

EMC BACKUP AND RECOVERY SOLUTION HELPS SAFEGUARD BANK TRANSACTIONS

Leading cash-handling provider regains control over backup windows and administration



ESSENTIALS

Challenges

- Backup windows running into production hours
- Unreliable backup servers and tape failures
- Slow recovery times

Solutions

- EMC Avamar deduplication backup software; EMC Data Domain deduplication storage systems; EMC NetWorker unified backup and recovery solution; EMC Data Protection Advisor backup monitoring and reporting software; VMware vSphere virtualization solution; EMC RecoverPoint SE; EMC Data Protection Advisor (DPA)

Key benefits

- Daily full guest and image-level backups protect growing virtualized environment
- Daily full NAS system backups and one-step recovery
- Backup windows slashed from nearly 24 hours to six to seven hours
- Recovery times improved from weeks or days to just a few hours or minutes
- Tapeless branch backup operations reduced server refresh cost by \$130,000

Loomis is an international cash-handling leader with origins from California's gold rush in the 1850s. Today, Loomis' U.S. operations include an electronic network of nearly 200 locations; 8,000 employees; and approximately 3,000 armored and other vehicles for secure transport, automated teller machine (ATM) services, cash processing, and vault services.

Reliable data access is critical to Loomis providing financial and business customers with secure transactions. For branch office data backup, Loomis used Computer Associates BrightStor ARCserve Backup software and tape systems to protect servers in 67 field locations responsible for delivering cash to ATMs, banks, and other sites. Yet, backups were unreliable, restores could take up to two weeks, and backup administration consistently consumed valuable IT staff time.

"Our integrated stand-alone server backups had a high failure rate due to contaminants in the environment, which was disrupting our operations because we needed to bring down the servers to repair them," says Bill Homes, director of Infrastructure. "If we miss deadlines for reporting nightly deposits to the banks, we've got financial penalties and non-compliance issues."

At the corporate data center, Loomis faced growing backup windows and administration time with its CA BrightStor ARCserve and Symantec Netbackup tape backup solutions. Loomis also lacked an effective method of protecting its growing number of virtual servers.

"When we became a public company, we began investing heavily in data mining, business intelligence, and other new applications," says Homes. "With all this new data, we filled up a 20-terabyte tape library in only six months, and soon our backup windows were running into production hours. Our Exchange performance was getting worse, and it was hard to find time to run maintenance without email outages."

BACKUP AND RECOVERY SOLUTIONS

Based in Houston, Texas, Loomis initially deployed a replicated, two-node EMC® Avamar® backup and recovery solution with source data deduplication to back up its IBM DB2 cash management application and documents on servers in 67 branches across the U.S. In addition, after successfully resolving the branch data protection issues, Avamar was chosen to provide daily full guest and image backups of a growing VMware® vSphere™ virtual server environment, which involved upgrading to an Avamar RAIN6 GEN3 Grid system using Avamar Virtual Edition. This greatly enhances the company's recovery-time objective (RTO) for key mission-critical applications running truck dispatch and tracking, safe polling, financial reporting, time tracking, and Microsoft SharePoint by providing application image level recovery of the virtual machines.

Loomis also implemented EMC Data Domain® DD660 deduplication systems with EMC NetWorker® backup and recovery software to protect its Microsoft Exchange, Microsoft SQL Server, Oracle, and file sharing environments.

Avamar and Data Domain systems replicate to Loomis' remote site for additional protection. Loomis uses EMC MozyPro® to remotely back up laptops used by field-based employees; however, they are currently evaluating Avamar's desktop/laptop functionality for this purpose.

An integrated EMC CLARiiON® CX™ storage area network (SAN) and EMC Celerra® NS network-attached storage (NAS) solution stores Loomis' critical application data, files, and VMware virtual machines. Loomis soon will use EMC RecoverPoint to provide continuous data protection (CDP) between its primary and remote sites.

DATA DEDUPLICATION SHRINKS BACKUP TIMES, IMPROVES SUCCESS RATES

Since deploying EMC backup and recovery solutions, Loomis has seen backup success rates and performance improve dramatically.

For its branch offices and virtualized data center operations, Loomis uses Avamar to obtain daily full backups across existing infrastructure by only sending new, unique sub-file data segments. Branches only have to move 800 gigabytes nightly compared with 50 terabytes to tape previously. Average daily full backups for branches are just 45-60 minutes today compared to two to three hours for previous daily increments.

“By addressing our backup needs across the board, EMC helps keep backup management and training simple. EMC also gives us flexibility so we can easily scale and move strategically ahead as our needs change.”

BILL HOMES, DIRECTOR OF INFRASTRUCTURE

Loomis protects their Celerra NAS system by using EMC NetWorker NDMP Storage Node configuration (which streams data at the device level at 4 GB over the fiber network) combined with EMC SnapSure™, in which Loomis was able to reduce the backup windows for full backups to once per week on the NAS.

