CASESTUDY

MISSISSIPPI COMMUNITY COLLEGE BOARD

Location

North America

Industry

Higher Education

Company

Mississippi Community College Board

Use Case

- *Database – Microsoft® SQL Server®*
- *Virtual Server Infrastructure (VSI) – VMware® vSphere®*

Business Transformation

Students have faster, more reliable access to the on-line enrollment application during its most critical period of use. Application developers can roll out new features more quickly. And IT managers can focus primarily on improving the atmosphere for learning instead of being diverted by the need to micro-manage technology.

Challenges

- Maintenance cost for legacy storage was about to rise 230%.
- Early-generation converged infrastructure was very complex to manage.
- Supporting the heavy demands of registration week meant IT work was severely degraded.

IT Transformation

- Higher-performing IT infrastructure gives students and faculty greater flexibility in enrolling for classes during online registration.
- Sharply reduced demands for system management allow IT staff to focus on strategic initiatives.
- FlashStack™ delivers more performance, greater storage capacity, and simpler management, with superior TCO.

FlashStack™ Converged Infrastructure Aces All its Tests at Mississippi Community College Board

The focus of the IT department at the Mississippi Community College Board (MCCB) is entirely about making a better learning atmosphere for students, faculty and staff. In the process, it occasionally learns valuable lessons of its own. One of those lessons came during a recent change in its IT infrastructure.

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RAY SMITH
Assistant Executive Director for Technology

MCCB had been an early purchaser of a "converged infrastructure" solution, which combines server, storage, networking and software elements into a single package that is designed to simplify planning, deployment and management, as well as lowers costs.

"I looked at converged infrastructure as a way to lessen the amount of hardware I had in my data center, and to reduce costs and complexity," recalled Ray Smith, Assistant Executive Director for Technology for the MCCB. "We were an early adopter of a major storage vendor's converged infrastructure package — maybe a bit too early. It literally took years, not weeks or months, to have it running as it was promised."

After the experience of buying a first-generation system for its main data center in Jackson — and a later version for a disaster-recovery site in a nearby town — Smith received yet-another lesson in the workings of traditional storage vendors.

"We had reached the end of our third year with the first system we had purchased, and the maintenance contract was going to increase from $48,000 a year to $110,000 a year — and that's just for the hardware."

At that point, Smith went looking for an alternative storage solution that would complement its investment in Cisco UCS servers. With the assistance of its system-integration

partner, Venture Technologies, it selected the FlashStack™ converged-infrastructure solution, which combines all-flash storage arrays from Pure Storage, Cisco UCS servers and switches, and VMware virtualization software in a single platform.

"With FlashStack, we saw the opportunity to reduce the footprint in our data centers, and to adopt a technology that we knew was advancing very quickly," said Smith. "I found that for less than the cost of the hardware maintenance on our legacy system, I could buy a FlashStack implementation and three years of maintenance. It was an easy decision for us."

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The configuration recommended by Venture Technologies followed the reference design approved by Pure Storage and Cisco, which was an important source of confidence for Smith. "One of the things I've learned in dealing with converged infrastructure is the importance of the companies working together. It's really valuable to me to know that the FlashStack design is certified and pre-tested."

FlashStack Proves the Value of Simplicity

Smith opted to purchase two FlashStack configurations — an all-new one for the main data center, and another one for the disaster recovery (DR) site that incorporates some of the UCS blade servers that were already running there. In total, MCCB now has Pure Storage FlashArrays, 13 Cisco UCS servers, and Nexus 5548 and 9148 switches, along with vSphere server-virtualization software from VMware.

Smith's organization provides centralized IT services for the 15 public community colleges and 34 campuses that make up the community college system which serves more than 70,000 students, and acts as an Internet service provider for those campuses. The IT team develops and deploys key applications such as student enrollment, and collects data across the system in response to legislative requests.

Installation of the FlashStack configuration was a lesson in simplicity, Smith noted. "With our previous system, the vendor had a team of seven people working over a series of months to get the system up and running. With the FlashStack, we had one person who worked on the conversion, and he was able to do it in less than a week. Installation of the FlashArray itself took about an hour."

The conversion to the new FlashStack infrastructure "was accomplished without an interruption to our production applications and to the user experience, which is just

unimaginable compared to what we had before," Smith added. He observed, "After that first install, I understood the importance of simplicity."

"In all the years I have been doing this, this was the most efficient install of something so complex," he continued. "The fact that we migrated to a wholly new infrastructure during normal work hours and with no downtime was amazing." Previously, he noted, the organization would have had to wait for a long holiday break to schedule an installation of such magnitude.

Performance Problems Disappear in Critical Application

The impact of the FlashStack infrastructure has been seen most notably in the process of registering students for classes, using the online Enrollment Tool. "The first week of registration is when the system runs its hardest. We historically didn't do anything else at that time, because the load was so heavy. Even so, we would always have points where the system was running so slow that students and administrators were very frustrated with the response time. So, one of our prime objectives in getting a new infrastructure was improving the speed of this application."

After migrating the Enrollment Tool to the FlashStack infrastructure, Smith observed, "We have seen much faster performance, which is a benefit to the students and a big relief to us. It has made things a lot less stressful."

The new IT infrastructure also supports the Mississippi Virtual Community College, whereby students can enroll in a class from any of the 15 colleges. Previously, they could only take classes at the college serving the district in which they resided. Smith's office developed the application that allows that cross-district enrollment, taking advantage of the added processing power and storage resources afforded by the FlashStack configuration.

"We are seeing a data-reduction rate of 3.8:1 on the Pure Storage array," Smith noted, "which not only reduces footprint in the data center, but also gives us the ability to spin up additional databases for application development without impacting performance or consuming precious storage capacity. That smooths the whole development process."

Benefits from FlashStack also have been noted in maintaining disaster-recovery preparedness. The FlashStack configuration at the DR site "has simplified things to the point where we can simulate an outage and I can see my virtual machines rebuilding themselves at the remote site. The previous equipment we had was way too complex to ever attempt to do that."

FlashStack Solution Simplifies Management

Smith also has been impressed by the simplified management of the FlashStack configuration. "One of the things I love about it is the

finite number of parts involved and how that makes planning and acquisition so easy. We use Venture Technologies' VT Watch as a single point of contact for support, and that simplifies things considerably."

He also has high praise for the management features of the Pure Storage FlashArray. "Within an hour and a half of installing the first array, I had the Pure1™ application on my cellphone where I could see everything that was going on with the array. It was like nothing I had even seen before."

Smith added, "With the Pure Storage array, there's no need to worry about LUNs or tiers or any of that complexity. You just decide how much storage you want to add and push a button, and you've got the space — all inside of VMware. It's a total change of mindset from the way storage has always operated."

The advantage of the effortless management of Pure Storage, he added, "is that I can spend more time thinking about the concerns of the business instead of working with the technology."

As an example, he noted, "I received an email from Pure Storage alerting me that a software upgrade was available and was asked when I would like to perform the upgrade. I responded that based on my previous experience with Pure upgrades, let's just do it now. I could say that because I know from prior experience that this array can be upgraded without any impact on production. An hour later, I could see from the Pure1 application on my phone that the upgrade had been completed successfully without disruption. It doesn't get much better than that."

Products and Services

Unified Computing FlashStack Converged Infrastructure:

- *Cisco® UCS® servers*
- *Pure Storage FlashArray*
- *VMware vSphere*

Cisco Networking and Security Solutions:

- *Cisco Nexus 5548 and 9148 switches*

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