Case Study

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METRO STATE

Simpana® Software Tops the Honor Roll at Metro State College for Ensuring Advanced Protection & Retention of Academic Data

QUICK FACTS

Industry/Solution:
- Education

Platform/File System:
- Microsoft Windows
- Red Hat Linux 4, 5 and 6
- Solaris Unix

Applications:
- SCT Banner
- VMware vSphere 4.1
- Microsoft Exchange

Partner Hardware:
- HP Enterprise Virtual Arrays (EVAs), Sun X4500 (Thumper) and HP DL380 storage servers

Challenges:
- Unreliable backup and recovery of heavily virtualized environment created risk and additional administrative overhead
- "Compulsive Backup Disorder" caused by lack of confidence in integrity of legacy data protection platform
- Inability to analyze and classify data led to retention of old, stale and redundant data
- Tape-based retention and recovery was cumbersome, costly and unreliable

Solution:
- CommVault Simpana software Backup & Recovery, Deduplication and Archive

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Customer Profile

Metropolitan State College of Denver is a fully accredited school offering bachelors and masters degrees in a diverse, urban setting. Founded in 1965, Metro State has built a solid reputation for delivering individualized and highly relevant instruction.

As part of its goal to become the preeminent public, urban, Baccalaureate College in the nation, Metro State provides a robust selection of majors, minors, certificate programs and custom-degree choices. With enrollment steadily increasing over the past decade, the college now supports the second largest undergraduate student population in Colorado.

With offerings in more than 55 major fields of study and 90 minors, Metro State provides students and faculty with wired and wireless Internet access and coursework from just about anywhere on campus. Additionally, 32 computer labs with more than 550 workstations offer students more research power.

According to Kenneth Garcia, director of IT infrastructure services at Metro State College, technology plays a prominent role in supporting the institution's focus on educational excellence. "Ensuring reliable access to research, course-work and student records is paramount, which is why everyone in the IT department is a data steward," he explains. "It's up to us to analyze, protect and manage all our important data."

Data Management Environment

A 75-person IT department operates as a services organization to the college, safe-guarding vital academic and administrative data for approximately 24,000 students as well as 4,000 faculty and staff. To that end, the team oversees the college's SCT Banner higher-education software among other core applications, file servers, computing platforms and storage.

Metro State is a big proponent of server virtualization, having migrated 80 percent of its environment to VMware vSphere 4.1 with plans to virtualize up to 90 percent as appropriate. The team supports servers running Microsoft Windows, Red Hat Linux and Solaris Unix operating systems. For data storage, Metro State College relies on HP Enterprise Virtual Arrays (EVAs) as well as Sun X4500 and HP DL380 storage servers to retain a multitude of data, video and archive files.

"We've embarked on a major initiative to adopt greener business practices and decided to digitize lots of files and data stored in cabinets and other archives throughout the campus," adds Garcia. "Storage technology is pivotal in moving digital data to a SAN or back-end storage for reliable retention. Before implementing CommVault Simpana software, we were at risk since we struggled to identify and classify data for safekeeping.

QUICK FACTS *(continued)*

Benefits:

- CommVault Professional Services assured rapid, trouble-free deployment and peace of mind
- Embedded deduplication has led to a 50-percent reduction in data moved across the college's backup network, which has enabled the team to meet backup windows while reducing storage consumption and costs
- Improved data protection and archive has led to improved SLAs, a boost in operational efficiency and the ability to deliver increased services to students and faculty

Fortunately, Simpana software gave us eyes into our environment so we could better protect and manage our data."

Failing Grade for Backup and Recovery

An undesirable byproduct of Metro State's plans to reduce paper-based file repositories with digital archives was an influx of data that needed to be protected and retained for up to 90 days. Unfortunately, the college's legacy EMC Networker platform wasn't able to keep pace with data growth, so the team began experiencing persistent backup failures. "It was very hard to confirm the integrity of the data stored in backups and we couldn't always determine where data resided in order to restore it," Garcia recalls. "Inconsistent reliability and complex operations led to 'Compulsive Backup Disorder' as we were constantly backing up everything since we weren't confident we could recover data when needed."

As backups grew to 20 TBs of mission-critical data, Metro State College couldn't meet its daily backup window and soon found that job delays and restarts saturated the backup network. "We were constantly in emergency mode and sometimes were forced to cancel a job and risk not having the backup," explains Garcia. "Restoring files was equally problematic, especially if we needed to recover anything older than 90 days."

Metro State used disk and tape in its backup solution, and the team experienced problems with both. On the disk side, the lack of file-indexing support meant that recoveries were often cumbersome and tedious. With data archived to tape, the process was fraught with problems, which impacted recovery success. There were multiple instances where files couldn't be found, which exacerbated nagging concerns about the viability of the college's legacy backup and recovery platform.

In addition, EMC Networker only provided limited support for Metro State's Solaris platform, further impeding the ability to troubleshoot problems. This also put undue strain on the team's sole Solaris engineer, whose time was better spent addressing core business objectives.

"We realized all of the problems were creating a 'perfect storm' scenario," adds Garcia. "So it became clear we needed a solution that would enable us to move to disk exclusively, while providing deduplication to reduce data in order to make our backup windows and retention requirements."

