deception

H3C S6520X-SI/S6520X-EI/S6520X-HI supports threat deception to redirect network scan traffic of the configured subnet to a decoy address.

NetStream

H3C S6520X-EI/S6520X-HI QC and HC models support NetStream when the FPGA card is plugged into the sub-card slot. The NetStream feature supports IPv4 and IPv6 flow traffic statistics monitoring with the configured sampling ratio.

Cloud Management

H3C S6520X-SI/S6520X-EI/S6520X-HI can be managed by H3C hosted cloud management platform Cloudnet (cloudnet.h3c.com) from anywhere.

EScan

H3C S6520X-SI/S6520X-EI/S6520X-HI C and F models provide a slot for an X86 sub-card. Administrators can install Linux on the sub-card and then install the H3C EScan component. The Escan component can scan endpoints in a specified subnet.

ZTP

H3C S6520X-SI/S6520X-EI/S6520X-HI supports Zero Touch Provisioning (ZTP) with a DHCP option specifying the TFTP server address and the configuration file on the TFTP server.

Automation with Ansible

H3C S6520X-SI/S6520X-EI/S6520X-HI can be configured by Ansible for automation.

SmartMC

H3C S6520X-SI/S6520X-EI/S6520X-HI supports SmartMC with one commander - Topology Master (TM) device managing multiple member devices - Topology Clients (TC) for configuration file backup and download, software upgrade, configuration deployment, and faulty member replacement.

Telemetry

H3C S6520X-SI/S6520X-EI/S6520X-HI supports Telemetry with GRPC dial-out and dial-in.

QoS

DCBX, PFC and ETS

H3C S6520X-SI/S6520X-EI/S6520X-HI supports Data Center Bridging Exchange (DCBX), Priority-based Flow Control (PFC) and Enhanced Transmission Selection (ETS) for a lossless network.

ECN

H3C S6520X-SI/S6520X-EI/S6520X-HI supports Explicit Congestion Notification (ECN) for a lossless network.

VoQ

H3C S6520X-SI/S6520X-EI/S6520X-HI supports Virtual Output Queuing (VoQ) to avoid head-of-line (HoL) blocking.

PoE

AI PoE

H3C S6520X-SI PoE models support AI PoE. They can automatically adjust PoE parameters to deliver power for many non-standard or uncommon scenarios.

Perpetual PoE

H3C S6520X-SI PoE models support perpetual PoE. PoE ports on them can provide continuous power to the powered devices during soft reboot (reboot via command line)

Fast PoE

H3C S6520X-SI PoE models support fast PoE. After the switch is powered on, the PoE ports on it start to provide PoE power to PD devices within 8 seconds.

Wireless Functions

Unified Wired and Wireless Access Controller

H3C S6520X-SI/S6520X-EI/S6520X-HI supports working as the unified wired and wireless access controller. As a wireless access controller, it can manage the wireless access points (APs) and authenticate wireless users for network access.

AP Auto Registration

Wireless APs are automatically registered to the wireless AC (the S6520X-SI/S6520X-EI/S6520X-HI switch) in a Layer 2 network or through DHCP option in a Layer 3 network

Wireless User WPA2 + PSK Authentication

The wireless network supports WAP2 + PSK authentication with the S6520X-SI/S6520X-EI/S6520X-HI switch working as the wireless access controller.

Wireless User Portal Authentication

The wireless network supports Web Portal authentication with the S6520X-SI/S6520X-EI/S6520X-HI switch working as the wireless access controller.

Sub-card and Fans

Some S6520X-SI/S6520X-EI/S6520X-HI models provide one or two expansion slots for the sub-card. The sub-card is connected to the switch via backplane ports.

Firewall Sub-card

The S6520X-SI/S6520X-EI/S6520X-HI models with expansion slot(s) support the firewall sub-card to apply firewall policies for the traffic.

Interface Sub-card

H3C S6520X-SI/S6520X-EI/S6520X-HI models with expansion slot(s) support multiple types of interface sub-card including
LSWM2QP2P 2*40GE
LSWM2ZSP2P 2*25GE
LSWM4SP8PM 8*10GE
LSWM2SP4PB 4*10GE
LSWM2SP8P 8*10GE
LSWM2MGT8P 8*Multi-GE (up to 5GE)
LSWM2XMGT8P 8*10GE
LSWM2SP2PB 2*10GE

Hot-swappable Sub-card

The sub-card is hot-swappable. Unplugging the sub-card does not impact traffic on the switch built-in ports.

