Success Story

J. Fletcher Creamer & Son, Inc. Constructs Efficiency and Competitive Edge with Hyper-V and NetApp

Another NetApp solution delivered by:

Quality Technology Solutions, Inc.

KEY HIGHLIGHTS

Industry
Construction

The Challenge
Eliminate server sprawl, consolidate 25 islands of storage, simplify while expanding capability.

The Solution
Virtualize with Hyper-V™ on NetApp® for faster application rollout, efficiency, and agility.

Benefits
- Deploy servers in 30 minutes, not 3 weeks
- Provision storage in minutes, not hours
- Deliver 100% availability
- Meet within-minutes RTO
- Use 69% less capacity
- Shrink data center footprint 98.5%
- Eliminate $55K annual capex/opex
- Manage 15TB in <1 hour/week

Customer Profile

Founded in 1923 and headquartered in Hackensack, New Jersey, J. Fletcher Creamer & Son is a full-service, multi-disciplined construction contractor serving the business community, government agencies, and utilities throughout the continental United States (*www.jfcson.com*). *The Engineering News-Record* (ENR) ranked J. Fletcher Creamer & Son 208th on the 2010 Top 400 Contractors listing. (Source: *enr.construction.com*)

The Challenge

Eliminate server sprawl, consolidate storage, simplify and expand

J. Fletcher Creamer & Son put its first truck on the road in 1923. In the late 1920s, the company added dump trucks to haul rock and fill for the George Washington Bridge construction project. Today, J. Fletcher Creamer & Son operates a fleet of some 2,000 pieces of construction equipment and trucks on hundreds of high-profile projects per year across the United States.

Throughout the decades, J. Fletcher Creamer & Son has achieved consistent growth and leading-contractor status by staying adaptable and focusing on productivity. Stanley Borowski, the company's IT manager, elaborates: "We run a business that operates on razor-thin profit margins, so we really have to maximize efficiency and effectiveness. One way we do that is by putting the best-possible technology in the hands of our highly skilled workforce. For the IT organization, that means maintaining an infrastructure that provides 24/7 user access to services, agility to scale and deploy new applications, and cost efficiencies."

In 2009, to better deliver on these objectives, Borowski's team undertook a technology refresh to replace a limiting physical-server infrastructure with a more flexible, efficient, and manageable virtualized environment. Working with Quality Technology Solutions, Inc. (QTS), a systems integrator based in Parsippany, New Jersey, and a NetApp Gold Partner as well as a Microsoft Gold Partner, Borowski's team outlined requirements to:

- Eliminate server sprawl for manageability and reduce data center costs.
- Consolidate storage to improve capacity utilization and reduce complexity.
- Accelerate application test and rollout to better serve unique client project scheduling, reporting, and communications requirements.

"Spinning up an application server used to take three weeks. Today it's 30 minutes, and there's no expanded footprint. We're achieving space savings, and the improved responsiveness contributes to higher user productivity and a competitive advantage in many bidding processes."

Stanley Borowski
IT Manager, J. Fletcher Creamer & Son, Inc.

- Enhance reliability and recoverability.
- Streamline administration to conserve IT staffing resources.
- Provide infrastructure scalability and flexibility to support business growth and opportunities.

The Solution

Implement Microsoft Hyper-V and consolidate on NetApp

The team evaluated multiple server-virtualization solutions and storage systems from EMC, HP, and NetApp. Neil Rosenberg, QTS president and CEO, emphasizes that the plan was to architect a strategic solution, one that would address immediate requirements for cost savings and responsive application services while providing IT flexibility for long-term business needs and opportunity. "Our goal," he states, "was to help J. Fletcher Creamer & Son leverage technology to drive business value. Our partnerships with leading systems, storage, and networking companies facilitated evaluation of an array of solutions to find a best-fit architecture.

"In this case, Microsoft® Hyper-V, manageable from within the Windows® framework, ideally suited the existing Windows-based application environment. On the storage side, NetApp storage virtualization capabilities and efficiencies complement and extend the core capabilities of Hyper-V." NetApp differentiators include provisioning flexibility, NetApp deduplication and other storage-efficiency technologies, and simple yet robust data protection with NetApp Snapshot® technology that provides instant and nearly zero-space virtual machine (VM) backups of Hyper-V data volumes.

