

## IN BRIEF

### Industry

- » Industrial machinery

### Challenges

- » Global user base needs fast access to centralized ERP system
- » Average response time of 70 seconds for ERP access from Germany
- » Prohibitive cost of additional bandwidth

### Solution

- » Steelhead appliances deployed worldwide to optimize WAN traffic
- » Steelhead appliances optimize Citrix desktop and application server traffic

### Benefits

- » Average response time for ERP from Germany is now two or three seconds
- » Total data reduction on the WAN of 86 percent
- » Optimized bandwidth capacity increase of 7.94x
- » Avoided capital costs



# Flow International Corporation

## Riverbed-Citrix combination accelerates access to central ERP system

Flow International Corporation provides technologically advanced, environmentally sound solutions to the manufacturing and industrial cleaning markets. It is the pacesetter in the development and manufacturing of ultrahigh-pressure (UHP) waterjet technology.

Flow's core markets include aerospace, automotive, job and machine shops, paper, art and architecture, industrial cleaning, surface preparation, food processing, and other specialty applications. With corporate headquarters in Kent, Washington, Flow International now has approximately 600 employees in offices in Indiana, Canada, Brazil, Germany, UK, Spain, Italy, France, Taiwan, Japan, and China.

### Challenge: Network latency made remote ERP access unworkable

Until late in 2009, Flow International ran an enterprise resource planning (ERP) system based on IBM AS/400 computers. Having outgrown that system, they began to look at alternatives, and eventually settled on Microsoft Dynamics AX 2009 with Terminal Server running over Remote Desktop Protocol (RDP) to connect the headquarters data center in Kent, Washington with its regional data center in Bretten, Germany.

Primarily due to network latency, performance was terrible. Average response time for the ERP application in Germany was about 70 seconds. Screen refreshes were so slow that users would type before the screens were ready, often causing incorrect data entries and adding to their frustration. The system was barely usable when it was initially deployed.

At this point, Jason Dickens, enterprise infrastructure manager at Flow International, began to look for ways to improve performance within the current implementation through tuning and other basic enhancements, but was unable to improve things significantly. "We dug through every port configuration on our network and considered our alternatives," says Dickens. "We considered increasing bandwidth, but it was prohibitively expensive. We also considered distributing our ERP system around the world, but that would have been expensive and it would have been a management nightmare."

### Solution: Riverbed and Citrix

Dickens' next step was to evaluate wide area network (WAN) optimization alternatives. He decided to look first at solutions from Riverbed Technology®, since he had used the company's Steelhead® appliances in a previous position. He also decided to consider another approach to desktop and application server virtualization, conducting a trial of Citrix virtual computing software at the same time he was evaluating the Riverbed technology.

Dickens and his team were immediately impressed by the performance improvement in the trial. The centralized ERP system became more than merely usable; performance was fast and reliable. "The Citrix and Riverbed trials occurred simultaneously, and it

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was like somebody plugged a cord into the wall and our systems started working," Dickens explained.

They were so impressed that within two weeks of the start of the trial, Flow International bought the three Steelhead appliances used in the trial—plus six additional ones. Less than a year later, they

bought four more, to bring their total to 13 Steelhead appliances deployed in the network: six in Europe, three in Asia, two in the United States, and two in South America.

#### **Benefits: Remote ERP access down to two or three seconds**

The results have been nothing short of remarkable. Flow International consistently sees better than 80 percent acceleration of its WAN traffic. As for implementation, it could not have been easier. According to Dickens, "We just turned them on, and they worked."

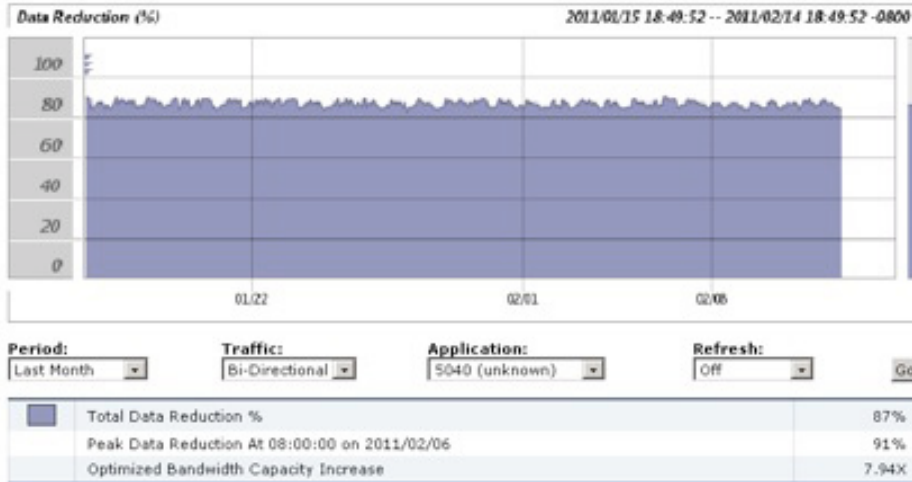
With over 50 percent of the company's revenue coming outside of the United States, improving application response times for users worldwide is a critical measurement for Flow International. "Before we put in Steelheads and Citrix, the average response time for our ERP application in Germany was about 70 seconds, but we've now reduced it down to two or three seconds," says Dickens. "We don't hear the user complaints any more."

As a result of the global WAN optimization, Flow International can now focus on implementing new technologies to further enhance business goals and user experience without having to be concerned about network latency and bandwidth limitations. In addition, WAN optimization has allowed Flow International to avoid the capital costs of investing in additional server infrastructure and the operational costs of increasing bandwidth to locations worldwide.

"Our entire infrastructure is not bleeding edge but we're beyond leading edge," he adds. "The Steelhead appliances have not been in place for a long time but all of the response time and productivity issues we faced when we launched our ERP systems have gone away. Our IT infrastructure literally hadn't changed in 15 years, and management gave us the opportunity to revamp it and do it right. We've been able to centralize our applications and optimize our WAN infrastructure to cost-effectively deliver the IT infrastructure our company needs to successfully compete in a global economy."

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Reports > Optimization > Data Reduction ?



Flow International has experienced a total data reduction on the WAN of 86 percent, and has realized an optimized bandwidth capacity increase of 7.94x.

**SUMMARY**

With a centralized ERP system and three-quarters of its business coming from outside the United States, Flow International Corporation needed to improve ERP access for remote users. By deploying Steelhead WAN optimization appliances along with Citrix thin client technology, the company has eliminated the frustrating 70-second delays that remote users formerly experienced. Average response time today for remote ERP users is two to three seconds. By leveraging the Steelhead appliances to optimize Citrix desktop and application server traffic, Flow International has been able to centralize its applications as well as streamline its disaster recovery process to successfully compete in a global economy.



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About Riverbed

Riverbed delivers performance for the globally connected enterprise. With Riverbed, enterprises can successfully and intelligently implement strategic initiatives such as virtualization, consolidation, cloud computing, and disaster recovery without fear of compromising performance. By giving enterprises the platform they need to understand, optimize and consolidate their IT, Riverbed helps enterprises to build a fast, fluid and dynamic IT architecture that aligns with the business needs of the organization. Additional information about Riverbed (NASDAQ: RVBD) is available at www.riverbed.com.



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