Fans for Redundancy

H3C S6520X-SI/S6520X-EI/S6520X-HI supports two or more fans for redundancy. With more than one fan installed on the switch, when one fan fails, the traffic on the switch is not impacted.

Capacity

MAC Table

H3C S6520X-SI supports up to 32K (32,768) MAC addresses in the MAC table. H3C S6520X-EI supports up to 128K (131,072) MAC addresses in the MAC table. H3C S6520X-HI supports up to 256K (262,144) MAC addresses in the MAC table. Tolly engineers verified that the switch forwarded traffic matching all entries in the MAC table, without frame loss or broadcasts occurring.

ARP Table

H3C S6520X-SI supports up to 16,383 ARP entries in the ARP table. H3C S6520X-EI supports up to 65,535 ARP entries in the ARP table. H3C S6520X-HI supports up to 131,071 ARP entries in the ARP table. Tolly engineers verified that the switch forwarded traffic matching all entries in its ARP table, without any packet loss.

ND Table

H3C S6520X-SI supports up to 10,240 ND entries in the ND table. H3C S6520X-EI supports up to 43,008 ND entries in the ND table. H3C S6520X-HI supports up to 87,040 ND entries in the ND table. Tolly engineers verified that the switch forwarded traffic matching all entries in its ND table, without any packet loss.

FIBv4

H3C S6520-22SG-SI & S6520-30SG-SI & S6520X-26XC-UPWR-SI & S6520X-54XC-UPWR-SI models each supports up to 8,176 IPv4 routes in the FIB. Other H3C S6520X-SI models each supports up to 16,368 IPv4 routes in the FIB. H3C S6520X-EI supports up to 65,520 IPv4 routes in the FIB. H3C S6520X-HI supports up to 131,056 IPv4 routes in the FIB. Tolly engineers verified that the switch forwarded traffic matching all routing entries in the FIBv4 table, without any packet loss.

FIBv6

H3C S6520-22SG-SI & S6520-30SG-SI & S6520X-26XC-UPWR-SI & S6520X-54XC-UPWR-SI models each supports up to 3,727 IPv6 routes in the FIB. Other H3C S6520X-SI models each supports up to 7,673 IPv46routes in the FIB. H3C S6520X-EI supports up to 32,761 IPv6 routes in the FIB. H3C S6520X-HI supports up to 65,529 IPv6 routes in the FIB. Tolly engineers verified that the switch forwarded traffic matching all routing entries in the FIBv6 table, without any packet loss.

Wireless Access Controller

When working as the wireless access controller, H3C S6520X-SI/S6520-EI/S6520-HI supports managing 256 wireless APs and hosting 2K (2,048) concurrent online users.

When working as the wireless access controller, H3C S6520X-HF-EI/S6520X-HF-HI supports managing 2K (2,048) wireless APs and hosting 10K (10,240) concurrent online users.

ACL

H3C S6520X-SI supports 994 inbound ACL rules and 256 outbound ACL rules. H3C S6520X-EI supports 2,046 inbound ACL rules and 256 outbound ACL rules. H3C S6520X-HI supports 4,094 inbound ACL rules and 512 outbound ACL rules. Tolly engineers verified that all rules worked properly to match the traffic and perform the configured actions (e.g. blocking.)

NetStream

H3C S6520X-EI/S6520X-HI's NetStream feature supports monitoring 128K (131,072) unidirectional flows, or 64K bidirectional flows.

Buffer

H3C S6520X-54XC-UPWR-SI supports 5.73MB buffer. Other H3C S6520X-SI models each support 2.56MB buffer. H3C S6520X-EI supports 9.61MB buffer. H3C S6520X-HI supports 10.37MB buffer.

VXLAN Virtual Switched Instances

H3C S6520X-SI supports 511 Virtual Switched Instances (VSI - virtual L2 switched domains.)

H3C S6520X-EI supports 1,023 Virtual Switched Instances (VSI - virtual L2 switched domains.)

H3C S6520X-HI supports 2,047 Virtual Switched Instances (VSI - virtual L2 switched domains.)

IPv4 VXLAN Tunnels

H3C S6520X-SI supports 511 IPv4 VXLAN tunnels.

