

Center Grove Community School Corporation



“VMware is the future of education technology. By virtualizing our environment, we provide a streamlined infrastructure for students and teachers that allows them to access the educational resources they need from wherever they are. VMware changes the way schools think about everything, from IT support to planning new projects to budgeting. It seems like every time I turn around something else good comes from launching our VMware virtualization projects.”

— Julie Bohnenkamp,
Director of Technology,
Center Grove

KEY HIGHLIGHTS

Challenge

Cost-effectively support Center Grove goals of providing high-quality education to 21st century students.

Solutions

Deploy virtualized desktops to provide robust, stable computing resources to more students and teachers cost-effectively and without overtaxing IT resources.

Results

- The district launched the Early College 1:1 laptop program with 400 virtual laptops without adding IT support resources.
- Repurposing 460 old desktops as virtual clients extends computing resources to students, without requiring a capital investment of \$325,000.
- Desktop life cycles used to be four to five years; now they're seven to eight.
- Energy usage required to power the server environment was reduced by 85 percent, for an estimated savings of \$19,860 annually.
- Virtualizing servers let the district avoid around \$24,000 in hardware costs.
- Server deployment is faster.

At Center Grove, Virtualization Enhances Educational Excellence

Students, Teachers Can Work from Anywhere, Anytime

School district rolls out plan to virtualize 2,400 desktops, adding sustainability, manageability and cost cutting.

People move to White River Township, Indiana—a community of just more than 35,000 people, located 20 minutes south of downtown Indianapolis—just for the quality of the schools.

It's an “education outcome” that didn't just happen by chance. Center Grove Community School Corporation, the public school system that serves White River Township, has invested considerable time and resources into developing for its students first-rate academic programs that emphasize educational innovation. The district recognizes that 21st century students have unique and changing educational needs, which often require cutting-edge methods and tools.

Center Grove's Early College Small Learning Community is an excellent example. This college-preparatory program for high school students is a rigorous, cross-curricular yet personalized program designed to instill confidence in students that they can succeed in a post-secondary setting. It immerses them in a university-like environment. It also lets them earn college credits. Students can even graduate from high school with an associate's degree.

The Early College program is innovative in another way as well. It's a 1:1 laptop program that leverages VMware View™ desktop virtualization technology to deliver mobile computing resources to participating students. And its success opened the door to an expansion of virtualization that will one day touch every single student enrolled at Center Grove.

Technology-Enabled Education

“So many elements of our Early College program depend on technology,” explains Julie Bohnenkamp, director of technology at Center Grove. “Each of the program's courses has its own online course environment. All assignments are posted electronically. Students build online portfolios of papers and assignments they can later provide to colleges.” Teachers use email to foster a close working relationship with Early College students, another goal of the program.

“We would have done the program, somehow, without VMware's virtualization technology,” Bohnenkamp continues. “But VMware View let us launch the program without a need to hire additional IT staff to support the new project.”

As a concept, virtualization had been on Bohnenkamp's radar for quite some time. She had read extensively about the technology and how school districts are using it. When Center Grove got funding for the Early College program, Bohnenkamp was ready. She

VMWARE AT WORK

VMware View™

- VMware View Manager
- VMware View Composer
- VMware ThinApp™

VMware vSphere™

DEPLOYMENT ENVIRONMENT

Primary Application

- VMware View 4.0
- VMware vSphere 4

Primary Hardware

- HP ProLiant DL380 G6 servers
- Dell notebooks
- Jack PC thin clients

Primary Software

- Microsoft Office Suite
- Adobe Photoshop
- Educational applications such as Inspiration Software and Comic Life

approached the district cabinet, superintendent and curriculum directors and then proposed configuring the program's new Dell laptops as VMware View virtual clients instead of standalone machines.

The proposal won immediate support. "I explained that with VMware View, I could provide stable, functional laptops to the students without overwhelming our IT department's resources. I got the immediate go-ahead to proceed."

Bohnenkamp's team initially rolled out VMware View virtual laptops to 240 students.

For this first deployment, Center Grove enlisted the help of an IT systems integrator, Technology Integration Group. Once Bohnenkamp's team had experience with VMware technology, however, they were able to tackle additional virtualization initiatives themselves. And they soon needed to do so. As enrollment in the Early College program grew, the number of virtual laptops also rose, eventually reaching 400.

It would have been difficult, if not impossible, to accommodate that many students if the IT staff had needed to configure and maintain 400 individual machines. "We've gained so many benefits by virtualizing our Early College 1:1 laptops," Bohnenkamp says. "We're able to manage all of the laptops from one central location. We can see in real time who is logged in. If we want to deploy or change the students' software, we can do it for every laptop from one place. We can troubleshoot or reset systems remotely as well."

In fact, the Early College virtualization project was so successful, Bohnenkamp's team began looking for other ways to leverage it, including for teachers' desktop computers and the school's server infrastructure—an initiative that ultimately led to Center Grove's decision to make desktop virtualization its preferred configuration standard.

