MyPower S8900 Series 40G Core Routing Switch

Datasheet

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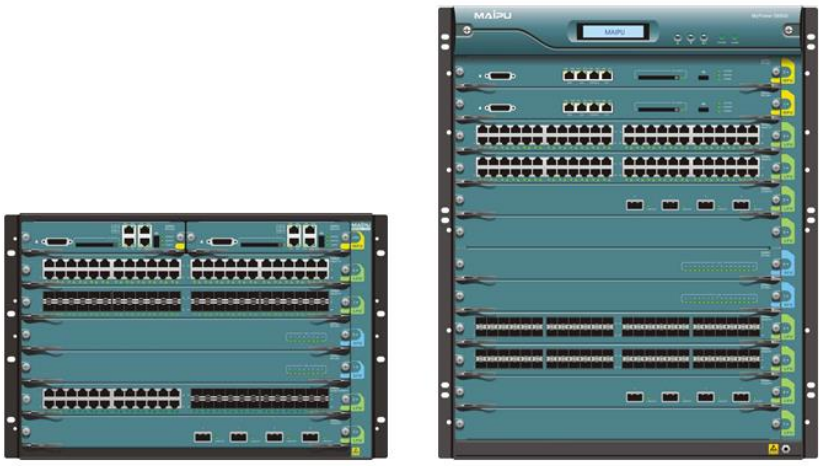
Overview

MyPower S8900 is Maipu new multi-service 40G core routing switch developed by Maipu. It adopts the ASIC+NP architecture design, provides the stable, reliable, and secure L2/L3 data wire-speed switching services for the next generation network, owns the advanced 10G Ethernet technology, supports various high-density interface board, and meets the high-density, high-throughput and no-block switching requirements of the core devices at the core layer. S8900 provides the new-generation core data switching service technology for the enterprise network with the services as the core. It supports the chassis with four slots, eight slots, respectively and provide the Tbps-level backplane bandwidth and switching capacity.



MyPower S8900

S8900 adopts the carrier-class reliability design and passive backplane technology and supports the control redundancy, switching redundancy, and power redundancy. Its board card, fan, and power supply are hot-swappable. Besides, it supports the STP/RSTP/MSTP/EIPS/VRRP protocols to realize the link redundancy and ensure that the services are not disconnected when the network fails in various networking modes. S8900 provides rich functions. For example, the hardware supports V6; provides various IPv6 networking modes and service applications (via the IPv6

Ready2 authentication); supports L2/L3/star/ring/tree MAN networking technologies and various flow classification technologies, QoS technologies, and multicast supporting technologies.

As the network core data switching platform, S8900 can cooperate with the other series switches of Maipu to provide a full range of MAN, LAN, and WAN solutions for the sectors of operators, financial services, government, energy, transportation, education, military, large and medium-sized enterprises. It is widely used in the data center, production network core, district network core, and IP MAN core of the foregoing sectors.

Key Features

- **Advanced hardware structure to ensure Tbps-level backplane and switching capacity**

S8900 switch adopts the ASIC+NP structure, provides passive copper backplane, realizes the intra-board and inter-board L2/L3 wire-speed distributed forwarding via Crossbar switching matrix, and performs high-speed route searching via powerful ASIC chip, thereby improving the forwarding performance and expanding capability greatly, reaching the Tbps-level backplane bandwidth and switching capacity, and providing advanced 40G Ethernet supporting, as well as high-density interface board to meet the high-density and high-throughput requirements of the devices at the core layer.

- **Separate the switching unit from the control unit, ensuring no packet loss**

MyPower S8900 adopts the technology of separating the control card and the switching card. When the control card fails and performs the redundant switching, it does not affect the data forwarding of the switching card and the data of the service cards is still forwarded normally on the switching card, so as to reach the high-reliability requirement of no packet loss.

- **Virtualization technology, achieve unified deployment and management**

MyPower S8900 supports VST management plane virtualization technology, including horizontal virtualization H-VST and virtualized deployment M-VST, it can realize high performance logical switch virtualized by more than one hundred different series of switches, for unified management and deployment.

Easy management: The entire virtualization architecture share one management IP address, simplify network topology and management, improve maintenance efficiency, highly reduce OPEX;

Strong architecture: With distributed cross-device link aggregation technology, multiple uplinks share load and backup each other, to improve redundancy in the network structure and link resource utilization;

High stability: Stacking to achieve local or remote function supports cross-device link bundling functionality to meet the core network links high-speed seamless switching needs.

