

MOHAWK INDUSTRIES



FILE AREA NETWORK

Mohawk Grows and Saves with Brocade StorageX

EXECUTIVE SUMMARY

Technology Challenge:

Eliminate the costs and risks of local data storage at over 100 geographically distributed sites and centralize file management for rapid migrations and consolidations

Solution:

Brocade® StorageX® application suite

Benefits:

- Elimination of tape devices at over 100 locations for substantial cost savings
- Centralized, automated remote site data replication for enterprise-wide file backup
- Fast consolidation of new sites without disruption to operations or users
- Improved productivity due to simplified file management

In business for over 120 years as a world-leading manufacturer and distributor of flooring products, Mohawk Industries generates enormous amounts of unstructured file data ranging from spreadsheets and databases to carpet and tile patterns. Much of this information must be stored, backed up, and readily accessible on a daily basis.

Previously, the Calhoun, Georgia-based manufacturer had relied on tape storage at over 100 of its 500 sites, with local employees expected to back up all files and store them manually for safekeeping. Too frequently, however, data went unsaved, jeopardizing the availability of business-critical information. In addition, Mohawk was planning to implement a new Point-Of-Sale (POS) solution that would require replacement of legacy green screen terminals with PCs and provide file sharing with 275-plus new Windows servers dispersed among its retail store locations. To improve efficiency, the company's IT staff was looking for a single solution to address these key data management challenges.

EXTENDING DFS WITH BROCADE STORAGEX

Mohawk initially deployed Microsoft Distributed File System (DFS), which enables shared folders on different servers to be grouped as a virtual tree of folders known as a "namespace"—helping to simplify file access and management. However, Mohawk soon realized it would need to extend the Microsoft DFS namespace with a more scalable solution that could aggregate files and centralize namespace management throughout the enterprise—enabling centralized data backup and eliminating the need for local tape storage at remote facilities.

Microsoft recommended that Mohawk deploy Brocade StorageX, the most widely used solution for simplifying the implementation and maintenance of DFS namespaces. The Brocade StorageX Global Namespace logically aggregates distributed files and provides centralized administration of multiple namespaces, as well as central views of all files.

KEY REASONS WHY MOHAWK INDUSTRIES CHOSE BROCADE

- Only industry solution to enable data consolidation for file systems from multiple vendors
- Highly scalable, easily administered Global Namespace
- Integration with Microsoft Distributed File System (DFS)
- Automated file replication services for hundreds of sites across the WAN
- Streamlined file management, backup, and restoration across the enterprise

According to Leon Verriere, Manager of Systems Engineering at Mohawk, “After evaluating Brocade StorageX, we found that it could greatly leverage DFS to fulfill our business and technology objectives. The Brocade StorageX Global Namespace is the only namespace solution that enables enterprises to manage distributed file storage between the data center and geographically dispersed sites.”

THE SAFETY AND ECONOMY OF CENTRALIZED BACKUPS

Today, Mohawk uses Brocade StorageX Replication Policies to automatically replicate file shares residing on servers at remote sites across the firm’s Wide Area Network (WAN) back to the central data center for centralized backup. Because many departments within Mohawk operate around-the-clock, administrators use the Byte-Level File Differencing Replication (BLDR) and bandwidth throttling functionality to minimize the bandwidth the backups consume.

After it centralized control of its distributed data, Mohawk eliminated the uncertainty and inefficiencies of local tape storage, removing the tape devices at over 100 of its sites to reduce costs and improve productivity. “Brocade StorageX permitted us to streamline operations, cut expenses, and truly protect our vital data,” Verriere notes. “By automating processes, the solution greatly reduced the time needed to back up and move files from one server to another. What once required many employee-hours to do every day, Brocade StorageX does effortlessly in exponentially less time.”

In the process, Mohawk gained a more effective business continuity strategy. The Brocade StorageX Global Namespace and Disaster Recovery Policies provide a centralized, policy-based way to manage the failover process. On four separate occasions, Brocade StorageX has transparently failed users over to disaster recovery sites within 15 minutes of a local server failure.

STREAMLINING DATA CONSOLIDATION AFTER ACQUISITIONS

Brocade StorageX has also enabled Mohawk to migrate data from Windows 2000 and Novell NetWare servers to Windows Storage Server 2003 with little effort and without disrupting user access to data. Moreover, the solution supports Mohawk’s growth strategy by enabling the firm to quickly and easily assimilate the file data of newly acquired firms.

