

IN BRIEF

Industry

- » Transportation

Challenges

- » Slow application performance
- » Centralize Infrastructure

Solution

- » Steelhead® appliances in over 100 locations
- » Out-of-Path design at the data center
- » Virtual In-Path with WCCP

Benefits

- » Return on investment in under 10 months
- » Increase in employee productivity
- » Accelerated Oracle ERP and SharePoint



CSX Corporation

CSX Corporation is a leading transportation company providing rail, intermodal and rail-to-truck transload services. The company's transportation network spans approximately 21,000 miles within the United States, and connects to more than 70 ocean, river and lake ports.

Challenge: Accelerating Applications for a Centralized Infrastructure

CSX challenges were multifold. Nat Thomas, Technical Director, Telecom Services, CSX described the first challenge: "Early in 2000, CSX had gone through a centralization of servers, 98 percent of all the servers' services — file, print, database, messaging — were centralized into one data center, and next we deployed Citrix thin-clients, but we have a mainframe, too. What we found is that web browsing, Microsoft Outlook, even opening up Excel spreadsheets across the WAN was impacting the performance of the Citrix applications and even the mainframe applications."

CSX Management's next challenge was accelerating hundreds of applications, including Oracle applications, Java-based web applications, and SharePoint 2006 for its 650 branches; 450 of those have PCs, printers, the rest of them have thin-client terminals and printers. Many remote users would wait five minutes and up to 10 minutes to access data. In order to speed up application performance for users in the branch while keeping a centralized IT infrastructure, CSX decided to evaluate WAN acceleration technologies.

Solution: Steelhead Appliances Overcome Network Limitations

The CSX IT team worked with a System Integrator firm to evaluate WAN optimization solutions. As a first step, the System Integrator took detailed field measurements of their end users' wait times. After collecting this information, they re-created those scenarios for CSX's Jacksonville network lab, where they tested the WAN optimization solutions. Thomas recalled, "We started with Riverbed®; we also brought in the WAAS product. We also brought in a couple of competitors' product. The beta version of the WAAS product did not work, so we set it aside."

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Thomas continued, "Ultimately, we spent about three months evaluating technologies and we just kept coming back to Riverbed. We wanted full buy-in from the Wide Area Networking group as well as the applications folks and the Enterprise Architects, so we kept bringing teams in and showing them the different products. Everybody agreed that the Riverbed product was the best performer, and had the most flexible deployment capability of being in-path, out-of-path, and virtual in-path with the WCCP protocol." Another key reason CSX chose Riverbed was the ability to support SSL traffic. Thomas added: "We have over 390 applications that are SSL-encrypted through a single sign-on portal."

When it was time to deploy the Steelheads appliances in CSX's enterprise network, Riverbed offered the most scalable solution with the least disruption to their network. CSX decided to use an out-of-path design at the data center, and used a virtual-in-path WCCP design in remote offices. This deployment allowed telnet and mainframe traffic to pass through the router without being touched.

Deploying Riverbed throughout CSX was done in a phased approach. First CSX focused on 13 regional sites, with each office having between 200 to 250 remote computers connected across the 768K circuit. Thomas reflected on the Steelhead appliances deployment: "We ultimately deployed over 100 locations that had from ten to 200 users. We would ship the appliances out to the remote

sites, and have the communication operations staff install the Steelheads; we would walk them through configuring the WCCP commands. The average deployment took about 30 minutes of hands-on deployment time. We were able to deploy remote sites in the middle of the day, without impacting the business.”

Benefits: Improved application performance and Significant ROI

By deploying Riverbed Steelhead appliances to over 100 sites, CSX has been able to improve application performance. Thomas stated, “On a monthly basis, we are removing about 15 terabytes of duplicate data from the wide area network. So we’re cleaning that off the WAN and allowing real business traffic through — not the duplicate bytes.” Thomas added, “We have 390 applica-

tions going over SSL; 91 percent of the data has been reduced. With CIFS traffic, we get an average of 85 percent reduction per month, and HTTP traffic is reduced by over 50 percent.”

By deploying Riverbed, CSX has been able to improve performance for its key enterprise applications without having to upgrade their bandwidth. CSX was able to finance the Riverbed deployment with funds that were

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earmarked for PC upgrades. Thomas summarized their business approach: “Instead of upgrading all our PCs at the remote sites, we invested in the wide area network optimization solution. In effect, end users now had a PC that was running five times faster than before, and support complaints dropped. We were able to delay the PC refresh project and extend the life of a PC for another year in the field; it basically paid for the Riverbed deployment within the first eight to nine months.”

CSX has also noticed a qualitative benefit, as Thomas shared: “After deploying over 100 Steelhead appliances, our team noticed that Internet browsing traffic decrease from 25 percent to 5 percent, and now end-users were able to download Excel spreadsheets from their file shares and utilize the network more effectively. Not only did we improve performance of applications, but it was truly a productivity boom. Our end-users immediately noticed the performance gains resulting from the deployment of Riverbed appliances at their offices.”

About Riverbed

Riverbed Technology is the IT infrastructure performance company. The Riverbed family of wide area network (WAN) optimization solutions liberates businesses from common IT constraints by increasing application performance, enabling consolidation, and providing enterprise-wide network and application visibility – all while eliminating the need to increase bandwidth, storage or servers. Thousands of companies with distributed operations use Riverbed to make their IT infrastructure faster, less expensive and more responsive. Additional information about Riverbed (NASDAQ: RVBD) is available at www.riverbed.com



2005, 2006, 2007, 2008, 2009



SUMMARY

CSX Corporation was looking to address application performance for 390 applications across their consolidated IT infrastructure. This transportation company wanted to provide LAN-like application performance to its 100 remote offices. With Riverbed Steelhead appliances, CSX has been able to increase employee productivity and forgo a PC refresh for remote end users. The payback period for the Riverbed investment was 8 to 9 months.

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