

IN BRIEF

Industry

- » Ultrahigh-pressure waterjet shape cutting systems

Challenges

- » Centralize ERP and disaster recovery to reduce IT costs and improve productivity and efficiency

Solution

- » Deploy Steelhead appliances to facilities worldwide to optimize WAN traffic
- » Implement Citrix desktop and application server virtualization
- » Replicate enterprise traffic using EMC RecoverPoint to a dedicated disaster recovery facility

Benefits

- » Data reduction on the WAN of 86 percent, and an optimized bandwidth capacity increase of 7.94x
- » Average response time for ERP applications has declined from about 70 seconds to two-three seconds
- » Replication traffic has been optimized by more than 95 percent



Flow International Corporation

A Riverbed Technology, Citrix and EMC RecoverPoint Solution Case Study

Flow International Corporation provides technologically advanced, environmentally sound solutions to the manufacturing and industrial cleaning markets. It is the pacesetter in the development and manufacture 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. From its 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.

Challenges

Until late in 2009, Flow International ran its enterprise resource planning (ERP) system on AS400s. But by then they had outgrown it, and began to look at alternatives. The company eventually settled on Microsoft Dynamics AX 2009 with Terminal Server running over Remote Desktop Protocol (RDP) to initially connect its headquarters data center in Kent, Washington with its regional data center in Bretten, Germany.

Primarily due to network latency, the performance was terrible. Screen refreshes were so slow that users would type before the screens were ready, often causing incorrect changes to data entries, adding to user 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."

So he explored wide area network (WAN) optimization alternatives and evaluated solutions from Riverbed Technology, since he had used Steelhead® appliances from Riverbed® in a previous position. At the same time, Dickens also evaluated other options for desktop and application server virtualization, and Flow International conducted a trial of Citrix virtual computing applications and Riverbed Steelhead WAN optimization appliances.

Solution—Steelhead and Citrix for Virtualization and WAN Optimization

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

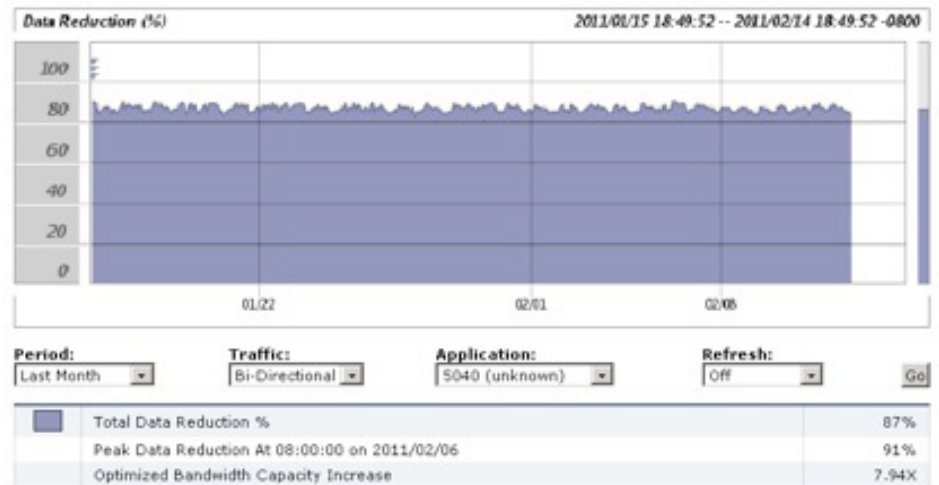
They were so impressed that within two weeks of the start of the trial in December 2009, Flow International bought the three Steelhead appliances in the trial—plus six additional Steelheads. Less than a year later, they bought four more, to bring their total to 13 Steelhead appliances deployed in the network:

- Six in Europe
- Three in Asia
- Two in the United States
- Two in South America

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

More than 50 percent of the company's revenue is outside of the United States, so 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.

