Microsoft Azure

SAN DIEGO STATE UNIVERSITY

Customer Name:
San Diego State University

Country or Region:
United States

Partner Name:
CloudLanes

Industry:
Education

Customer Website:
www.sdsu.edu

Products and Solutions:
Microsoft Azure Storage

Business Need:
Data protection and recovery

Executive Summary

San Diego State University (SDSU) was facing a virtual tsunami of digital data growth. Several hundred terabytes of data, including financial data, student information, and other data stored on virtualized servers on campus, needed to be backed up, verified, archived, maintained, and occasionally restored. As that volume of data continued to grow toward an expected total of 1 petabyte, the university had a hard time keeping up with it. The physical limitations and cost of its tape backup and archiving system led the university to the CloudLanes Cloud Data Platform and Microsoft Azure Storage. Together, CloudLanes technologies and Azure Storage provide SDSU with a flexible, scalable, and highly secure solution that integrates its multiple backup streams into a unified cloud data preservation platform. With this solution, the university is able to quickly back up its data, preserve the chain of custody, and gain quick access to any of its archived data, while reducing on-premises storage costs.

While digital transformation brings countless benefits, it also presents new challenges. Some of the most taxing of those challenges are how, where, and how long to store all that data. Those are the questions that San Diego State University (SDSU) found a simple and powerful answer to.

In the middle of 2015, SDSU Systems Analyst Ray Rodriguez realized that the school's tape backup capacity was about to exceed demand. The school had three different backup streams to contend with:

- A Veeam backup of approximately 35 TB for its growing VMware and Hyper-V infrastructure

- A Commvault weekly backup of about 60 TB for its physical hosts

- A campus security video surveillance archive, which produced about 4–5 TB per month

Each of those streams was growing in volume by anywhere from 5 percent to 15 percent annually, which limited data retention to three months. The university had to stick with the three-month retention policy for archived data because additional tape capacity and offsite storage was too expensive. SDSU's goal was to get rid of tape backups but find a solution that would work with its three existing backup systems. "We wanted to eliminate the expense, complexity, unreliability, and time-consuming nature of the tape processing, but keep our existing backup tools," says Rodriguez.

Expanded capacity, minimized disruption

SDSU considered disk-to-disk backup appliances as an alternative to tape, but found that, while they were quick to ingest data, they were more expensive. Next, the university turned to the cloud. "We were looking for a simple, flexible, and quick way to move our production backup into the cloud and back on-premises if needed. And we wanted a solution that would let us use our existing Veeam and Commvault backup tools," says Rodriguez. "We looked at multiple platforms, but found that the **CloudLanes Cloud Data Platform** and **Azure Storage** solution was the only one that came close to meeting our performance and cost requirements."
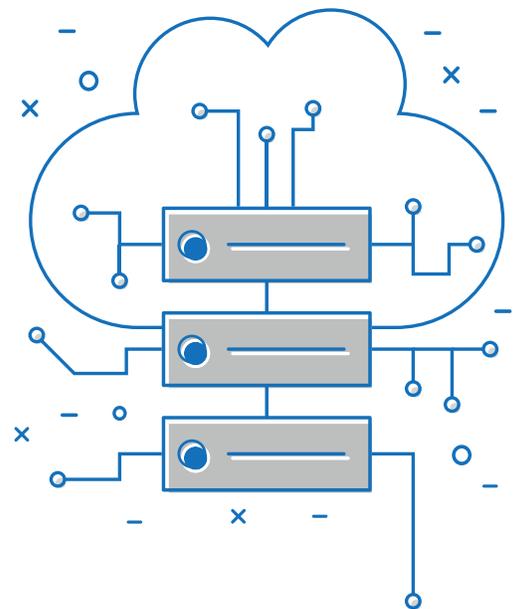
SDSU needed to move multiple terabytes of data to the cloud every day, which traditionally could be very slow. CloudLanes offers a secure and scalable solution in Azure with robust data verification and audit logs. It would significantly accelerate the movement of data and provide a single integrated solution for all three workloads that SDSU needed to back up. It not only moves data, it also helps make it more accessible and manages the data lifecycle. The CloudLanes policy-based engine can also automatically delete archived data from cloud storage based on retention policies SDSU sets.

