



College Uses Application Virtualization to Deliver Course Software Easily, Inexpensively

Overview

Country or Region: United States

Industry: Education—Community college

Customer Profile

Sinclair Community College of Dayton, Ohio, is one of the largest community colleges in the United States, with approximately 24,000 students.

Business Situation

Sinclair wanted to find an efficient, cost-effective way of delivering required classroom software that would not require a lot of IT intervention.

Solution

The school used Microsoft® Application Virtualization version 4.5 and Microsoft Intelligent Application Gateway 2007 to deliver classroom software over the school network and the Internet.

Benefits

- Technology provides quick, easy delivery of class software to students
- IT administrators can be redeployed to other projects
- Solution costs significantly less than competitive products—U.S.\$4,500 annually versus hundreds of thousands of dollars
- School can increase enrollment by extending its reach to remote students

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Scott McCollum, Director of Information Technology Services, Sinclair Community College

A lot of college programs require more than just textbooks. Many disciplines require students to use an array of software programs as part of their studies. Sinclair Community College, like other schools, faced challenges deploying the right set of software to classrooms on time and devoted considerable IT resources to the task. Now, using Microsoft® Application Virtualization technology, Sinclair can make software accessible to students on demand quickly, easily, and affordably. Students have access to course software when they need it, while the school is saving deployment time and resources. Meanwhile, Sinclair is laying the foundation for increased distance-learning programs for students well beyond the school's Dayton, Ohio, location.

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Situation

Sinclair Community College is one of the largest community colleges in the United States. Located in Dayton, Ohio, Sinclair averages approximately 24,000 students per academic quarter, and each year serves more than 100,000 individuals who participate in the school's academic courses, training sessions, and conference center events. Sinclair offers a variety of services that include university transfer classes and programs, direct-to-work career training for fields such as healthcare and engineering, custom training for businesses, and consulting and assistance for community programs and initiatives. The school employs about 2,500 people.

Many of the academic and training programs and classes offered by Sinclair are technical in nature. This means the school needs to provide the software applications required by teachers for specific curricula. For some courses, such as those in the health and engineering fields, this can mean deploying a dozen or more applications for a single class. For years, getting all the applications deployed in time created a major challenge for the Sinclair IT department as it struggled to get all courses equipped with the right software packages at the beginning of each academic quarter.

“The school uses about 700 different software applications,” says Scott McCollum, Director of Information Technology Services for Sinclair Community College. “And we have about 70 different combinations of software ... that are deployed during the school year. Each discipline or program has its own combination, and each instructor has a specific list of programs needed for a class.”

For years, meeting this challenge required two full-time IT administrators responsible for creating scripts for installing particular software combinations on PCs. Those hard disk

drives then were cloned and the images distributed over the network to duplicate the software packages to other computers.

“The process is incredibly time-consuming, and more often than not we do not get the lists of required software before our required deadline,” says McCollum. “We need the lists at least three weeks in advance of a class, but often get the requests just a week before—or in even shorter time. This creates frantic deadlines with the IT department racing to get software packages scripted and installed. There have been many instances where classes had to begin a quarter without all their software in place, which throws off the schedule for the class.”

Sinclair experienced other problems as well. For example, scheduling classrooms was a complex logistical challenge because the school had to juggle physical classroom space, class size, and the need to deliver the right software to PCs in a particular classroom. Additionally, the need for a physical deployment of software limited the ability of Sinclair to require the use of software in courses where students did not physically come to campus. While students could enroll in online courses, they had to acquire their own software at significant personal expense.

Solution

Sinclair Community College decided to take an innovative approach to software deployment by delivering applications virtually over the school's network and the Internet. The school chose a combination of Microsoft® products and technologies, including Application Virtualization (App-V) version 4.5 and Intelligent Application Gateway (IAG) 2007.

Instead of installing entire applications through the network, Microsoft Application Virtualization 4.5 (part of the Microsoft

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Desktop Optimization Pack for Software Assurance) uses a streamlined delivery method. When a Sinclair student clicks to start an application, Application Virtualization receives a request from the student’s PC and then installs only the code necessary to start the application from a centralized virtual application server on the Sinclair campus. The software that is sent to the student’s computer is typically 20 to 40 percent of the total application.

After a student ends a session, the application and its user preferences are saved in a local, file-based cache location on the PC. When the student wants to use the application again, it opens from the local PC cache, resulting in a faster start than the initial session. There is little impact on network bandwidth, and the user’s applications are preserved even in the case of unexpected computer shutdown.

Sinclair IT administrators manage Application Virtualization by using the App-V Management Web Service, which provides a centralized service for administering App-V servers and applications. The school’s administrators communicate with the service through the App-V Management Console, performing tasks such as publishing and removing applications, controlling server settings, configuring software packages, and more.

The school began moving applications to the virtual application server in the third quarter of 2007. By late 2008, the IT department had about 350 of the school’s 700 applications converted to the Application Virtualization environment. The department continually adds new applications to the App-V system as instructors request them and plans to have all applications virtualized by fall quarter 2009.

