

SUB-ZERO GROUP, INC.

EMC Avamar meets backup and recovery demands of virtualization and data growth



ESSENTIALS

Industry

Manufacturing

Company Size

1,000 employees at three manufacturing sites

Business Challenges

- Tape-based backup system could not handle exponential data growth—SAN doubled to 42 TB in two years
- Weekly full backups unable to complete within available window
- Virtual machines were backed up with rudimentary snapshot-based backups on the SAN
- Data recovery was slow and inefficient

Solution

- EMC Avamar deduplication backup software and system
- VMware
- Microsoft Exchange

OVERVIEW

Based in Madison, Wisconsin, Sub-Zero Group, Inc. is a well-known and respected manufacturer of high-end residential kitchen appliances including refrigerators, ranges, and dishwashers. Founded more than 60 years ago, Sub-Zero Group, Inc. acquired the domestic line of the Wolf Range Corporation in 2000. It now employs more than 1,000 people at manufacturing facilities in Wisconsin, Arizona, and Kentucky.

BUSINESS CHALLENGES

As part of its decade-long IT evolution, Sub-Zero Group, Inc. recently virtualized more than 70 percent of its IT environment with VMware®. And like many large enterprises, Sub-Zero Group, Inc. is experiencing exponential growth in its corporate data—its SAN has more than doubled to 42 TB in only two years.

For more than eight years, Sub-Zero Group, Inc. had relied on a tape-based backup system running Symantec NetBackup software, but the system could no longer handle the company's data load. For example, NetBackup could never complete a full backup of the Sub-Zero Group, Inc. home directories during the weekend window.

To back up its virtual machines (VMs), Sub-Zero Group, Inc. used rudimentary snapshot-based backups on the SAN, a situation that was not ideal because it depended on the SAN's constant availability and used significant disk resources in order to maintain 90 days of backups.

"It was a very antiquated system. We were spooling backups right to LTO tapes that could only store 200 gigabytes each—a typical 30-terabyte backup would require a large quantity of tape," explains Craig Wuerzberger, systems engineer, Sub-Zero Group, Inc. "As a result, we were spending too much time flipping and managing tapes for a backup that, often, could not even complete."

Data restore was just as cumbersome because a typical restore required up to 40 tapes that could only be fed five at a time into the SL 500 tape library.

Driven by the explosion in data and virtualization, Sub-Zero Group, Inc. sought a disk backup solution that would enable it to eliminate tape and support its burgeoning virtual environment, which had grown to more than 200 VMs. With only Wuerzberger and one other technician dedicated to backup and recovery tasks, the solution needed to be extremely easy to implement and use.

SOLUTION

To meet these requirements, Sub-Zero Group, Inc. chose EMC® Avamar® deduplication backup software and system.

CUSTOMER PROFILE

EMC²

Results

- Achieved daily full backups in less than eight hours—previously daily incrementals took 12 hours
- Reduced one person's time spent managing backups from one day to no more than an hour
- Reduced typical restore times from several hours to ten minutes
- Achieved average deduplication rate of 99.29 percent
- Achieved average backup time of 23 minutes

"As an all-in-one, single-vendor solution, Avamar provides comprehensive and powerful deduplicated backup and recovery at a much lower cost of ownership than if we had purchased multiple hardware and software systems from multiple vendors," says Wuerzberger. "Implementation was smooth and easy; in a little over a month after we acquired Avamar, we were in full production."

With virtualization becoming the cornerstone of the Sub-Zero Group, Inc. IT environment, the seamless integration of Avamar with VMware was a huge benefit.

"We were able to realize an ROI within only three months just by removing a large number of obsolete physical machines. But we would not be able to reach our virtualization goals without the state-of-the-art backup and recovery that Avamar provides," Wuerzberger says.

UNIFIED, FLEXIBLE DATA PROTECTION

With Avamar, Sub-Zero Group, Inc. has been able to eliminate tape and bring its entire data environment under the control of a single, unified backup and recovery system.

Avamar protects physical servers running SQL Server and Oracle databases and Microsoft SharePoint applications, as well as VMs running Microsoft Exchange. Sub-Zero Group, Inc. has given its DBAs the ability to perform their own backups of SQL Server databases and to store the backups in a designated location that can be easily transferred to the Avamar solution. This flexibility gives DBAs the autonomy they prefer and enables Wuerzberger and his team to coordinate enterprise-wide backup and recovery.

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Craig Wuerzberger
Systems Engineer at Sub-Zero Group, Inc.

Avamar performs daily, full guest-level backups of more than two TB of Microsoft Exchange data using the Microsoft Volume Shadow Copy Service (VSS) Snapshot for Exchange plug-in. This enables mailbox-level restores, a completely new capability for Sub-Zero Group, Inc. Previously, the company could only perform database or block-level restores, but now they can restore individual users' mailboxes as required—a much more efficient process.

ACCELERATING BACKUP

Avamar deduplication is accelerating backup at Sub-Zero Group, Inc. With an average backup data deduplication rate of more than 99.29 percent, the company can now easily complete full daily backups in less than eight hours, compared to the 12 hours previously required for daily incremental backups.

In addition, backups can now be performed during the quieter third shift when there is less demand on data resources. And backups of the three-terabyte home directory—which could not complete over a weekend with tape—can now be completely backed up from A to Z in a matter of minutes. Avamar's variable-length, client-side deduplication makes this possible since Avamar only needs to back up unique daily changes. Since Avamar constructs a daily full backup as part of this process, it ensures a one-step recovery that is extremely fast.

Sub-Zero Group, Inc. takes advantage of Avamar's deep integration with VMware by leveraging Changed Block Tracking (CBT) for both backup and recovery. CBT tracks daily changed blocks within the VMs and enables Avamar to quickly scan and deduplicate those blocks for a faster backup. Avamar then sends only the unique changed blocks to the Avamar Data Store.

SPEEDING DATA RESTORE, SAVING TIME

As the only solution that leverages CBT for recovery, Avamar provides the fastest data restore available, resulting in significant time savings for Sub-Zero Group, Inc. Avamar also provides file-level restore capabilities. Previously, restoring data involved up to three hours searching for, retrieving, and loading tape cartridges before the restore job could even begin. With Avamar, that preparation time has been eliminated, and restores take place in minutes.

"With Avamar, I can perform a typical restore in less than ten minutes. Even our users have noticed how much faster they get their restored data back," Wuerzberger notes. "Avamar has reduced my overall time spent managing backup and recovery from at least a day to no more than an hour. Just in those time savings, Avamar has paid for itself."

MEETING FUTURE REQUIREMENTS

Sub-Zero Group, Inc. is currently performing daily full backups for its remote locations via existing network links, since Avamar will deduplicate at the remote offices and then compress, encrypt, and send only the unique daily changed data. With the success of Avamar in the Madison location, plans are underway to install an additional Avamar appliance at the Phoenix manufacturing facility.

The company will also implement Avamar's replication capabilities to support a planned disaster recovery facility. In addition, Sub-Zero Group, Inc. is testing Avamar for laptop backups to support its growing population of mobile users.

"With the exploding growth in data we've seen in recent years, it's tremendously reassuring to know that we have a backup and recovery infrastructure that will support our company into the future, with the technology, stability, and dependability that EMC is known for," remarks Wuerzberger.

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