ZXR10 8900 Series Terabit MPLS Routing Switch —Complicated Network, Simple choice

Overview

ZXR10 8900 series Terabit MPLS routing switches are high-end switch products presented by ZTE with high capacity and performance for the core/aggregation layer of the network. This series is consisted of the following models: ZXR10 8912, 8908, 8905, 8902. ZXR10 8900 family supports L2/L3/L4 wire speed switching and are mainly positioned at the core/aggregation layer of Metro Network and the campus, E-government and corporate network.

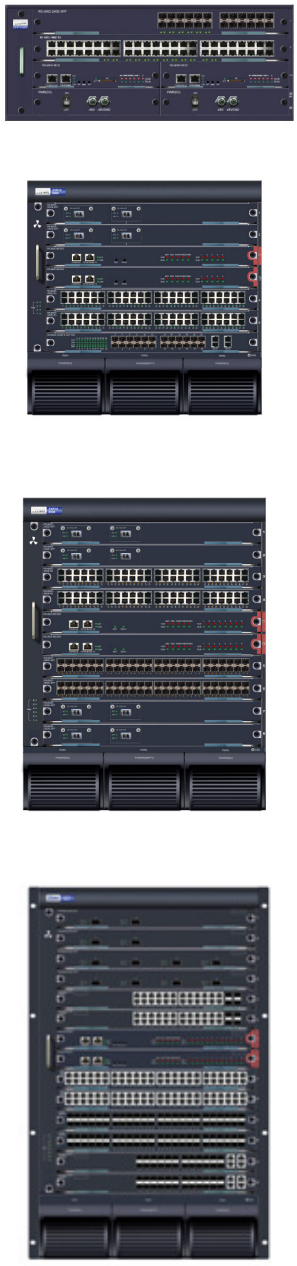


Figure 1 ZXR10 8902/8905/8908/8912

Advanced Features

Robust Hardware Architecture

ZXR10 8900 adopts a large-capacity and high-speed serial bus backplane to connect the main control board with all service line cards. The control and switch matrices are integrated in one main-control unit and can provide 1:1 redundancy. A large-capacity switch matrix is used to guarantee sufficient switching capacity that the system may need when it is operating at wire speed. The control board uses a high-performance CPU and large memory to ensure adequate computing power and storage space for speedy protocol processing and quick look up in big table structures. Each line card provides packet processing capability at wire speed through ASIC and offers 10G, 1G and 100M interfaces to different services.

High Performance Software Platform

For software, the ROS operating system of ZXR10 8900 is a multi-task, real-time operating system. It is responsible to manage the hardware architecture of the entire routing switch, providing a unified operation platform for the applications. Based on the VxWorks kernel, single-processor process scheduling, process synchronization, memory management, and time management can be well-implemented. Kernel functions such as communications between processes of the same CPU and between processes of multi-processor are also supported to provide reliable, efficient and stable services for the upper layer. High reliability, real-time capability, self-healing, maintainability,

simplicity and encapsulating capability are all taken into consideration.

Large capacity

ZXR10 8912 supports up to 1152Gbps non-blocking switching capability, supports 857Mpps packet forwarding capability, supports 500K L3 route entries, 256K MAC addresser, 4096 VLAN , 10K ACL per interface module to satisfy data wire speed forwarding requirements.

Customer Benefits

Carrier-class Reliability to ensure Ever-online Services

Key modules such as system controlling unit and power supply adopt 1:1 mode backup. The high reliability is ensured by Hitless Protection System (HPS). Strict reliability requirements are satisfied when the redundancy control module is properly configured. It supports ZESR intelligent Ethernet technology based on EAPS as well as functions such as VRRP, LACP and STP provide further reliability for users.

Carrier-class Ethernet OAM

ZXR10 8900 Ethernet OAM bases on IEEE802.1ag, IEEE802.3ah and MPLS OAM which can reduce OPEX and make the network easier to operate and manage;

Comprehensive MPLS related features

ZXR10 8900 features more powerful MPLS capability. Besides MPLS L3 VPN and VPLS/VPWS, it offers more advanced functions such as MPLS TE and MPLS FRR as well.

Abundant line card types

ZXR10 8900 also supports extremely abundant line card types. Users have a wide selection of line card types to choose from, which could help cut the CAPEX a lot.

DPI service module

DPI service module is designed for checking services via deep packet inspection technology instead of forwarding packets directly. Deep Packet Inspection technology identifies traffic accurately, and implements control and statistical analysis. It provides rich control and QOS policies for customers to help them to make the best use of network resource and realize differentiated service based upon user and service.

Firewall service module

Firewall service module is particularly used for providing firewall function for the entire system, which can enhance security; Firewall service module provides many security functions including filtering, anti-attack service, NAT, and security management.

Applications and Services

The ZXR10 8900 enables service providers to offer the multiple services on converged network architecture, including FTTH, HSI, IPTV,L2/L3VPN,2G/3G/LTE service, etc. Two of the typical application cases are listed below:

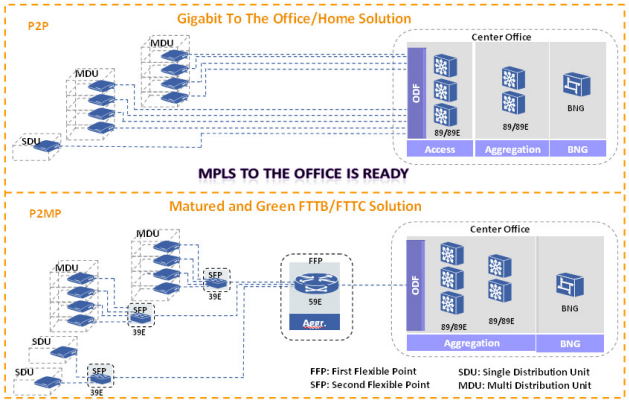


Figure 2 ZXR10 8900 application in E-FTTX

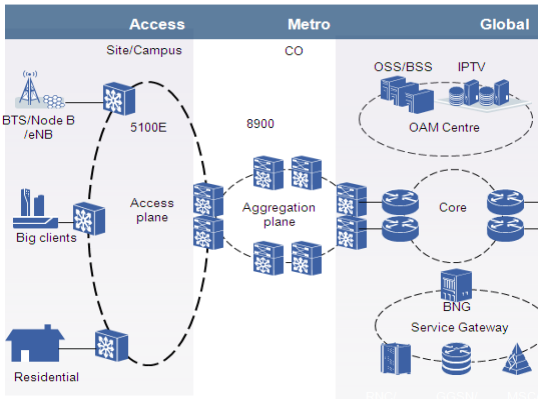
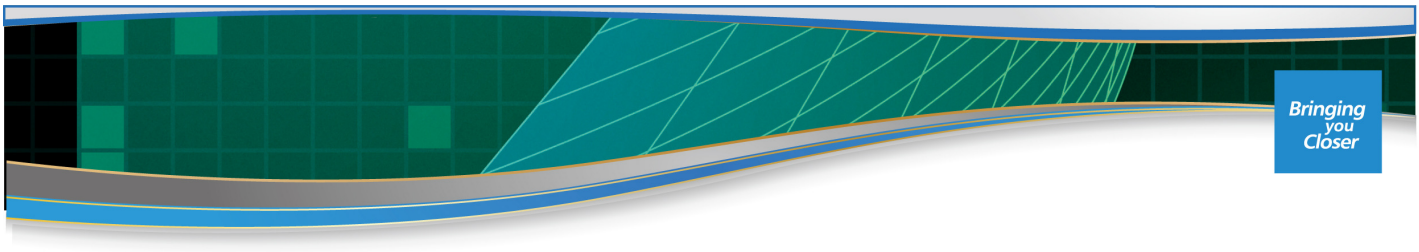


Figure 3 ZXR10 8900 application in Metro Ethernet



Product Architecture

ZXR10 8900 supports a wide variety of line cards in order to provide flexible interface combinations. All available line card types include FE electrical/optical port cards, GE electrical/optical port cards, and 10GE optical port cards can be found in the table below:

Type	Interface Module
Ethernet	44 FE+ 4 GE/FE Optical Interface Board
	48 FE Electrical Interface Board
	48 FE Optical Interface Board
	24 GE Electrical Interface Board
	24 GE Optical Interface Board
	48 GE Electrical Interface Board
	48 GE Optical Interface Board

Type	Interface Module
	24 GE Optical + 2 10GE Optical Interface Board
	24 GE Electrical + 2 10GE Optical Interface Board
	12 GE Optical + 12 GE Optical/Electrical + 2 10GE Optical Interface Board
	2 10GE Optical Interface Board
	4 10GE Optical Interface Board
	8 10GE Optical Interface Board

Model	Switching Capacity	Forwarding Capacity	LIC Slot	Redundant Hardware
8912	1152Gbps	857Mpps	12	Yes
8908	768Gbps	571Mpps	8	Yes
8905	480Gbps	357Mpps	5	Yes
8902	192Gbps	143Mpps	2	Yes

Technical Specification

Technical Specification	8912	8908	8905	8902
L2 protocol support	IEEE 802.3, IEEE 802.3u, IEEE 802.3z, IEEE 802.3x and IEEE 802.1p, etc. STP, MSTP/RSTP, VLAN, QinQ, ZESR			
QOS feature	Packets classification: L2/L3/L4, priority marking, ingress policing/resources control, egress traffic shaping, H-QoS, queue management and scheduling, congestion avoidance			
Routing protocols	RIP1/2,OSPF, BGP, IS-IS, RIPng, BGP4+, OSPFv3, IS-ISv6, 6to4 tunnel and 6PE			
Service features	MPLS VPN, RSVP-TE, OSPF-TE, ISIS-TE, MPLS-TE, FRR, PBT, NAT,NAT log, Multicast, Bandwidth control, 802.1x, RADIUS, DHCP Relay , DPI, FW etc.			
Physical dimensions (H*W*D)	755*442*450 mm	577*442*450 mm	440*442*450 mm	175*442*420 mm
Maximum Weight	< 65kg	< 49kg	< 38kg	< 25kg
Power supply (DC/AC)	AC : 100V~240V, 50Hz ~60Hz; DC: -57V~-40V			
Maximum Power	1800W	1200W	720W	288W
MTBF/MTTR	200000 hours/30 minutes			
Noise	<70 dB			
Operating Environment Requirement	Temperature:0℃~+45℃; Humidity:10%~90% (non-condensing)			

China
NO. 55, Hi-tech Road South, ShenZhen, P.R.China
Tel:+86-755-26770000
Postcode: 518057

West Europe
114 rue galliéni, 92100Boulogne Billancourt, France
Tel:+33 (0)1707 25 700

North America
Paseo de la Reforlma 404, Floor 13 Col,Juarez,Cuauhtemoc, Mexico,D.F.
Tel:+52 55 52072786
Fax:+52 55 52070020

South Africa
Block D, Lincoln Wood office park, woodland drive, Wood mead, JHB, SA
Tel:+27-11-6565093
Fax:+27-11- 6565087

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