

Guangdong Telecom Selects Juniper Networks to build Broadband IP Network



Challenges

- Transform the investment in broadband network into sustainable operation revenue
- Eliminate network “bottleneck” with higher-capacity broadband access platform
- Create value-added services

Actions

Deploy E-series to build stable, scalable and high-performance networks that can meet growing customer demands

Advantages

- Ensure the performance and reliability of broadband access
- Ensure stable revenues to carriers
- Support multiple services

Overview

Carriers the world over are looking to transform their broadband network investments into sustainable, profit-generating networks, capable of meeting the demands of various broadband applications today and tomorrow. Carriers need to employ realistic and effective strategies to maximize the capabilities and meet the requirements of all parties involved in broadband deployment.

Guangdong Telecom is a solely-owned subsidiary of China Telecom with corporate headquarters in the Guangdong Province. It operates 22 prefectural, city-level telecommunication offices and 78 county-level telecommunication offices, whose business scale includes

domestic and international fixed telecom networks and infrastructures (including local wireless loops), telecom network-based voice, data, video, multimedia communication and information services and other services relating to communications and information. While accelerating the construction of the underlying communication network, Guangdong Telecom also is committed to the construction of information communication networks and the development of an information service portfolio to meet the demands of the evolving informatization. Having spent many years on construction, Guangdong Telecom has built up an information telecommunication network that offers wide coverage, high technology and comprehensive capacities.

“Guangdong Telecom selected Juniper Networks for the impressive high reliability and services-enabling capabilities of the E-series.”

Technical Leader
Guangdong Telecom



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Increasing Demand for Value-added Services

Guangdong Telecom began to offer ADSL broadband access services at scale in 1999. With the increase of its subscriber base, Guangdong Telecom required a high-capacity broadband access platform to eliminate the “bottleneck” in its network. In 2001, Guangdong Telecom selected Juniper Networks ERX-1400 Edge Router to expand its existing residential and business broadband network services, and eventually upgraded its infrastructure into one of the largest broadband IP networks in China. Since that time, Guangdong Telecom has continued with a series of network expansion. Currently, its ERX-1400 Edge Router-based broadband IP network covers the entire Pearl River Delta, including Guangzhou, Shenzhen, Dongguan, Shunde, Jiangmen, Foushan, Huizhou, etc. At present, Guangdong Telecom has about 700,000 ADSL subscribers. Together with its other broadband access subscribers, its subscriber base is over one million and is expected to reach 1.5 million by the end of 2003. Guangdong Telecom expects that its subscribers can benefit from the various enhanced features, new capacities and new broadband services offered by the current broadband access network, which is capable of satisfying the demands of future business expansion and which takes advantage of the opportunity arising from the rapid increase of Internet services in China.

Technical Solutions

The Juniper Networks E-series Edge Routing product is designed to meet the carrier requirements at the network edge. The innovative ASIC-based E-series routers are ideal platforms for deploying the IP services at the carrier edge.

(1) E-series xDSL Solution

The E-series is the best xDSL subscriber management platform, providing the comprehensive performance, density and scalability required by IP services in a large-scale deployment. Combined with the subscriber management capacity, Level 1 routing and the innovative IP QoS features, Juniper Networks E-series

platform enables Guangdong Telecom to provide competitive new IP services for their ADSL subscribers.

Regardless of whether the E-series is deployed at the central office by the carriers or at the POP by the service providers, the E-series is fully transparent to vendor-specific DSL devices, aggregating data traffic from several Digital Subscriber Line Access Multiplexers (DSLAM). In addition, the OC-3/STM-1 or OC-12/STM-4 for the E-series typically delivers support for high-speed links into the core of the backbone. Unlike other products, the E-series is a complete subscriber management platform, providing basic services, a full suite of service profiles distribution and network routing. In addition, the E-series can enable all critical xDSL edge capacities as well as new advanced capacities.

The E-series products are designed to implement xDSL subscriber management platform capability, combining the scalability, performance, reliability and the rich software feature sets of the carrier-class router. With the E-series, xDSL subscribers no longer need any auxiliary products to access the network and can benefit from wire-speed performance as well as support for new IP services and comprehensive Internet routing. The scalable xDSL solution supporting large-scale deployment can enable service providers to reduce their capital investment and simplify network management.

(2) E-series Value-added Solution

Facing the increasing competition and price pressure of the traditional transmission service market, service providers turn to offering value-added services to increase revenue and maintain customer retention. With value-added IP services, the service provider can make its services more attractive to its subscribers, thus improving the value to their subscribers as well as themselves. The E-series not only enables Guangdong Telecom to satisfy the demands of the current broadband access services, but also provides the ability to offer value-added broadband services in the future.

