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— Frank Smith, Manager of Corporate IT Core Infrastructure, Lionbridge

## Lionbridge Technologies

*Lionbridge uses FalconStor NSS to virtualize over 100TB of storage in a Microsoft Windows Server 2008 R2 with Microsoft Hyper-V environment, supporting more than 4,500 employees around the world.*

### Background

Lionbridge Technologies provides localization, translation, testing, and development services and solutions to many of the world's most renowned companies, including Porsche, Volvo, Merck, Motorola, Nokia, EMC, HP, Microsoft, and IBM. Lionbridge's core business is translating software (including user interfaces), documentation, and training materials into multiple languages to meet its clients' globalization requirements. The company's worldwide footprint is a key differentiator that enables it to deliver superior services through local contacts and resources. Employees include more than 4,500 linguists, engineers, content developers, project managers, quality assurance professionals, and subject matter experts in addition to a network of over 25,000 independent translation partners. In addition, solution centers in India, China, and Eastern Europe employ more than 1,600 professionals performing application development and maintenance, product engineering, and designing award-winning product testing and certification programs.

### Challenge

Frank Smith is the Manager of Corporate IT Core Infrastructure at Lionbridge. He and his five-person team are responsible for keeping data available around-the-clock to support a global workforce. The team supports a clustered Microsoft Exchange and Microsoft SQL Server environment, IM/Voice (OCS), Active Directory, Terminal Services, disaster recovery (DR), plus data center and SAN activities. A data center in Massachusetts houses most of the core servers for these applications, which now includes hundreds of virtual machines built on Microsoft Windows Server 2008 R2 with Microsoft Hyper-V.

Smith and his team had originally leveraged a standalone server and storage environment, which proved to be inefficient in providing the high availability (HA) the company needed. Without true multi-pathing, the team was forced to create cumbersome workarounds, which made failover and load balancing extremely complex. In addition, supporting SAN growth and minimizing costs was a constant challenge.

### FalconStor Solution

With storage capacity growing from 3TB to 100TB in just two years, the need for a new solution was inevitable. A key reason that Lionbridge purchased the

### Industry

Business Services

### Company Profile

Founded in 1996, Lionbridge Technologies provides translation and localization as well as testing and development services to companies around the world. This public company has more than 4,500 employees, solution centers in 26 countries, and approximately \$461 million in annual revenue.

### IT Environment

- > Microsoft Windows Server 2008 R2 with MPIO
- > Microsoft Hyper-V, Microsoft Exchange, Microsoft SQL Server, Microsoft Office Communications Server, Microsoft Windows Server R2, iSCSI Software Initiator
- > Sun Flx-380, Sun 6140, and Hitachi AMS 1000 storage arrays

### Challenges

- > Ensuring high data availability for global workforce
- > Storage growth with proliferation of standalone servers
- > Distributed management
- > Rising costs

### FalconStor Solution

- > FalconStor® Network Storage Server (NSS)

### Benefits

- > Storage virtualization in consolidated data center
- > Saved hundreds of thousands of dollars in storage
- > 300% improvement in data availability
- > On-demand, non-disruptive scaling
- > Centralized management
- > Flexible, cost-efficient environment

FalconStor® Network Storage Server (NSS) solution in 2004 was to integrate all of its JBOD storage with an iSCSI gateway.

Now, an aggregated, virtualized storage pool is available to any host, along with FalconStor storage intelligence and centralized management technology. Lionbridge's merger with BGS in 2005 prompted a significant effort to centralize file storage in order to simplify management and reduce costs, and FalconStor NSS has played a crucial role in that effort. Storage is now consolidated on Microsoft failover clusters with FalconStor NSS on the back end. As a result, nearly all storage from local servers in remote offices has been placed on the iSCSI SAN.

### Deployment Details

FalconStor NSS serves approximately 75 host servers; 20 of those physical servers run 400 to 500 virtual machines. Lionbridge uses a mixture of three or six-node Microsoft Hyper-V clusters, with a new Microsoft Hyper-V R2 CSV file system that enables clustered shared volumes. This eliminates the need for a single LUN to be assigned to each virtual machine. Server virtualization with Microsoft Hyper-V has enabled a more dynamic data center, in which servers can be quickly and easily added and removed. The flexible virtual server environment is tremendously enhanced with FalconStor NSS storage virtualization technology, enabling administrators to balance workloads for maximum resource utilization.

"It's simple," comments Smith. "I'll create a new virtual disk on FalconStor NSS and then serve it out to the cluster, and the system engineer can build a server on top of it." Currently, Lionbridge serves 100TB of Sun and Hitachi Fibre Channel (FC) storage using FalconStor NSS.

### Business Benefits

Today, Smith is able to consolidate storage from remote offices domestically and internationally. Local offices rarely retain their own file and print services or domain controllers; instead, these services are consolidated in a cloud computing data center environment. Data availability now reaches 99.97% — a 300% increase. The company's storage infrastructure has reached 99.99% availability.

Smith says that implementing FalconStor NSS enabled Lionbridge to save a tremendous amount of money while implementing a SAN-based infrastructure. "Without this iSCSI-based virtual storage

pool, we would have to deal with many more standalone servers, which are difficult to manage." With the combined strengths of FalconStor NSS, a Microsoft iSCSI software initiator, and multi-path I/O built into Microsoft Windows Server 2008 R2, Lionbridge gets the right infrastructure to support its business without breaking the bank. Smith explains, "We don't need to go out and spend \$5,000 for a pair of HBAs and \$10,000 for PowerPath licensing every time we want to add a server to our existing SAN. All we need is a dual-port NIC card — for about \$125 — and no further licensing." This also lets Lionbridge utilize its existing network infrastructure instead of investing further in FC connectivity.

Virtualizing storage using FalconStor NSS also simplifies management significantly. Smith's team can manage different types of storage from one application, instead of having a different management application for each type of storage. "You carve up the storage on the back end and connect it to FalconStor NSS," he begins. "Then you really don't have to worry about the native GUI for that array." Much more storage can now be managed with its existing staff.

Smith adds, "One of the biggest things that FalconStor technology has allowed us to do is to become vendor-agnostic. We don't really care what we're putting behind it, as long as we know that it's solid storage." For example, FalconStor NSS functionality fostered huge savings in a late-2008 storage purchase. "We were looking for dependable, block-level storage — no bells and whistles, because we use all the software licensed from FalconStor. As a result, we were able to choose the best storage for the best price, which saved us \$450,000 on a single purchase."

Equally important is the ability to provision capacity-on-demand without interrupting operations. "We can buy a new array tomorrow and slide it behind these FalconStor NSS boxes, and it will be completely seamless," says Smith. "We've done this during business hours with no effect on our downstream clients."

### Future Plans

Smith plans to build a DR site in the Midwest in late 2010. This secondary site will use FalconStor NSS with Microsoft Windows Server 2008 R2 stretch clustering. FalconStor and Microsoft engineers have completed a successful proof of concept (POC) at the Microsoft Enterprise Engineering Center and plan to begin implementation soon.

For more information, visit [www.falconstor.com](http://www.falconstor.com) or contact your local FalconStor representative.

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