

SICOM6896G-H

High Performance Core switches



Overview

SICOM6896G-H series switches are a new generation of high-performance core switches for cloud computing, data center and high-end campus networks. The product adopts advanced hardware architecture design, excellent switching performance and rich data center business features.

SICOM6896G-H series support a maximum of 576 10G ports, 96 40G ports, and 48 100G ports, and reserves the evolution capability to 768 100G ports.

SICOM6896G-H complies the network resource pooling requirements of cloud computing data centers. SICOM6896G-H series supports rich virtualization features and data center features. With the SICOM8630/SICOM8648X series of data center ToR switches, 15,000+ 10G servers can be accessed, providing a complete network solution for super data center.

On the basis of providing high-performance L2/L3/L4 wire-speed switching services, SICOM6896G-H series switches further integrate various network services such as IPv6, MPLS VPN, network security, traffic analysis, virtualization, etc. Various data center high reliability technologies, such as intermittent update and forwarding, restart, and redundancy protection, ensure the longest uninterrupted communication capability of the network.

» Key Features

Advanced hardware architecture design, powerful processing capability

Adopt advanced hardware architecture design, separate control engine and switching network board, provide continuous bandwidth upgrade capability.

Equipped with high-performance ASIC switching chips and multi-core processors to meet the high-performance, high-capacity, high-density and expandable requirements of data center core equipment.

Supports high-density 10 Gigabit service boards, and realizes three-layer full line-speed non-blocking switching between boards.

The whole device supports a maximum of 576 10G ports, 69 40G ports, and 48 100G ports, and reserves the evolution capability to 768 10G ports, 128 40G ports, and 64 100G ports.

Single service board supports up to 512K MAC address entries and 512K Layer 3 routing entries.

Rich data center service features

Supports virtualized Virtual Chassis technology, which can virtualize multiple physical devices into one logical device. Compared with independent physical devices, the performance, reliability, flexibility and management of the virtual system have unparalleled advantages.

High Performance: The virtualized system can make full use of every link between physical devices, avoid the blockage of the link by the traditional networking model STP, double the performance.

High reliability: Based on advanced distributed processing technology, through the efficient cross-physical device link aggregation function, the three-plane separation of logical control plane, service control plane and service data plane is realized, providing uninterrupted Layer 3 routing and forwarding, The business interruption caused by the single point of failure is avoided, and the reliability of the virtual system is greatly improved.

Flexibility: Through the virtual cluster service board, the distance of the virtual cluster system can be extended to 80KM, which is flexible and convenient, breaking the geographical limitation of traditional cluster technology.

Easy managed: The entire virtual system realizes unified management of a single IP, and the actual physical equipment is transparent to users, which simplifies the management of network equipment and network topology, greatly improves network operation efficiency, and effectively reduces operation and maintenance costs.

Large layer2 technology: Support TRILL/SPB protocol, and can build a large second-layer network of data center, which simplifies and flattens the network structure and meets the large-scale server access requirements of data center.

Data Center level High Reliability

Based on HPS (Hitless Protection System), the key components of SICOM6896G-H, such as system main control unit, power supply system, fan system, are designed with redundancy. All system modules are hot-swappable. Supports seamless switchover in case of failure without manual intervention.

Support STP/RSTP/MSTP protocol, VRRP protocol, ring network protection, dual uplink active/standby link protection, LACP link aggregation and other simple and efficient redundancy protection mechanisms.

Support ISSU (In-Service Software Upgrade), and GR (Graceful Restart) for OSPF/BGP and other routing protocols, to ensure uninterrupted forwarding of user data during system upgrade and master switch.

The ultra-high-precision BFD bidirectional link detection mechanism, through linkage with Layer 2 and Layer 3 protocols, realizes millisecond-level fault detection and service recovery, which greatly improves the reliability of the network system.

Perfect Ethernet OAM mechanism, supporting 802.3ah, 802.1ag and ITU-Y.1731, through real-time monitoring of network operation status, to achieve rapid detection and location of faults.

The high-reliability design of software and hardware meets the fault recovery time requirement of 50ms, and truly

achieves the high reliability of 9s (99.999%) of the core device.

Rich service features

Perfect Layer 2 and Layer 3 multicast routing protocols, meeting the access requirements of IPTV, multi-terminal high-definition video surveillance and high-definition video conferencing;

Complete Layer 3 routing protocols and large routing table capacity, meeting the needs of various Various types of network interconnection requirements can be established, and super-large campus networks, enterprise networks, and industry user private networks can be formed.

