



Veritas NetBackup™ and Amazon Web Services rewrite inefficient tape-based data protection processes.

OVERVIEW

Ivy League University Attains High-Achieving Data Protection with NetBackup and AWS

Providing students with a world-class higher education requires an institution to effectively protect the applications and data that make its campus tick. For an Ivy League university, protecting cutting-edge research data across schools of medicine, management, architecture, and other disciplines can also have broader implications for the knowledge base of scientific communities and the world at large. When a tape-based data protection solution had run its course, one Ivy League school turned to Veritas™ and Amazon Web Services (AWS). The transition dramatically cut costs, and storage staff were able to reduce by about one and a half full-time equivalents (FTEs) the time they must dedicate to backup and recovery.

TIME TO GET RID OF TAPE

One of the world's preeminent universities needed to refresh its data protection environment. The school's faculty, researchers, and staff run a wide range of applications on Windows and Linux servers and desktop computers. The IT Services organization was protecting these systems using IBM Tivoli Storage Manager (TSM).

When it installed TSM 15 years earlier, the university ran only physical, on-premises machines. Over time, however, many of its servers migrated to a virtual environment, in which mirrored snapshots replaced TSM backups. The school also began experimenting with cloud applications and moved data protection for many desktop systems to a cloud-based platform.

It was time to upgrade the now-smaller TSM environment. "Our data protection wasn't even close to state-of-the-art," explains a senior storage administrator for the university. "We were using numerous types of LTO tape drives and several tape libraries from both IBM and Spectra Logic. The tape backups were supported by Fibre Channel disk and five AIX servers."

ORGANIZATION PROFILE

Industry: Higher education

Headquarters: United States

KEY CHALLENGES

A leading Ivy League university was using a tape-based data protection solution that had been in place for 15 years. The equipment was expensive, data restores were slow, and backup and recovery processes consumed one and a half full-time equivalents (FTEs) for a three-person storage staff.

SOLUTION

The school deployed Veritas NetBackup™ to store backups locally on a pair of third-party storage appliances, which then automatically replicate to Amazon S3 cloud storage from Amazon Web Services.

BENEFITS

- 1.5 FTEs reclaimed by storage staff for activities other than data protection
- Better data protection reliability
- Larger proportion of university research data protected via enterprise solution, because easier configuration facilitates more flexible data-retention policies

The legacy hardware was expensive, and managing the TSM environment took almost one and a half full-time equivalent positions (FTEs). “We were always running into issues with the tape library,” the senior storage administrator reports. “We had to troubleshoot robot issues and tape drive issues. On top of that, we had to manage servers and disk hardware spread across five data centers.”

TSM’s command-line-based user interface exacerbated these challenges. “We didn’t have a graphical interface to see what was going on,” the senior storage administrator says. “Providing users with good information was time-consuming.”

“All TSM restores were CLI-based and difficult for users. In Veritas NetBackup, we just click on the date, time, and file name. In many cases, IT Services no longer has to be involved in data restores.”

*Senior Storage Administrator,
Leading Ivy League University*

GUI AND SIMPLICITY ARE SELLING POINTS FOR NETBACKUP

When IT Services began looking for alternatives, they focused first on the hardware side of data protection. “We wanted to save money and simplify our environment,” the senior storage administrator says. “We discovered a hardware storage appliance that integrates with the Amazon S3 cloud storage platform from Amazon Web Services. The appliance also handles compression, deduplication, compaction, and encryption, so it seemed like a great fit.”

IT Services decided to completely eliminate tape and deploy these appliances for data storage. Next, they needed to select data protection software. After considering several options, they chose Veritas NetBackup™.

“We saw that Veritas worked well with the disk cache we were going to use,” the senior storage administrator says. “We also really liked the reporting and GUI [graphical user interface]. With NetBackup, we get daily reports showing us what backed up properly and what failed. NetBackup has a much more modern interface than our legacy solution.”

A final decision criterion was ease of deployment and configuration. “We found NetBackup simple to install,” the senior storage administrator says. “And because configuration is so much easier, and is GUI-based, NetBackup gives IT Services much more flexibility in adding one-off retention policies for users with specific needs.”