> *"CloudLanes has strong hooks and secure integration with Azure Storage, which makes the solution seamless for the customer."*
>
> **VIJAY RAMASWAMY,**
> **VP OF BUSINESS DEVELOPMENT, CLOUDLANES**

The university chose to start the cloud storage project with the Veeam backup stream. Rodriguez and fellow SDSU Systems Analyst Ryan Truong created a proof of concept in about a week and a half, setting up the firewall rules and networking interfaces, as well as installing CloudLanes software. "It took less than 15 minutes to install CloudLanes software and only about 45 minutes to configure and tie it into Veeam," says Rodriguez.

Five times faster backup speed

As part of the setup, SDSU opened three storage accounts in Azure as required by the CloudLanes solution to maximize throughput from the datacenter. For the first few months, SDSU ran its Veeam backups to the cloud through its older firewalls, which limited outbound throughput to less than 2 gigabits per second (Gbps). In early January 2017, SDSU completed a previously planned upgrade to a new 10-Gbps firewall, which allowed CloudLanes to maximize the data transfer rate. With CloudLanes, SDSU was able to move data at an average speed of 2.6 TB per hour, which was limited only by networking environment factors, not by processing power. Even at the sustained lower speeds, with CloudLanes, the university realized at least five times more throughput per hour than with the previous tape backup that averaged about 500 GB per hour.

Cold storage reduces local storage costs

In addition to backing up data five times faster, SDSU significantly reduced its local storage costs. It uses on-premises storage for the latest 30 days of backups and stores data older than 30 days in Azure cool Blob storage. Using this two-tiered approach, SDSU saw a significant reduction in its storage costs compared to its previous tape backup system and is gaining more utility from its stored data through additional services available in Azure.
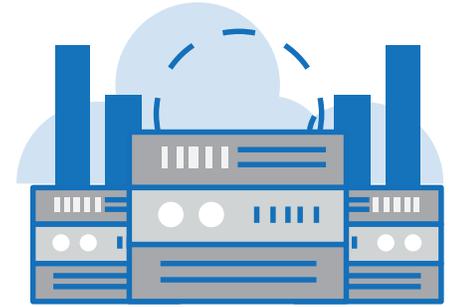
Preserving the chain of custody

CloudLanes also provides SDSU with advanced data and auditing capabilities as data moves from on- premises to the cloud. "Through CloudLanes, at any point in time we know who has touched the data, moved the data, or copied the data," says Rodriquez. "This, coupled with the advanced verification services, means we can always be sure that our data is intact and secure."

Completing the transition

Rodriquez and his team at SDSU are continuing to add projects to Azure Storage with the CloudLanes solution, starting with moving the Commvault backup to Azure. "The process for the Commvault project is very similar to what we did for Veeam," says Rodriguez. "We just need to do a couple of configurations in Commvault and point it to CloudLanes, and away it goes."

The other project on the list is to move surveillance videos from campus to the cloud. The number of video cameras on campus is increasing exponentially, and the university needs a secure and scalable way to store, manage, and analyze the videos. The elasticity of the Azure infrastructure with CloudLanes will provide SDSU with more flexibility in setting retention policies. It will be able to extend retention times as well as expand the types of video it stores to include class lectures, special events, and other instructional activities. "Azure and CloudLanes technologies offer a simple, highly secure way to extend our datacenter into the cloud in a format that folks here are already accustomed to," says Rodriguez.

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> **RAY RODRIGUEZ**
> **SYSTEMS ANALYST, SAN DIEGO STATE UNIVERSITY**

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