Fully support Layer 2 and Layer 3 MPLS VPN, and can build a super-large MPLS VPN core network to meet the access requirements of industry private network VPN users and enterprise network VPN users.

Provides value-added service features such as POE and traffic analysis.

Comprehensive IPv6 Solution

Supports IPv6 protocol suite, IPv6 neighbor discovery, ICMPv6, Path MTU discovery, DHCPv6 and other features. Supports IPv6-based Ping, Traceroute, Telnet, SSH, ACL, etc., to meet the needs of all IPv6 network device management and service control.

Supports IPv6 multicast features such as MLD and MLD Snooping, supports IPv6 static routing, RIPng, OSPFv3, BGP4+ and other IPv6 Layer 3 routing protocols, providing users with complete IPv6 Layer 2 and Layer 3 solutions.

Supports a wealth of IPv4 to IPv6 transition technologies, including: IPv6 manual tunnel, automatic tunnel, 6to4 tunnel, ISATAP tunnel and other tunnel technologies to ensure the smooth transition from IPv4 network to IPv6 network.

Perfect security mechanism

Device-level security protection: advanced hardware architecture design, the hardware implements hierarchical scheduling and protection of packets, and supports the prevention of DoS, TCP SYN Flood, UDP Flood, broadcast storms, and large traffic attacks on devices; Supports hierarchical protection of command lines, and users at different levels have different management rights;

Complete security authentication mechanism: supports IEEE 802.1x, Radius, Tacacs+, etc., providing users with a complete security authentication mechanism.

Enhanced service security mechanism: Supports clear text or MD5 authentication of related routing protocols, supports uRPF reverse route lookup technology, which can effectively control illegal services; hardware-level packet depth detection and filtering technology supports control packets and data packets Deep inspection can effectively isolate illegal data packets and improve the security of the network system.

Innovative green design

Intelligent power management system: SICOM6896G-H adopts advanced power system architecture design to achieve efficient power conversion, unique power monitoring, slow start, sequential power-on and other functions, real-time monitoring of the running status of the whole machine , intelligent adjustment, deep energy saving.

Intelligent fan management system: The intelligent fan design adopts a counter-rotating fan to provide stable and strong wind pressure and efficiently dissipate heat; it supports automatic fan speed regulation and independent partition control, which effectively reduces the speed and noise, and prolongs the service life of the fan.

Supports energy efficient Ethernet function and follows the international standard IEEE 802.3az, which effectively reduces energy consumption.

» Product Specifications**-Data Center Features**

Support virtualization technology
Support TRILL/SPB large second-layer technology

>Technical Specification**-Mac Switching Function**

Support static configuration and dynamic learning of MAC addresses
Support viewing and clearing of MAC addresses Configurable MAC address aging time
Support limit on the number of MAC addresses to be learned
Support MAC address filtering function

-Vlan

Support 4K VLAN entries
Support GVRP Support 1:1 and N:1 VLAN Mapping
Support basic QinQ and flexible QinQ functions
Support Private VLAN

-Spanning Tree Protocol

Support 802.1D (STP), 802.1W (RSTP), 802.1S (MSTP)
Support BPDU protection, root protection, loop protection

-Multicast

Support IGMP v1/v2/v3
Support IGMP Snooping
Support IGMP Fast Leave
Support multicast group policy and multicast group quantity limit
Support multicast traffic replication across VLANs
Support PIM-SM, PIM-DM

-IPV4

Support static routes, RIP v1/v2, OSPF, BGP
Support policy routing
Support equal-cost routes to achieve load balancing
Support OSPF, BGP Graceful Restart
Support BFD for OSPF, BGP

-IPV6

Support ICMPv6, DHCPv6, ACLv6, IPv6 Telnet
Support IPv6 neighbor discovery
Support Path MTU discovery
Support MLD, MLD Snooping
Support IPv6 static routing, RIPng, OSPFv3, BGP4+
Support manual tunnel, ISATAP tunnel, 6to4 tunnel

-Qos

Support traffic classification based on the fields of L2/L3/L4 protocol headers
Support CAR traffic restriction
Support 802.1P/DSCP priority re-marking Traffic policing and traffic shaping
Support Ingress and Egress ACLs
Support matching L2, L3, L4 and IP quintuple for replication, forwarding and discarding
Support Hash homologous and homologous load balancing to ensure session integrity of traffic output

