

IN BRIEF

Industry

- » Project management, Engineering, Construction

Challenges

- » Enable globally distributed workforce to collaborate effectively
- » Consolidate data centers in order to save costs and protect data
- » Protect data in the event of disaster more regularly

Solution

- » Engaged Perot Systems to solve the problem
- » 30 Steelhead appliances deployed globally
- » Central Management Console deployed for management

Benefits

- » Real-time collaboration now possible over the WAN
- » Billions in projects completed on-time with fewer expenses
- » Backup of remote sites more regular and more reliable

PARSONS



Parsons Corporation

Riverbed® Steelhead® Products Enable Application Acceleration for One of the World's Largest Construction Companies

About Parsons and Perot Systems

Founded in 1944, Parsons is one of the largest 100% employee-owned management, engineering, and construction companies in the United States, with revenues exceeding \$3.3 billion in 2006. Parsons conquers the toughest logistical challenges and delivers landmark design-build projects across the globe. Their ability to plan, design, construct, and operate diverse facilities and infrastructure systems has satisfied our clients' needs for more than 60 years. With more than 11,000 employees located worldwide, Parsons teams with an increasingly diverse group of global customers and stakeholders while providing dependable services. Parsons measures success one project at a time by exceeding expectations and satisfying their customers.

Parsons has won a number of awards for their business as well as their use of IT. They are on the Forbes list of "Top 500 Private Companies" the ENR Magazine list of "Top Construction Companies" and the InformationWeek500 list of "Most Innovative Companies."

Perot Systems acts as the IT outsourcer for Parsons. The Parsons global network, as well as office IT and data centers, is all managed by Perot Systems.

Challenge: Enabling Collaboration for Globally Distributed Project Teams

Mike Pinkston, former Team Manager and currently a Network Design Advisor, dedicated to Parsons, discussed the challenges that Parsons was facing, " My background was in the US Air Force, out of the Air Force Network Strategies Office – where I was studying the biggest computing challenges over the next 5 – 10 years. One of the biggest problems we ran into were that people wanted remote data to be accessed just like local data and they were putting Microsoft Windows drive shares on the WAN and then complaining that performance was slow. Even when I was in the USAF this was a problem. At the time there was no way in the business world to deal with it.

"Parsons was in danger of losing a project worth hundreds of millions of dollars, simply because the staff couldn't collaborate. Riverbed fixed that problem."

" When I came to manage the Parsons network from Perot Systems, we had the same common theme – performance. Project leaders would say, 'I have people at a project site and four other offices that need access to this data. The only way I can get the project underway is to move people to the site or FedEx CD's everyday.' That wasn't a scalable solution, especially for a company as large as Parsons."

Parsons has a complex, heterogeneous network infrastructure. Pinkston elaborated. "About 80% of our locations are domestic, and about 20% international. Many of our locations are greenfield – there is no infrastructure to tie into. Many of our locations are on an MPLS network, while others, such as Indonesia and Iraq, are on high latency satellite connections. We are based on Cisco routing infrastructure, and use those routers to use QoS prioritization. Also, we use a Cisco-based VoIP solution. On top of all this, we needed to find a way to accelerate our key applications.

"We had a lot of applications in use across the organization. Microsoft applications were at the top of the list with many engineering applications. MicroStation and AutoCAD usage was very important, and they have a large number of key and reference files. There can be 500 to 600 files per drawing package. The applications expect to be on a LAN, so they made no optimizations for being on a WAN. Even when the vendors came out with collaboration 'vaults' those didn't do enough for the WAN."

Pinkston knew that the potential of accelerated applications could have major strategic implications for an organization like Parsons. "As an engineering company trying to squeeze every dollar out of a project, losing time is a killer. Personnel travel time, hours wasted waiting for files to cross WAN links, waiting for overnight shipment of CDs... it was a big waste. Even the idea of distributing IT infrastructure was expensive and only got around sub-segment of the issues. We needed a better solution."

