"FalconStor CDP was the only solution that could do everything we wanted, without forcing us to deal with multiple vendors. It was an easy choice."

- Justin Bell, Network Engineer, Strand Associates

Strand Associates

FalconStor CDP and FalconStor NSS enable cost-effective remote backup, recovery, and storage virtualization, ensuring data availability

Background

Strand Associates, Inc. (Strand) is a multidisciplinary engineering firm headquartered in Madison, Wisconsin, with 11 offices throughout the U.S. The company is focused on municipal projects, from roadways to buildings, to electrical and wastewater plants.

Strand has 12TB of live data across its offices, as well as another 6TB in active archives. These numbers have grown steadily. Individual projects require as much as 15GB of storage, as applications for traffic modeling, simulation, and GIS often generate very large data files. Ensuring adequate protection and access to all of the file level, Microsoft Exchange Server, and Microsoft SQL Server data is a critical part of the IT team's job.

Challenge

The company's distributed office structure made it difficult to ensure data access and adequate protection. Data protection was limited to individual tape backups. Daily differential and full weekly tape backups were handled by an engineer or secretary in each office.

According to Network Engineer Justin Bell, that system did not work well. There were many failed jobs, and the IT team spent a significant amount of time troubleshooting due to failed hardware, lost tapes, forgetting to swap out tapes, etc. In addition, data recovery was difficult. Without onsite IT staff, office personnel faced the challenge of having to locate and mount the correct tapes. They ran hourly shadow copies for more granular backups, but in the offices with large data stores and significant traffic, the shadow copies corrupted the page pools, resulting in server downtime and ruined copies.

This scenario had a significant impact on productivity. Growing shadow copies had to be deleted and servers had to be rebooted at night. As a result, if a file was accidentally deleted during the day, only the last daily differential could be restored, minus the work that had occurred in the meantime. In some cases, IT was unable to catch the problem soon enough, and the server would fail in the middle of the workday. Occasionally, when these "blue screen" incidents occurred, there was no data to restore because of tape drive errors or accidental overwrites.

FalconStor Solution

Bell was tasked with delivering an improved infrastructure that would let employees in multiple offices work together more smoothly. This included providing fast, easy access to any data from any office, ensuring that interfaces and directory structures

Industry

Business Services (Engineering)

Company Profile

Founded in 1946, Strand Associates provides specialized services in civil and environmental engineering and science. The company has 380 employees in 11 U.S. offices, with headquarters in Madison, Wisconsin.

IT Environment

> Microsoft Windows Server 2003 and 2008
> Microsoft Exchange and Microsoft SQL Server
> CAD and engineering applications

Challenges

> Ensuring data protection and recovery for multiple offices
> Delivering continuous availability of mission-critical data
> Recovering from tape failures and lost data
> Overcoming impediments to user and IT productivity

FalconStor Solution

> FalconStor® Continuous Data Protector (CDP)
> FalconStor Network Storage Server (NSS)

Benefits

> Nonstop data availabiity across the enterprise
> No need for IT staff at remote sites
> 5-minute recovery from disk with 100% transactional consistency
> Increased IT productivity by up to 20-30 hours per month
> Reduced maintenance costs by eliminating the following components:
  • 308 tapes
  • 7 tape drives
  • 7 backup servers
  • 7 backup software licenses

retained a consistent look-and-feel, and enabling extensive video conferencing capabilities.

Bell looked at a number of solutions before selecting the FalconStor® Continuous Data Protector (CDP) solution, including EMC RepliStor and Network Appliance (NetApp) StorVault. The EMC solution required special setup, including having to install and manage additional servers and tape libraries at each site. Historical copies were dependent on shadow copies, and scalability was limited. The NetApp solution required proprietary hardware , and it did not offer the bare metal recovery or migration capabilities that Strand needed.

With its TOTALLY Open™ architecture, only the FalconStor CDP solution could deliver all of the capabilities that Strand was looking for, including continuous local and remote data protection, mirroring, snapshots, and replication, at a price that worked within the company's budget. "FalconStor CDP was the only solution that could do everything we wanted, without forcing us to deal with multiple vendors," says Bell. "It was an easy choice." The company purchased FalconStor CDP in July of 2008 and a FalconStor Network Storage Server (NSS) device for storage virtualization several months later.

Deployment Details

Bell and his team developed detailed requirements for the new solution. Corporate guidelines require historical backups to be kept in each office for at least a month for complete protection. Bell wanted at least two copies of all data stored locally at each site for fast recovery, and the solution needed to be able to back up data every two hours. They did not want to wait for tapes to ship from the Wisconsin office in order to restore replicated data.

Because they had a single T1 line to each remote office, Bell and his team needed efficient offsite replication, and the ability to copy a day's worth of changed data to the Wisconsin office within 10 hours and put it on tape. The FalconStor solution accommodates all of these needs.

Instead of being forced to use proprietary hardware, Strand was able to implement FalconStor CDP on IBM servers of their choice. Data from remote offices is replicated to a FalconStor CDP device in Wisconsin. Meanwhile, data from the Wisconsin office is replicated from a FalconStor NSS appliance to a FalconStor CDP appliance in Illinois. "This setup allows us to keep an offsite copy of everything, so that all of our data is protected," Bell explains.

FalconStor CDP is set up to do hourly backups, which Bell calls the "icing on the cake" in light of the product's other capabilities. WAN-optimized replication including FalconStor MicroScan™ technology minimizes remote bandwidth requirements to

improve replication efficiency. Strand can now keep 18 months of snapshots on the FalconStor CDP servers in each office.

FalconStor HyperTrac™ Backup Accelerator technology increases tape backup speed, eliminates backup windows, and offloads processing from application servers. For instance, Strand has a server that connects to FalconStor CDP and FalconStor NSS, as well as a Dell 122T tape autoloader and Dell 132T tape library. Weekly backups are performed on Fridays. All data from remote offices is written to one set of tapes and stored in Wisconsin. All of the file, email, and Microsoft Exchange data is written to tape and taken offsite.

Bell estimates that the system allows them to reliably back up and manage all of its data. "Since implementing this system, we have never had to use the backup tapes," he adds.

Business Benefits

The benefits of the new system have been significant in terms of time and money. "We've had approximately 600 restore jobs in the last year using FalconStor CDP," Bell says. "That would have been extremely difficult with our old system." Bell and his team can recover data from disk in just five minutes with full granularity, which is beneficial to end users. The remote staff spends much less time struggling with tape and backup administration — as much as 20 to 30 hours less each week — freeing them to focus on other tasks.

From a cost persective, the FalconStor solution eliminates the company's need to use and maintain hardware including seven backup servers and licenses, seven tape drives, and over 300 tapes in remote offices. In addition, there is no need to install extra Microsoft Windows servers in each office for monitoring and management, providing further savings.

The value of the FalconStor solution became fully apparent during a devastating hurricane in 2008, when Strand's Ohio office lost power for multiple days. Members of the IT team, some of whom had little training or experience with the new system, were able to mount the Ohio replicas from the FalconStor CDP in the Wisconsin office as live volumes and redirect user traffic there, minimizing downtime to 30 minutes. When power was restored days later, the team was able to replicate the data back and switch over to the Ohio servers without users even noticing. Bell states, "We are ecstatic with the results of the solution."

For more information, visit www.falconstor.com or contact your local FalconStor representative.

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