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Success Stories

Virginia Community College System Protects Services for 240,000 Users with NetApp's Technology

Virginia's Community Colleges

KEY HIGHLIGHTS

Industry
Education

The challenge
Ensure tier 1 disaster recovery within 24 hours. Enable recovery to the last committed transaction. Simplify disparate tier 1 and 2 storage architectures.

The solution
Standardize on NetApp's unified architecture to enable automated, synchronous data replication and achieve storage efficiency.

Benefits
- Secured business continuity for more than 240,000 users
- Enabled tier 1 services recovery within hours
- Automated DR without adding to staff
- Achieved more than $800,000 savings

CUSTOMER PROFILE

Established in 1966, the Virginia Community College System (VCCS) spans 23 community colleges on 40 campuses across the state. The college system serves more than 230,000 students and another 170,000 people enrolled in workforce-training programs. A recognized innovator in education accessibility, VCCS spearheaded the creation of transfer grants, which make four-year college degree programs more affordable to qualified community-college graduates. Through its Guaranteed Transfer program, VCCS also offers a gateway to some of the commonwealth's most prestigious four-year colleges, including the College of William and Mary, the University of Virginia, and Virginia Tech (source: www.VCCS.edu).

THE CHALLENGE

Ensure 24x7 availability of critical tier 1 and 2 applications to more than 240,000 users
Any hour of the day or night, on or off campus, students at VCCS take advantage of online services to attend classes, take tests, pick up assignments, and register for new courses. Many VCCS classes are 100% online, and almost every class offered has a Blackboard e-Education component. The PeopleSoft Campus Solutions system provides fast, online access to records and grades, financial aid information, recruiting data, and more.

As director of enterprise services at VCCS, Matt Lawson is responsible for keeping these critical applications and services available 24x7. "We deliver IT services to some 240,000 students, faculty, and staff. If the Blackboard system is down, school is not in session. If our Campus Solutions system isn't available, students can't register for classes, and professors can't input grades."

To ensure the highest availability of services, VCCS recently initiated a systemwide technology refresh that included setting up a new disaster recovery (DR) site. Lawson explains some of the project drivers. "In our production data center, we run a mix of more than 250 servers that have been deployed over time to respond to new business requests and changing user requirements. Unfortunately, that piecemeal growth has too often resulted in complexity and incompatibilities. On the storage side, for example, we ended up with two independent SANs for our tier 1 and tier 2 applications. Because we purchased the SANs at two different times from two different vendors, the SANs did not interoperate.

"That incompatibility became an even bigger problem as we initiated standup of the DR site. Linking the two SANs in the Richmond data center would have required a new SAN controller at a cost of $800,000. Then we would have had to duplicate everything at

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Matt Lawson
Director of Enterprise Services, Virginia Community College System

the Roanoke DR site. Plus, we would have had to buy third-party routers for replication. After all that, we'd still be left with outdated storage technology and no NAS or iSCSI connectivity."

THE SOLUTION

Standardize on a NetApp solution
Considering the combined requirements of a systemwide storage technology refresh along with objectives for its new DR site, VCCS selected a solution from NetApp over offerings from EMC, HP, and IBM. A key benefit of NetApp's solution is its single architecture, which spans the entire product line, allowing VCCS to deploy different systems—without sacrificing compatibility—at the main data center and at the DR site.

VCCS standardized on NetApp's solutions for all office and DR site applications, deploying a clustered NetApp FAS6000 series enterprise-class solution that serves as storage for the Richmond data center. NetApp's unified architecture enables both NAS and SAN connectivity, an important capability as VCCS moves additional applications to NAS technology.

A NetApp FAS3000 series midtier storage system at VCCS's Roanoke DR site supports an Oracle® RAC environment and can be scaled to handle full production capacity if there is a permanent failure at the main data center. NetApp SnapMirror® software enables high-speed replication of data to the DR site, and NetApp SnapRestore® software enables near-instantaneous restoration of single files or entire databases. Leveraging this software, VCCS is able to meet its recovery objectives without additional third-party hardware or staffing.

BUSINESS BENEFITS

Enhanced performance and management efficiency
Lawson says that moving VCCS's database based on Oracle for campus solutions will offer both performance and administration benefits. "We will be running Oracle over NAS on NetApp, and our preliminary internal testing is showing that we will get a performance boost in our Oracle Database compared to our old technology fabric-attached SAN. We will also be using SnapManager® for Oracle software, which will simplify the backup process of our large Oracle Databases. Traditional backups that ran for five to six hours now are replaced by NetApp Snapshot™ copies (using SnapManager for Oracle) that take less than five minutes."

Around-the-clock availability, plus fast return to service in a disaster event
To protect data and services, VCCS utilizes NetApp Snapshot technology to maintain local copies and NetApp SnapMirror software to replicate to the DR site. Lawson notes, "Every vendor we considered claimed to be able to replicate data, but only NetApp demonstrated that it could be done quickly, efficiently, automatically, and economically.

"While we plan to set recovery time and recovery point objectives specific to each application, we expect that in the event of a main-site disaster, our mission-critical enterprise applications and services will be back online in a matter of hours, not the several weeks and long staff hours that it would have taken to recover from tape in our pre NetApp infrastructure. Our plan is to be able to return the primary tier 1 applications to service in less than 24 hours.

"NetApp's technology also gives us the ability to recover to the last committed transaction. Why is that so important? In a community college environment with a highly diverse and stratified student base, it's essential that services be reliable and easy to use. If the registration system, for example, hiccups and loses a registration, that might prove to be the last straw of discouragement for a marginal student trying to sign up for classes, and it would be personally painful to our IT staff. Our mantra is 'students first,' and we take that very seriously. Technology must work for our user community, not stand in the way."

Dual-use DR, automation efficiencies, and cost savings

NetApp SnapMirror software, together with NetApp FlexClone® technology, enables space-efficient copies to be created on VCCS's disaster recovery storage for additional uses such as testing and quality assurance. VCCS will leverage this functionality to enhance testing capabilities while ensuring zero impact on production systems and application services.

Lawson points out other savings VCCS is achieving from NetApp's solution. "Staying with solutions from current VCCS vendors would have required implementing identical storage products at both the primary and DR sites. Because not all systems will be duplicated at the DR site, we would have had to purchase more capacity than we needed in Roanoke. In contrast, the NetApp FAS3000 system delivers a high-value solution that is right sized to support the current requirements of the site's dual roles as a testing center and backup facility. And even though we will have added robust testing and DR capabilities, we have no plans to expand our IT staff."

In conclusion, Lawson emphasizes the importance of choosing a real-world-proven storage solution. "It was no small fact that our partners overwhelmingly choose NetApp: IBM and Mirapoint resell NetApp systems, and Blackboard, Mirapoint, Oracle, PeopleSoft, and SAS all use NetApp. When your objective is to deliver the highest possible availability of critical services, knowing that your storage solution has been proven in demanding production environments is an important factor in your decision."

SOLUTION COMPONENTS

NetApp Products

Clustered NetApp FAS6030 and FAS3070 systems with NAS/FC and IP SAN connectivity

NetApp SnapMirror, SnapRestore, SnapDrive®, SnapManager for SQL Server™, SnapManager forExchange, and SnapManager for Oracle software

NetApp FlexVol® and FlexClone technologies

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