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Success Story

Coppin State Moves to NetApp for Performance, 67% Less Admin, and in-Budget DR



Another NetApp solution delivered by:



KEY HIGHLIGHTS

Industry
Education

The challenge
Minimize costs while implementing storage for mission-critical applications, VMware®, and DR.

The solution
Deploy NetApp® storage to boost performance and availability with maximum management, space, and budget efficiencies.

- Benefits**
- Improve PeopleSoft and Exchange performance.
 - Maintain 24x7 availability.
 - Enable fast backups and within-four-hour DR.
 - Reduce admin by 67%.
 - Conserve data center space, cooling, and power.

CUSTOMER PROFILE

Coppin State University is an historically black university located on a 45-acre campus in west central Baltimore, Maryland. Part of the University System of Maryland, the institution offers 53 majors and 9 graduate-degree programs. More than 4,000 students take advantage of programs in the arts and sciences, teacher education, nursing, graduate studies, and continuing education. In 2008, the university was selected as a Laureate and 1 of 50 finalists in the Computerworld Honors Program. (Source: www.coppin.edu)

THE CHALLENGE

Minimize costs while implementing storage for mission-critical applications, VMware, and DR

Coppin State University’s vision is to create an educational environment that fosters the highest-possible level of student academic excellence and creativity. To this end, Coppin strives to leverage best-of-breed technology to make learning and program administration in liberal arts teaching more effective and to contribute academic achievement models to the city, the state, and the nation.

The challenge, says Dr. Ahmed El-Haggan, CIO and vice president of IT at Coppin, comes in addressing university technology needs without exceeding IT financial

resources. “It’s not enough to implement a good feature set. The solution must also be reliable, scalable, and easy to maintain. For example, several years ago we deployed a storage solution from EMC. Although it met our performance requirements, it proved too difficult for us to manage in-house. Scaling the system and implementing a local disaster recovery solution required engagement of consulting services that proved to be both disruptive and expensive.”

Thomas Smith, Coppin’s Campus Network Services director, adds, “Because of that experience, we moved to a more manageable LeftHand Networks solution for our next generation of storage. The system was definitely easy to set up and easy to maintain. Unfortunately, it couldn’t handle the performance demands of our PeopleSoft ERP system that serves as the backbone of the university. Our entire faculty, staff, and student population depends on the system for admissions and administration, payroll and financials, human resources, Web access, and so on. We encountered serious performance issues that impacted both production and dev/test. Students often couldn’t log in, our SQL® database administrators had to micromanage data storage to maintain performance, and developers lost valuable time in their delivery schedules.”

“Whenever we need storage, NetApp lets us deploy it quickly, easily, and within our financial resources. For a state university with limited finances, efficiency is always important, but in this economy it’s imperative.”

Dr. Ahmed El-Haggan

VP of IT, CIO, and Professor of Computer Science, Coppin State University

To address these issues, the Coppin IT team outlined six critical needs for a new storage solution:

1. Improve performance to deliver responsive PeopleSoft and Microsoft® Exchange e-mail services.
2. Complement the university’s expanding VMware environment.
3. Improve capacity utilization to support data growth within current financial constraints.
4. Ensure availability and streamline backup/recovery processes.
5. Enable compliance with state-mandated disaster recovery and business-continuation requirements.
6. Simplify storage administration to reduce costs.

THE SOLUTION

Deploy NetApp storage to boost performance and availability with maximum management, space, and budget efficiencies

The Coppin State University IT organization evaluated current solutions from multiple vendors, including EMC, Hitachi, LeftHand Networks, and NetApp. Key to the selection was a recommendation by Presidio Networked Solutions, a leading provider of business enablement solutions. As a trusted advisor and eight-year partner to the university,

Presidio successfully implemented the school’s network infrastructure, perimeter security infrastructure, wireless infrastructure, and VoIP phone system. Based on the university’s needs, Presidio proposed a NetApp solution to address all critical requirements, including high performance, manageability, high availability, in-budget disaster recovery, and space-reduction technologies for improved efficiency and capacity utilization, which are especially helpful to Coppin’s virtualized infrastructure initiatives.

Today, Coppin State University has standardized on NetApp storage. The deployment includes high-availability NetApp FAS3040 systems deployed in Baltimore, Maryland, at the school’s primary data center in the Miles Conner Administration Building and across campus at the Grace Jacobs Building. Leveraging NetApp SnapMirror® software, the university replicates data to a smaller NetApp FAS2050 system installed on the campus of another University System of Maryland member, Salisbury University, situated 100 miles distant in eastern Maryland. This location serves as Coppin’s hot site for disaster recovery.

