

Zayo Group Lights Up Performance and Lowers Cost with 100GbE Core Network

Summary

Company:

Zayo Group

Industry:

Technology

Business Challenge:

- Zayo needed a cost-effective, high-performance, BGP-free MPLS network solution with the density to support rapidly growing bandwidth demands.
- This required a next-generation 100GbE core network across the U.S. and Europe with a scalable service-oriented Ethernet edge to meet the growing bandwidth needs of Ethernet customers.

Technology Solution:

- PTX5000 and PTX3000 Packet Transport Routers
- MX2010 3D Universal Edge Routers

Business Results:

- Saved \$1.8 million annually on power and cooling costs over other vendor solutions
- BGP-free MPLS core capable of 8 Tbps and can rapidly deploy 100 Gbps services
- Ability to grow the core network to eight 100GbE ports per slot
- Significantly improved customer experience through faster service agility and service availability



Bandwidth is in high demand and the demand is only increasing as communications service providers, large multinational corporations, and others increasingly depend on fast and reliable networks to transport data and support critical business operations. To continue providing an exceptional user experience through performance and services, Zayo Group invested in new network infrastructure.

Business Challenge

Network infrastructure providers have a challenging job these days. As their customers demand innovative physical infrastructure and bandwidth services, providers have to keep up with the latest technology to offer the best performance and services to customers.

Zayo Group, which is based in Boulder, Colo. and has European headquarters in London and Paris, runs a network that stretches 82,000 miles and offers a wide range of services, including dark fiber, wavelengths, Ethernet, IP services, SONET, interconnection, and colocation to telco, education, finance, healthcare, oil and gas, and utility customers. Zayo provides connectivity between carrier points of presence, commercial buildings, data centers, and more.

“We needed to re-architect our network to ensure we could stay ahead of the bandwidth growth curve. It made financial sense to set up a brand new core limited to Layer 2 protocol enabling a faster, convergent core network,” says Chris Morley, president of Cloud and Connectivity at Zayo Group.

To do this, Morley and Mark Davis, director of Zayo’s Ethernet architecture team, had to completely rethink the network core from the ground up.

“The PTX Series provides a significant power and cooling cost savings over the alternatives we evaluated—on the order of \$1.8 million saved per year.”

Mark Davis, Director of Ethernet Architecture, Zayo Group

Technology Solution

To grow its Layer 2 revenue while maintaining a converged core network, Zayo sought a routing solution that would be faster and better than the competition and deliver the performance, form factor, and optical integration it needed. Zayo’s Ethernet and IP are separate entities, and Juniper worked collaboratively with Zayo to help define the

requirements. Zayo then evaluated three leading routing solutions in its proof-of-concept lab to validate their performance and help make a decision.

Based on these tests, Zayo Group chose the SDN-ready Juniper Networks® PTX Series Packet Transport Routers for its core network in the U.S. and Europe. On the U.S. side, the company deployed the PTX5000 Packet Transport Router, which supports up to 960 Gbps. The ultra-compact PTX3000 Packet Transport Router, which is well suited for metro and urban node locations and supports up to 240 Gbps of capacity, was chosen for deployment in Europe. PTX Series is a high-performance platform that's optimized for MPLS and Ethernet architectures. The routers deliver powerful capabilities based on the Junos® Express chipset and give customers a choice of integrated dense wavelength-division multiplexing (DWDM) 100GbE technology and a wide selection of 100GbE, 40GbE, and 10GbE transceivers.

For its metro area core, Zayo selected the Juniper Networks MX2010 3D Universal Edge Router for its high capacity, density, performance, and ability to support more than 17 Tbps of throughput with scalability up to 40 Tbps. With the SDN-ready MX2010 router in the metro areas, Zayo can continue to sell and grow revenue with Layer 2 services, while having fast convergence at the core.

According to Davis, developing the new network architecture around Juniper routers in the core was extremely easy and enabled Zayo to deploy quickly.

Business Results

Zayo Group has seen several benefits from its next-generation Juniper network. "The PTX Series provides a power and cooling cost savings over the alternatives evaluated," says Davis. Besides the OpEx savings, the company is taking advantage of new levels of performance, including 100GbE speeds. Davis appreciates the PTX3000 router's small footprint for smaller markets, which saves on space, power, and other collocation costs.

Another plus Zayo Group has found with the Juniper routing solution is the industry-leading resiliency times. The robust embedded resilience architected within both the PTX Series

and MX Series routers will ultimately deliver a better and more consistent experience for the customer. During the test phase, Davis found that the average protection switch across the Juniper routers was about 20 to 30 milliseconds, as opposed to several seconds for the competition. Davis adds that the addition of the MX Series enables Zayo to continue to sell and grow its revenue with Layer 2 services, while having the core network and convergence the company is looking for.

Zayo took a big step by expanding its relationship with Juniper, and it has paid off many times over. "Our total cost of ownership is lower, making Juniper a great investment for Zayo," says Morley.

Next Steps

"It was essential to engage early and help Zayo identify requirements and new services it could offer for additional revenue," says Ajay Taneja, Juniper's account manager for Zayo. "It was also critical to work closely with the technology teams and ensure a smooth implementation," adds Gerry Cafaro, Juniper sales vice president.

Like many providers of network infrastructure, Zayo Group is looking ahead to the next big things, which today are SDN and virtualization. To take advantage of these trends and bring these critical features into its network, Zayo is well positioned with an SDN-ready routing infrastructure and other SDN solutions from Juniper. With bandwidth needs growing every day, Zayo is already well suited to meet its customers' needs and is in a great position to provide much more in the future.

For More Information

To find out more about Juniper Networks products and solutions, please visit www.juniper.net.

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