Simpana® Software Goes to the Head of the Class

In November 2010, Metro State College started evaluating data management and protection platforms by looking at software-only solutions and disk-based, deduplication appliances. Over a five-month period, the team evaluated EMC's Avamar Data Store and ExaGrid's disk-based backup hardware, as well as the latest version of EMC Networker, IBM Tivoli Storage Manager, Symantec Backup Exec and CommVault® Simpana® software.

While the dedupe appliances posted impressive data reduction results, Metro State wasn't eager to invest in dedicated hardware that locked them into a particular vendor's platform. What's more, in the case of EMC Avamar, the team learned they'd be forced to invest in new hardware after three years. "We didn't like the fact that Avamar only gave us a three-year window before the product fell out of support and required the purchase of an entirely new appliance," notes Garcia.

The team had similar misgivings about ExaGrid and decided that a hardware-agnostic, software-based approach was preferable. When sizing up the software competitors, the IT team at Metro State felt that Backup Exec lacked the data analytics to tame the

unruly backup window and Tivoli Storage Manager was too expensive. Metro State also compared how CommVault Simpana software and Backup Exec handled deduplication. The team preferred CommVault's approach as it enabled performing deduplication at both the source (e.g., client server) and target (e.g., backup server).

Backup Exec, in comparison, only performs deduplication at the source, which the team felt might put additional pressure on already overtaxed file servers. With CommVault technology, the team could dedupe data at the client and therefore maximize data reduction across clients before storing to disk. Another plus for Simpana software: the fact that Metro State would be able to leverage a single platform with a centralized management console. "Simpana software was the only product that gave us everything we wanted in one platform," adds Garcia. "We also solicited a lot of feedback, including from our DR provider and other CommVault customers, and heard over and over how Simpana software was 'bulletproof,' and that input meant a lot."

As the college is very diligent in applying state funding, the team carefully evaluated the finalists in terms of CAPEX and OPEX. In the case of Simpana software, Metro State had the opportunity to take advantage of CommVault's capacity licensing model, which offers unprecedented flexibility in enabling customers to pay for what they protect while enabling them to easily and economically change scope, scale and protection methods at will.

In the final analysis, CommVault's capacity licensing model allowed Metro State College to get more functionality, in terms of data protection, reporting, deduplication and archive, than competing solutions. "Total cost of ownership for Avamar was 40 percent higher than CommVault," notes Garcia. "Simpana software delivered more functionality than Avamar over a five-year period while saving us both time and money by eliminating tape altogether."

Graduating to Modern Data Management and Protection

With the end of the spring semester looming and finals underway, Metro State College decided on Simpana software's modern data management approach and began the software deployment, aided by CommVault Professional Services. "Metro State couldn't risk any downtime during this critical time of the year, so we made an investment in on-site engineering support," says Garcia. "The additional cost was justified by a seamless installation and peace of mind."

Under the guidance of a knowledgeable CommVault Resident Support Engineer, Metro State College completed a rapid deployment and was successfully backing up everything with CommVault in less than two weeks. Two additional Simpana software technical experts then helped fine-tune deduplication while sharing best practices on how to tailor backups and restores. "Augmenting Metro State's capabilities with CommVault's Services team was a smart decision as I didn't lose a wink of sleep during the deployment," Garcia adds. "We had great knowledge transfer and CommVault's input on how to maintain our environment was icing on the cake."

Once Simpana software was up and running, Metro State College began using deduplication to cut redundant data in half before conducting nightly backups. The 50-percent reduction enabled the team to meet its backup window for the first time in years. "Backups that used to take days are now completed in less than a day," notes Garcia. "For example, backing up our mail server used to take up to four days. Now we can easily finish in a 24-hour window."

Armed with this insight, the college has made a series of well-informed decisions to retire older hardware, discontinue maintenance and move less-critical data off expensive primary storage onto secondary tiers for longer-term retention. The result: impressive cost savings, an increase in operational efficiencies and services as well as an improvement in the college's SLA for data retention.

For instance, additional storage is available to faculty and students for housing videos and serving as a temporary data repository for projects and other non-critical data. Thanks to Simpana software's deduplication, Metro State now easily retains important data on disk for 90 days and possibly can extend retention to 120 days. Additionally, the college has moved off tape altogether, which has yielded substantial cost savings. "We can eliminate $17,000 worth of tape pickups annually while also removing the manual process of managing tapes, which took about 15 hours each week," recalls Garcia. "We've been able to reallocate the time and funds to other areas, such as building a disaster recovery plan at little to no cost increase."

Metro State College is highly confident in Simpana software's ability to streamline operations. "We've experienced a 75-percent efficiency improvement in our backup operations," says Garcia. "The fact that we manage backups, restores, archives and reporting all from a single management console makes a big difference."

The next course of action for Metro State College involves adding the Simpana Archive module to the mix, as the team wants to control growing file shares that contain aged and inactive data. "If we can move data that never or hardly changes to archival disk, we can take advantage of huge storage cost savings," Garcia adds. "Once we've explored Simpana Archive for file systems, we'll consider further investments to help control Microsoft Exchange data growth and infrastructure costs."

Metro State is also looking into how CommVault's edge data protection solution can protect data residing on laptops and desktops used by the office of the president and other top college officials. "With Simpana software, we can really use one product to unify data management across Metro State's server, laptop and desktop data," concludes Garcia. "By consolidating our data protection on CommVault's single platform, we've recaptured hardware costs, improved SLAs, extended data retention and improved backup and recovery."

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