H3C S6520X-EI supports 895 IPv4 VXLAN tunnels.

H3C S6520X-HI supports 1,535 IPv4 VXLAN tunnels.

IPv6 VXLAN Tunnels

H3C S6520X-SI supports 512 IPv6 VXLAN tunnels.

H3C S6520X-EI supports 896 IPv6 VXLAN tunnels.

H3C S6520X-HI supports 1,024 IPv6 VXLAN tunnels.

DRAM and Flash

H3C S6520X-SI/S6520X-EI/S6520X-HI each has 2GB DRAM and 1GB Flash storage. H3C S6520X-HF-EI/S6520X-HF-HI each has 4GB DRAM and 1GB Flash storage.

Resource Table Performance

ARP Learning Rate

H3C S6520X-SI/S6520X-EI/S6520X-HI each supports learning 820 ARP entries per second.

H3C S6520X-HF-EI/S6520X-HF-HI each supports learning 590 ARP entries per second.

IPv4 BGP Route Learning/ Withdraw Rate

H3C S6520X-SI supports learning 1,943 IPv4 BGP routes per second and withdrawing 2,477 routes per second.

H3C S6520X-EI supports learning 3,096 IPv4 BGP routes per second and withdrawing 3,168 routes per second.

H3C S6520X-HI supports learning 3,353 IPv4 BGP routes per second and withdrawing 3,455 routes per second.

H3C S6520X-HF-EI supports learning 4,844 IPv4 BGP routes per second and withdrawing 5,405 routes per second.

H3C S6520X-HF-HI supports learning 5,240 IPv4 BGP routes per second and withdrawing 5,374 routes per second.

IPv6 BGP4+ Route Learning/ Withdraw Rate

H3C S6520X-SI supports learning 1,278 IPv6 BGP4+ routes per second and withdrawing 2,036 routes per second.

H3C S6520X-EI supports learning 2,690 IPv6 BGP4+ routes per second and withdrawing 2,823 routes per second.

H3C S6520X-HI supports learning 3,014 IPv6 BGP4+ routes per second and withdrawing 3,178 routes per second.

H3C S6520X-HF-EI supports learning 4,533 IPv6 BGP4+ routes per second and withdrawing 5,013 routes per second.

H3C S6520X-HF-HI supports learning 3,554 IPv6 BGP4+ routes per second and withdrawing 4,483 routes per second.

Convergence Time

IRF Stacking Cable Failure

In an IRF stack with H3C S6520X-SI/S6520X-EI/S6520X-HI switches, when one stacking cable failed, the traffic on that cable is automatically failed over to other remaining stacking cables. The failover time was 9ms in the test.

Hardware BFD

H3C S6520X-SI/S6520X-EI/S6520X-HI supports hardware BFD with minimum 3ms sending interval. Tolly engineers captured the packets to verify.

Test Methodology

The H3C Comware Software, Version 7.1.070 was used as the switch firmware in the test.

Capacity

In the capacity test, each item was tested independently. The S6520X-SI/S6520X-EI/S6520X-HI switch supports multiple modes. The test results demonstrated the maximum capacities. For the capacities in each mode, please contact H3C.

H3C S6520X-SI/S6520X-EI/S6520X-HI Series Intelligent 10GE Switch
Tolly Verified Features - Part 1 of 5

IRF

✔	**IRF Stacking Bandwidth** S6520X-SI: up to 240Gbps stacking bandwidth with 6*40GE stacking links S6520X-EI/S6520X-HI: up to 500Gbps stacking bandwidth with 5*100GE stacking links
✔	**Load Balancing between Stacking Links** When switches are stacked with multiple stacking links, traffic between the stack members is load balanced between stacking links
✔	**Single-point Management** Administrators can connect to any one of the stack members to manage the entire stack

Layer 2 Features

✔	**STP/RSTP/MSTP/PVST**
✔	**ERPS** <50ms failover time
✔	**RRPP** <50ms failover time
✔	**Smart Link** <50ms failover time
✔	**Link Aggregation High Availability** With link aggregation from the IRF stack members to the uplink or downlink device, traffic is load balanced between the IRF members. When one IRF member is rebooted or one link in the aggregation group is shutdown, there is 0 packet loss
✔	**VLAN** The device supports 4,094 VLANs