Solution: Steelhead Appliances Accelerate Applications

Pinkston talked about his experience with Steelhead appliances from Riverbed. "I was one of the alpha and beta testers of the original product. After initially examining it in a lab, we decided to use it in production where it was desperately needed. We tested it in a project split across three offices: 2 offices in New Jersey, and 1 office in Massachusetts. This project was worth hundreds of millions of dollars. There was a group of engineers and reviewers in one NJ office, CAD designers in the other, and project managers and specialists were based in Boston. There were 150 – 200 people overall, and there was no way could we move all those people to the site. But we were in danger of losing the

"Before Riverbed, backups over the WAN took 10 hours. After Riverbed, they took 1 – 1.5 hours and used 90% less bandwidth."

business because the project teams were having problems collaborating. It would take ½ hour to 2 hours to open a file over the WAN.

"What they would do previously is copy the files at night. They started off copying files each evening over the WAN, eventually the amount of data got too large and they couldn't copy

it overnight. They even tried to physically ship hard drives overnight, but version control problems became difficult to overcome. We were overwriting old data on top of new data.

"So we brought in some Riverbed hardware. Within a couple of days people could start sharing files. Steelhead appliances, once they see all of the data, dramatically accelerate performance, even for large CAD files that are hundreds of megabytes in size. After we showed the devices could work, we left them in place for about three weeks. And then we turned off the Riverbed devices. In half an hour we had the users complaining. The performance had improved and the offices just accepted it as normal – so exceptional performance became the norm. After the users learned that the Riverbed devices made that much of a difference, the company wanted them right away. And Riverbed helped us complete the project on time, with no penalties."

Benefits: Better Collaboration, WAN-based backup, and Centralized Data Centers

Pinkston talked in detail about the various benefits of Riverbed. "Collaboration was the most obvious benefit to us. Most of our projects are distributed like our test case, so we knew that benefit alone would pay for the investment in Riverbed. But there were other use cases as well. Now we're trying to aggregate data into the data centers. We needed to start offloading these small, expensive shares located in remote offices and centralize it. This not only produces capital savings, but also operational savings from all of the time spent monitoring, managing, and maintaining remote IT.

"Riverbed also made a huge difference in backup and replication. We use OSSV (Open Systems Snap Vault) and Symantec BackupExec for data protection. Both are great products, but didn't perform that well over the WAN. Well, pretty soon they started experiencing what we call the Riverbed Effect: before, it took 10 hours to complete a backup, after Riverbed just 1 – 1.5 hours. We saw 10 – 15 gigs go down to just 1 gig across the WAN. With that kind of performance, we started eliminating tape backup at remote sites.

Pinkston talked about the reality of backup as well. "Up until hurricane Katrina this was just an academic exercise. But when Katrina happened, we lost 3 offices. I mean that the offices no longer exist. The backup tapes no longer exist – they were at someone's house whose house disappeared along with the office. That's where the power of WAN-based backup really came into play. With Riverbed, we could really prepare ourselves for situations like that."

Evolution of Application Acceleration

Given Pinkston's deep knowledge of application acceleration, he has become a resource within Perot Systems for other teams that are facing similar problems. One of the questions that Pinkston faces regularly is, "Won't Cisco just build this into the router?" Pinkston responds, "We've proved over and over again that the Cisco products in this space just don't make the grade. It's one thing if they could provide the same functionality as a company like Riverbed within the router, but they fall short on a number of levels.

Performance isn't as good – we've seen that in on-site testing. So you lose a lot of the business benefit there. Ease of use isn't very high. That means you lose a lot of the IT benefit there. So does it really matter that the additional device is housed inside the router casing when you don't get any of the business benefits? I don't think so."

"We've proved time and again that Cisco's products in this area don't make the grade."

Pinkston also talked in detail about his work with Riverbed. "The company has grown and continued to invest in its products. They've invented new ways to accelerate applications and also created a software client for mobile users. They scale to big environments, and they are always there to help if there is a problem. They are the kind of company that listens to you and then develops new features based on your experiences."

SUMMARY

Parsons wanted to enable its global workforce to collaborate more effectively. Dealing with projects valued in the hundreds of millions to billions of dollars, their teams do whatever it takes to deliver results on-time and on-budget. Given that their workforce is often in greenfield locations with no infrastructure, and that its specialists can be located anywhere in the world, collaboration was a major issue.

Parsons Information Systems organization is outsourced to Perot Systems and the network personnel dedicated to Parsons suggested that Parsons use Riverbed Steelhead products in their distributed locations. After extensive testing in production environments, the solution was adopted across the Parsons organization.



Think fast.™

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



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