Virtualization 'Love Letters'

In some cases, Center Grove's decision to virtualize was marked by a kind of serendipity. Take the teachers' computers, for instance. The summer after the launch of the Early College program, the entire district opted to close all buildings for necessary maintenance and technology preparation, leaving teachers with no way to use their classroom computers or their network files during that period.

Bohnenkamp and VMware View came to the rescue. "The teachers didn't know it but we were in the process of deploying virtual desktops for them," Bohnenkamp says. And as it happened, Bohnenkamp's team was able to email the link to its VMware View portal immediately following distribution of the email notifying teachers that the school buildings would be closed, letting them know they would still have access to their necessary network files.

The response was overwhelming. Teachers were tremendously excited to learn that they would be able to prepare for the upcoming school year from their homes, and not a single person had trouble using their new virtual system. "The teachers were so grateful," Bohnenkamp said.

Around the same time, Bohnenkamp and her staff began virtualizing Center Grove's servers. It has proven to be a major cost saver for the district. "So many times people decide to purchase software for some curricular need but don't realize that they also need a server," Bohnenkamp explains. "It becomes a hidden expense that can wreak havoc on our budget."

With VMware virtualization, the IT team can simply create a new virtual machine on the district's existing servers. "Virtualizing has helped us avoid around \$24,000 in hardware costs in the last year alone," Bohnenkamp says. It's also faster to provision a virtual server than to requisition and implement a physical machine. "We love how easy it is to deploy virtual machines. It's like a dream."

Center Grove's implementation of VMware View helped trim costs in another way as well. The district was using Citrix GoToMyPC to replicate desktops for administrators or other staff who need to work occasionally from home. Today the IT team uses VMware View to replicate the computers instead. This allowed the district to cut \$3,000 in GoToMyPC licensing costs from its software budget.

Supporting Sustainability

With VMware proving its value in more and more ways, it was only a matter of time before the Center Grove IT department began embracing virtualization as its standard for desktop deployment.

Center Grove schools—in keeping with the district's reputation for educational excellence—are already technology intensive. In the high school alone, there are 17 computer lab classrooms, 15 wireless 1:1 laptop classrooms, and a take-home 1:1 for the Early College program with 400 laptops totaling well over 1,450 student computers. The ratio of desktops to high school students is about 1:2 overall.

With VMware View, however, the district is moving closer to providing even more computing resources to students, without having to add more IT support staff. One way Bohnenkamp's team will do this is by repurposing older PCs. For example, the district just purchased 460 new desktops for its classroom teachers. Now the IT team is redeploying the teachers' old computers as virtual clients in Center Grove's middle school classrooms. "We would have had to spend as much as \$325,000 if we had done this using new hardware," Bohnenkamp notes.

Repurposing the teachers' computers also supports Center Grove's sustainability goals. "When we're asked how we're incorporating sustainability into our projects, our answer is virtualization," notes Bohnenkamp. She anticipates that the district will be able to nearly double computer life cycles from four to five years to seven to eight, thanks to VMware View technology.

Within its server environment, virtualizing 30 machines with VMware technology has reduced Center Grove's energy usage by 85 percent, for an estimated savings of \$19,860 annually.

In the high school, the IT team is planning to launch another environmentally friendly project that leverages VMware View. It is deploying 20 Jack PC thin clients in its districtwide libraries. "This is a very green initiative," Bohnenkamp notes. "These thin clients can be powered by standard Power-over-Ethernet. All you do is run a data cable and plug in the monitor and keyboard. That's it. It's very streamlined."

Virtual Desktops for Educational Excellence

The VMware environment is also easier to manage. The district's 15 IT technicians would otherwise struggle to support the school's 4,500 desktops if it weren't for virtualization. But VMware View's management tools transform what would be a highly challenging task into a reasonable one. "VMware View Composer makes provisioning virtual machines very simple," notes Linda Gardner, district software specialist at Center Grove. "When I build an image, it takes exactly what I've created and then compiles it and processes the compilation for every single machine." If the team makes a change to the image later, View Composer propagates it automatically. "It's a huge time saver."

Another tool the team relies on heavily is VMware View Manager. "View Manager is awesome. I instruct it, one time, to create my virtual machine pools and it takes off and does what I tell it to do. And the user interface is very friendly."

“VMware has put a lot of thought into how its tools manage the desktop,” adds Mark Schwartz, technology coordinator/network engineer at Center Grove. “You can tell they have thought about what people need to accomplish and what it takes to manage large numbers of workstations.”

The team also uses VMware ThinApp™ to reduce the size of its desktop images—something particularly important for space-hungry applications the high school students use, such as Adobe Photoshop CS3.

While saving time, money and resources is important, Center Grove values VMware technology most because it allows the district to more effectively fulfill its academic vision.

“VMware technology removes obstacles,” Bohnenkamp says. “And ultimately it’s the teachers and students who benefit the most. The technology is never in the way of their academic experiences. Everyone can access the software they need from a robust machine that works the way it’s supposed to every time. That is what really speaks to the beauty of VMware in my opinion.”

