Baker Engineering and Risk Consultants, Inc.

Riverbed Technology,Inc., helps this risk management company engineer a safer world by enabling fast application performance involving extremely large data sets over the WAN, and securing 100% of its sensitive data in a data center.

Company description

Baker Engineering and Risk Consultants, Inc. (BakerRisk) is an international consulting firm with six offices across the US, Canada, and the UK. With 170 engineers, scientists, and staff, the company provides risk assessment, engineering solutions, R&D, testing services, and forensic accident investigations to oil, gas, refining, chemical processing, fertilizer production, and related industries.

In Brief

Challenges

- Centralize engineering applications and huge data sets without slowing application performance
- Remove highly sensitive data from remote offices
- Accelerate data transfer to disaster recovery site

Solution

- Riverbed® SteelFusion™
- Riverbed® SteelHead™
- Riverbed® SteelHead™ Mobile
- Riverbed® SteelCentral™ Central Management Console

Benefits

- 100-gigabyte files now transfer in one hour versus 8 to 10
- Centralized applications perform as if local
- 65% reduction in replication traffic
- Sensitive data safely stored in data center
- $20K to $40K savings per remote office

Engineering a safer world creates a lot of data

BakerRisk provides comprehensive risk management engineering services to companies whose very existence exemplifies high-risk. Consider a one million square-foot chemical processing facility. What would happen if one high-pressure valve failed, releasing a stream of flammable liquid onto everything within 50 feet? How thick does the wall of oil refinery tank need to be to withstand a bomb blast? BakerRisk helps companies identify, analyze, and engineer solutions to prevent the worst-case scenarios that keep CEOs up at night.

"The work we do requires minute details," explains Robert Mumphrey, director of IT at BakerRisk. "Engineers create 3D CAD models of facilities with details as small as the angle of a pipe or pressure in a valve. We include as much minutiae as necessary to run our simulations, which can run for an hour, a day, or several weeks."

This results in extremely large data sets. Some individual files can be as large as 100 gigabytes. "We currently have 200 terabytes of data stored at our data center, which is quite a lot for a company of 170 employees," Mumphrey adds.

BakerRisk uses its own suite of proprietary analysis and prediction software, like SafeSite3G© and QRATool©, along with AutoCAD and MicroStation for computer-aided design (CAD) and both proprietary and commercial CFD and FEA software. Operating systems are primarily Windows with some Linux and Ubuntu; business applications include Microsoft Office.

Previously, BakerRisk maintained a separate IT infrastructure (applications, servers, SAN, etc.) at each location, mainly to give engineers the level of performance they needed from their simulation software. "Engineers have a decentralized mindset," says Mumphrey. "They want local copies of data so they can run simulations on their laptops or PCs as needed."

The company's initial attempt to centralize data and applications was an utter failure, however. "People sat at their desks, unable to work, watching files download. Preparing for a client meeting meant transferring a file the day before because it could take eight to 10 hours," Mumphrey says. "That centralization effort left a bad taste."

Replicating data from the data center to the disaster recovery (DR) site was equally inefficient. "We replicated our full data set over the WAN to our DR site, but it was slow," he adds.

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>
> Robert Mumphrey
> Director of IT, BakerRisk

SteelHead and SteelFusion transformed the way people worked

"BakerRisk's first step toward addressing these issues was WAN optimization using Riverbed® SteelHead™ appliances and SteelHead™ Mobile software (the majority of employees work on laptops). "Choosing Riverbed was no contest," says Mumphrey. "We have a lean IT department. We needed something that wouldn't require a lot of care and feeding."

The benefits were immediate. "SteelHead WAN optimization transformed the way people worked overnight," Mumphrey explains. "Before, a 100-gigabyte file took overnight to transfer. That dropped to around an hour."

Back-up efficiency was another benefit. "We saw a tremendous difference with optimization on the back-ups to our disaster recovery site," Mumphrey adds. "Reports on the SteelHead™ Central Management Console show a 65 percent reduction in replication traffic."

But the company continued to store data at each location, incurring costs and posing risks to the data. Mumphrey wanted to try centralization again, but met fierce opposition. "The engineers raised hell," he remembers. "No way were they doing that again."

When he learned about Riverbed® SteelFusion™ Mumphrey was interested. SteelFusion is a Software-Defined Edge (SD-Edge) solution that delivers a unique combination of infrastructure consolidation and local application performance. It would allow BakerRisk to converge remote storage, server, backup, and networking infrastructure into one appliance, while securing 100% of its data in the data center, and delivering application performance as if the data resided locally.

Without announcing it, Mumphrey set up a test of SteelFusion in our largest local office. "We didn't announce what we were doing," Mumphrey says. "After three weeks, we told them the data was not local but in the data center. They couldn't believe it."

Cost saving wasn't Mumphrey's main reason for deploying SteelFusion, but the company saved $20,000 to $40,000 per office by replacing servers and SANs with SteelFusion Edge appliances.

More importantly, employees have the level of application performance they need and the centralization effort was a success. "Listening to people talk, I hear how they're able to work fast and get things done efficiently," Mumphrey notes. "If I tried to take the Riverbed appliances out of our infrastructure, I'd probably be walked out of the building. Without Riverbed, our engineers wouldn't be able to do their business the way they do it today."

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With the 200 terabytes of data safely housed in the data center, Mumphrey rests easier. "Our remote sites are lean—a router, a couple switches, and the SteelFusion appliance," he says. Both management and security are greatly improved in the lean environment.

About Riverbed

Riverbed Technology, Inc. enables organizations to modernize their networks and applications with industry-leading SD-WAN, application acceleration, and visibility solutions. Riverbed's platform allows enterprises to transform application and cloud performance into a competitive advantage by maximizing employee productivity and leveraging IT to create new forms of operational agility. At more than $1 billion in annual revenue, Riverbed's 28,000+ customers include 97% of the *Fortune* 100 and 98% of the *Forbes* Global 100. Learn more at riverbed.com.