

A large U.S. health insurer speeds backup and recovery

With an IBM ProtecTIER solution

Overview

Challenge

To better manage growing volumes of personal health information, speed data recovery, control the amount of storage space required, and reduce the cost of backup media

Solution

Implementing an IBM virtual tape library based on IBM ProtecTIER® Deduplication Solutions to speed operations and reduce the use of tape in on-site storage locations

Benefits

Reduced the time and effort spent on storage management, reduced the amount of storage space required, and enabled cost savings by decreasing the use of tape as storage media

Finding a better way to manage storage for backup and recovery

A large health insurer in the U.S. collects volumes of personal health information (known in the industry as PHI) on its members, ranging from contact and identification data to medical and claims records. The company retains about 400 TB of data on site at its data center facility and sends nearly 550 TB of production data a month to an off-site backup location managed by a third party. The company also archives about 300 TB a month off site. All data sent off site is encrypted.

The combination of off-site backup, archiving and on-site incremental backup is key to the company's disaster recovery plan—and results in a backup cycle that can run nearly 24x7. Depending on their content, some databases are backed up weekly, some daily, and some multiple times a day.

But the volume of backup presented a management challenge. The company found that because data does not change every day, a storage solution that reduces the volume of saved information by backing up only the changes can spread that data across a cumbersome number of tapes. Notes the company's backup and recovery technical lead, "If I have a server out there that's three years old, I could have 30 or 40 tapes that data happens to reside on. It's possible that 100 different tapes would have to be mounted, depending on how old the server is."

When data recovery becomes necessary, such a large number of tapes can dramatically slow operations.



“The IBM ProtecTIER solution has allowed us to move in the right direction for better recovery of our data centers.”

—Backup and recovery technical lead, a large U.S. health insurer

Implementing a VTL solution from IBM to reduce capacity consumption

To better manage data protection and speed data recovery, the company worked with an IBM Business Partner to add an IBM virtual tape library (VTL) based on IBM ProtecTIER Deduplication Solutions. Utilizing the deduplication capabilities of ProtecTIER, the VTL reduces storage capacity consumption by eliminating redundant data. The result is that only one instance of a data set is stored, requiring considerably less space than common data compression techniques and enabling more efficient data recovery (operational recovery).

The company also continues to use the legacy tape environment, which includes IBM 3584 TotalStorage® Tape Library, IBM System Storage® TS1120 Tape Drives, and IBM Power Systems™ servers running IBM Tivoli® Storage Manager.

Achieving a more efficient operation with deduplication technology

The VTL has reduced the time and effort the company spends on storage management. “We don’t have to spend a lot of time logging on and managing and watching,” says the backup and recovery technical lead. “You log on once or twice a week, and it works. The overhead is very low once it’s been implemented.”

But the most remarkable differences between the VTL and standard tape storage lie in operational capabilities. “To mount one tape,” he says, “used to take somewhere between a minute and a half and three minutes, but to mount a VTL tape is almost instantaneous. Our backup times used to be somewhere between 10 or 20 GB an hour if we were lucky. But we’ve been able to push our VTL up to over 140 GB an hour for backup time. And overall, our restore time is one-sixth of the time that it used to be.”

Solution components

Hardware

- IBM ProtecTIER Deduplication Solutions

Business Partner

- MSI Systems Integrators
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The increase in accessible space also made a difference. Virtualizing the tape library enabled more drives per server—128 virtual tape drives as compared to the 30 physical tape drives it previously operated. The result of virtualization is the equivalent to 12,000 tapes.

The company conducts about 200 database backups every day in its data center. But as the backup and recovery technical lead explains, “We’re no longer fighting for tape drives. I don’t have a problem now between daily backups and the restore process. I can run both at the same time.”

And while virtualization means more access to more drives, deduplication means that fewer tapes are required. Even the early stages of the VTL implementation have reduced the need for storage to about a quarter of its previous requirements. Ultimately, deduplication can reduce the need for storage capacity by as much as 25 times, and further reductions are expected as the company makes greater use of its VTL. Only 36 of the 60 TB of storage available in the VTL are currently being used.

Supporting an evolving backup and recovery strategy

As the company’s backup and recovery strategy evolves, the backup and recovery technical lead predicts that the use of tape will continue to drop. The company is currently testing the use of IBM SAN Volume Controller (SVC) for replication between their primary and secondary data centers as a means of boosting the company’s disaster recovery capabilities.

“We’re still sending tape with production data off site,” he says. “But when we begin replicating to our secondary data center, that’s where the real tape count reduction will occur.”

In the meantime, he says the VTL has the company heading in the right direction. “The IBM ProtecTIER solution has allowed us to move in the right direction for better recovery of our data centers. If the VTL hadn’t come, we’d still be relying completely on tape drives. I would be hard pressed to change from the VTL that we’re currently using today.”

For more information

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