At the J. Fletcher Creamer & Son data center, a NetApp high-availability FAS2050 system configured with both high-performance FC and economical SATA drives provides 15TB of capacity via iSCSI to a Windows Server 2008 R2 Hyper-V environment running across a cluster of five HP ProLiant DL380 servers. The J. Fletcher Creamer & Son IT team manages the environment via Microsoft System Center Virtual Machine Manager 2008 R2 and Microsoft System Center Configuration Manager 2007. Hyper-V Live Migration and Cluster Shared Volumes enable nondisruptive VM migration between server hosts.

The J. Fletcher Creamer & Son virtual environment consists of some 20 virtual machines running Microsoft Office SharePoint Server® 2007; Microsoft SQL Server® 2008; Microsoft SQL Server 2008 R2 Reporting Services and Business Intelligence solution; Microsoft Exchange Server 2007 (with 250 mailboxes); Citrix XenApp; Oracle® Primavera P6 Professional Project Management and Primavera Contract Management; BID2WIN Software's Construction Management Suite, which includes the BID2WIN Estimating & Bidding and BUILD2WIN Field Tracking & Analysis applications; and BlackBerry Enterprise Server.

The multiprotocol FAS2050 also provides SMB/CIFS-based access to file shares and storage resources to several physical servers that run applications including Explorer Contract Manager and BID2WIN Estimating. To protect the environment, J. Fletcher Creamer & Son leverages NetApp Snapshot point-in-time copy technology in conjunction with Symantec™ Backup Exec™ 2010 for disk-to-disk-to-tape backup that maximizes recoverability and efficiency, as well as Symantec Enterprise Vault™ for archiving files and e-mails to the less-expensive, lower-performance SATA disk shelf.

Business Benefits

Fast-tracking applications

For Borowski's IT team, it's all about service—to some 270 geographically distributed users who need an always-expanding array of estimating, bidding, equipment tracking, and other applications, and to customers who request specific reporting or scheduling packages.

Borowski says the virtual infrastructure delivers: "The Hyper-V on NetApp infrastructure lets us be more responsive to our clients, as well as to in-house project managers, engineers, ERP users, and estimators. Spinning up an application server used to take three weeks, starting with purchase approvals to final install. Today it's 30 minutes, and there's no expanded footprint. We're achieving space savings, and the improved responsiveness contributes to higher user pro-

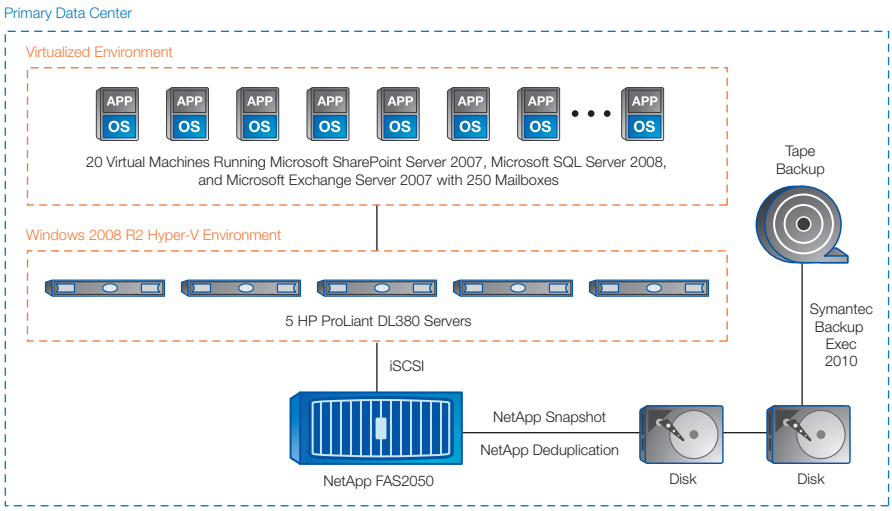

Figure 1) J. Fletcher Creamer & Son, Inc. storage infrastructure.

ductivity and a competitive advantage in many bidding processes. In some cases, we've also seen a performance gain. Users tell us that a report that took 30 minutes to run in the physical environment completes in 5 minutes on the Hyper-V-NetApp infrastructure.

"We're also able to quickly deploy test beds to evaluate software without impacting production systems. We've even tested an operating system upgrade by rebuilding our cluster in a virtual environment. We ran it there for a month, tested databases and other systems against it, and then moved it back onto the cluster—all without productivity loss."

