

**IN BRIEF****Industry**

- » Professional Services (Earth Science, Engineering, and Technology Consulting)

**Challenges**

- » Large CAD and GIS files hampered collaboration and hindered consolidation efforts
- » Aging backup solution made inefficient use of IT staff and resources
- » Business continuity plan required better DR strategy

**Solution**

- » Accelerated large file transfer and reduced bandwidth consumption with Steelhead WAN optimization
- » Centralized data and consolidated remote office infrastructure to one box with Steelhead EX and Granite products
- » Simplified data storage in the public cloud using a Whitewater cloud storage gateway

**Benefits**

- » \$50K - \$60K in savings over two years by eliminating legacy disk-to-disk backup system
- » \$50K/year in savings from avoided consultant fees
- » 50% reduction in data storage costs
- » Faster file transfers and increased bandwidth capacity for improved productivity and collaboration across sites
- » Streamlined, scaled, and secured DR



## GeoEngineers

### Riverbed Performance Platform Improves Collaboration and Ensures Success of Consolidation and DR Initiatives

GeoEngineers, Inc., an earth science, engineering, and technology consulting firm, has 300 employees working in either the Seattle headquarters or one of 10 branch offices located around the US. Professionals from the different locations frequently collaborate on projects, and the company relies extensively on Microsoft SharePoint to facilitate project team communication. Other critical applications include Microsoft Exchange, a customer relationship management (CRM) solution, the ArcGIS geographic information systems solution, and a variety of computer-aided design (CAD) programs.

#### Challenge: Large files hampered collaboration and consolidation; replicating data over the WAN compromised DR

An MPLS wide area network (WAN) connects GeoEngineers' facilities. It was set up to enable specialists to collaborate in different offices, but the size of the firm's CAD and GIS files – hundreds of megabytes – made it difficult for employees in different locations to work together effectively. For example, it took two hours to transfer a typical 720 MB file from one office to another, challenging employees to stay productive as they waited for the information.

Large file sizes and slow WAN transfers also prevented the IT team from consolidating infrastructure and project data into the data center. Storing that data locally, for performance reasons, meant that each remote office had to be equipped with a backup server, in addition to another server that hosted the local domain controller, print, DHCP, and file server. Each remote office was storing about a terabyte of data, an amount that was growing by about 20 percent per year as demand for the company's services increased.

Supporting 20 aging servers in remote offices was not cost-effective, nor was it suitable for a successful disaster recovery (DR) strategy. Backup sets from the remote offices were sent over the

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WAN to a hard drive system in the data center. Even though backups were sent at night, the size of the datasets and bandwidth limitations at times caused the transfer to carry over into the workday. When that happened, IT stopped the backup. This put the company at some

risk, but even more risky was the lack of enough storage space, even with 150 1 TB disks, for system backups. "We were only backing up data," explains Mitchel Weinberger, IT manager at GeoEngineers. "If our data center had an outage or disaster, we had no DR process."

Another issue was that IT couldn't keep as many backup sets as they would have liked. "Our goal is to preserve project documents indefinitely. No project data is ever deleted intentionally however we were only able to archive quarterly" Weinberger explains. The company's headquarters in Seattle posed an additional DR concern. "We had lots of data backed up, but physically, we had a single point of failure in a geologically active zone," said Kurt Anderson, GeoEngineers' CIO. One of Anderson's goals was to mitigate that risk.

#### Solution: IT deployment aligned with business goals

GeoEngineers turned to the Riverbed® performance platform, from Riverbed Technology, to address all of the company's IT issues and improve collaboration, cost control, and resiliency. The integrated solution included Steelhead® appliances - the industry-leading WAN optimization solution, Granite™ edge virtual server infrastructure (Edge-VSI) products, and a Whitewater® cloud storage gateway.

GeoEngineers actually began adopting the performance platform six years ago by equipping its data center and all of its remote offices with Steelhead appliances. Installation was easy, involving no changes to routers, switches, servers, or clients. Using powerful WAN optimization and technologies, the Steelhead appliances immediately reduced bandwidth consumption, accelerated data replication over the WAN, and helped to improve collaboration. At that time, however, project data was still stored locally to ensure adequate performance in the remote offices.

Next, GeoEngineers deployed a Whitewater 710 appliance in its data center, replacing its disk backup system with data storage in the public cloud. Similar to the Steelhead appliances, the Whitewater appliance was easy to install. "We had it up and running in an hour," Weinberger points out. All that was required was to connect the Whitewater appliance to the company's existing backup application, Symantec Backup Exec, and to its cloud service provider, Amazon Simple Storage Service (S3). The Whitewater cloud storage gateway leverages Riverbed's leading WAN optimization technologies to speed data transmission to and from the cloud. In addition, Whitewater also implements Riverbed byte-level deduplication technology that looks at data in smaller segments to find more matches, greatly reducing the amount of data sent to the cloud. GeoEngineers is experiencing a deduplication rate of 28 times, on average, today.

Granite solutions, the third component of the Riverbed performance platform, gave the IT team a completely new way to consolidate project data in the data center while making it available to users and applications running locally in remote offices. GeoEngineers deployed Granite products by updating its Steelhead appliance deployment to Steelhead EX, which provides more memory, disk, and CPU capacity to support the Virtual Services Platform (VSP), essential for eliminating dedicated servers in the branch office. Granite Edge runs as a service on the Steelhead EX appliance, with an additional appliance, Granite Core, installed in the data center.