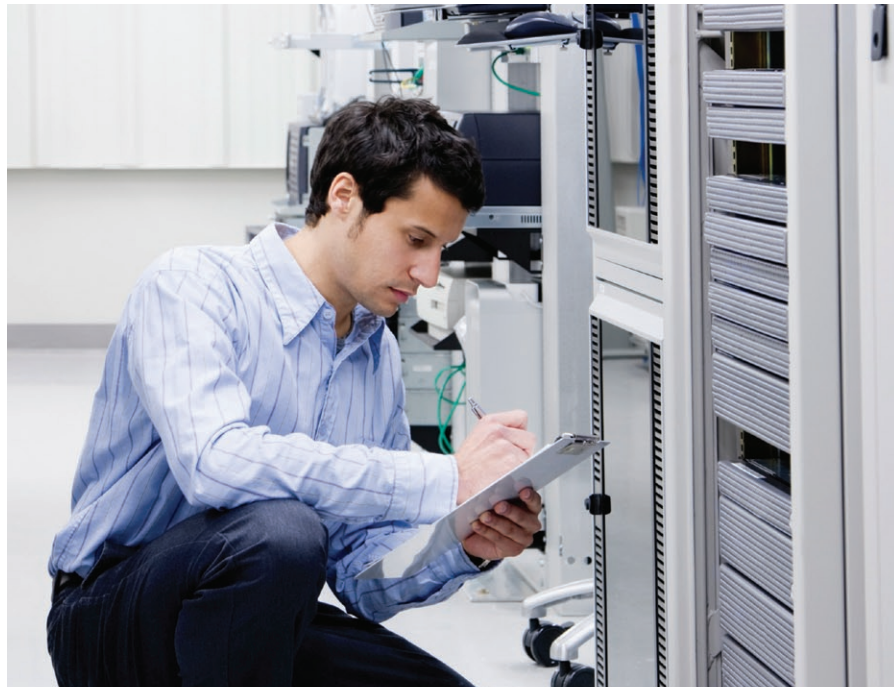
NetApp provides high-performance storage resources (via FCP) to some 80 physical servers and a broad array of applications,

including Oracle® PeopleSoft ERP, Microsoft SQL-based systems, Microsoft Exchange e-mail, and Blackboard teaching and learning software. The NetApp solution serves as storage for the university’s VMware environment that runs a variety of application, print, and Web servers and includes approximately 100 virtual systems (90 production and 10 dev/test) running on 6 ESX hosts.

BUSINESS BENEFITS

Responsive PeopleSoft and Exchange services

The Coppin IT team contends that while competitive vendors offered strong solution elements, only NetApp combined needed performance, functionality, and manageability in one solution. Smith comments specifically on performance: “In the past, we had to be experts on cache and spindle count in order to maintain adequate performance—and even then users complained about slow service. Since deploying NetApp, we’ve had no complaints from DBAs, developers, or users, and our IT staff doesn’t waste time micromanaging storage. NetApp easily handles the demands of our mission-critical applications, including PeopleSoft and Exchange. And those annoying ‘Outlook is waiting for an Exchange server’ popups? They’re gone.”



Complementary storage for VMware: fast provisioning, reliability, environmental savings

In 2006, Coppin began a transition to a VMware-based virtualized-server environment. All administrative servers run in the VMware-on-NetApp environment, and the university is on course to move remaining applications over as vendors announce support. Smith estimates that the environment to date has enabled a 50% reduction in the server/storage footprint. “We’ve also been able to eliminate previous cooling and power issues—in fact, we actually now have an unused power circuit.”

By enabling rapid storage provisioning and delivering essential scalability and reliability, NetApp complements the virtual environment. Smith elaborates, “The ability to quickly scale and allocate capacity is particularly important as we expand IT services to support more video-on-demand applications and new nursing programs built on particularly technology-hungry software. As for reliability, we have had no NetApp related downtime—not even a minor incident. Students rely on our systems for critical services such as applying for and tracking financial aid, signing up for courses, and taking exams. If we expect them to utilize online services to meet education requirements, we have an obligation to keep those services available 24x7.”

Storage efficiency for flexibility and savings

E-mail serves as an official communication vehicle for Coppin. Student grades, class schedules, university news, and emergency alerts are all communicated via e-mail. Smith points out that NetApp storage has enhanced that system as well.