In early 2009, the IT department started a pilot program to test the use of Microsoft

Application Virtualization for Terminal Services, a technology that extends Application Virtualization to remote PCs over the Internet. With this technology, students can use the Internet to remotely access the same software that is available in campus computer labs. The pilot program involves about 40 off-campus students signing in over the Internet from different locations to participate in a Health Information Management class.

The school is using Microsoft Intelligent Application Gateway (IAG) 2007 as a remote access gateway that works in tandem with Application Virtualization to deliver software packages. The school worked with SCE Consultants for the deployment of IAG including customization to provide role-based access to the campus network.

IAG uses a combination of a Secure Sockets Layer virtual private network (SSL VPN), a Web application firewall, and endpoint security so that students and faculty can easily access the software packages. The Sinclair IT department uses IAG to enforce compliance with rules that control access to and use of the applications, such as providing students with permissions to access software for particular classes after they are enrolled.

Benefits

By using the application virtualization solution for deploying software over the school’s network and the Internet, Sinclair Community College is addressing several key issues that have hampered colleges and universities across the country.

The school is seeing dramatic improvements in its ability to quickly and easily deliver applications when they are needed to students and faculty for specific courses, while the IT department is spending far less time on software deployment. In addition, the school estimates that it saved a significant amount of money by using Microsoft technology instead

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of a competitive solution. And by using the technology to reach remote students, the school is laying the groundwork for significantly increasing enrollment without having to worry about classroom scheduling logistics and the costs associated with building and maintaining physical classroom space.

Quick, Easy Software Delivery

Distributing software remotely using Application Virtualization is dramatically improving the ability of the school to have applications ready when students and faculty need them. “For classes where we already have the software packages installed on the App-V server, timeliness of delivery is no longer an issue,” says Patrick Seymour, Network Applications Specialist for the Sinclair IT department.

“For example, we have one department—Biology—that has all its applications in the App-V environment,” Seymour says. “The Biology department uses a lot of applications, including sophisticated simulation software that took a lot of time in the past to deploy. With the Microsoft App-V technology, all the software is available to students as soon as they log on. The delays related to late software requests are gone.”

That means the IT department is able to redeploy valuable administrative resources to other tasks. “In the past, we had two administrators who were tasked with creating scripts, and we used other technicians to deploy the clones,” says McCollum. “The scripting process alone could take six to eight hours, and then there were more hours on top of that to deploy the packages. All of that work is gone. With Microsoft App-V, we literally have saved 100 percent of the time that we used to devote to these deployment tasks. Now we can use those IT resources for other projects.”

Lower Cost vs. Competitive Systems

In 2004, the Sinclair IT department brought in a company to evaluate a network-based software delivery system—and “quickly walked the company representatives out of the building,” McCollum says. “The technology would have cost us hundreds of thousands of dollars. We simply could not afford it, because we don’t have huge budgets like some other schools.

“However, with our Microsoft license agreement, we’re able to deploy the App-V solution for delivering software over our network for about \$4,500 annually,” McCollum says.

McCollum notes that other colleges and universities are experimenting with online delivery of software packages—but at a huge price premium over what Sinclair is paying. “We know about efforts by other schools on similar initiatives,” he says. “We’re not sure how much [they cost], but such solutions can cost hundreds of thousands of dollars—or even millions. It might be impressive, but it’s expensive and it’s complicated. Sinclair is making use of off-the-shelf components that are much more affordable and customizable to meet our specific needs.”

Greater Reach for School

Not only is the Application Virtualization technology helping Sinclair deliver course software while saving valuable resources, but it also is providing a foundation for growing the school without the burdens of classroom logistics and the construction and maintenance of additional buildings.

“The combination of Microsoft App-V for Terminal Services and Internet Application Gateway 2007 provides an enormous opportunity for the school to extend its reach to remote students,” McCollum says. “We have an ambitious online learning program, and the Microsoft technologies fit in perfectly.”

For More Information

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For more information about SCE Consultants products and services, call (201) 482-4471.

For more information about Sinclair Community College, call (800) 315-3000 or visit the Web site at: www.sinclair.edu

With distance learning, a key issue for Sinclair—and any educational institution—is making the required class software available to students. In most cases, off-campus students have had to acquire the software themselves to participate in class, which can be a significant cost factor.

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Microsoft Virtualization

Microsoft Virtualization is an end-to-end strategy that can profoundly affect nearly every aspect of the IT infrastructure management lifecycle. It can drive greater efficiencies, flexibility, and cost-effectiveness throughout your organization. From accelerating application deployments; to ensuring systems, applications, and data are always available; to taking the hassle out of rebuilding and shutting down servers and desktops for testing and development; to reducing risk, slashing costs, and improving the agility of your entire environment—virtualization has the power to transform your infrastructure, from the data center to the desktop.

For more information about Microsoft Virtualization solutions, go to: www.microsoft.com/virtualization

Software and Services

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