MyPower S8900E Series Core Switch Datasheet

Overview

MyPower S8900E is Maipu new multi-service MPLS 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 1G/10G/40G/100G 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. S8900E 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, ten slots, respectively and provide the Tbps-level backplane bandwidth and switching capacity.

MyPower S8900E Series

S8900E 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/ERPS/VRRP protocols to realize the link redundancy and ensure that the services are not disconnected when the network fails in various networking modes. S8900E provides rich functions. For example, the hardware supports IPv6; provides various IPv6 networking modes and service applications; 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, S8900E 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**

MyPower S8900E 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 1G/10G/40G/100G 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 S8900E 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.

- **Support rich data center features**

MyPower S8900E core switch adopts SDN architecture design, supporting NETCONF interfaces to third-party software creating open programming mode. MyPower S8900E support VxLAN and EVPN technologies for large L2 data center network for the migration of virtual machines.

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

MyPower S8900E core switch supports horizontal N:1 virtualization(H-VST) up to 4 devices and supports 128 vertical N:1 virtualization(M-VST).

Easy management: The entire virtualization architecture shares 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. S8900E 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 640G interface wire-speed service card, making the network architecture more simple**

The advanced Gigabit system design capability of S8900E realizes that the board supports high-density 1G/10G/40G wire-speed interfaces. As the network core switching platform, S8900E reduces the network hierarchy and network devices via high-density access capability, so as to make the network architecture simpler.

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

S8900E supports IEEE802.1ag, IEEE802.3ah standard Ethernet OAM protocols so that Ethernet devices and Ethernet network have the link status, interface status, and network auto configured management capability. Moreover, S8900E 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 S8900E provide the dual-redundancy or multi-redundancy. S8900E supports power redundancy, management module redundancy, switching matrix redundancy, and link redundancy. The power module, fan module, and all service cards of S8900E 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 S8900E 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 V1/2/3 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℃ rules, 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 S8900E series core switch is lower than 1800W, while the lower-power consumption design of S8900E 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 S8900E Series			
Chassis	**SM8900E-06**	**SM8900E-10**	**SM8900E-08**	**SM8900E-12**
Chassis configuration				
Structure	Rack/modular distributed structure design			
Control Engine Slots	2	2	2	2
Switching Fabric Slots	2	2	4	4
Service Slots	6	10	8	12
Power supply Slots	4	4	4	8
USB	1	1	1	1
SD Slot	1	1	1	1
Console	2(RJ45+USB)	2(RJ45+USB)	2(RJ45+USB)	2(RJ45+USB)
Reset	1	1	1	2
CMM	1	1	1	2
Out-Band Management	1	1	1	1
FAN Array	2	2	2	4
Average non-fault time	>200,000 hours			
Standards & protocols				
Main Protocol	802.1X, VLAN, PVLAN, STP, RSTP, MSTP, port mirroring, IGMP Snooping, GVRP, Broadcast Storm Control, QINQ, VLAN Translation, 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	ERPS			
MPLS VPN	LDP, MPLS L3 VPN, MPLS QoS, MPLS FRR			
IPv4 Routing Protocols	Static route, RIPv1/v2, OSPF, BGP4, ISIS, IGMP, PIM-SM, PIM-DM, MBGP, VRRP, equivalent route, policy route, Graceful Restart			
IPv6 Main 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			
Data Center Features	VxLAN, E-VPN, Netconf			
OAM	802.3ah OAM、802.1ag OAM			
System management	SHELL, TELNET, FTP, SNMP V1/V2/V3, IP-SLA, TR069, 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, VRRP, IP FRR, TE FRR, ISSU			
Virtualization Stacking	H-VST Virtualization (4:1) M-VST Virtualization (128:1) VSD Virtualization (1:2)			
IEEE standards	IEEE 802.3z (1000BASE-X) IEEE 802.3ab (1000BASE-T) IEEE 802.3ae (10G SFP+) IEEE 802.3ba (40G QSFP) IEEE 802.1ad (Q-in-Q) IEEE 802.3x (Flow Control) IEEE 802.3ad (Link Aggregation) IEEE 802.1x (port authentication) IEEE 802.1d (STP) IEEE 802.1Q (Virtual LAN) IEEE 802.1w (RSTP) IEEE 802.1s (MSTP) IEEE 802.1p (COS priority) IEEE 802.3az EEE			
Physical index				
Dimension (W×D×H)	441x434x488 (11U)	441x434x666 (15U)	442x645x666mm (15U)	442x645x841mm (19U)
Power Supply				
Input voltage (AC)	100-240V, 50-60Hz			
Environment Parameters				
Working temperature	0~50℃			
Working humidity	5-95% no-condensing			