- **50ms network recovering capability, ensuring that the service is not disconnected forever**

50ms network recovering capability is the telecom network reliability requirement. Maipu realizes the Ethernet fast network recovering capability via the private technology EIPS so that the IP network fault recovering capability improves from tens of seconds to 50ms, ensuring that the service recovers fast and the service is online forever.

- **High-performance 80G interface wire-speed service card, making the network architecture more simple**

The advanced Gigabit system design capability of Maipu realizes that the board supports 8-port 10Gigabit wire-speed interfaces. As the network core switching platform, S8900 reduces the network hierarchy and network devices via high-density Gigabit access capability, so as to make the network architecture simpler.

- **Rich Ethernet OAM features, making Ethernet manageable**

S8900 supports IEEE802.1ag, IEEE802.3ah, and E-LMI standard Ethernet OAM protocols so that Ethernet devices and Ethernet network have the link status, interface status, and network auto configured management capability. Moreover, S8900 provides IPFIX and SLA functions so that Ethernet has the complete promise service capability.

- **Stable core guarantee mechanism and the redundancy for key components to ensure the carrier-class reliability of the core devices**

All key components of S8900 provide the dual-redundancy or multi-redundancy. S8900 supports power redundancy, management module redundancy, switching matrix redundancy, and link redundancy. The

power module, fan module, and all service cards of S8900 are hot-swappable, ensuring that the services are not interrupted forever. The special dual-engine backup design ensures the carrier-class reliability of the core switching platform.

- **Hardware supports distributed IPv6 wire-speed forwarding**

Each wire card of S8900 has the hardware IPv6 capability, including protocol/function processing, and data forwarding, which avoids the bottleneck and delay problems of the centralized forwarding, provides the strong guarantee for the large-scale commercial applications of IPv6, and meets the different IPv6 applications.

- **Perfect network security features ensure that the core devices can provide the complete anti-attack and anti-virus capability**

S8900 adopts excellent security design; supports SNMP V3 based on user security policy, MAC+IP+VLAN binding, and 802.1X authentication; supports the security policies such as anti network storm attack, anti DOS/DDOS attack, anti ARP attack, anti-scan pry attack, anti freaky packet attack, and anti network protocol packet attack to prevent attacks and virus efficiently. It is suitable for large-scale, multi-service, and complicated-flow networks.

- **Low-power consumption and lead-free ROSH design**

According to 10℃ rule, the reliability and life of semiconductor chip are related with working temperature. The working temperature increases 10℃ and the reliability of semiconductor reduces a half, while the working temperature and power consumption are in direct proportion. The maximum power consumption of MyPower S8900 series 40G core routing switch is lower than 1800W, while the lower-power consumption design of S8900 makes the temperature of the board card semiconductor chip lower. Therefore, the low-power consumption design improves the use life and stable running of high-end devices, saves the running energy consumption of devices, and meets the green environmental protection requirements.

Technical Specifications

Product	**MyPower S8900 Series**	
Chassis	**SM8900-04**	**SM8900-08**
Chassis configuration		
Structure	Rack/modular distributed structure design	
Slots of the device	8	12
Control slots	2	2
Service slots	4	8
Switching slots	2	2
Console port	1	
Out-band interface	1	
Hot swap	The power supply, fan and board cards support hot-swap.	
Power supply redundancy	Supports power supply redundancy (N+M)	
Switching Card redundancy	Supports dual switching card redundancy	
Control Card redundancy	Supports dual control card redundancy	
Performance (SM8900-04/ SM8900-08)		
Switch capacity	640Gbps	1.28Tbps
IPv4 throughput	476Mpps	953Mpps
IPv6 throughput	476Mpps	953Mpps
Average non-fault time	>200,000 hours	
Standards & protocols		
L2 protocol	802.1X, VLAN, PVLAN, STP, RSTP, MSTP, port mirroring, IGMP Snooping, GVRP, Broadcast Storm Control, QINQ , VLAN Translation, AAA function, port binding, address filter, supports cross-board port/flow mirroring, supports RSPAN, IP-based ACL, MAC-based ACL, MAC+IP-based ACL, and Jumbo Frame	
50ms ring protection	Ethernet Intelligent Protection Switching(EIPS)	
IPv4 L3 protocols	Static route, RIPv1/v2, OSPF, BGP4, ISIS, IGMP, PIM-SM, PIM-DM, MBGP, VRRP, equivalent route, policy route, Graceful Restart	

