

ZXSH39-48S6X-C3 Stackable 10GE Routing Switch

Product Overview

ZXSH39-48S6X-C3 is a new generation of aggregation 10GE switches introduced by H3C. It is targeted at the IP MAN (metropolitan area network), campus networks and enterprise networks. It is developed on the basis of high performance hardware and VR - a software platform with H3C own independent intellectual property rights. It supports multiple services like IPv6 and network security based on L2/L3/L4 wire-speed switching service. It also supports nonstop upgrade, continuous forwarding, graceful restarting and redundancy protection.



ZXSH39-48S6X-C3

Product Characteristics

➤ Advanced Hardware Architecture and Industry-Leading Port Intensity

- 1U box-shaped switch with 48 gigabit SFP ports and 6 10G SFP+ ports;
- 32K MAC and 12K routing entries;
- 4KV surge protection.

➤ Innovative Virtual Cluster Switching Technique

- **Innovative** : virtualize multiple physical devices into one. The performance, reliability and management of the virtual system are superior to the physical ones;
- **Improved Performance**: makes full use of each link in the physical devices, which avoids STP blocking the link and protects the original link to the maximum extent;
- **High Reliability**: Based on the advanced distribution mechanism and efficient cross-physical link aggregation link function, the logic control plane, service control plane and service data plane are separated. Thus, the device can support continuous layer3 routing forwarding, avoiding service interruption as a result of a single point of failure;
- **Easy Management**: realizes single IP management, greatly improving the networking efficiency and lowering the operating cost.

➤ **Carrier-level High Reliability**

- Based on HPS (Hitless Protection System), the key components of ZXSH39-48S6X-C3 such as the power module support dual back-up, hot-swap, seamless switching in the downtime without manual intervention;
- Supports STP/RSTP/MSTP, VRRP protocol, Ethernet ring protection, dual master-slave uplink protection and LACP link aggregation;
- Supports ISSU (In-Service Software Upgrade);
- Supports BFD mechanism;
- Supports Ethernet OAM mechanism, 802.3ah and 802.1ag;
- High reliability (99.999%): MTTR of is 50ms, meeting the requirement of the carrier-level service.
- The is compatible with mainstream third-party optical modules.

➤ **Varied Service Characteristics**

- Supports layer2 and layer3 multicast routing protocol, which enable the device can access to IPTV, HD video surveillance and HD video conference;
- Supports layer3 routing protocol and super-large routing table capacity, which enables the device is available in large campus networks, enterprise networks and industry networks;

➤ **Versatile IPv6 Solution**

- Supports the IPv6 protocol suite, IPv6 neighbor discovery, ICMPv6, path MTU discovery, DHCPv6, etc;
- Supports Ping, Traceroute, Telnet, SSH, ACL based on IPv6;
- Supports MLD, MLD Snooping, IPv6 static routing, RIPng, OSPFv3 and BGP4+, etc;
- Supports IPv6 tunnel: manual tunnel, automatic tunnel, GRE tunnel, 6to4 tunnel, ISATAP;
- Supports IPv4 transiting to IPv6: IPv6 manual tunnel, automatic tunnel, 6 to 4 tunnel, ISATAP tunnel.

➤ **Complete Security Mechanism**

- **Equipment-Level Security:** The advanced hardware infrastructure design realizes the level-based packet schedule and packet protection, prevents DoS-/TCP-related SYN Flood, UDP Flood, Broadcast Storm or large traffic attacks, and supports level-based command line protection, endowing different levels of users with different management permissions;
- **Security Authentication Mechanism:** IEEE 802.1x, Radius and TACACS+;
- **Enhanced Service Security Mechanism:** supports the plain-text or MD5 authentication of relevant routing protocol, URPF, deep inspection of hardware packet, control packet and data packet and filtering technology.

➤ **Innovative Energy-saving Design**

- Intelligent power management: The power system of supports real-time monitoring the device and the slow-start. It is also power-saving;
- Intelligent fan management system: The fan system of supports automatic speed regulation, which efficiently slow the fan speed and mitigate the noise;
- Comply with the international standard IEEE 802.3az.