“We're pulling very little data over the wire across thousands of miles. So we're getting full backups every night that easily complete within our window,” says Hoang Tran, systems engineering manager.

Before Avamar, Loomis was limited to file-level backups of its virtual machines since it didn't have enough backup storage capacity for image-level backups. Now, daily full image backups of VMware servers are completed in 10-12 minutes.

“With Avamar and VMware integration, we are able to protect this environment at the file and image level with minimal disruption to the production systems and without the need to provide additional staging server resources,” says Tran.

Data Domain deduplication storage systems, NetWorker, and RecoverPoint SE utilizing local CDP have enabled Loomis to protect all of its large high-change-rate databases and file systems. This has reduced Exchange backup windows from nearly 24 hours to just six to seven hours and recovery windows from hours to minutes. Exchange backups, which were unreliable and only completed half the time, now have nearly 100 percent success rates. In addition, Data Domain inline deduplication has improved onsite retention from one week to 90 days before data is moved to tape for offsite long-term retention. As a result, Loomis' tape requirements, management, and costs have been reduced significantly.

Specifically, only a few weeks after implementing Data Domain systems into its environment, Loomis has benefitted from an overall data reduction ratio of 8.6 times—only requiring 2.9 TB of capacity to protect 25.6 TB of primary data. In addition, the system is ingesting 2 TB of data a day, but Data Domain inline deduplication reduces this by 34.4 times, and therefore the system only requires 60 GB to protect the 2 TB data set. Based on these initial results, Loomis anticipates it will be able to retain data onsite for at least 90 days with its current implementation.

AVOIDING THE HURRICANE WITH QUICK RECOVERY

Avamar was put to the test when Hurricane Gustav swept through New Orleans.

“When Hurricane Gustav was on its way,” Tran recalls, “we spun a virtual server here in Houston and restored the data from New Orleans in just a few hours. We rerouted money to our BCP branch and all the transactions got processed. Everything worked perfectly.”

Previously, it took two weeks for branch offices to restore data because offsite tapes were not easy to locate. In addition, branches were not always swapping tapes, so backups were frequently overwritten and data was unrecoverable.

“We used to scramble when servers went down and hope that all the tape backups were complete. Now we don’t worry as much about unplanned downtime,” Tran says.

With the Data Domain systems and NetWorker software, restores are completed in minutes on average compared to several hours before.

“In testing, we’ve spun an entire database from Data Domain,” explains Paul Roeder, senior storage engineer. “Before, it was almost impossible. Now we just do it. We sleep better at night knowing we have disaster recovery with EMC.”

INVESTMENT PAYBACK IN EIGHT MONTHS

Loomis attributes significant tape cost reductions and management time savings to Avamar and Data Domain systems. Loomis estimates Avamar paid for itself in eight months and expects the Data Domain systems will provide a similar return on investment.

Loomis no longer needs to send approximately 30 tapes weekly to an offsite facility, explains Homes. “With Data Domain’s 90-day retention window, we’re moving toward eliminating all tape backups of our critical systems. So, we’re spending less on tapes, transportation, and offsite storage, not to mention the time and headache to manage the environment.”

Because branch servers no longer need to be equipped with tape drives, Loomis saved over \$130,000 when it refreshed them with smaller platform servers.

STABILITY AND CENTRALIZED REPORTING STREAMLINE BACKUP OPERATIONS

Backup administration is consuming significantly less time for both data center and branch personnel.

“One of the best things about Avamar is that it frees up storage engineers to do storage engineering. Plus, two operations jobs were eliminated that focused on monitoring backups and helping the branches with restores. Now when we get a restore request, the user has the file before we’re off the phone,” notes Homes. “Avamar just works. You look at the logs once a day. You don’t have to baby-sit like you do with tapes. That’s a huge time savings.”

Integration among EMC’s different solutions also has streamlined operations. For example, EMC Data Protection Advisor software is integrated with NetWorker for backup reporting.

“Data Protection Advisor’s reports on Data Domain are very granular and extensive,” says Tran. “It provides a very efficient management system and it gives us a lot of insight so we can forecast better. Soon, we’ll roll Avamar into DPA for even more centralized reporting. Our branch offices and virtual servers in the data center are tied together and managed with Avamar. NetWorker helps us manage both our Data Domain and tape environment as we transition to a tapeless infrastructure. It takes less time when we centralize our control.”

UNIFIED BACKUP AND RECOVERY SIMPLIFIES MANAGEMENT

As Loomis continues to expand its use of EMC backup and recovery solutions, the company is looking to integrate the different environments further.

“We plan to get all our backup and recovery into one unified architecture,” says Tran.

“EMC gives us the option to manage all of them—disk, tape, physical, virtual, and multi-vendor—from a single pane.”

“By addressing our backup needs across the board, EMC helps keep backup management and training simple,” says Homes. “EMC also gives us flexibility so we can easily scale and move strategically ahead as our needs change.”

CONTACT US

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