

Central Michigan University



“Given our college’s intensive use of technology in the classroom, one of my department’s most important jobs is to ensure that our students’ desktops are equipped with the right software, and that they run the way they should. With VMware View, we have the tools we need to be more responsive to professors’ requests around software deployment and accessibility. We can manage our college’s desktop environment more efficiently and focus our attention on meeting high standards of service.”

– Stan Pope,
Director of Technology
for the College of Business
Administration at Central
Michigan University

KEY BENEFITS

Challenge

Enable faster, simpler deployment of applications services to college instructors and students

Solution

Deploy a Virtualized Desktop Environment to enable centralized management and control of over 300 desktop PCs

Results

- IT can be more responsive to professor requests for applications support
- System upgrades that once took a week can now be performed within an hour
- IT has reduced need to augment staff with student help, from 80 hours/week down to 40
- Less time required to train student employees in IT tasks
- Flexibility of VMware View tools allow systems to be optimized for performance
- Improved ability to manage software licensing by sizing to concurrent usage rather than number of PCs
- In some cases, reduced software licensing costs

Central Michigan University’s College of Business Administration Virtualized Desktops Deliver an Innovative Learning Environment

Business College Prepares Future Leaders on Virtual Desktops

By Enabling Effective Applications Support, Virtualized Desktop Infrastructure Ensures IT Meets College’s Mission Critical Requirements

For many years, sometime during the month of April, Stan Pope, Director of Technology for the College of Business Administration at Central Michigan University (CMU), has polled the college’s professors about what software they planned to use the following academic year.

This annual rite has broad implications for the college. If its students are to succeed as business professionals, they must be technologically fluent. And that means the right software applications must be in place when those students start their coursework in the fall.

Until recently, Pope needed every minute between April and September to accommodate the professors’ software requests. He had to research the requirements of each application and verify they would run on the college’s PCs. He had to plan, budget and perform hardware upgrades. Then there was the installation itself, a time-consuming and laborious process that required Pope’s staff to touch 300 standalone computers, one system at a time.

It seldom went smoothly. Inevitably, professors would come to Pope the first week of the fall semester with additional software installation requests. Pope always knew that for the first few weeks of every academic year, he and his staff would be scrambling to get the college’s desktops ready for the year’s coursework.

But that was then. This is now: Pope has implemented a virtual desktop environment using VMware View infrastructure. As a result, his staff can allocate and manage resources, as well as install software more flexibly and quickly from a central location. It has proven to be an efficient and streamlined way for Pope’s staff to deliver the high level of IT service the college’s professors appreciate and expect.

Virtualization for Technology-Intensive Instruction

In the College of Business Administration, technology is central to the business college’s mission: to prepare future business professionals to assume leadership roles in the global economy. Many of the college’s graduate and undergraduate programs—including accounting and marketing—require students to master software applications they’ll use in their future careers. Other courses focus explicitly on information systems and information technology. The college sponsors technology-intensive research centers on leadership/management and supply chain management. And it’s a member of the SAP University Alliances program. Through this program, SAP provides the college with software and

VMWARE AT WORK

VMware View™ 4.5

- VMware View Composer
- VMware ThinApp™

VMware vSphere®

- VMware ESX®

DEPLOYMENT ENVIRONMENT

Primary application

- VMware View 4.5
- VMware vSphere 4

Primary hardware

- Dell servers
- Sun blade servers
- HP Servers - Proliant DL385
- Sun 7410 SAN
- Desktop - HP DC 7800/Dell Optiplex 380

Primary software

- Microsoft XP
- SAP
- Adobe Reader
- Microtab
- ArcGIS Explorer

resources; the college incorporates the software in courses that teach skills in integrated business processes and strategic planning.

To meet its students' needs, the business college's technology must mirror that found in private industry. It has to be robust and up-to-date. At the same time, the college must manage that technology efficiently to avoid excessive costs and management overhead.

For this reason, as soon as he joined CBA, Pope recognized that virtualization was a natural for the business college's IT infrastructure. He started by virtualizing the college's server environment, which includes a mix of Dell servers and Sun blades, as a VMware vSphere environment.

