

Speeding Product Introductions with Flexible Data Center Interconnect

Summary

Company:

Financial market information services provider

Industry:

Financial Services

Challenges:

Speed time-to-market by quickly provisioning new revenue-generating applications and services across data centers

Selection Criteria:

The company needed a high-capacity solution to address rapidly growing application and bandwidth requirements among its metro area data centers.

Network Solution:

- PTX Series Packet Transport Routers
- MX Series 3D Universal Edge Routers
- QFX Series Switches
- Professional Services, Testing Services
- Resident Engineers
- Juniper Care Plus

Results:

- Rolled out new revenue-generating applications more quickly
- Gained ability to add capacity between data centers in a matter of minutes, not months
- Lowered CapEx and OpEx significantly by converging packet and optical networks
- Gained control and visibility over optical transport
- Eased transition to packet-optical networks with Juniper Networks as a trusted advisor

Global financial markets move on the speed of information, and those investors who can make split-second decisions based on the most up-to-date information stand to be the big winners. In this highly dynamic and demanding environment, financial information providers compete based on their ability to deliver critical information and services with increasing speed and agility.

Challenge

Bandwidth constraints were stifling innovation and future revenue growth at this major financial services information provider. The convergence of its media and financial services business created new opportunities for the firm, but in order to stay ahead of competitors, it needed to quickly accommodate the business' need for new applications and services.

However, when rolling out new applications to both internal and external customers, the IT department had little control over the timeline and process for adding network capacity between its data centers. Adding bandwidth to support a new application often required weeks or months of waiting for the company's telecom service provider. In addition, the company had no visibility into or control over its carrier's optical circuits, so if there was a problem, it was reliant on its provider to troubleshoot. The company wanted to be able to turn up additional bandwidth on the fly and have greater control over its networks.

"The firm didn't have to change the network design to gain the full advantage. It was a one-to-one swap for the routers, and with Junos running on the PTX, it was a familiar operating environment, which made the transition even easier."

Greg Marchwinski, Juniper Professional Services

Selection Criteria

To resolve these issues and accommodate future needs, including a state-of-the-art data center that it was building in the region, the company needed a flexible and intelligent solution from networking experts for data center interconnect.

“We have a long-standing relationship and are a trusted advisor as the company forges ahead with new network architectures and designs to meet their stringent business demands,” says Greg Marchwinski in Juniper Professional Services.

The Juniper Professional Services team worked closely with the customer to compare the benefits and costs of options including using routers with integrated 100GbE dense wavelength-division multiplexing (DWDM) transponders. Juniper developed a sophisticated, interactive ROI modeling tool that allowed the customer to compare the different scenarios, including costs over time as bandwidth scaled to terabits. The model clearly showed the business value of deploying a router with integrated DWDM transponders. Juniper Professional Services also worked closely with the customer on deployment and validation testing.

Solution

With its own optical network, the customer could deploy bandwidth dynamically among its data centers, gain greater visibility into the network, and lower costs. The company deployed Juniper Networks® PTX Series Packet Transport Routers with integrated optical transponders in the core, and used MX Series 3D Universal Edge Routers in the aggregation layer.

Having the optical transponders integrated into the PTX Series router simplifies the optical layer into a single layer instead of two. In addition, the combined packet transport solution includes interworking at the photonic layer, and network layer coordination at both the control plane and the service management layers.

“It was the sheer performance and scale of the PTX Series that sealed the deal,” says Marchwinski. PTX Series routers deliver enormous scalability—up to 2 Tbps per slot—so the company can increase network capacity without needing to increase the size of its network or data center facilities.

“The firm didn’t have to change the network design to gain the full advantage,” says Marchwinski. “It was a one-to-one swap for the routers, and with Junos running on the PTX, it was a familiar operating environment, which made the transition even easier.”

The customer’s network engineering team was new to optical networking, so the Juniper team worked closely with them. Additionally, using its proven methodologies and technologies, the Professional Services team performed multiphase testing in its labs to validate the end-to-end solution prior to deployment in the customer’s production environment.

Results

IT can turn on new bandwidth in less than 10 minutes, rather than waiting months, and that gives the company greater agility to deploy and scale revenue-generating information services and applications. The IT staff only has to set the appropriate wavelength and complete relevant packet configurations.

The company’s application developers previously were constrained in what they could create due to the limited bandwidth between data centers. With those limitations lifted, they can now architect revenue-generating applications that were not possible before.

Transitioning to the PTX Series with integrated transponders and its own dark fiber infrastructure—rather than relying on an external provider for circuits—is going to deliver significant cost savings, especially as the company’s bandwidth needs scale. An integrated approach saves space, power, and cooling in data center facilities over a traditional approach with separate routers and optical gear.

The PTX Series router with integrated transponders provides a much higher level of resiliency at both the packet and optical layers. Because the router has direct access to the optical layer, it can see when error rates begin to rise and change the route before a problem occurs. In addition, the company’s network engineers gain direct visibility and control over the optical layer, which enables them to take control of their own troubleshooting. IT no longer has to rely on the carrier for problem isolation and resolution.

Next Steps and Lessons Learned

After the success of deploying optical infrastructure between its two data centers, the company plans to use its High-IQ Network to connect its new state-of-the-art data center in the New York metro area. In addition to using the PTX Series routing platform for data center interconnect, the company uses MX Series routers for the core and aggregation layers in its data centers.

For More Information

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

About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at www.juniper.net.

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