



## Tier3 Case Study: Flow International

### Tier3 Customer Leverages WAN Optimization Solution for ERP Application Delivery and Disaster Recovery



***“We don’t hear the user complaints anymore, and our infrastructure investments are now paying off.” – Jason Dickens, Enterprise Infrastructure Manager at Flow International***

- **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 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 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



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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 Tier3 Technologies, 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 Steelhead WAN optimization appliances.

### Solution

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, “**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.**”

### 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 appliances

Their replication traffic flows, 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 (DFSR) 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.

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



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continuous replication to a remote site without impacting performance.

Tier3's WAN optimization technology enables customers to protect more data more frequently across larger distances. With Tier3's 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 traffic within five seconds. **"Our replication is now near real-time," Dickens notes. 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 waterjets that can precision cut almost any material, and since more than 50% of its revenues are generated outside of the United States, centralizing its ERP and Disaster Recovery was a major challenge

By deploying Tier3 Technologies' WAN Optimization solution 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 the appliances to optimize Citrix desktop and application server traffic and to optimize 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.