MyPower S12800 Series 100G Core Routing Switch

Datasheet

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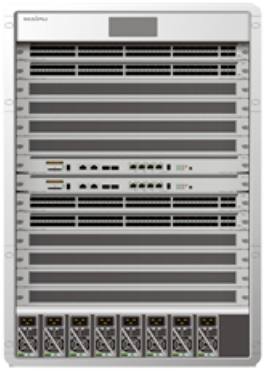
Overview

MyPower S12800 is new super high performance 100G core routing switch developed by Maipu. It adopts the CLOS architecture design, provides the stable, reliable, and secure L2/L3 data wire-speed switching services for the next generation network, owns the advanced 10G/40G 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. S12800 provides the new-generation data center switching service technology for the enterprise network with the services as the core. It provides the Tbps-level backplane bandwidth and switching capacity.



MyPower S12800 Series 100G Core Routing Switch

S12800 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. S12800 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 Metro-E features; provides various flow classification technologies, QoS technologies, and multicast technologies.

As the network core datacenter switching platform, S12800 can cooperate with the other series switches of Maipu to provide a full range of enterprise LAN solutions for the sectors of 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 CLOS structure to ensure Tbps-level backplane and switching capacity**

MyPower S12800 switch adopts the CLOS 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 10G/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 S12800 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 S12800 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-density 10G/40G interface wire-speed service card, capability of upgrade to 100G in the future**

The advanced 10G&40G system design capability of Maipu realizes that the board supports 52-port 10G SFP+ and 16-port 40G QSFP interfaces. As the network core switching platform, S12800 reduces the network hierarchy and network devices via high-density 10G/40G access capability, so as to make the network architecture simpler. S12800 has capability of upgrade to 100G in the future with its powerful switching Fabric.

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

S12800 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, S12800 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 S12800 provide the dual-redundancy or multi-redundancy. S12800 supports power redundancy, management module

redundancy, switching matrix redundancy, and link redundancy. The power module, fan module, and all service cards of S12800 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.

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

S12800 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 S12800 series 40G core routing switch is lower than 2000W, while the lower-power consumption design of S12800 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 S12800 Series
Chassis	**SM12800-12**
Chassis configuration	
Structure	Rack/modular distributed structure design
Slots of the device	18
Control slots	2
Service slots	12
Switching Fabric slots	4
Power slots	8
Fan slots	4
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 switching card redundancy
Control Card redundancy	Supports control card redundancy
Performance	
Switch capacity (Bi-Direction)	10.2Tbps
IPv4 throughput (Bi-Direction)	7624Mpps
Average non-fault time	>250,000 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 protocol	Static route, RIPv1/v2, OSPF, BGP4, ISIS, IGMP, PIM-SM, PIM-DM, MBGP, VRRP, equivalent route, policy route, Graceful Restart, BFD for BGP/IS-IS/OSPF/RSVP/VPLS PW/VRRP
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
System management	SHELL, TELNET, FTP, SNMP V1/V2/V3, IP-SLA, Network management software, Third-party software, IPFIX (Netflow), NTP clock
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 802.3ba (40G BASE) IEEE 802.1ad (Q-in-Q) IEEE 802.3x (Flow Control) IEEE 802.3ad (Link Aggregation) 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)
Power supply	
Input voltage (AC)	100-240V, 50-60Hz
Environment parameters	
Working temperature	0~45℃
Working humidity	10-90% no-condensing

Order Information

Model	Description
MyPower S12800 Series	
Chassis and power supply	
SM12800-12-MF	SM12800-12 chassis, 12 service slots, 2 control engine slots, 4 switching fabric slots, 2 Fan slots, 8 Power slots
SM128-MPUB	Control module, supporting active/standby backup function (one is mandatory, 1+1 redundancy is optional) (for S12800-12)
SM128-SFUB	Switching fabric module\
FAN-19A-01	Fan module, need configure two Fans module (for S12800-12)
AD1600-1D005M	1600W AC power module
Business line-card	
SM128-48GET4XGEF-DA	48-port 1000M Base-T and 4-port 10G SFP+ interfaces module (the SFP+ optical transceiver needs to be configured)
SM128-16QXGE-DA	16-port 40G SFP+ interfaces module (the SFP+ optical transceiver needs to be configured)
SM128-52XGEF-DA	52-port 10G SFP+ interfaces module (the SFP+ optical transceiver needs to be configured)
SM128-48GEF2XGEF-SA	48-port 1000M Base-T and 2-port 10G SFP+ interfaces module (the SFP+ optical transceiver needs to be configured)
SM128-16XGEF4QXGE-SA	16-port 10G SFP+ and 4-port 40G QSFP interfaces module (the SFP+ and QSFP optical transceiver needs to be configured)
SM128-44GET4GE-SA	44-port 1000M Base-T and 4-port 1G SFP interfaces module (the SFP optical transceiver needs to be configured)