

# CHINA'S MULTIMEDIA GIANT TOPWAY OPTIMIZES PERFORMANCE AND SERVICES WITH JUNIPER NETWORKS M10I MULTISERVICE EDGE ROUTER

## Summary

**Industry:** Multimedia Communication/Information

**Challenge:** Improve company performance and user experience while maintaining scalability and minimizing cost for IP application dependent enterprises

**Network Solution:** Juniper Networks M10i Multiservice Edge Router

**Results:** Seamless integration, increased security, enhanced network consistency and connectivity, and increased revenue

Shenzhen Topway Video Communication Co., Ltd. (Topway) is a joint-stock enterprise held by Shenzhen Radio, Film, and Television Group. It is the first enterprise of its kind in China to focus on cable television network construction and operation, and is considered the information industry's driving force in Shenzhen. While Topway's primary business concerns are video information transmission and multifunction online services, its scope also includes cable television network construction, development, operation and management, and cable television program reception and transmission.

Topway has been responsible for a number of media advances in China. In 1996, Topway established the first 550 MHz cable integrated services network (CISN) in China. Then, in 2001, Topway built its IP-based Metropolitan Area Network (IP MAN) with MPLS, and other advanced communications technologies. In 2002, Topway took on its biggest accomplishment to date—establishing the first comprehensive, public cable television, integrated service digital network in China—with an 860 MHz two-way upgrade to the cable television network that enabled high-speed information transmission capable of integrating images, data, and voice transmission. In 2005, Topway completed cable-based voice network system testing, enabling high quality IP voice services and other multimedia services. Currently, the corporate network can transmit over 500 sets of standard definition digital TV programs, and provide users with interactive television, high-speed data, VoIP, and other integrated services.

## Challenges

In the world of information technology enterprises, high-performance routing technology—once merely relegated to the background—has come to the forefront as an important pillar of corporate strategy for bolstering an enterprise's competitiveness. Demand to improve company performance and the user experience has necessitated that enterprises deploy an increasing number of IP applications such as VoIP, multicast video, customer relationship management (CRM), supply chain management (SCM), and extranet applications. Naturally, Topway executives felt the pressure to provide services for web-based users that include images, data, and audio. As a result, Topway engaged in a series of business expansions to facilitate the growth of its network size, functions, applications, and network-based services.

As a network operator, Topway's services (based on its network) are of the greatest importance and impact to its enterprise customers. As such, continuous network development, increasingly rich services, and especially user requirements for high quality integrated services have placed higher demands on Topway's network performance. The ongoing explosion in network applications has not come without devastating consequences to the user experience, however. The added burden of new IP applications and services have meant unstable and poor network responsiveness for enterprise customers.

This issue goes hand in hand with another—that of connectivity between headquarters and regional offices. Central headquarters are required for operators and large scale enterprises to integrate flows from each branch office, to provide core connectivity for local offices, and to support high traffic data center access. This requires routers with superior performance and reliability.

Topway originally established an MPLS VPN that connected headquarters with branch centers, administrative agencies, and business partners. It also provided MPLS-based VPN services for local enterprise customers. But when the number of its broadband users reached the original network's limit of 200,000, there was no further capacity to deploy new services internally or for customers.

A network upgrade solution became imperative.

## Selection Criteria

Thorough analysis of Topway's central local area network, a convergence point of data and business applications, revealed that the appropriate networking solution needed to:

- Effectively solve connectivity issues
- Achieve internal data gathering and aggregation via MPLS VPN connections
- Provide corporate users with Internet-based business platforms by connecting the front end (usually web-based) to the Internet
- Ensure business data sharing via connections between the back end and administrative departments, and between enterprises and institutions that use leased lines
- Demonstrate strong processing capacity, and rich support of MPLS VPN
- Maintain the continuity and stability of the existing network and applications
- Allow simple deployment and seamless integration with existing infrastructure while maintaining flexibility and accessibility
- Reduce deployment and ongoing overhead costs, including any maintenance downtime delays.

## Solution

Juniper Networks® needed to integrate four new routers at the convergence layer of Topway's central LAN to serve as provider edge (PE) routing in the MPLS/VPN, accessing traffic to the MPLS/VPN backbone. To that end, Juniper Networks M10i Multiservice Edge Router was the Juniper Networks M Series Multiservice Edge Routers most compact, fully redundant routing platform. The M10i supports 16 Gbps of throughput and is the product of choice for enabling reliable and secure services in small and medium-sized service provider points of presence (POPs) and enterprise networks.

M Series Multiservice Edge Routers have been widely deployed in the world's largest networks, withstanding tests of practical application in demanding, high traffic environments. The M10i completely isolates the control layer, the forwarding layer, and the business logic layer. Hardware-based methods combined with highly scalable, secure, and reliable Juniper Networks Junos® Software allows the M Series to support a variety of features and applications important to businesses—such as network-based security, IPv6, real-time voice and video, and high value, content-rich multicast, to name a few—in a single platform without affecting performance. This maximizes revenue and reduces operating costs.

## Results

Topway felt that the M10i was tailor-made for its network, allowing the company to reduce delays and substantially cut costs, enabling it to expand business.

The M Series routers integrated seamlessly with Topway's existing network, simultaneously protecting the company's investments and maintaining current stability. Successful deployment of the new hardware greatly enhanced security, provided consistent feature sets to all network locations regardless of connection type or density of service area, and granted the network the tunneling mechanisms to support VPN business services without sacrificing performance. One of the M10i's greatest benefits has been its ability to collect a wide range of statistical data at a granular level: It regularly performs diagnostics to achieve flexible billing, traffic planning, and rapid troubleshooting. In addition, the upgrades have improved Topway's network reliability—the M Series routers ensure stability and scalability, and offer redundant power and cooling systems. All of these advantages have translated into remarkable scalability and further increases in revenue for Topway.

## Next Steps and Lessons Learned

Topway's satisfaction with Juniper's products and services once again proves that Juniper has earned its position as the leader in high performance networking solutions. The success of this project, in particular, is a testament to the quality and efficacy of the Juniper Networks M10i Multiservice Edge Router. The outstanding features of the M10i have exceeded Topway's expectations, increasing security, reliability, and operational stability. Topway is now excitedly looking forward to further boosting its business success with Juniper in the future.

## For More Information

To find out more about Juniper Networks M Series products and solutions, visit [www.juniper.net/us/en/products-services/routing/m-series/](http://www.juniper.net/us/en/products-services/routing/m-series/).

## About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at [www.juniper.net](http://www.juniper.net).

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