WAN Optimization solution removes 15 terabytes of data from the WAN, improves application performance.

# CASESTUDY

" 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.

**—Nat Thomas**
**Technical Director, Telecom Services**

## BUSINESS CHALLENGE

CSX, a leading transportation company providing rail, intermodal, and rail-to-truck transload services, faced multiple challenges. In 2000, CSX centralized 98 percent of all their servers' services—file, print, database, messaging—into one data center. Nat Thomas, Technical Director, Telecom Services, CSX, described the first challenge: "We deployed Citrix thin-clients, but we also have a mainframe. We found 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 was also seeking to accelerate hundreds of applications, including Oracle applications, Java-based web applications, and SharePoint 2006 for its 650 branches. Many remote users were waiting between five and 10 minutes to access data. CSX decided to evaluate WAN acceleration technologies to speed up application performance for users in the branch while keeping a centralized IT infrastructure.

## THE EI SOLUTION

Enterprise Integration helped the CSX IT team evaluate potential WAN optimization solutions. EI first took detailed field measurements of CSX 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 spent three months evaluating technologies and we just kept coming back to Riverbed. From the Area Networking group to the applications folks and the Enterprise Architects, everyone 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." And Riverbed was able to support SSL traffic, key to CSX with their more than 390 applications that are SSL-encrypted through a single sign-on portal.

When it was time to deploy the Steelhead appliances in CSX's enterprise network, CSX decided to use an out-of-path design at

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ENTERPRISE INTEGRATION

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.

Deployment 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. They deployed over 100 locations that had from ten to 200 users, shipping the appliances to the sites and having the communication operations staff install the Steelheads. The average deployment took about 30 minutes of hands-on time, enabling them to deploy remote sites in the middle of the day, without impacting the business.

## THE BENEFITS

By deploying Riverbed Steelhead appliances to over 100 sites, CSX has been able to improve application performance. On a monthly basis, they are removing about 15 terabytes of duplicate data from the wide area network, "We're cleaning that off the WAN and allowing real business traffic through — not the duplicate bytes." Thomas said. "We have 390 applications 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."

CSX was also able to improve performance for its key enterprise applications without having to upgrade bandwidth. They were able to finance the Riverbed deployment with funds that were earmarked for PC upgrades, "Instead of upgrading all our PCs at the remote sites, we invested in wide area network optimization. PCs are running five times faster than before, and support complaints have dropped. We were able to delay the PC refresh project and extend the life of a PC for another year, paying for the Riverbed deployment within the first eight to nine months," Thomas said.

Additionally, productivity has increased as a result, "After deploying over 100 Steelhead appliances, Internet browsing traffic decreased from 25 percent to 5 percent, and now end-users are 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," Thomas said. The CSX end-users immediately noticed the performance gains resulting from the deployment of Riverbed appliances at their offices.

CSX was looking to address application performance for 390 applications across their consolidated IT infrastructure. They wanted to provide LAN-like application performance to their 100 remote offices. With the help of Enterprise Integration and Riverbed Steelhead appliances, CSX has been able to increase employee productivity and forgo a PC refresh for remote end users.