Layer 3 Features

✔	**BFD for VRRP** ~13ms failover time with 3ms BFD interval
✔	**BFD for IPv4 Routing Protocols** BFD for static route: 12.4ms failover time BFD for RIP FRR: 14.2ms failover time BFD for OSPF FRR LFA: 11.3ms failover time BFD for IS-IS FRR LFA: 11.6ms failover time BFD for BGP FRR: 14.9ms failover time

✔	**BFD for IPv6 Routing Protocols** BFD for static route: 16.3ms failover time BFD for RIPng FRR: 13.2ms failover time BFD for OSPFv3 FRR LFA: 12.3ms failover time BFD for IS-IS IPv6 FRR LFA: 12.2ms failover time BFD for BGP4+ FRR: 12.1ms failover time
✔	**OSPF Fast Re-route (FRR)**
✔	**Policy Route**
✔	**Equal-cost Multi-path Routing (ECMP)**
✔	**IP Fragmentation and Reassembly**

Multicast Features

✔	**IPv4 IGMP Snooping for Layer 2 Multicast**
✔	**IPv6 MLD Snooping for Layer 2 Multicast**
✔	**IPv4 IGMP and PIM for Layer 3 Multicast**
✔	**IPv6 MLD and IPv6 PIM for Layer 3 Multicast**

VXLAN

✔	**L2 and L3 Connectivity over VXLAN with the Centralized Gateway**
✔	**L2 and L3 Connectivity over VXLAN with the EVPN Control Plane and Distributed Gateways**

MPLS

✔	**MPLS L2VPN**
✔	**MPLS L3VPN**
✔	**MPLS BFD** e.g. fast detect MPLS L2VPN PW connectivity failure

Source: Tolly, December 2021   Table 7

H3C S6520X-SI/S6520X-EI/S6520X-HI Series Intelligent 10GE Switch
Tolly Verified Features - Part 2 of 5

Security Features		O&M	
✔	**802.1X Authentication**	✔	**Port Mirroring** Local port mirroring or Remote Switched Port Analyzer (RSPAN) with total 7 mirroring groups
✔	**Portal Authentication**		
✔	**Triple Authentication** MAC, 802.1X and Web Portal authentication on the same port	✔	**Network Quality Analyzer (NQA)** Network connectivity monitoring
✔	**DHCP Snooping, DHCPv6 Snooping** Trusted port for the DHCPv6 server; Binding table creation	✔	**iNQA** Intelligent Network Quality Analyzer (iNQA) uses the actual service packets to directly measure end-to-end or hop-by-hop packet loss in a large-scale IP network
✔	**DHCP Relay, DHCPv6 Relay**		
✔	**ND Snooping** Trusted port for ND; Binding table creation	✔	**TWAMP-light** Round trip latency, jitter and packet loss monitoring
✔	**DHCP Server, DHCPv6 Server**	✔	**Encrypted Traffic Analysis** Interoperate with third-party tools (e.g. VIEWINTECH ENS system)
✔	**PPPoE Relay** Add the PPPoE client-side interface and VLAN information to the PPPoE packets for the BRAS to distinguish between end hosts	✔	**Threat Deception** Redirect network scan traffic of the configured subnet to a decoy address
✔	**CPU Defend** Limit the rate of certain protocol packets (e.g. ARP) that need to be processed by the device CPU to prevent the CPU from overloading	✔	**NetStream** IPv4 and IPv6 Flow traffic statistics monitoring with the configured sampling ratio when the FPGA card is plugged into the switch (excluding S6520X-SI, S6520X-HF-EI and S6520X-HF-HI models)
✔	**Attack Source Tracing** Identify the attacker and respond with certain actions (interface error down, alarm, etc.)	✔	**Cloud Management** The switch can be managed by H3C hosted cloud management platform Cloudnet (cloudnet.h3c.com)
✔	**MAC-Forced Forwarding (MFF)** Layer 2 isolation. All Layer 2 communications have to go through the gateway	✔	**EScan** The switch[1] provides a slot for an X86 sub-card. Administrators can install Linux on the sub-card and then install the H3C EScan component. The Escan component can scan endpoints in the specified subnet
✔	**IP Source Guard (IPSG)** Prevent IP address spoofing attacks (unauthorized hosts access and attack the network with forged IP addresses). The device validates IP packets' source IP, source MAC, VLAN ID and interface with the binding table (static or DHCP snooping)		
✔	**Dynamic ARP Inspection (DAI)** Prevent man-in-the-middle attacks and theft on authorized users' information. The device validates ARP packets' source IP, source MAC, VLAN ID and interface with the binding table (static or DHCP snooping)	✔	**Zero Touch Provisioning (ZTP)** with a DHCP option specifying the TFTP server address and the configuration file on the TFTP server
✔	**Source Address Validation Improvements (SAVI)** Validate DHCPv6 and ND protocol packets, and IPv6 data packets with the binding table	✔	**Automation with Ansible** The switch can be configured by Ansible
✔	**Secure boot** Multiple methods to ensure the switch boots from a legit image		

