University of Connecticut School of Business Uses VMware View to Offer Flexible Student Computing

“Our vision is to offer our students dedicated desktops for every class they take. VMware View technology has put us on the path to realizing that dream.”

— Jeremy Pollack, Director of IT, University of Connecticut School of Business

As one of the top business schools in the country, the University of Connecticut School of Business is committed to equipping its more than 3,500 students with the real-world skills they need to achieve career success.

“Supporting student computing in some form has been a key strategic goal for us for well over a decade,” notes Jeremy Pollack, Director of IT, University of Connecticut School of Business. But it has taken a while for the school to find the right way to support students’ computing needs. Its first attempt, in 2000, was fairly straightforward: The school asked all incoming students to acquire laptops and bring them to class. However, because these laptops weren’t standardized, students inevitably experienced compatibility and reliability issues. To support the hardware, the school found itself dealing with no fewer than 50 different laptop vendors and many more configurations.

So in 2003, the school began a program to lease standardized laptops to students. While this laptop environment was easier to support, the school had to maintain a costly inventory of spare systems to accommodate unexpected fluctuations in enrollment. “Because we charged students for the laptops, we mostly broke even on the program cost,” Pollack says. “But keeping the extra machines on hand was an expense that we had to absorb as a loss of roughly $20,000 per semester, plus we needed a full-time staff member just to manage them.”

Then the school implemented VMware technology to virtualize its server environment, and the IT team realized VMware View™ could deliver comparable flexibility and cost savings for its end-user computing environment as well. “VMware View was a logical solution for us,” Pollack says. “It lets us offer next-generation virtual computing that is accessible anywhere, anytime. Now we focus our resources on supporting software instead of buying and maintaining hardware.”

Assistant Dean Michael Vertefeuille has been very excited about the progress and capabilities offered by the platform. “VMware View’s desktop virtualization will result in a significant reduction in our IT staff’s overhead and a more robust technological environment for our students. Our staff will now be able to focus more on cutting-edge and innovative solutions to enhance the teaching and research mission of our school.”

Another benefit of View is that the school could pilot the solution from its existing server environment. “If we had chosen another desktop virtualization solution, such as Citrix, we would have had to build out a whole new infrastructure and train staff on an entirely new set of technologies,” notes Pollack. “We didn’t have to do that with VMware View. We had existing physical infrastructure, and our staff were already experts with VMware concepts and technologies, which very smoothly translated into the VMware View world.”
Entire Environment Up in Less than Two Days

The School of Business intended to phase in its View environment over the course of the entire 2010–11 academic year. That changed when funding was cut for the existing laptop program. “A decision was made during the summer that we would no longer offer laptops to any new students,” says Pollack. It was a bit of a curve ball for Pollack’s team—but the new timeline proved more than manageable. “Implementing VMware View was very easy to do,” Pollack says. “We had the entire infrastructure up and running in about a day and a half.”

The initial virtual desktop environment was hosted on Dell PowerEdge R710 servers attached to an existing storage infrastructure: a mix of Dell EqualLogic PS6000E and PS5000E iSCSI Storage Area Network (SAN) arrays. All of the technology runs on the same Avaya 5600 series Ethernet switches as the iSCSI and networking fabric. “Our existing enterprise VMware deployment proved sufficient to run this initial pilot. The PowerEdge servers had spare CPU cycles, and our clustered EqualLogic SANs did as well. The Avaya data gear is always rock-solid.”

Of the 300 VMware View virtual desktops initially deployed, around 20 are used by faculty and staff. The rest are for students—and those students can use any type of hardware. “When they are in the business world, our students will be using Microsoft Windows machines,” Pollack says. “And with our VMware View virtualized desktop environment, we can teach on Windows even if students walk in with Apple hardware.” In fact, students can use a variety of devices to access the school’s virtual desktops. “I have a person on staff that comes to meetings with an iPad and Bluetooth keyboard connected to his View desktop,” Pollack says.