As an example, he says, the IT Services group retains most backups for 90 days. However, some environments on campus—particularly research labs that have to comply with external regulations such as the Health Insurance Portability and Accountability Act (HIPAA)—have different requirements for long-term retention. “We have to meet their unique data-retention needs, and that’s much easier to do with NetBackup than it was with TSM.”

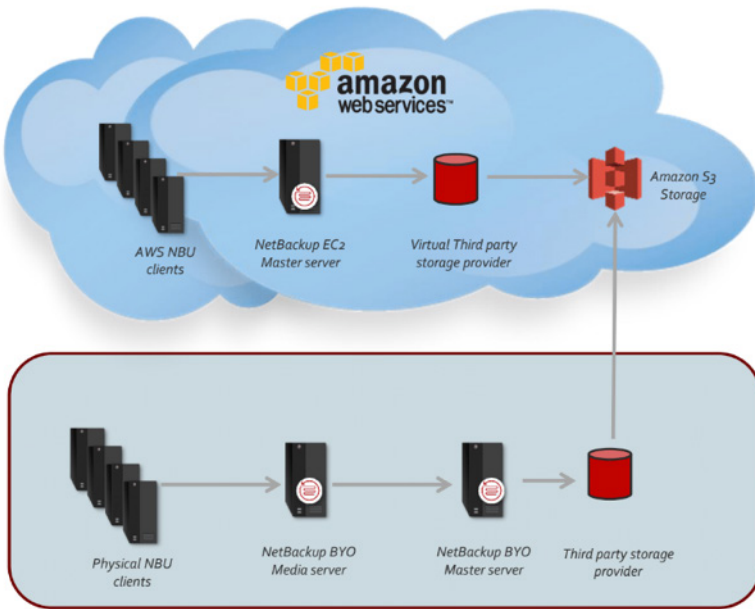
MORE RELIABLE DATA PROTECTION

The university’s on-site IT backups are now supported using NetBackup on one physical master server and one media server. These backups are written to a third-party storage appliance, which is automatically replicated to AWS S3. The university’s cloud environment is supported by a duplicate cloud resident NetBackup environment.

“This setup gives us peace of mind,” the senior storage administrator says. “Our local backup data is replicated in the cloud. And because AWS makes several copies, we are spared the process of making duplicate tapes and sending them off to a storage facility. All of that now happens in the background. Using NetBackup with Amazon Web Services has substantially improved the reliability of data protection across the university.”

For cloud applications, IT Services runs backups directly to the AWS-based NetBackup server. “We needed to protect the data we were moving to the cloud,” the senior storage administrator explains. “Before, there were some types of information that we could not store in AWS because data protection was inadequate. That is no longer an issue, because our cloud applications are covered by NetBackup.”

Except for departments and users with unique requirements, the cadence and retention of backups have not changed from the TSM days. “Because we’re entirely disk-based, data is much easier to recover than it was in our tape environment,” the senior storage administrator says.



The combination of NetBackup and Amazon Web Services has improved both the efficiency and the effectiveness of data protection at the Ivy League university.

LOWER COST OF OWNERSHIP

Direct spending on data protection hardware has dropped precipitously. “The size of our TSM environment was huge compared with what we have now,” the senior storage administrator says.

Perhaps most important, the senior storage administrator estimates that the three-person storage team is saving one and a half FTEs that were previously dedicated to backup and recovery tasks. This is partly because the NetBackup GUI enables others within the university to take on data protection. “All TSM restores were CLI [command-line interface]-based and difficult for users,” the senior storage administrator says. “In Veritas NetBackup, we just click on the date, time, and file name. We’ve trained systems administrators and lab users across the university. In many cases, IT Services no longer has to be involved in data restores.”

All told, the combination of NetBackup and Amazon S3 has significantly reduced total cost of ownership (TCO) for the university’s data protection environment. IT Services continues to extend the system’s benefits to cover even more users and systems campus-wide.

“Backups are critical,” the senior storage administrator concludes. “Veritas has been very responsive throughout the process of improving our backup and recovery systems. With their support, we have built an environment where we spend much less time and money to achieve robust data protection.”



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Leading Ivy League University*

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Veritas Technologies LLC
2625 Augustine Drive
Santa Clara, CA 95054 USA
+1 (866) 837 4827
veritas.com

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please visit our website.
veritas.com/company/contact

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