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 7.94 times.

Steelhead and RecoverPoint for Disaster Recovery

They've seen other remarkable benefits from the implementation, since Steelhead appliances optimize all network traffic, not just Citrix virtualization traffic. Flow International has been able to dramatically improve disaster recovery and replication using the Steelhead appliances

Their EMC RecoverPoint and Microsoft Data Protection Manager (DPM) replication traffic, which regularly send terabytes of data across the WAN, have been optimized by better than 95 percent, further freeing large amounts of network bandwidth for their global Microsoft Distributed File System Replication (DFS-R) data to flow easily across their global network infrastructure.

The ERP applications run at the data center in Kent, Washington, and enterprise applications are replicated to the disaster recovery facility in Jeffersonville, Indiana. Each of these locations has EMC CLARiiON storage area networks (SANs) for backup, and all ERP applications are replicated to Jeffersonville using EMC RecoverPoint.

Riverbed Steelhead appliances have received EMC E-Lab qualification for EMC RecoverPoint, the leading solution for intelligent network-based data protection and disaster recovery. Riverbed WAN optimization solutions complement RecoverPoint's native compression capabilities and enable organizations of all sizes to address poor replication performance and insufficient WAN bandwidth between sites.

EMC RecoverPoint brings continuous data protection and continuous remote replication for on-demand protection and recovery to any point in time. With RecoverPoint, Flow International can implement a single, unified solution to protect and replicate data across heterogeneous storage. The company can simplify management and reduce costs, recover data at a local or remote site to any point in time, and ensure continuous replication to a remote site without impacting performance.

Riverbed's WAN optimization technology enables EMC customers to protect more data more frequently across larger distances. With Riverbed solutions, recovery point objective (RPO) and recovery time objective (RTO) targets can be met and/or exceeded while organizations minimize the monthly cost of their WAN infrastructure. Flow International started with the goal of eventually replicating ERP data within 30 minutes, and the company now replicates all RecoverPoint traffic within five seconds. "Our replication is now near real-time," Dickens notes.

"For our initial implementation, we set RecoverPoint for maximum compression and deduplication, but a few months after deployment we played with the settings to tune WAN optimization and reset RecoverPoint for maximum throughput," Dickens says. "I decided I'd turn off all the RecoverPoint features that help bandwidth optimization and rely solely on the Riverbed appliances. This allowed RecoverPoint to focus its resources on processing more raw input/output operations while we were offloading WAN optimization to a specialized appliance. The result is that we're now seeing about 98 to 99-percent WAN efficiency for our disaster recovery traffic."

Benefits

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.

The 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. It has removed the risk of meeting disaster recovery RPO/RTO objectives, and improved user satisfaction and productivity. "We don't hear the user complaints anymore, and our infrastructure investments are now paying off," Dickens says.

Disaster recovery replication is near real-time, and international offices also efficiently replicate through the Steelheads back to the Jeffersonville data center. "Our entire infrastructure is not bleeding edge but we're beyond leading edge," Dickens states.

"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, streamline our disaster recovery and optimize our WAN infrastructure to cost-effectively deliver the IT infrastructure our company needs to successfully compete in a global economy," he concluded.

SUMMARY

Flow International Corporation produces innovative ultrahigh-pressure waterjet equipment that can precision cut almost any material, and since more than 50 percent of its revenues is generated outside the United States, centralizing its ERP and disaster recovery was a major challenge.

By deploying Steelhead WAN optimization appliances at its headquarters, disaster recovery center and major regional data centers worldwide, Flow International has been able to centralize ERP and disaster recovery to reduce IT costs and improve productivity and efficiency.

The company has leveraged Steelhead appliances to optimize Citrix desktop and application server traffic, and to optimize RecoverPoint replication traffic. Flow International has implemented a centralized IT infrastructure backed by WAN optimization capabilities that allow the company to reliably and efficiently share applications and data worldwide.



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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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