Order Information

Model	Description
MyPower S8900E Series	
Chassis and power supply	
SM8900E-06/10	
SM89E-06-MF	SM8900E-06 chassis, two control engine slots, two switching engine slots, six service slots, two fan slot, four power slots.
SM89E-10-MF	SM8900E-10 chassis, two control engine slots, two switching engine slots, ten service slots, two fan slot, four power slots.
SM89E-MPUC	SM89E-MPUC Control Engine, supporting active/standby backup function (one is mandatory, 1+1 redundancy is optional)
SM89E-SFUD	SM89E-SFUD Switching Engine, for SM8900E-06&10
FAN-11A-01	FAN-11A-01 Fan module for SM89E-06-MF
FAN-11B-01	FAN-11B-01 Fan module for SM89E-10-MF
SM8900E-08/12	
SM89E-08-MF	SM8900E-08 chassis, two control engine slots, four switching engine slots, eight service slots, two fan slot, four power slots.
SM89E-12-MF	SM8900E-12 chassis, two control engine slots, four switching engine slots, twelve service slots, four fan slot, eight power slots.
SM89E-MPUB	SM89E-MPUB Control Engine, supporting active/standby backup function (one is mandatory, 1+1 redundancy is optional)
SM89E-SFUG	SM89E-SFUG Switching Engine, for SM8900E-08
SM89E-SFUB	SM89E-SFUB Switching Engine, for SM8900E-12
FAN-15A-01	FAN-15A-01 Fan module for SM89E-08
FAN-19A-01	FAN-19A-01 Fan module for SM89E-12
Power Module	
AD800-1D005M	AD800-1D005M,800W AC power module
AD1600-1D005M	AD1600-1D005M,1600W AC power module
Service Modules	
EA Modules (Complete L2&L3 Features)	
SM89E-48GEF2XGEF-EA	48-port 1000M optical interface,2 port 10G optical interface
SM89E-48GET2XGEF-EA	48-port 1000M electric interface,2 port 10G optical interface
SM89E-24GET24GEF2XGEF-EA	24-port 1000M optical interface,24-port 1000M electric interface,2 port 10G optical interface
SM89E-48GETP2XGEF-EA	48-port 1000M electric interface,2 port 10G optical interface，PoE&PoE+ Enable
SM89E-16XGEF-EA	16-port 10G Ethernet interface

SM89E-16XGEF4QXGE-EA	16-port 10G Ethernet interface and 4-port 40G Ethernet interface board
SM89E-52XGEF-EA	52-port 10G Ethernet interface
DB Modules (Complete L2&L3 Features, VxLAN)	
SM89E-48GEF-DB	48-port 1000M SFP optical interface
SM89E-48GET-DB	48-port 1000M Base-T electrical interface
SM89E-24XGEF-DB	24-port 10G SFP+ optical interface
SM89E-24GEF24XGEF-DB	24-port 1000M SFP optical interface, 24-port 10G SFP+ optical interface
SM89E-48XGEF-DB	48-port 10G SFP+ optical interface
SM89E-48XGET-DB	48-port 10G Base-T electrical interface
SM89E-12QXGE-DB	12-port 40G QSFP optical interface
SM89E-16QXGE-DB	16-port 40G QSFP optical interface
SM89E-4QFP-DB	4-port 100G QSFP28 optical interface
SM89E-48GEF-DB	48-port 1000M SFP optical interface
SM89E-48GET-DB	48-port 1000M Base-T electrical interface
SM89E-24XGEF-DB	24-port 10G SFP+ optical interface
SM89E-24GEF24XGEF-DB	24-port 1000M SFP optical interface, 24-port 10G SFP+ optical interface
Value Added Modules	
SM89E-AC-A	Wireless Controller Module, 12*1000M Base-T, 8*1000M SFP, 2*10G SFP+
SM89E-FW-A	Firewall Module, 4*1000M Base-T, 4*1000M SFP
Stacking Cable	
SFP-STACK-15	High speed stacking cable, SFP+ to SFP+,10Gbps, L=1.5m
SFP-STACK-30	High speed stacking cable, SFP+ to SFP+,10Gbps, L=3.0m
SFP-STACK-50	High speed stacking cable, SFP+ to SFP+,10Gbps, L=5.0m
QSFP-STACK-10	High speed stacking cable, QSFP+ to QSFP+,40Gbps, L=1.0m
QSFP-STACK-30	High speed stacking cable, QSFP+ to QSFP+,40Gbps, L=3.0m
QSFP-STACK-50	High speed stacking cable, QSFP+ to QSFP+,40Gbps, L=5.0m