Source: Tolly, December 2021   Table 8

H3C S6520X-SI/S6520X-EI/S6520X-HI Series Intelligent 10GE Switch
Tolly Verified Features - Part 3 of 5

O&M (continued)

✔	**Smart Management Center (SmartMC)** One commander - Topology Master (TM) device manages multiple member devices - Topology Clients (TC) for configuration file backup and download, software upgrade, configuration deployment, and faulty member replacement
✔	**Telemetry GRPC Dial-out and Dial-in**

QoS

✔	**DCBX, PFC and ETS** Data Center Bridging Exchange (DCBX), Priority-based Flow Control (PFC) and Enhanced Transmission Selection (ETS)
✔	**Explicit Congestion Notification (ECN)**
✔	**Virtual Output Queuing (VoQ)** to avoid head-of-line (HoL) blocking

PoE[1]

✔	**AI PoE** Automatically adjust PoE parameters to deliver power for many non-standard or uncommon scenarios
✔	**Perpetual PoE** PoE ports provide continuous power to the powered devices during soft reboot (reboot via command line)
✔	**Fast PoE** After the switch is powered on, the PoE ports on it start to provide PoE power to PD devices within 8 seconds

Wireless Functions

✔	**Unified Wired and Wireless Access Controller** The switch can act as the wireless access controller (AC) to manage WLAN APs and authenticate wireless users
✔	**AP Auto Registration** APs are automatically registered to the wireless AC (the switch) in a Layer 2 network or through DHCP option in a Layer 3 network
✔	**Wireless User WPA2 + PSK Authentication**
✔	**Wireless User Portal Authentication**

Sub-card and Fans

✔	**Firewall Sub-card** Some models provide one or two expansion slots for the sub-card. The sub-card is connected to the switch via backplane ports. The firewall sub-card successfully applied the firewall policies for traffic
✔	**Multi-type Interface Sub-card** LSWM2QP2P 2*40GE LSWM2ZSP2P 2*25GE LSWM4SP8PM 8*10GE LSWM2SP4PB 4*10GE LSWM2SP8P 8*10GE LSWM2MGT8P 8*Multi-GE (up to 5GE) LSWM2XMGT8P 8*10GE LSWM2SP2PB 2*10GE
✔	**Hot-swappable Sub-card** Unplugging the sub-card does not impact traffic on the switch built-in ports
✔	**Fans for Redundancy** With more than one fans installed on the switch, when one fan fails, the traffic on the switch is not impacted

Capacity

✔	**MAC Table** S6520X-SI: 32K (32,768) MAC addresses S6520X-EI: 128K (131,072) MAC addresses S6520X-HI: 256K (262,144) MAC addresses
✔	**ARP Table** S6520X-SI: 16,383 entries S6520X-EI: 65,535 entries S6520X-HI: 131,071 entries
✔	**ND Table** S6520X-SI: 10,240 entries S6520X-EI: 43,008 entries S6520X-HI: 87,040 entries

1. Only the S6520X-SI UPWR models support PoE

Source: Tolly, December 2021   Table 9

H3C S6520X-SI/S6520X-EI/S6520X-HI Series Intelligent 10GE Switch
Tolly Verified Features - Part 4 of 5

Capacity (continued)