Item	ZXSH39-48S6X-C3
Backplane	216Gbps
Forwarding	162Mpps
MAC table	32K
Ports	48-Port Gigabit SFP 6-Port 10GE/GE SFP+
Indicator	Power, system, link/active
Dimensions mm (W×D×H)	440x350x44
Power supply	AC: 100V-240V, 50Hz/60Hz DC: 36V~72V
Environment	Operating temperature/humidity: 0°C-50°C; 10%-90% non-condensing Storage temperature/humidity: -20°C-70°C; 5%-95% non-condensing
Standards	IEEE 802.1 Working Group IEEE 802.3 Working Group IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3z Gigabit 1000BASE-SX/LX IEEE 802.3ab Gigabit 1000BASE-T IEEE 802.3ae 10Gb/s Ethernet IEEE 802.3x flow control and back pressure IEEE 802.3ad port trunk with LACP IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN tagging IEEE 802.1ad Q-in-Q IEEE 802.1X port authentication network control IEEE 802.1ab LLDP IEEE 802.3ah OAM IEEE 802.3az EEE(Energy Efficient Ethernet)

	RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2 RFC 3376 IGMP v3 RFC 2710 MLD v1 RFC 2328 OSPF v2 RFC 1058 RIP v1 RFC 2453 RIP v2
MAC switching	Static configuration and dynamic MAC learning(32K) MAC browsing and removal Configurable aging time of the MAC address Limited number of learnable MAC addresses MAC filtration Black-hole MAC list
Jumbo frame	9K
VLAN	4K VLAN IDs, 4094 active VLAN, 1K SVI GVRP 1:1 and N:1 VLAN Mapping QinQ and selective QinQ Private VLAN Voice-VLAN
STP	802.1d STP, 802.1w RSTP, 802.1s MSTP BPDU protection, root protection and ring protection L2PT for BPDU
Multicast	IGMP v1/v2c/v3 IGMP Snooping IGMP Fast Leave Multicast group policy and multicast number limit Multicast filtering

	MVR PIM-DM/SM/SSM
IPv4	Static routing, RIP v1/v2, OSPF, BGP Policy Based Routing(PBR) ECMP BFD for static routing, RIP, OSPF, BGP
IPv6	IPv4/v6 dual stack ICMPv6, DHCPv6, ACLv6 and IPv6 Telnet IPv6 neighbor discovery Path MTU discovery MLD V1 MLD snooping IPv6 Static Routing, RIPng, OSPFv3, BGP4+ Manual tunnel, ISATAP tunnel, 6-to-4 tunnel
DHCP	DHCP server, client, relay, snooping
MPLS VPN	MCE(Multiple VRF)
QoS	Traffic classification of port/L2~4 protocol headers/VLAN/CoS/DSCP CAR traffic control 802.1P/DSCP priority mapping and remark Multiple queuing algorithms such as SP, WRR or SP+WRR Tail-Drop, WRED Traffic supervision and traffic shaping 8 queues per port
Security features	DDoS attack prevention, TCP-SYN/UDP/ARP Flood attack prevention IEEE 802.1x authentication, multiple-user authentication, guest vlan URPF L2~L4 ACL Anti-DOS/IP spoofing/TCP/ping/SYN/ICMP flood attacks Broadcast/multicast/unknown-unicast storm-control Port isolation, Port Security, IP+MAC+port binding DHCP Snooping, DHCP Option 82

	DAI(Dynamic ARP Inspection) IPSG(IP Source Guard) IEEE 802.1x certification AAA, Radius, TACACS+ Multiple user privileges
Reliability	Power 1+1 backup 802.3ad Static/LACP link aggregation EAPS G.8032 ERPS VRRP GR for OSPF and BGP BFD for OSPF and BGP ISSU BVSS virtual stacking system
Management	CLI: Console, Telnet, SSHv1/2 Web-GUI: HTTP, HTTPS SNMP v1/v2/v3, RMON, SNMP alarm/inform/traps Upload and download of FTP/TFTP/SFTP files Debugging Syslog for alarm/notification/command/debug NTP SPAN, RSPAN (1:1 and N:1 mirror) LLDP, LLDP-MED sFLOW ZTP (Zero Touch Provisioning) Optical DDM Ethernet cable diagnosis 802.3ah, 802.1ag
Energy saving	IEEE 802.3az

Ordering Information

Item	Description
ZXSH39-48S6X-C3	48-Port Gigabit SFP + 6-Port 10G SFP+ L3 Stackable Managed Switch (2 power slots, single AC-220V hot-swap power supply, with cooling fan, 1U, standard 19 inch rack-mounted installation)