“Prior to Brocade StorageX, it would have taken weeks or months to consolidate new acquisitions—and cost tens of thousands of dollars,” says Verriere. “Now, we’re ensuring these new assets yield dividends for Mohawk as soon as possible.”

FAST COST SAVINGS FOR AN IMPRESSIVE ROI

By benefiting from the solution’s many capabilities, Mohawk is deriving a strong return on its investment into Brocade StorageX. The annual cost savings have amounted to \$300,000, and the company anticipates the savings to increase as the company grows. Even better, Mohawk has a solid foundation to efficiently manage its burgeoning storage needs throughout its distributed enterprise.

“Brocade StorageX allowed us to virtualize and, as a result, cost-effectively and transparently administer a storage infrastructure spanning over 500 remote sites,” Verriere concludes. “We can capture and control business-critical data with remarkable ease, bolstering our storage infrastructure for the opportunities that lie ahead.”

For more information, visit www.brocade.com.

Implementing a Strategic File Area Network

Insights from Leon Verriere, Manager of Systems Engineering at Mohawk Industries

As File Area Networks (FANs) begin to emerge in corporate enterprises, Mohawk Industries has been at the forefront of this trend. During a recent roundtable discussion, Mohawk Industries' Manager of Systems Engineering Leon Verriere described how his organization is leveraging Brocade® File Services solutions as part of his company's strategic FAN environment.

To view the complete roundtable discussion online, visit www.brocade.com/events/webcasts.jsp.

Q: When you began implementing a FAN, was it difficult to think in terms of file management?

Leon Verriere: I would not say that it was even very difficult. Once you understand the basic concept of the FAN, you can leverage the technology you currently have in-house and consider plugging in the file services that you may be looking at. It just will make everything a whole lot easier once you have that overarching umbrella of the FAN approach.

Q: How important was it to attach a long-term ROI to your environment?

Leon Verriere: I am not sure that you can actually touch on the ROI enough. File management has been neglected for so many years because there has not been a strategic initiative. That was a key point for Mohawk in our implementation, that we could demonstrate ROI for what we wanted to do. Also, we want to be able to plug in different types of services to solve problems without worrying about how one type of solution might collide with another. A FAN provides a complete approach.

Q: One FAN detail that is probably worth calling out is the Global Namespace, where you are talking about a true heterogeneous file system. How important is the ability to centrally manage data?

Leon Verriere: At Mohawk, there would be no way that I could survive with the few resources that I have if I did not think in terms of efficiency. I mean, we are constantly challenged to do more with less, and the only way to do that is to standardize and make things easier to manage.

MOHAWK INDUSTRIES AT A GLANCE

- The world's leading manufacturer and distributor of flooring products
- \$6.6 billion in annual revenues and 37,700 employees worldwide
- Over 60 TB of file and application data distributed across 350 locations
- Over 6.5 TB of unstructured data in remote locations and 5.5 TB in data centers
- Staff of eight full-time engineers
- Projected annual cost savings of the Brocade StorageX solution: \$300,000

KEY GOALS OF AN ENTERPRISE FAN

As a reference architecture for understanding enterprise file management, FANs have five key objectives:

- Centralizing control for file information by avoiding silo-, application-, or device-specific approaches
- Defining business group attributes and separating logical data relationships from physical device relationships
- Creating a non-disruptive, transparent file movement capability across geographical boundaries
- Deploying file management services across the entire IT infrastructure
- Demonstrating measurable ROI for file management

We actually have hundreds of locations that I have to manage file data for, so there are a large number of file data management challenges. From our perspective, we really want to protect all of the company's data, even down to the data that sits in a user's "My Documents" folder. And we found a way to do that using the FAN methodology.

Our difficulty comes in managing multiple file systems that I have across multiple locations and there is always an ongoing data migration. There is a constant charge to remove hardware and have it replaced with bigger, better hardware and more storage. So the constant moving of these files is a gigantic headache. Just in the time that we have had this FAN methodology in place, we have done a Novell-to-Windows migration. We have acquired four companies in that timeframe, and we have also done a rollout of Windows Storage Servers to over 275 of our locations.

Q: How big is your team that has responsibility for dealing with file management issues?