✔	**IPv4 Routing Table/FIBv4** S6520-22SG-SI & S6520-30SG-SI & S6520X-26XC-UPWR-SI & S6520X-54XC-UPWR-SI: 8,176 routes Other S6520X-SI models: 16,368 routes S6520X-EI: 65,520 routes S6520X-HI: 131,056 routes	✔	**VXLAN Virtual Switched Instances (VSI - virtual L2 switched domain)** S6520X-SI: 511 instances S6520X-EI: 1,023 instances S6520X-HI: 2,047 instances
✔	**IPv6 Routing Table/FIBv6** S6520-22SG-SI & S6520-30SG-SI & S6520X-26XC-UPWR-SI & S6520X-54XC-UPWR-SI: 3,727 routes Other S6520X-SI models: 7,673 routes S6520X-EI: 32,761 routes S6520X-HI: 65,529 routes	✔	**IPv4 VXLAN Tunnels** S6520X-SI: 511 tunnels S6520X-EI: 895 tunnels S6520X-HI: 1,535 tunnels
✔	**Wireless Access Controller** S6520X-SI: managing 256 WLAN APs; hosting 2K (2,048) concurrent online users S6520X-EI: 256 APs; 2K concurrent online users S6520X-HI: 256 APs; 2K concurrent online users S6520X-HF-EI/S6520X-HF-HI: 2K APs; 10K concurrent online users	✔	**IPv6 VXLAN Tunnels** S6520X-SI: 512 tunnels S6520X-EI: 896 tunnels S6520X-HI: 1,024 tunnels
✔	**ACL** S6520X-SI: 994 inbound rules, 256 outbound rules S6520X-EI: 2,046 inbound rules, 256 outbound rules S6520X-HI: 4,094 inbound rules, 512 outbound rules	✔	**DRAM and Flash** S6520X-SI: 2GB DRAM, 1GB Flash S6520X-EI: 2GB DRAM, 1GB Flash S6520X-HI: 2GB DRAM, 1GB Flash S6520X-HF-EI: 4GB DRAM, 1GB Flash S6520X-HF-HI: 4GB DRAM, 1GB Flash
✔	**NetStream** S6520X-EI (excluding S6520X-HF-EI models): 128K (131,072) unidirectional flows, or 64K bi-directional flows S6520X-HI (excluding S6520X-HF-HI models): 128K (131,072) unidirectional flows, or 64K bi-directional flows	✔	
✔	**Buffer** S6520X-54XC-UPWR-SI: 5.73MB Other S6520X-SI models: 2.56MB S6520X-EI: 9.61MB S6520X-HI: 10.37MB	✔	

Source: Tolly, December 2021   Table 10

Tolly.

H3C S6520X-SI/S6520X-EI/S6520X-HI Series Intelligent 10GE Switch
Tolly Verified Features - Part 5 of 5

Resource Table Performance	**Convergence Time**
✔ **ARP Learning Rate** S6520X-SI: 820 ARP entries per second S6520X-EI: 820 ARP entries per second S6520X-HI: 820 ARP entries per second S6520X-HF-EI: 590 ARP entries per second S6520X-HF-HI: 590 ARP entries per second	✔ **IRF Stacking Cable Failure** When one of the stacking cables failed, the traffic failover time was 9ms
✔ **IPv4 BGP Route Learning/Withdraw Rate** S6520X-SI: Learn 1,943 routes per second; Withdraw 2,477 routes per second S6520X-EI: Learn 3,096 routes per second; Withdraw 3,168 routes per second S6520X-HI: Learn 3,353 routes per second; Withdraw 3,455 routes per second S6520X-HF-EI: 4,844 learning; 5,405 withdraw S6520X-HF-HI: 5,240 learning, 5,374 withdraw	✔ **Hardware BFD with 3ms sending interval**
✔ **IPv6 BGP4+ Route Learning/Withdraw Rate** S6520X-SI: Learn 1,278 routes per second; Withdraw 2,036 routes per second S6520X-EI: Learn 2,690 routes per second; Withdraw 2,823 routes per second S6520X-HI: Learn 3,014 routes per second; Withdraw 3,178 routes per second S6520X-HF-EI: 4,533 learning; 5,013 withdraw S6520X-HF-HI: 3,554 learning, 4,483 withdraw	

Source: Tolly, December 2021   Table 11

H3C S6520X-EI/S6520X-HI Series Switch Power Consumption
(provided by H3C, not verified by Tolly)