IPv6 protocols	IPv4/IPv6 dual stack, TCP6, UDP6, RawIP6, Pingv6, TraceRoute6, Telnet6, FTP6, TFTP6, DNS6, ICMPv6, VRRPv3, DHCP6, ND, PMTUD, RIPng, OSPFv3, IS-IS6, BGPv4+, IPv6 static routing\IPv6 policy routing	
QoS	Supports Diff-serv/QOS, flow monitoring (CAR), SP, WRR, SP+WRR queue scheduling algorithm, 802.1P/DSCP/TOS, queue scheduling mechanism, Two rate Three color (trTcm)	
Upper layer application	DHCP/DHCP Option82/DHCP Relay/DHCP Snooping, IGMPv1/v2/v3, IGMPv1/v2/v3 Snooping, PIM-SM/PIM-DM/PIM-SSM	
Security mechanism	SSH, ACL flow filtering mechanism, ACL, ARP, SNMPv3, Radius user-graded login authentication, TACACS+, access table host access control, data log, IP address/VLAN ID/MAC address/port binding, packet filtering, packet filtering of application layer	
Stacking	Maipu Virtual Stacking Technology H-VST and M-VST	
POE	POE and POE+ Supports	
System management	SHELL, TELNET, FTP, SNMP V1/V2/V3, IP-SLA, Network management software, Third-party software, IPFIX (Netflow), NTP clock	
Reliability	BFD for BGP/IS-IS/OSPF/RSVP/VPLS PW/VRRP, Keepalive gateway, Smart link, VRRP, VRRPv3, VRRPE, IP FRR, TE FRR	
Virtualization	H-VST 4 device M-VST 128 device	
IEEE standards	IEEE 802.3 (10BASE-T) IEEE 802.3u (100BASE-T) IEEE 802.3z (1000BASE-X) IEEE 802.3ab (1000BASE-T) IEEE 802.3ae (10G BASE) IEEE 802.1ad (Q-in-Q) IEEE 802.3ad (Link Aggregation) IEEE 802.3x (Flow Control) IEEE 802.1d (STP) IEEE 802.1Q (Virtual LAN) IEEE 802.1w (RSTP) IEEE 802.1s (MSTP) IEEE 802.1p (COS priority) IEEE 802.1x (port authentication) IEEE 802.3af (POE) IEEE 802.3at (POE+)	
Physical index		
Dimension (W×D×H)	444x600x310 (7U)	444x600x577 (13U)
Power supply		
Input voltage (AC)	100-240V, 50-60Hz	
Input voltage (DC)	-40~-57V	
Environment parameters		
Working temperature	0~55℃	
Working humidity	10-90% no-condensing	

Order Information

Model	Description
MyPower S8900 Series	
Chassis and power supply	
SM8900-04-MF	SM8900-04-MF chassis, two control engine slots, two switching engine slots, four service slots, one fan slot, four power slots.
SM89-MPUAH	SM89-MPUAH Control Engine, supporting active/standby backup function (one is mandatory, 1+1 redundancy is optional) (for SM8900-04-MF)
SM89-SFUAH	SM89-SFUAH Switching Engine; one is mandatory; 1+1 redundancy is optional, for SM8900-04-MF
FAN-7A-01	FAN-07A-01 Fan module
SM8900-08-MF	SM8900-08-MF chassis, two control engine slots, two switching engine slots, eight service slots, one fan slot, four power slots.
SM89-MPUBH	SM89-MPUBH Control Engine, supporting active/standby backup function (one is mandatory, 1+1 redundancy is optional) (for SM8900-08-MF)
SM89-SFUBH	SM89-SFUAH Switching Engine; one is mandatory; 1+1 redundancy is optional, for SM8900-04-MF
FAN-13A-01	FAN-13A-01 Fan module
SM89-SIUH	SM89A-SIUH Liquid crystal display card
AD1000-1S007Z	AD1000-1S007Z, 1000w AC power module
DD600-1S007Z	DD600-1S007Z, 600w DC power module
Service Modules	
SM89-48GETP-EA	48-port 1000M electric interface module,PoE&PoE+ Enable
SM89-24GET24GEF-EA	24-port 1000M electric interface and 24-port 1000M optical interface module
SM89-48GEF-EA	48-port 1000M optical interface module (SFP optical module needs to be configured)
SM89-48GET-EA	48-port 1000M electric interface module
SM89-8XGEF2QXGE-EA	8-port 10G Ethernet interface and 2-port 40G Ethernet interface board (SFP+ optical module and QSFP optical module needs to be configured)
SM89-32XGEF-EA	32-port 10G Ethernet interface (SFP+ optical module needs to be configured)
SM89-16XGEF-EA	16-port 10G Ethernet interface (SFP+ optical module needs to be configured)
SM89-16XGEF4QXGE-EA	16-port 10G Ethernet interface and 4-port 40G Ethernet interface board (SFP+ optical module and QSFP optical module needs to be configured)