



Walton Business School Converts Student Labs to Zero Clients – Lowers Costs, Energy & Noise

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WILLIAM ALLRED, PH. D.
ASSOCIATE DIRECTOR, TECHNOLOGY CENTER
SAM M. WALTON COLLEGE OF BUSINESS, UNIVERSITY OF ARKANSAS

AT A GLANCE

Situation

- Higher education
- Sam M. Walton College of Business, University of Arkansas
- 250 faculty and staff, 6,000+ undergraduate and graduate students

Challenges

- Evolving the College’s infrastructure to support the bring-your-own device (BYOD) trend
- Offloading faculty from support of lab systems without overwhelming IT
- Leveraging existing virtualization platforms (investment protection)

Solution

- Centralized virtual desktop infrastructure
- Teradici® PCoIP® Zero Clients and All-in-One Clients

Results

- **Lower costs:** estimated savings of \$1M over 10 years
- **Greater agility:** easy-to-deploy, easy-to-manage zero clients allow IT to rapidly respond to faculty change requests
- **Sustainability:** lower power and cooling requirements support green initiative
- **Quiet operation:** 10-decibel noise reduction in lab with 61 zero clients instead of PCs



Since its founding at the University of Arkansas in 1926, the Sam M. Walton College of Business has become a premier, nationally recognized business school. Walton College offers more than 6,000 students a broad range of experiential learning, and faculty are encouraged to lead research efforts focused on the latest business knowledge.



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While the faculty prepares students for their future, IT prepares the Walton College’s infrastructure for future students. This calls for an increasingly agile technology model, and full support for the planned bring-your-own-device (BYOD) policy. The 400 PCs in the business school’s student labs gave IT a great starting point. The associate director of the Walton College technology center challenged his team to come up with a better computing model for the labs. Specifically, they needed to overcome limitations related to:

- **Operating costs.** Every four to six years, PCs had to be replaced. Additionally, IT was re-imaging all 400 PCs every semester and struggling to maintain the hardware and software spread among multiple labs and buildings.
- **Flexibility.** Setting up the lab PCs was time intensive; changes were limited to once a semester.
- **Sustainability.** A high-priority green initiative made it important to reduce the energy and cooling requirements for the labs.

A virtual desktop infrastructure, leveraging existing VMware systems and expertise, made sense for the College. IT initiated a pilot test of VMware Horizon View. Two loaner devices, a zero client and an all-in-one client, allowed them to check out endpoint options and test the College’s specialized instructional and research software with View.

“BYOD was foremost in our minds when we tested View,” said William Allred, Ph.D., associate director of the technology center, Walton College of Business. “Eventually, the same lab experiences that we offer on campus will be available to any student using any device. This is where we are moving.”

The successful pilot was followed by a cost analysis. “We considered all of the up-front costs – 400 new zero clients, and building up our virtualization infrastructure including adding RAM and processors to our servers, and introducing fast storage arrays,” said Allred. “Storage is make-or-break for our VDI user experiences – we have to have the IOPS to support the desktops. Even with all of the up-front costs, we calculate that we will save more than \$1M over the first ten years. This is a significant amount of money for our organization.”

The PCoIP zero clients account for a significant portion of the cost savings. “We expect that zero clients will double the life of our endpoints,” said Allred. “With no moving parts, I think they will last longer than the vendor-stated lifespan of seven years.”

The lab transformation met expectations, and also yielded some unexpected benefits. Each new endpoint requires much less power, and also operates lowers the noise in the labs. “With significantly less power consumed, the PCoIP zero clients give us a sustainable solution that supports our green initiative,” said Allred.

“And we were surprised at how quietly they operate. We measured a 10-decibel noise reduction in one lab when 61 seats were converted to zero clients. The instructors can now hear themselves talk, while in the past they didn’t like to use this room. Now that is much quieter, it is one of our most popular lab rooms.”

Products used

- PCoIP Zero Clients
- PCoIP All-in-One Clients
- PCoIP Management Console

Virtualization platform

- VMware Horizon View



“Today we have a much more flexible model in our student labs, and a solid foundation for BYOD,” said Allred. “The Teradici PColP Zero Clients are absolutely amazing. We have had zero Help Desk calls about them, and we are now much more proactive. I could go on and on about the Teradici technology. Next year we will introduce PColP zero clients to faculty and staff.”

Key to the success of the VDI deployment has been the simplicity of managing the new endpoints. IT uses the Teradici PColP Management Console to speed deployments and firmware updates.

“Without an OS on the zero clients, management is so much easier,” said Scott Zemke, senior systems engineer in the technology center for the business school. “I recently updated the firmware on 300 clients in a half hour using the Teradici PColP Management Console. The functionality it gives me is really helpful. And endpoint updates are no longer urgent – there are no security issues or critical patches.”

“Even though VDI has shifted more lab support functions from the faculty to us, it has been a positive change. It offloads faculty, who can now better focus on students and research. And we can very efficiently manage hundreds of PColP clients from different vendors using the Management Console. This includes giving our faculty much faster response for changes. What would have taken one or two days in the past now takes us less than an hour. The faculty has quickly picked up on this, and they now ask for same-day changes to lab setups. And we can do it.”

The Walton College of Business has become the VDI benchmark on the University of Arkansas campus. When the University’s School of Architecture asked them about VDI performance with CAD packages, the business school’s technology team took the opportunity to check out the Teradici PColP Hardware Accelerator solution.

“Adding a Hardware Accelerator card to our VDI server freed the server to handle other tasks,” explained Zemke. “Besides smoothing out the whole experience for 3D CAD applications or video, the Teradici card lets us lower our memory allocations from 3G to 1G per virtual machine. Plus, we can put 40 percent more desktops on a blade that has an accelerator card. Overall, the Hardware Accelerator works wonderfully. We have a second card ordered, and we plan to add more as we scale up our VDI servers.”

“The Teradici PColP Hardware Accelerator boosts video and just makes servers more efficient,” said Allred. “It is a win-win solution for us and for the end users.”

