SEPATON®

Customer Case Study

UNH Data Protection Makes the Grade with SEPATON S2100-ES2 Virtual Tape Library

As part of a data center consolidation project, the University of New Hampshire wanted to implement a faster, more efficient way to backup and protect their academic and administrative data. Their SEPATON S2100®-ES2 virtual tape library (VTL) with DeltaStor® data deduplication helped them cut backup times, meet stringent RTO requirements, and reduce their capacity requirements by 50 percent.

> "The deduplication ratios we achieved with DeltaStor let us delay capacity upgrades to our VTL by a full year, and our backups are three times faster than with our old tape system. We have been very pleased with the results of our investment."
>
> **Robert Rader**
> Storage and Backup Manager
> University of New Hampshire

UNH Overview

The University of New Hampshire is a world-class public research university with the feel of a New England liberal arts college. UNH is the state's flagship public institution, enrolling 11,800 undergraduate and 2,400 graduate students.

Backup Application

Symantec NetBackup
EMC Legato Networker

Key Benefits

- Cut restore times from hours to minutes
- Controlled data growth with deduplication
- Enabled scaling of performance and capacity as needed
- Increased reliability of backups to nearly 100 percent

The Environment

The University of New Hampshire IT department academic and administrative systems to support approximately 2,000 staff and more than 14,200 students. These systems are essential to a wide range of key functions, including course registrations, student enrollment, and payroll and benefits administration.

The University has approximately 10 TB of data and applications that need to be protected. This data was divided into two categories: academic data, such as Microsoft Office documents, file and print serving, and Exchange email on Windows servers; and administrative data, such as Oracle databases, digital images, and file systems on Linux servers.

They were protecting data on these servers using LTO-2 and LTO-4 tape libraries. They perform weekly full backups, which are retained for six weeks and daily incremental backups, which they retain for two weeks. They then made full copies of backup tapes and sent them to an off-site disaster recovery facility.

Saving Cost, Reducing Complexity

The IT staff implemented a backup consolidation project to combine the backup infrastructure for both the academic and administrative systems. "We saw an opportunity to control costs and improve utilization by managing all our operations in a single infrastructure," said Robert Rader, storage and backup manager, UNH.

Meeting their Needs

Even though backup performance was important, the University could not improve their backup times using the NetBackup multiplexing function because it would have slowed restore times, jeopardizing the critical RTO needed for their large Oracle databases. "We were stuck running our slow backup clients to our 10 streaming tape drives and suffering the performance consequences of tape *shoe shining*," said Rader, referring to a common problem caused by backup clients that transfer data at a slower rate than the minimum tape drive speed. The shoe shining effect causes the drive to repeatedly stop, rewind, and start again, slowing backup performance and increasing wear on tape media and drives.

"Managing our growing data volumes was also challenging because you can't easily or cheaply add more tape drives to a full tape library," said Rader. "That's what drove us to investigate VTL technology — an option with no penalty for slow backup clients and with an easy, free, and non-disruptive way

to add tape drives." They also saw the potential for deduplication to make the VTL option cost-effective through capacity optimization.

The University IT staff considered VTLs from SEPATON, Data Domain, Quantum, and FalconStor. "It was quickly apparent that the SEPATON VTL was the only solution that could provide the performance, scalability, and deduplication we needed," said Rader.

> "Our investment in the SEPATON VTL with deduplication worked out even better than we had calculated. We are getting almost double the capacity reduction we originally anticipated."
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The Solution

UNH implemented a SEPATON S2100-ES2 VTL with 30 TB of capacity and DeltaStor deduplication software. The SEPATON VTL is configured with 30 virtual tape drives on three backup servers for each of the University's backup clients, enabling it to back up multiple servers simultaneously without slowing performance or jeopardizing restore times.

The Results

The University has as many as 100 backup clients running throughout any given night with as many as 20 backups running concurrently. Approximately 40 percent of these backup clients are Windows servers that operate 5 or 10 times slower than their LINUX and Unix clients. These slow clients can slow the performance of LTO drives, but are not an issue with disk-based backup.

"The SEPATON VTL gives us much more flexibility to run many more concurrent backups without affecting performance," said Rader. The University can now backup a 200 GB Oracle database in half and hour and can restore an entire volume in a fraction of the time it used to take.

We can easily achieve performance rates of 600 MB/second and accommodate the speed of slower Windows clients as necessary. Our data sets average 1.5 TB nightly and 12 TB weekly."

Deduplication Controls Growth, Saves Money

"Our investment in the SEPATON VTL with deduplication worked out even better than we had calculated. We are getting almost double the capacity reduction we originally anticipated," said Rader. "As a result, we have pushed back our plans to add capacity to the system by more than a year."