-Security Features

Support L2/L3/L4-based ACL flow identification and filtering security mechanism
Support anti-DDoS attack, TCP SYN Flood attack, UDP Flood attack, etc.
Support the suppression function of multicast, broadcast and unknown unicast packets
Support port isolation
Support port security , IP+MAC+ port binding
Support DHCP Snooping, DHCP Option 82
Support IEEE 802.1x authentication Support Radius,Tacacs+ authentication
Support uRPF Support command line hierarchical protection

-Reliability

Support dual main control redundancy
Support multi-power backup
Support main control, service card hot swap and service automatic recovery
Support static/LACP link aggregation
Support link aggregation across service cards
Support EAPS and other ring network protection
Support VRRP
Support Ethernet Network OAM 802.3ah/802.1ag/ITU-Y.1731
Support GR for OSPF, BGP Support BFD for OSPF, BGP
Support ISSU service without interruption System upgrade

-Management & Maintenance

Support Console, Telnet, SSH
Support SNMP v1/v2/v3
Support TFTP file upload and download management
Support RMON
Support sFLOW, Netflow traffic statistics analysis

-Environment Limit

Operating Temperature 0°C ~ +40°C
Storage Temperature -20°C ~ +70°C
Ambient Relative Humidity 5 ~ 95% (non-condensing)

-Power Supply

AC: 100V-240V, 50Hz±10%
DC: -48V

Physical Characteristics

Dimension

483mm×654mm×485mm (W×H×D)SICOM6896G-4BS

483mm×654mm×620mm (W×H×D)SICOM6896G-8BS

483mm×654mm×796mm (W×H×D)SICOM6896G-12BS

Technical Parameter

	SICOM6896G-4BS	SICOM6896G-8BS	SICOM6896G-12BS
Switch Capacity	20.74Tbps/128Tbps	41.47Tbps/204 8Tbps	55.3Tbps/256Tbps
Packet Forwarding	5040Mpps/36000 Mpps	6720Mpps/48000 Mpps	8400Mpps/67500 Mpps
Slots Total	10	14	18
Main Card slot	2	2	2
Switch Card slot	4	4	4
Line Card slot	4	8	12

 **Ordering Information**

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Item	Description
SICOM6896G-H Series Chassis	
SICOM6896G-H-4BS	SICOM6896G-H-4BS chassis (including 2 fan slots, 7 power supply slots, 2 MSU slots, 4 SFU slots, and 4 LPU slots)
SICOM6896G-H-8BS	SICOM6896G-H-8BS chassis (including 3 fan slots, 7 power supply slots, 2 MSU slots, 4 SFU slots, and 8 LPU slots)
SICOM6896G-H-12BS	SICOM6896G-H-12BS chassis (including 3 fan slots, 7 power supply slots, 2 MSU slots, 4 SFU slots, and 12 LPU slots)
SICOM6896G-H Series Power Supply	
SICOM6896G-H-AC1200	SICOM6896G-H series AC power module 1200W
SICOM6896G-H-POE1000	SICOM6896G-H series POE AC power module 1000W
SICOM6896G-H Series MSU	
SICOM6896G-H-MSU	SICOM6896G-H series MSU card
SICOM6896G-H Series SFU	
SICOM6896G-H-SWI	SICOM6896G-H-4BS SFU card
SICOM6896G-H-SWII	SICOM6896G-H-8BS SFU card
SICOM6896G-H-SWIII	SICOM6896G-H-12BS SFU card
SICOM6896G-H Series LPU	
Gigabit LPU Card	
SICOM6396G-H-43GE	48 Gigabit copper ports LPU card (RJ45)
SICOM6896G-H-48GX	48 Gigabit fiber ports LPU card (SFP)
10Gigabit LPU Card	
SICOM6896G-H-48X	48 10Gigabit fiber ports LPU card (SFP+)
40Gigabit LPU Card	
SICOM6896G-H-8QX	8 40Gigabit fiber ports LPU card (QSFP+)
100Gigabit LPU Card	
SICOM6896G-H-4CX	4 100Gigabit fiber ports LPU card (QSFP28)
LPU Card	
SICOM6896G-H-48GS	48 Gigabit POE/POE+ ports (RJ45)