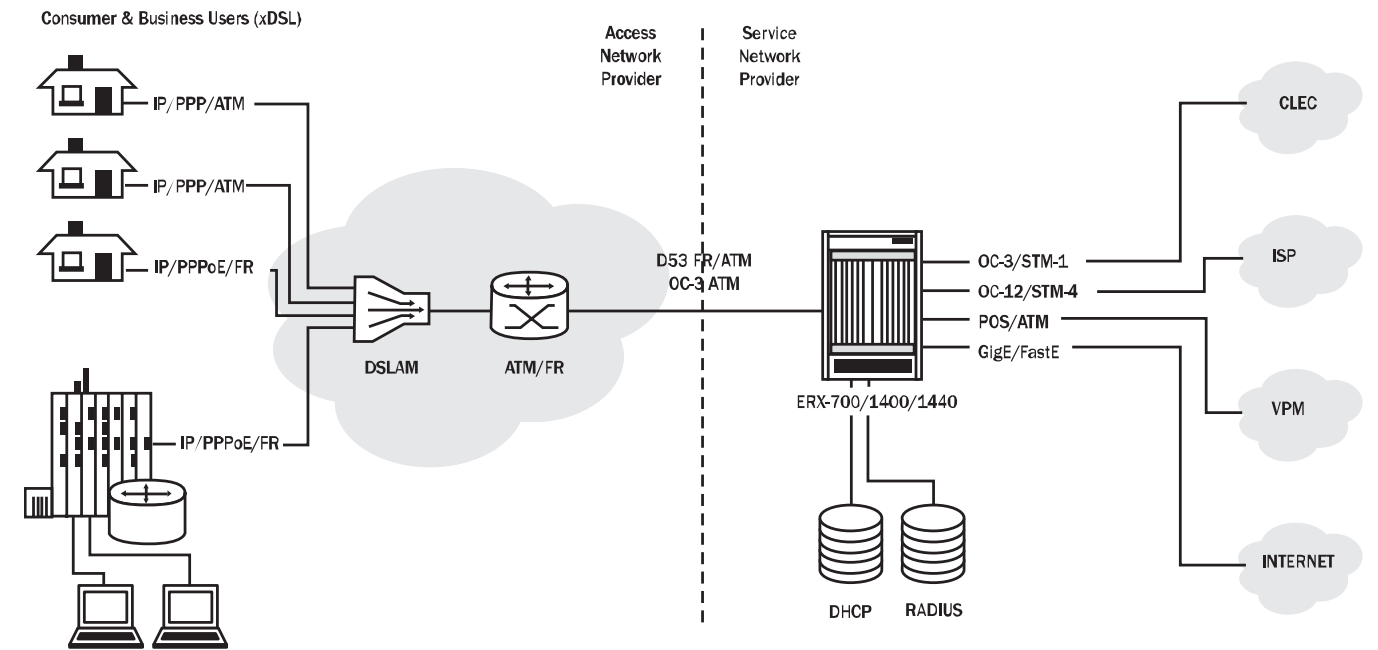


Figure 1: E-series xDSL Solution

Guangdong Telecom carried out a field trial of value-added services in Guangzhou in 2001, setting up a Service Select Center (SSC) specifically for the value-added services. The value-added services such as IP calling services depend on the network, which requires adjustments to the router. These services are also closely related to applications which require cooperation with ICPs. For example, some online application services such as fee-based websites and various online multimedia services can be enabled by ICPs. In addition to expanding the access services, Guangzhou Telecom also launched a ChinaVnet Program to promote these online application services. The ChinaVnet is a collection platform for ICPs. Guangdong Telecom helps to charge and collect the services usage fee and return the fee to ICPs in proportion.

Guangdong Data Communication Bureau, a sub-unit of Guangdong Telecom, had signed contracts with about 100 ICPs by the end of 2002. When ADSL subscribers access ICPs who contracted with Guangdong Telecom, the ICPs will deliver the subscribers' data to Guangdong Telecom for identification, after which the ICPs can identify the subscribers. When the subscribers try to access the fee-based services, the system will clearly notify the subscribers that this is a charged service and ask them whether would like to pay for it. If yes, the service fee will be collected by Guangdong Telecom, and the subscriber information will be stored in the subscriber end browsers as cookies. However, when the subscribers disconnect with the ICPs or close the browsers, the cookies will be automatically deleted and the system has to re-identify and re-charge the subscribers if they access the ICPs again. In order to protect the subscribers, the subscriber information sent from the

subscribers to the ICPs is encrypted and can only be identified by Guangdong Telecom.

As a broadband value-added services platform, “ChinaVnet” can connect to various ICPs and supports various applications, such as online shopping, online gaming and online movies, etc. regardless of whether the subscriber is on the gaming website or on the video website.

Building the Future of Broadband with Juniper Networks

According to Guangdong Telecom, with Juniper Networks E-series in Phase I and Phase II of the broadband network construction, the network is so stable that it can fully satisfy the evolving business demands of Guangdong Telecom. And the SDX-300 can prevent different subscribers logging on with the same account number at the same time, eliminating misappropriation of account numbers and other billing problems. Guangdong Telecom selected Juniper Networks for the impressive high reliability and services-enabling capabilities of the E-series.