Limited capacity in the old storage infrastructure required enforcement of mailbox quotas: Faculty and staff were restricted to 80MB and students to 25MB. With heavy use of the e-mail system, clogged mailboxes presented ongoing problems. Capacity issues were exacerbated by duplicate storage of e-mail attachments forwarded to thousands of students and staff.

NetApp space efficiencies have enabled Coppin to give faculty members up to 1GB each for e-mail and home directories and students up to 1GB for e-mail. “When we made the announcement to our faculty, we actually got a standing ovation,” relates El-Haggan. “On the student side, the additional capacity lets us maintain e-mail accounts for students who may not be completing their studies over successive semesters, but rather come in and out of the system over a period of years. Another important tool is NetApp’s Single Mailbox Recovery software that Exchange adminis-

trators use to execute granular retrievals in minutes rather than spending hours or days to manually recover an e-mail.”

Johan Milbrink, Data Center Practice manager at Presidio Networked Solutions, cites another important benefit: “We have a pilot project underway to implement a VMware View desktop virtualization solution for students within the university’s School of Management Science and Economics. Having the VMware-on-NetApp environment in place gives us a proven infrastructure to deploy the VDI. NetApp also makes the project financially feasible by reducing the cost of VDI storage with deduplication and enabling fast, no-cost storage provisioning via NetApp FlexClone® software. We can provision thousands of desktops in a fraction of the time and space it would take with another storage solution.”

Fast backup/recovery, affordable DR

Smith explains that because doing a full set of backups in the old storage infrastructure took as long as five or six days, administrators settled for rolling backups. Now the IT team uses NetApp Snapshot™ technology for online backups and NDMP to tape so that backups complete much more quickly and with greater space efficiency. As a result, Smith’s team schedules backups as often as application and user needs dictate.

NetApp also enables within-four-hour disaster recovery for critical applications. Smith continues, "We currently replicate a critical virtual server environment that will allow us return to service of basic functionality within four hours at our Salisbury hot site. As we virtualize more applications in our Baltimore data center, we will expand recovery capabilities to be compliant with state-mandated requirements for business continuation in the event of a major primary-site failure. NetApp technology is key to helping the university meet requirements for emergency preparedness (communicating in the event of a disaster), disaster recovery, and business continuity."

Milbrink adds that because NetApp does not require identical systems at the primary and backup sites, Coppin deployed a smaller NetApp solution at the DR site for greater cost efficiency.

Administrative and budget efficiencies

Other savings have come from implementing tiered storage—that is, taking advantage of cost-saving SATA disk drives for all but the most performance-critical applications (for example, ERP and Exchange) that warrant high-performance FC disk drives. Overall, Smith says that deploying NetApp storage has enabled Coppin to reduce administration by 67%: "We now have one FTE supporting more capacity than what three could manage in our old storage infrastructure."

El-Haggan recaps, "NetApp gives us unprecedented flexibility to pursue projects like the VDI pilot that we expect will help us provide greater opportunities to technical students and directly advance our contribution to increasing graduates in STEM (science, technology, engineering, and math).

"What's harder to quantify is the peace-of-mind savings. Whenever we need storage, NetApp let's us deploy it quickly, easily, and within our financial resources, without the headache and cost of going outside the organization for basic storage management. For a state university with limited finances, efficiency is always important, but in this economy it's imperative.

"When we do need assistance, the NetApp team provides invaluable expertise—our IT director says our NetApp engineer is one of the best he's worked with in the industry. We also benefit from a strong and positive partnership with Presidio. They understand our mission and our business environment so that they can help us most cost-effectively address our needs," El-Haggan states. Presidio is a NetApp Star Partner and NetApp APSP Certified (Authorized Professional Service Partner). NetApp APSP Certified partners have successfully completed the Authorized Professional Service Program requirements for their designated specialization, including the same rigorous training required for NetApp Global Services personnel. They also have access to the same best-in-class tools and methodologies used by NetApp Professional Services engineers.

SOLUTION COMPONENTS

NetApp products

NetApp high-availability FAS3040 and FAS2050 systems

NetApp Snapshot, SnapMirror, and SnapRestore® technology

NetApp MultiStore®, SnapManager for Exchange, SnapManager for SQL, Operations Manager, and SnapDrive® software

Protocols

NetApp FC and IP (iSCSI) SAN

Environment

VMware

Oracle PeopleSoft

Microsoft SQL Server and Exchange 2003

Blackboard

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