The View environment also allows students to access their virtual desktops from other locations besides their classrooms, such as their dorm rooms and even off-campus locations. The flexibility of the infrastructure supports programs such as online education and the school’s experiential learning programs, which combine classroom-based coursework with real-life research and projects that are often conducted in partnership with private-sector businesses. Applications the school supports through the View environment include Microsoft Exchange, Office 2010, Visio 2010, Project 2010, SAS and MatLab.

The school has also begun to use VMware ThinApp™ to create and deploy applications or versions required by specific courses. “With VMware ThinApp, we can use the same desktop image while also pushing out specific applications that certain courses require,” says Pollack. If a Web development class requires a specific version of Microsoft Internet Explorer, for example, Pollack’s team can support that without having to create a completely new desktop. “It saves us time,” Pollack notes. “Instead of 10–15 hours to create desktops for five different computer labs, it takes an hour or two.”

Staff Freed to Focus on Innovation

For the fall 2011 semester, the School of Business will increase its View deployment to 700 virtual desktops—on a dedicated set of hardware—at which time the school’s IT department will no longer dedicate 80 percent of its time to maintaining the laptop environment. Instead, it expects to spend only 20 percent of its time on support with the other 80 percent devoted to innovation and tasks that provide more value to students and faculty.

The new environment will be extended to use existing computer labs as endpoints for accessing View virtual labs. The school expects to reduce maintenance and replacement costs by $318,000 over five years by extending current life cycles and then moving to thin clients. This savings alone was sufficient to justify the costs for this next phase of View implementation. With View it will also be easier to accommodate guest faculty and those who work remotely, because the school can simply spin up virtual machines instead of equipping those faculty with physical systems.
“Because our staff will spend less time supporting laptops, they can spend more time on innovation.”

Jeremy Pollack, Director of IT, University of Connecticut School of Business

To support these new needs, the school has deployed a significantly more powerful infrastructure. The new environment is powered by a Dell PowerEdge M1000e blade chassis with eight M710HD blades, a Dell EqualLogic PS6010XVS hybrid SSD/SAS SAN, and Avaya’s new Virtual Services Platform 7000 top-of-rack 10G switch. “One of our biggest lessons learned is the difference in SAN requirements for a VMware View implementation,” notes Pollack. “It flips an enterprise deployment on its head in terms of what is important. The new hybrid EqualLogic promises close to tenfold improvements in terms of total supported virtual desktops.”

Collaboration Will Extend Environment Across University

With a successful deployment behind them, the School of Business is now focused on a larger vision—helping the University virtualize the remainder of its desktops. Today, the School of Business is collaborating with the School of Engineering and the University Library on the new desktop virtualization infrastructure that will be large enough, at first, to support all three organizations—and has been architected to be modularly expanded as needed to accommodate other entities in the future. Among the benefits, this virtual desktop infrastructure will facilitate online instruction, reduce computer lab maintenance costs, and increase faculty and student confidence in the reliability of the University’s computing systems. “One of the exciting things we realized during the School of Business’ pilot was that VMware View represents a whole new area of technology, one in which none of us had any significant investment in infrastructure or operations. Thus, VMware View was an ideal project for collaboration. It scales well and there were no integration headaches,” Pollack said. The University of Connecticut team is documenting their collaboration at http://vpc.uconn.edu.

The School of Business will host this new infrastructure within its datacenter and will use VMware vCenter™ CapacityIQ software to ensure that it has adequate hosting capacity as the infrastructure grows. The school is also implementing some VMware partner solutions such as Unidesk and Ericom to round out the View functionality.

“To me, implementing VMware View is a ‘no brainer,’” Pollack concludes. “It let us leverage our existing physical infrastructure and technical know-how with a minimal investment. We were able to start small, but we can scale easily as our needs grow. We know that, moving forward, we’ll discover VMware View benefits that we can’t even fathom right now.”

IMPLEMENTATION OVERVIEW

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