Michael Olshefski, network administrator at J. Fletcher Creamer & Son, adds, "Another benefit is being able to immediately return resources rather than having to incur the time and expense of repurposing or recycling a box. Today we just delete a file."

Staying on the job 24/7

Since standardizing on NetApp, J. Fletcher Creamer & Son has experienced no storage-related downtime. Borowski emphasizes the importance of availability: "Estimators and project teams need around-the-clock access to IT services. The Hyper-V on NetApp infrastructure combines highly reliable components with robust failover, backup, and recoverability. In the past, a server failure might have brought an entire department down for as much as eight hours. Today, if one of the Hyper-V servers goes down, virtual machines migrate to another server within 10 to 60 seconds."

Faster, automated backups using NetApp Snapshot technology also provide improved protection of critical systems. The NetApp solution allowed J. Fletcher Creamer & Son to retire the 3 separate devices that were required to back up the company's original SAN and local storage on some 25 physical servers.

Olshefski touts the improved recoverability: "At least once a week, someone asks us to recover an Excel spreadsheet or other critical data. In the past, retrieving such a file from the nightly backup tape typically took several hours. For new data created the same day, whether deleted or corrupted, I had to relay the bad news that their data was not on last night's tape and not recoverable. Now recovery point objectives are under an hour and recovering a Snapshot copy takes just seconds."

Bidding to win

Cost efficiencies are vital in an industry in which the award most often goes to the lowest qualified bid. Olshefski estimates that NetApp deduplication enables a 69% capacity savings on Hyper-V VMs. He notes other savings from:

- **Reduced data center space and power costs**. "The new IT infrastructure delivers greater performance, functionality, and scalability in 98.5% less space, requiring a footprint of just 6 square feet. Our old infrastructure nearly filled a 20x20-foot data center. With more than 25 tower servers, each configured with dual power supplies, our power costs were higher and our UPS was maxed out. Now we have space, power, and UPS capacity to spare."
- **Reduced capex/opex**. Collapsing some 15 physical servers enables an annual savings of more than $15,000 in maintenance. Implementing the new virtual infrastructure also allows J. Fletcher Creamer & Son to avoid annual purchases of at least $40,000 in new server hardware for an expanding application mix.
- **Streamlined administration**. Eliminating server sprawl and consolidating storage dramatically simplify administration. "Managing 15TB of NetApp storage takes less than one hour per week. Not only do we have improved utilization of storage resources, but it takes just minutes to expand or contract capacity. In the past, we couldn't share capacity across servers and resizing took several hours."

"We're able to support the company's IT needs with a highly flexible, cost-efficient infrastructure that helps us keep our project teams productive, overhead low, and bids competitive for continued success in an ever-changing national economy," observes Borowski.

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Michael Olshefski
Network Administrator, J. Fletcher Creamer & Son, Inc.

"This infrastructure also gives us scalability for growth and agility to expand services or develop new revenue streams. Right now, for example, we're evaluating document management systems and are in the process of building an extranet that will give clients and subs access to CAD drawings and other large-format files."

Borowski concludes by referring to the importance of a trusted advisor: "QTS has been a long-term value-added partner, consistently bringing us technologies and solutions that meet unique business needs. Their expertise, implementation services, and commitment to aggressive schedules helped us complete the infrastructure project quickly and seamlessly. As a result, we're more responsive, efficient, and competitive."

SOLUTION COMPONENTS

NetApp Products
NetApp HA FAS2050 solution

NetApp deduplication technology

Protocols
NetApp SAN (iSCSI)/NAS (SMB/CIFS)

Partner
Quality Technology Solutions, Inc. (QTS)
www.QTSnet.com

Environment
Windows Server 2008 R2 Hyper-V

Microsoft System Center Virtual Machine Manager 2008 R2; Microsoft System Center Configuration Manager 2007

Microsoft Office SharePoint Server 2007

Microsoft Exchange Server 2007

Microsoft SQL Server 2008; Microsoft SQL Server 2008 R2 Reporting Services

Citrix XenApp

Oracle Primavera P6 Professional Project Management; Oracle Primavera Contract Management

BID2WIN Estimating & Bidding

BUILD2WIN Field Tracking & Analysis

Explorer Contract Manager

BlackBerry Enterprise Server

Symantec Enterprise Vault

NetApp

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