But a key focus of his was always to tackle the college's desktops.

The university's College of Business Administration has around 400 PCs and laptops in its environment. Most are Windows-based desktops, and most are for student use. There's a 98-computer "open lab" that students can access from 7:30 am to 1:30 am. Three other instructional labs are used respectively for SAP instruction (48 workstations) and business information systems classes (two labs with 40 computers apiece). A 32-laptop rolling cart lets instructors bring mobile computing resources into classrooms if they need them. And a final, 30-PC classroom provides overflow capacity for the open lab, or can be reserved for courses that aren't normally taught in computer labs.

Smoother Applications Deployment, Management

Given the college's academic focus on business technology, it's no surprise that the desktop environment must accommodate a broad and eclectic mix of applications software, from programming tools to accounting software, as well as fully-featured business software such as SAP.

Supporting these tools is a core task of the college's IT department. "It's all about the applications," Pope explains. "How to deliver applications, how to make changes throughout the semester and how to update desktops in a reasonable amount of time, when the systems are being used almost around the clock."

To make managing the college's applications more streamlined, Pope implemented a VMware View Virtual Desktop Infrastructure (VDI). "We based our rollout on redeploying existing PCs as VMware View clients," he explains. The primary reason for this is that students use PCs for web-based applications like YouTube as much as they do to run locally-installed software. "We decided that dual-purpose systems would best meet our students' needs. We'd give them a browser-based environment and a virtual desktop environment they can launch to run their lab applications."

Pope's team spent about a year testing the technology then put it into production after upgrading the environment to the latest version, VMware View 4.5. "VMware View 4.5 makes virtual desktops easier to manage," Pope says. "The interface is more intuitive and interactive. It's easier to see system updates, and to access more in-depth information and control."

As the implementation has matured, Pope has used additional VMware tools to optimize the virtual desktop environment and performance of the desktops. A major step was deploying VMware ThinApp software for application virtualization. "We can now assign virtual applications to virtual machines," says Pope. "It gives us more flexibility because we can optimize the use of desktop memory." Pope's staff has virtualized about a dozen software applications, ranging from office tools like Adobe Reader, statistical software like Minitab, and software applications used for undergraduate courses such as ArcGIS Explorer, a geology tool. The team also used VMware ThinApp to virtualize the SAP client it owns courtesy of the SAP Alliance Program.

Pope also uses VMware's Linked Clone technology to configure the environment for "zero" persistent desktops. "All of our virtual machines are shared," he says. "It's all about concurrency." It's also about simplifying control. "In the past, we had to buy enough software licenses to cover all of our desktops. With VMware View, we can control how many concurrent licenses can be used at any given time. It makes it easier to provision our desktop environment." In some cases—depending on the software license model of a particular application—this allows the college to reduce its software costs, because Pope can size software licensing based on actual usage rather than the number of physical desktops.

Streamlined Staffing Requirements

VMware View also allows Pope to reduce staffing costs. Pope's IT team includes two full time technicians augmented by student employees. In the past, he's needed as much as 80 hours per week of student time to meet the department's IT service demands. Today, he's able to keep student hours to about 40 per week.

In addition to reducing department costs, fewer student hours means Pope spends less time training. "Student employees tend to be transient. They work for you for a year or two, then graduate," Pope notes. "By reducing our need for staff, we've also streamlined my job as a staff manager." And students who work for the department can become more specialized, developing deeper expertise in areas like delivering software to desktops or supporting faculty.

Perhaps the biggest benefit of the virtual desktop environment, however, is that it allows Pope's team to more effectively deliver applications-related services to the college's faculty and students. Because applications can be rolled out to the entire environment from a single, centralized console, the IT team can more easily accommodate service requests—even during periods when demand for applications services peaks.

It's also a breeze to manage upgrades and patches. "It's so much easier to make the change once on our virtual desktop image than to make that same change on 300 different PCs," Pope says. Instead of taking four people a week to perform a typical system upgrade, most can be completed in an hour.

"Our VMware View environment gives us control and stability, but also flexibility," Pope concludes. "We have the tools we need to manage our desktop environment more efficiently, which means we're doing a better job at supporting our college's desktop users."