Leon Verriere: I have three people for that. My team as a whole is actually eight, but that includes staff for what our next big challenge was, which was handling remote site tape backups. For years and years, you deployed a server in a remote facility, put a tape device out there, and then you got some person who has never done IT in their

life to change the tapes so that you can restore files if anything ever goes wrong. We needed a way to centralize and standardize that process.

Q: It sounds like you had developed different file serving strategies over many years. At some point, did you look at this and say, "If we do not unify this in some way, we cannot scale?"

Leon Verriere: That's correct. We purchased Brocade StorageX to implement in our environment. And with the systems from Microsoft—and they are the ones who actually brought us to the Brocade StorageX product—we determined that this solution would be able to eliminate our dependency on physical file locations. We use the term virtualization because the Global Namespace provides the virtualization for us. We use the Global Namespace for applications. We use it for user data, paths to their "My Documents" folders. Users have no idea where their files are located because they are going through a Global Namespace. There are no server-specific names or anything in any of the file paths.

Q: Did you implement this completely based on business logic?

Leon Verriere: Yes. One of the immediate implications of having this namespace is that you could, for the first time on an enterprise-wide basis, remove the device-level dependency. It is in an abstracted logical group. Also with Brocade StorageX,

we have been able to simplify and automate our migrations and consolidations. Now, when we have to deploy any file server to a location, we consolidate data from multiple servers to a single server, and Brocade StorageX enables us to do that. In the four acquisitions that I mentioned, we have used the file consolidation piece in order to eliminate servers and implement a Global Namespace in all of those locations.

Q: Was it easy to transform your environment in a non-disruptive way?

Leon Verriere: Yes. I can give you a very quick illustration. We have a file server at our El Paso Ceramic Tile Manufacturing Plant and they are starting to hit the ceiling on the amount of storage they have in their server. Rather than ship drives in order to upgrade the amount of storage they have, what we will do is take a new server, put upgraded drives in it, take the data—it is a very quick, point-and-click process—and indicate that we want that data to be what is on the current El Paso server.

It is non-intrusive. The users have no idea that it is happening. I ship the server to the location, have them plug it in, and then I do a very quick sync of the data. Basically, I can point them to the new box and the users never know the difference. It really is that simple.

Q: What has been the impact of the FAN on your disaster recovery program?

Leon Verriere: We actually built our disaster recovery plans for all of our file and print devices around the ability to centrally manage data. If I have a file sever that fails out in the field, then I have one that is sitting on standby in my data center that I can copy the data to. At the same time I can redirect my users from the failed location to where the replicated location is back in my data center. So they have complete access to their files at that point.

Q: You can set up standby or failover warm servers for any failed file service over multiple geographies, do the failover, redirect the business users, and then switch back?

Leon Verriere: Right, and then the Brocade StorageX product will actually handle the synchronization of the data as well. That is done from a single console. From a backup perspective, we have a great deal of leverage. In fact, that is where most of our dollar savings came from. What we began doing is using Brocade StorageX to replicate all of the data from all of those devices back to our primary data center. Now we have a full disaster recovery copy of all of our remote facilities. So we could lose any one of the file servers that we have in the enterprise and we have a full backup of the data from the previous night.

BROCADE FAN SOLUTIONS

To support efficient file management operations, Brocade offers a full suite of FAN solutions, including applications and professional services for:

- Data consolidation
- Remote office management
- Data center consolidation
- Information management
- Business continuity

Applications in the Brocade FAN solution suite include:

- Brocade StorageX®
- Brocade File Lifecycle Manager® (FLM)
- Brocade Wide Area File Services (WAFS)
- Brocade UNCUupdate
- Brocade MyView®

To learn more, visit www.brocade.com/solutions/fileservicessolutions.jsp.

COMMON BUSINESS DRIVERS FOR A FAN

- Data consolidation
- Remote office management
- Data center consolidation
- Information management
- Business continuity

A FAN ARCHITECTURE SIMPLIFIES

- Technology upgrades
- Ongoing data migrations
- Data consolidations
- Mergers and acquisitions
- Archiving
- Compliance or security initiatives
- Growth management

Q: When you were thinking about a formalized FAN deployment, what ended up being the key ROI justifications as you sold this up within your organization?

Leon Verriere: It was about eliminating the tape backup infrastructure and putting a dollar value on the fact that people are not changing tapes. I could convince my CIO how important file data was, especially in those edge locations. So, by representing the whole tape backup scenario, that is really where the large amount of ROI came out.