"Granite allows us to store data in the data center, and project CAD and GIS files from the data center storage over the WAN to local offices without impacting the end-user experience," says Weinberger. "The combination of Steelhead appliances and Granite allows us to eliminate physical hardware in the remote offices and the associated maintenance costs, solidify a disaster recovery strategy for these offices, and have backup processes run by system administrators in the data center."

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### Benefits: Improved collaboration, cost control, and resiliency

#### Collaboration

Steelhead WAN optimization improved productivity and collaboration at GeoEngineers by accelerating the transfer of large files over the WAN. The two-hour transfer time for a 720 MB file, for example, dropped to just 10 minutes on the first transfer and to five seconds for subsequent transfers. "With that type of speed, I knew our staff would be able to collaborate in real time," says Weinberger.

"Overall, we could not do what we're doing right now in terms of project team collaboration without Riverbed," says Anderson.

#### Cost Control

Each component of the performance platform contributes to cost savings. The Steelhead appliances, for example, gave GeoEngineers such an increase in bandwidth capacity (a 3x to 4x capacity increase) that the firm has not needed to make additional investments in bandwidth capacity. The payback on the Steelhead appliances was just a matter of months, according to Weinberger.

The transition to public cloud data storage via the Whitewater gateway turned out to be a very cost-effective solution as well. “We looked at duplicating our data to a secondary data center or offices, but the infrastructure costs and data transfer costs were really prohibitive,” Anderson says. “Using Whitewater and the cloud eliminates a lot of those costs.”

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In terms of the dollar cost for data storage, the Whitewater appliance has reduced this expense from \$13,000 per year previously spent on the disk-to-disk system to a \$6,000 per year cost for cloud storage. Plus, the company will no longer need to upgrade its disk systems “We expect to save about \$50,000 to \$60,000 over the next two years by removing the current disk system from the data center and by not having to purchase new devices,” Weinberger says.

Along with the cost reduction came a reduction in IT staff time devoted to backup processes as well. Weinberger estimates that rather than spending four to six hours a week on backups, they now spend an hour a week at most. This efficiency is allowing Weinberger and his colleague to spend more time working on projects to improve the company’s IT environment. In the past, much of this work had to be done by consultants. Weinberger expects significant savings here. “Even for relatively small projects, to deploy some additional functionality could cost us \$50,000,” he says. “My colleagues and I will be able to handle those now.”

The recently deployed Granite products are expected to drive significant cost savings as well. By reducing the IT infrastructure at the remote offices to just one box (the Steelhead EX + Granite appliance), the solution spares GeoEngineers the cost of replacing those 20 aging servers – a potential savings of hundreds of thousands of dollars.

**Resiliency**

With the performance platform in place, GeoEngineers IT can rest easier, knowing that there’s a solid DR strategy in place to ensure business continuity.

By allowing all project data to be consolidated in the data center with the Granite solution, GeoEngineers can apply more sophisticated data protection technologies, such as snap-shotting, which support a greater choice of recovery points. Within the data center, backup processes have been made more secure by the implementation of the Whitewater cloud storage gateway. For example, the company’s very short data retention times caused by disk space limitations are a thing of the past. “With the back-up data now in the cloud, I can keep as much as I want,” Weinberger says. In addition, having data in the cloud provides the media change that is one element of a good DR strategy. It also overcomes the problem of having all backed up data in one physical, seismically active location. Furthermore, with the data encrypted during transit and while at rest in the cloud, “there’s no risk of anyone getting hold of our information,” notes Anderson.

“Moving data storage to the cloud gives us a cost-effective DR strategy that is in line with the goals of our business continuity plan,” Anderson adds.

The Riverbed performance platform aligned GeoEngineers’ IT deployment with the company’s business goals, delivering the cost-savings, data security, and collaborative environment the company required. GeoEngineers’ corporate motto is, We find a better way.™ When it comes to IT, the Riverbed performance platform is that better way.

**“Cost savings: bandwidth increase avoided; more than 50-percent reduction in data storage costs; \$50K to \$60K savings over two years by eliminating disk-to-disk system; reduced consulting charges projected to save \$50K plus per year; avoided upgrades to 20 servers.”**

## SUMMARY

GeoEngineers' large CAD and GIS files took so long to travel over the company's wide area network (WAN) that professionals in different offices had trouble collaborating. Replicating the files over the WAN to a disk backup system in the company's data center was equally inefficient, compromising the ability to recover information in the event of a disaster.

The Riverbed performance platform – Steelhead WAN optimization, Granite edge virtual server infrastructure, and Whitewater cloud storage gateway – solved the problems posed by these large files. WAN optimization dropped transfer time across the WAN dramatically (from 2 hours to 10 minutes for a typical 720 MB file). Granite products enabled the IT team to consolidate project data in the data center while making it available to users and applications running locally in remote offices, eliminating the dangers posed by replication over the WAN. Whitewater, in conjunction with data storage in the public cloud, gave the company a much less expensive yet more effective DR strategy.

**Business impact:** Employees collaborate more effectively across sites, which means greater business agility and speed. GeoEngineers now has a cost-effective DR strategy in line with its business continuity plan. The company avoided costly bandwidth increases and server upgrades. Data storage costs have dropped by 50 percent, and the company expects to save \$50K to \$60K by eliminating the disk-to-disk system. Finally, with the efficiencies made possible by the Riverbed performance platform, GeoEngineers' IT staff can take on more projects that add business value while reducing consulting charges by \$50K or more per year.

## 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](http://www.riverbed.com).



2005, 2006, 2007, 2008, 2009, 2011



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