Building Elastic, Agile and Open Networks Supporting Future Needs

—ZXR10 V6000 vRouter and vMSR

In recent years, an increasing number of telecommunciations operators started plans for network cloudification transformation, while enterprises and organizations are switching to cloud-based ICT services. Network Function Virtualization (NFV) of basic network elements has emerged as the key technology for network cloudification. As one of the world's leading communications equipment providers, ZTE released the ZXR10 V6000 vRouter & vMSR, leveraging over twenty years of experience in IP product development and data network construction, to boost network and service upgrade and transformation.

Based on two core technologies of ROSng inside and vSSP abstract, ZTE's virtual router emulates product functions and maintenance and management capabilities of traditional physical devices. It provides high performance and reliability according to the requirements of carrier-class operation. ROSng as the unified protocol stack platform of ZTE's network products is responsible for providing rich infrastructure, service applications and maintenance and management services. Employing a multi-process modular design and distributed architecture, it implements flexible module-based combination of services to fully meet various network requirements, with commercial deployments around the world. The vSSP forwarding architecture performs software abstraction and modeling for high-performance forwarding components such as network processor (NP) and traffic manager (TM) of traditional router line cards, and completely tracks all service capabilities of traditional routers, especially complicated multi-service forwarding and processing capability under the X86 scenario.
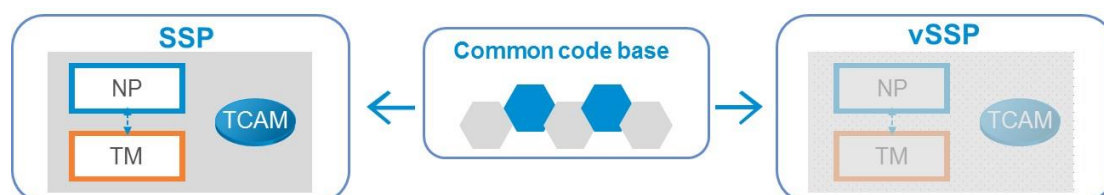

Figure 1   vSSP Diagram

Emulating the functions of traditional routers, ZTE's virtual router provides higher flexibility and elastic expansion capability for future network services.

✧ **Elastic**

On the forwarding plane, the ZXR10 V6000 virtual router adopts fully distributed architecture and innovative software and hardware technologies to optimize the forwarding performance in multi-service superposition scenarios. It supports seamless dynamic expansion, and maximally supports expansion to 254 forwarding planes. The network capacity can be expanded and reduced dynamically to meet the performance requirements in different scenarios.

✧ **Service chain**

The ZXR10 V6000 virtual router provides strong expansion capabilities based on standard service chain. Together with the NFV management platform and orchestration system, it can implement flexible service orchestration and build flexible and diversified value-added network platforms.

✧ **L3 decoupling**

The ZXR10 V6000 virtual router can run on ZTE's TECS cloud operating system platform or third-party virtual platforms such as VMware and KVM, meeting the customer's requirement for L3 decoupling of communications cloud resource and seamlessly adapting to the customer's deployment environment.

✧ **New networks, new services**

To address the demands of operators and enterprise customers, ZTE proposes a number of integrated solutions such as CO rearchitecting, Network on Demand (NoD) and Elastic VPN with the V6000 virtual router as the core network element. Besides virtualized network elements, the solutions can also provide UME service orchestration system, ZENIC controller and vManager management system to build complete service operation system, implement rapid service delivery and meet the demand for fast, configurable and cloudified service deployment.
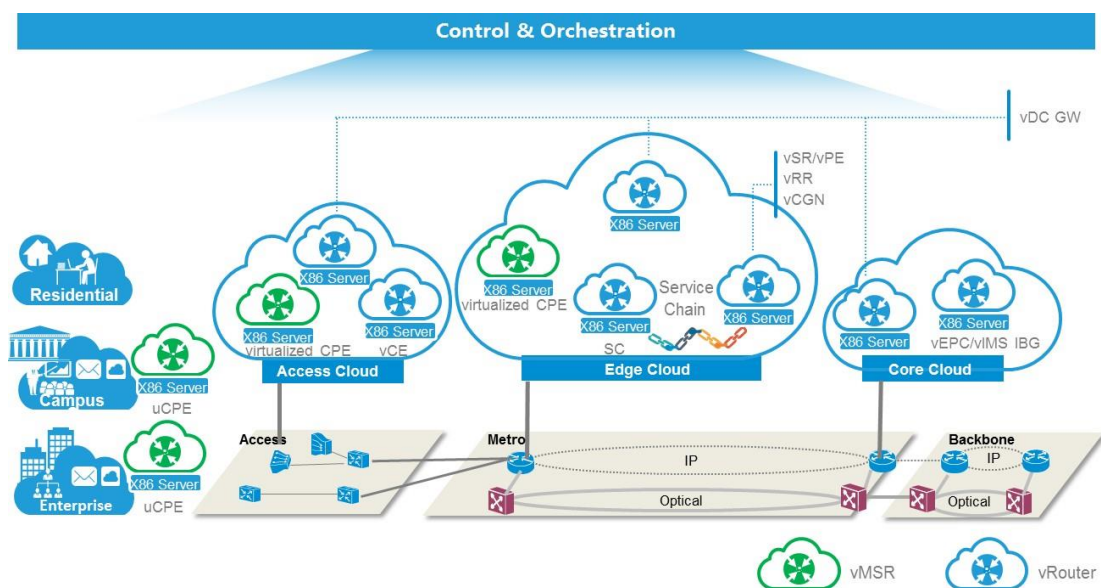
Figure 2   Application Scenario of ZXR10 V6000 vRouter & vMSR

With industry-leading expertise in SDN and NFV technologies, ZTE will continue to closely track customers' needs for ongoing optimiziation, and collaborate with manufacturers, customers and standardization organizations to drive mutually-beneficial development, actively promote the healthy development of the NFV industry and help customers to build elastic, agile and open networks.