There is so much flexibility as far as what we are doing. I do not have to buy tapes or tape devices. If you are managing six to eight terabytes of data that is in 300-plus locations, you would probably need quite a few more people. We have a massively efficient organization right now. The CAPEX and the OPEX savings is an easy way to get the senior management team to buy into it. But there is also a cascade of cost savings from the management efficiencies of technologies like this. It adds up to be even more significant than the CAPEX/OPEX savings in the long run. ■

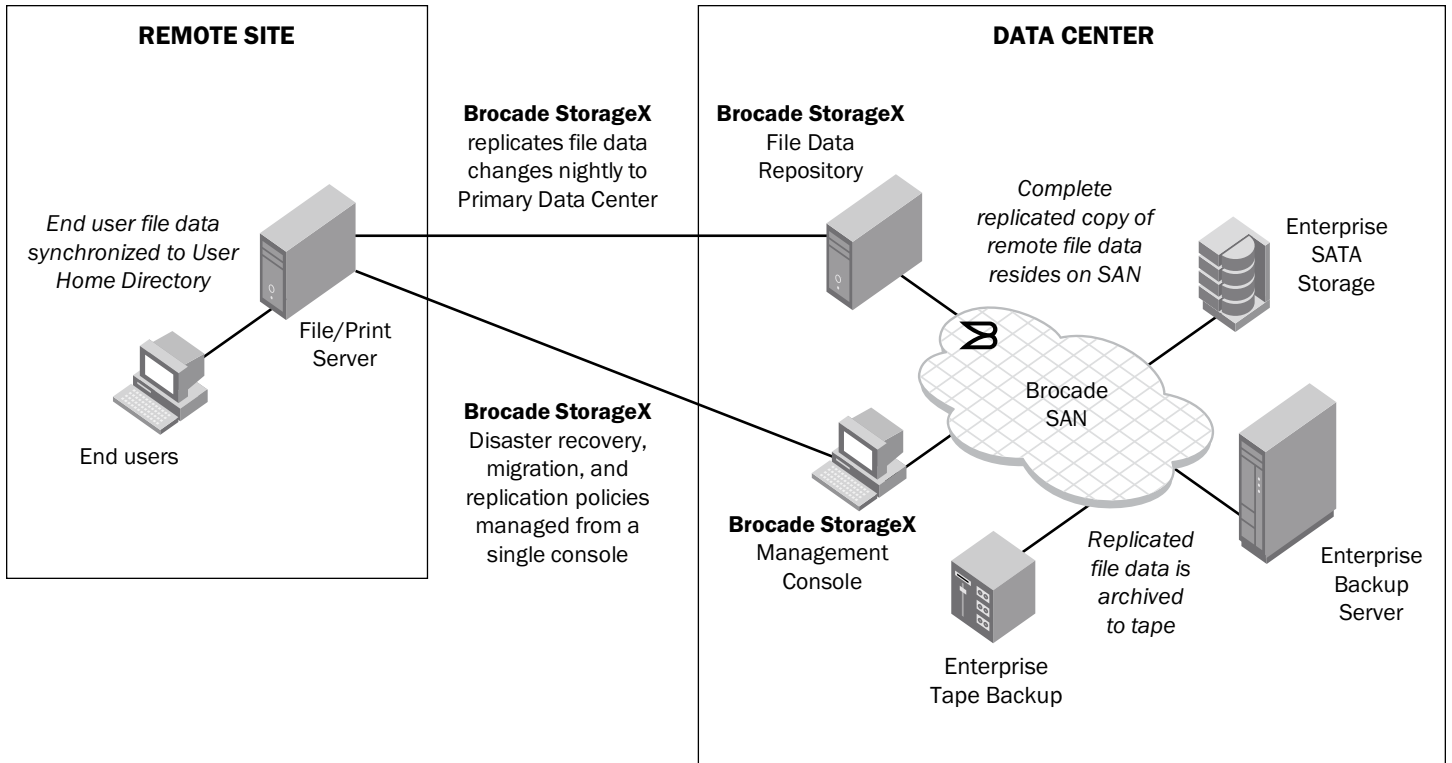


Figure 1. Mohawk Industries' enterprise data protection strategy leveraging Brocade StorageX.

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