Switch Model	Power Consumption
S6520X-30QC-EI	MIN: single AC 38W; dual AC 43W. MAX: single AC 179W; dual AC 183W.
S6520X-54QC-EI	MIN: single AC 39W; dual AC 44W. MAX: single AC 231W; dual AC 234W.
S6520X-30HC-EI	MIN: single AC 38W; dual AC 43W. MAX: single AC 197W; dual AC 200W.
S6520X-54HC-EI	MIN: single AC 44W; dual AC 49W. MAX: single AC 249W; dual AC 251W.
S6520X-30QC-HI	MIN: single AC 38W; dual AC 43W. MAX: single AC 179W; dual AC 183W.
S6520X-54QC-HI	MIN: single AC 39W; dual AC 44W. MAX: single AC 213W; dual AC 234W.
S6520X-30HC-HI	MIN: single AC 38W; dual AC 43W. MAX: single AC 197W; dual AC 200W.
S6520X-54HC-HI	MIN: single AC 44W; dual AC 49W. MAX: single AC 249W; dual AC 251W.
S6520X-30HF-EI	MIN: single AC 29W; dual AC 35W. MAX: single AC 131W; dual AC 134W.
S6520X-54HF-EI	MIN: single AC 29W; dual AC 36W. MAX: single AC 163W; dual AC 162W.
S6520X-30HF-HI	MIN: single AC 38W; dual AC 46W. MAX: single AC 143W; dual AC 145W.
S6520X-54HF-HI	MIN: single AC 36W; dual AC 44W. MAX: single AC 177W; dual AC 176W.

Source: H3C, December 2021

H3C S6520X-SI/S6520X-EI/S6520X-HI Series Switch Power Consumption
(provided by H3C, not verified by Tolly)

Switch Model	Power Consumption
S6520X-18C-SI	MIN: single AC 18W; single DC 18W; dual AC 24W; dual DC 23W. MAX: single AC 92W; single DC 89W; dual AC 95W; dual DC 97W.
S6520X-26C-SI	MIN: single AC 19W; single DC 19W; dual AC 25W; dual DC 23W. MAX: single AC 108W; single DC 106W; dual AC 110W; dual DC 113W.
S6520X-16ST-SI	MIN: single AC 17W; single DC 20W; dual AC 18W; dual DC 20W. MAX: single AC 52W; single DC 54W; dual AC 58W; dual DC 59W.
S6520X-24ST-SI	MIN: single AC 17W; single DC 20W; dual AC 18W; dual DC 24W. MAX: single AC 66W; single DC 67W; dual AC 70W; dual DC 73W.
S6520-16S-SI	MIN: single AC 15W; single DC 15W. MAX: single AC 51W; single DC 52W.
S6520-24S-SI	MIN: single AC 17W; single DC 16W. MAX: single AC 67W; single DC 68W.
S6520-22SG-SI	MIN: single AC 14W. MAX: single AC 45W.
S6520-30SG-SI	MIN: single AC 15W. MAX: single AC 62W.
S6520-26Q-SI	MIN: single AC 15W; single DC 15W; dual AC 18W; dual DC 18W. MAX: single AC 81W; single DC 81W; dual AC 80W; dual DC 80W.
S6520X-26MC-SI	MIN: single AC 27W; single DC 29W; dual AC 32W; dual DC 31W. MAX: single AC 129W; single DC 129W; dual AC 130W; dual DC 134W.
S6520X-26MC-UPWR-SI	MIN: single AC 45W; single DC 46W; dual AC 56W; dual DC 67W. MAX: single AC 1,139W (900W PoE); single DC 614W (410W PoE); dual AC 2,428W (2,040W PoE); dual DC 1,219W (960W PoE).
S6520X-26XC-UPWR-SI	MIN: single AC 39.3W; single DC 40.4W; dual AC 51.3W; dual DC 68.5W. MAX: single AC 1,026W (PoE); single DC 420W (PoE); dual AC 2,385W (PoE); dual DC 1,047W (PoE).
S6520X-54XC-UPWR-SI	MIN: single AC 65.1W; single DC 82.5W; dual AC 73.6W; dual DC 64.8W. MAX: single AC 1,054W (PoE); single DC 406W (PoE); dual AC 2,333W (PoE); dual DC 1,031W (PoE).
S6520X-10XT-SI	MIN: single AC 17.5W. MAX: single AC 34.5W.
S6520X-16XT-SI	MIN: single AC 22.1W. MAX: single AC 48.3W.

Source: H3C, December 2021

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