

SICOM6896G-S

Core Switch



» Overview

SICOM6896G-S series switches are new-generation T-bit core switches for next-generation IP metropolitan area networks and large campus networks. This series products adopts an advanced distributed multi-level switching matrix architecture. On the basis of providing high-performance L2/L3/L4 wire-speed switching services, it further integrates IPv6, MPLS VPN, network security, traffic analysis, virtualization, etc. network services, combined with a variety of high-reliability technologies such as uninterrupted upgrade, uninterrupted forwarding, graceful restart, and redundancy protection, ensure the long-term uninterrupted communication capability of the network. Deep energy saving, greatly reducing the energy consumption of device, low carbon and environmental protection, effectively reducing operation and maintenance costs, and providing a perfect solution for the green and sustainable development of the network.

» Key Features

> **Reliable hardware architecture design, powerful processing capability**

- Designed for the 40G platform, it adopts a distributed multi-level switching matrix architecture, equipped with high-performance ASIC switching chips and multi-core processors, to meet the high-performance, high-capacity, high-density and expandable requirements of carrier-class core equipment.
- Support high-density 10 Gigabit service boards, and realizes three-layer full line-speed non-blocking switching between boards.
- Support expansion capability to 100GE port.

➤ **Carrier-class high reliability**

- Based on HPS (Hitless Protection System), the key components of SICOM6896G-S, 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 5 9s (99.999%) of the core device.

➤ **Virtualization cluster switching technology**

- SICOM6896G-S supports the virtualization cluster switching technology, which can virtualize multiple physical devices into one logical device. The performance, reliability, flexibility and management of the virtual system are unparalleled compared with independent physical devices.
- High performance: The virtualization system can make full use of each link between physical devices, avoiding link congestion caused by the spanning tree protocol in the traditional networking model. The performance of the virtualization system is doubled, maximizing the protection of the original link investment.
- High reliability: based on the advanced distributed processing technology, through efficient across physical equipment link aggregation function, achieve logic control plane, the business control plane and data plane of three plane separation, three layer to provide uninterrupted routing forwarding, to avoid the single point of failure caused by interruption of business, greatly improve the reliability of the virtual system.
- Flexibility: Support service card stacking and flexible stacking modes. It can extend the distance of virtual cluster system up to 80KM, which is flexible and convenient, breaking the geographical restriction of traditional cluster technology.
- Easy management: The entire virtual system realizes unified management of a single IP address, and the actual physical devices are transparent to users. This simplifies the management of network devices and network topology, greatly improves network operation efficiency, and effectively reduces operation and maintenance costs.

Industrial Ethernet Solutions

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> 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.

> Comprehensive IPv6 Solution

- Support IPv6 protocol suite, IPv6 neighbor discovery, ICMPv6, Path MTU discovery, DHCPv6 and other features.
- Support IPv6-based Ping, Traceroute, Telnet, SSH, ACL, etc., to meet the needs of all IPv6 network device management and service control.
- Support IPv6 multicast features such as MLD and MLD Snooping
- Support IPv6 static routing, RIPng, OSPFv3, BGP4+ and other IPv6 Layer 3 routing protocols, providing users with complete IPv6 Layer 2 and Layer 3 solutions.
- Support 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-S 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

> Technical Specification

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

Industrial Ethernet Solutions

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℃~+40℃
Storage Temperature -20℃~+70℃
Ambient Relative Humidity 5~95% (non-condensing)

-Power Supply

AC: 100V-240V, 50Hz±10%
DC: -48V

-Physical Characteristics

Dimension

482mm×370mm×397mm (W×H×D)SICOM6896G-S-4BS

482mm×370mm×530mm (W×H×D)SICOM6896G-S-8BS

Technical Parameter

	SICOM6896G-S-4BS	SICOM6896G-S-8BS
Switch Capability	76.8/307.2Tbps	105.6/422.4Tbps
Packet Fowarding	8640/57600Mpps	14400/86400Mpps
Slot Number	6	10
Line Card Slot	4	8

Ordering Information

ITEM	Description
SICOM6896G-S Series Chassis	
SICOM6896G-S-4BS	SICOM6896G-S Chassis (including 1 fan slot, 3 power slot, no power supply, 2 MSU slots, 4 LPU slots)
SICOM6896G-S-8BS	SICOM6896G-S Chassis (including 1 fan slot, 3 power slot, no power supply, 2 MSU slots, 8 LPU slots)
SICOM6896G-S Series Power	
SICOM6896G-S-AC350/550W	350W/550W AC power module (can be fully loaded with 6 line cards)
SICOM6896G-S-DC350/550W	350W/550W DC power module (can be fully loaded with 6 line cards)
SICOM6896G-S MSU	
SICOM6896G-S-MSU-I	4BS chassis, 1 type I single MSU is used for gigabit card, and max 1 card with 10 gigabit port More than 2 cards with 10 Gigabit, 2 I-type MSU cards are required;
SICOM6896G-S-MSU-II	8BS chassis is equipped with at least 2 I-type master controllers, can be equipped with gigabit LPU cards, and can be equipped with a maximum of 1 LPU card with 10G ports; equipped with 1 type 2 MSU: can only be equipped with gigabit cards, and can be equipped with a maximum of 1 10G card. If there are more than 2 cards with 10 Gigabit, you need to configure 2 Type II MSU
SICOM6896G-S Series LPU	
Gigabit LPU Card	
SICOM6896G-S-24GX24GE	24 Gigabit fiber ports(SFP) and 24 Gigabit copper ports(RJ45) LPU card
SICOM6896G-S-48GE	48 Gigabit copper ports(RJ45) LPU card
SICOM6896G-S-48GX	48 Gigabit fiber ports(SFP) LPU card
Gigabit & 10Gigabit LPU Card	
SICOM6896G-S-8X24GX	24 Gigabit fiber ports(SFP), 8 10Gigabit fiber ports(SFP+)LPU card
SICOM6896G-S-8X24GE	24 Gigabit copper ports(RJ45), 8 10Gigabit fiber ports(SFP+) LPU card
10Gigabit LPU Card	
SICOM6896G-S-16X	16 10Gigabit fiber ports(SFP+) LPU card
SICOM6896G-S-4QX	4 40Gigabit fiber ports(QSFP) LPU card