

XIOtech MAGNITUDE and CommVault Galaxy Keep Mesaba Airlines Flying High

QUICK FACTS

Industry/Solution:

- Transportation

Platform/File System:

- Windows 2000/2003
- Novell Netware
- Sun Solaris

Application(s):

- Backup, restore MS Exchange, MS SQL servers and Lotus Notes

Partner Hardware:

- Dell
- Sun
- XIOtech MAGNITUDE

Challenges:

- Reliable backups
- Fast restores

Competitive Challengers:

- Veritas
- eVault

Solution:

- CommVault Galaxy Backup & Recovery
- Synthetic Full Backup

Benefits:

- Reliable Backups
- Reduced administrative costs
- Fast restores, including single-message e-mail restores
- High Availability

Customer Profile

Real-time business demands full-time data—that's why after a costly computer outage, regional air carrier Mesaba Airlines decided to rebuild their IT infrastructure around the Magnitude™ storage solution.

"We can't rely on a single server," says Scott Ficek, director of IT for Mesaba. "We have to have a high-availability architecture that uses clustered servers working from a centralized storage solution. The Magnitude solution gives us everything we need to reliably run our mission-critical crew and flight dispatch systems."

IT Reliability Is Critical

Operating as Northwest AirlinK, Mesaba is the fifth largest regional airline in the United States. They rely on the data in their crew and flight dispatch systems to keep track of their service to 103 U.S. and Canadian cities from major hubs in Minneapolis/St. Paul, Detroit, and Memphis. If their flight and crew data isn't available, they can't fly.

And yet, that was the unfortunate situation in December 2000 when Mesaba faced a systems outage that grounded their aircraft and crews for more than four hours. "It was ugly," recalls Ficek. "Besides the idle ground time, it took 10-15 additional hours to get the system stable and usable, and a lot longer to return everything to normal." Because of all the downtime, Mesaba lost more than a million dollars and endured the frustrations of delayed customers. "We couldn't afford to go through that again," says Ficek, "so we knew we needed a new high-availability system and for us that meant a centralized storage solution."

XIOtech Makes It Happen

As they began to redesign their infrastructure, Mesaba's IT team looked to the Magnitude. "We knew XIOtech had been there and done that and that they could help us design the architecture we needed to make it happen,"

says Ficek. "We also looked at other solutions," Ficek continues, "but the Magnitude had clear advantages for us. It was specifically designed as a server solution for environments like ours, and not some downsized mainframe solution trying to fit in. Plus, it gave us a platform for remote disaster recovery."

The Magnitude is the only storage system that is architected to virtually eliminate planned downtime, eliminate storage complexity, and simplify server management. It can be configured, reconfigured, updated, and managed on the fly, enabling dynamic, disruption-free response to changing business and computing needs. In addition, the Magnitude is architected for zero data loss—its cacheless architecture prevents cache corruption of data and ensures data integrity.

As a large Novell user, Ficek was pleased that the Magnitude worked easily with clustered servers, and that a planned upgrade to NetWare 6.0 would be no problem. Plus, Ficek liked that the Magnitude easily could be configured for off-site disaster recovery. "We first wanted to have a high-availability solution," explains Ficek, "and then we wanted to build a remote disaster-recovery capability around the central storage platform. XIOtech's competition hadn't even begun to think about it."

Mission-Critical Systems Run Flexibly and Reliably

Mesaba now runs their mission-critical crew and flight dispatch database systems exclusively from their Magnitude. "The crew system keeps track of more than 1,600 crew members," explains Ficek, "including their physical location, what flights they're scheduled on, the hours they've flown, and the pay they've earned. The flight dispatch system tracks where each aircraft is and where it's going, and generates the paperwork required to release and track a flight for take-off. Managing all this data has been tremendously simplified by the Magnitude."

Of particular value to Ficek are the virtualization capabilities of the Magnitude. "If I need to grow a volume by a few gigabytes, I don't have to worry about what drive I'm taking the space from. Or if I need to add new storage, I don't have to worry about drive configurations or adding a new shelf. I just plug in the new drive and it's done."

Today, more than 750 users access a half terabyte of storage from the Magnitude solution. Applications on the Magnitude include Lotus Notes, Microsoft SQL Server 2000, and Oracle databases. Mesaba's server configurations include Microsoft Windows 2000, Windows 2003, and Sun Solaris operating systems, with the clustered servers running NetWare 6.0.

IP for Disaster Recovery Completes the Solution

Once the Magnitude was in place, Ficek began to look to the next phase of his IT plan: disaster recovery. "In the event we lost our primary data center," he explains, "we needed to be able to continue to run the airline from another location with all the same data."

Mesaba installed a second Magnitude subsystem at their main training center, located 10 miles away from the primary data center. To ensure efficient and cost-effective data replication, Mesaba chose to build an IP storage solution. Each Magnitude subsystem is connected to a Nishan Systems™ 3300 Multiprotocol Storage Switch, and the Nishan switch connects the two systems to the IP network.

The Nishan switches perform wire-speed conversion between Fibre Channel and Internet Fibre Channel Protocol (iFCP) for transport across an OC-3 SONET data connection. Magnitude Geo-Replication Services software allows users to access or duplicate storage volumes across networked Magnitude nodes. While data is being replicated to a storage volume on a target Magnitude node, the source volume remains online and accessible. User access to data and applications is not impacted. Synchronous mirroring is done in real time at a high rate of speed between systems. "The software works extremely well," says Ficek. "Mirroring has been painless."

The Big Backup

Before implementing the solution, Mesaba had used Veritas's Backup Exec to back up to tape once a day. But since, it has been using a CommVault-based backup system that stores data on one terabyte of disk reserved for that purpose on the Magnitude. Between 12:00 am and 4:00 am each morning, the data is sent over the OC-3 connection to a tape backup at the secondary facility 10 miles away.

"We considered offsite backups over the OC-3 network during the day, but it consumed all the bandwidth and affected mirroring," says Randy Witt, IT manager at Mesaba. "Backing up to disk is faster, both in terms of data recovery and backup."

The other advantage of CommVault is that it does a synthetic full backup, meaning that

after just one full backup, it does incremental updates. After a week, Mesaba merges all the changes into a full backup. As a result, "we'll never do a full backup again," Witt says. This time-saving technique has particularly helped with the backups over wide-area connections from Detroit and Cincinnati. "It would take hours to do weekly full backups with the systems over there," he notes. "Now, it takes 45 minutes."

Before CommVault, the wide-area systems were backed up locally to tape using Backup Exec. "It became a problem after a while because it required someone to pick up those tapes once a week, and the backup windows were horrible," Witt says.

High-Availability

Ficek and Mesaba are impressed with the solution. "Without the Magnitude, it would have been almost impossible for us to configure a high-availability system at this location with a disaster-recovery option," declares Ficek. "As it was, installation was a piece of cake, the technical support has been more than we expected, and we get the benefit of umpteen redundancies and everything is hot swappable!" In short, concludes Ficek, "The Magnitude keeps us flying smoothly."

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