College Lowers Desktop Costs in Computer Labs by 30 Percent with Virtual Desktops

Volunteer State Community College implemented Virtualization Experience Infrastructure (VXI) and Virtualization Experience Client (VXC) endpoints.

**EXECUTIVE SUMMARY**

**Customer Name:** Volunteer State Community College  
**Industry:** Higher Education  
**Location:** Gallatin, Tennessee  
**Number of Employees:** 8,500 Students; 600 Faculty and Staff

**CHALLENGE**

- Support growing student population while reducing operational costs
- Cost-effectively refresh computer labs to comply with state mandate for computer-based instruction
- Free up time for IT team to focus on online learning initiatives

**SOLUTION**

- Implemented Cisco Virtualization Experience Infrastructure (VXI) with Citrix XenDesktop, an end-to-end validated architecture that brings together desktop virtualization and collaboration
- Replaced laptops in computer lab with Cisco Virtualization Experience Client (VXC) endpoints, which provide access to virtual desktops over the Cisco network

**RESULTS**

- Lowered desktop costs by 30 percent and reduced energy consumption
- Reduced desktop management time, freeing IT team to focus on other initiatives
- Built foundation for Bring Your Own Device (BYOD) policy

**Challenge**

Student enrollment at community colleges grew 17 percent across the state of Tennessee in 2010, spurring Volunteer State Community College (Vol State), of Gallatin, Tennessee, to seek cost-effective ways to offer a quality learning experience to more students. The college currently serves 8,500 students with 600 full-time faculty and staff.

Intensifying the challenge, the state of Tennessee cut appropriations to all colleges and universities in 2009, reducing Vol State’s share by 15 percent. That same year, the state passed legislation altering the instructional approach for remedial and developmental courses in math, reading, and English from instructor-led to computer-based with instructor support.

To meet the new requirements, Vol State IT department needed to refresh its student computing labs on a very limited budget. In addition, the college needed to add 400 desktops to the 2000 already in place, without hiring more desktop technicians or increasing energy consumption.
Solution
Vol State met its goals to create a flexible and secure platform for learning by implementing a Cisco® Virtualization Experience Infrastructure (VXI). Cisco VXI™ is an end-to-end architecture for delivering a unified workspace that brings together virtual desktops and collaboration. Vol State’s VXI deployment is based on Citrix XenDesktop software operating on Microsoft Hyper-V.

When students visit the campus computer lab, they log in from Cisco Virtualization Experience Client (VXC) endpoints to access a virtual desktop, including Microsoft Office applications, a browser, and specialized math and science applications. “Cisco VXI has become the foundation to meet Vol State’s vision for virtualization and to support new educational programs,” says Brian Kraus, director of IT for Vol State.

The server at the center of Cisco VXI is the Cisco Unified Computing System™ (UCS®), which combines compute, networking, storage access, and virtualization. “Because of the sheer amount of memory we can put into Cisco UCS servers, just two servers supported the first 160 virtual desktops, and we had room for more,” says Kraus. “When Cisco’s engineer showed us how quickly we could provision new servers, and the exponentially greater memory, it became clear that Cisco was at the front of the pack.” What’s more, the cost of the Cisco UCS was comparable to traditional servers.

Vol State needed to move quickly to have the new computer lab open for the new school term. Working with Presidio Networked Solutions, a Cisco Gold Certified Partner, Vol State implemented the Cisco VXI in January 2011 and conducted a pilot from March through June 2011. The lab opened on schedule.

The college increased the value of its investment in the Cisco UCS by also using it to host nearly all other campus learning and administrative applications, including Cisco Unified Communications and collaboration applications. Faculty and staff use Cisco Unified IP Phones 7900 Series, as well as Cisco Jabber™ software for instant messaging, group chat, and visual voicemail.

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— Brian Kraus, Director of Information Technology, Volunteer State Community College

Results
Cisco VXI is helping Vol State continue delivering high-quality educational services despite a decreased budget. And instead of investing time and money in maintaining desktop computers, the IT team can focus on its initiative to deliver instructional content to offsite learners.

Lower Total Cost of Ownership for Desktop Computing
Replacing laptops in computer labs with Cisco VXC 2212 endpoints decreased the cost of each desktop from US$1000 to $700, a result of:

- Lower hardware costs: Thin clients cost less than laptops.
- Lower management costs: With the Cisco VXI, deploying the first set of virtual desktops took less than two hours, compared to an estimated two days on the previous server platform.
- Lower energy costs: Cisco VXC endpoints receive power over Ethernet, and therefore do not need a separate power cable and outlet. What’s more, Cisco EnergyWise™ technology built into the switches automatically turns off the endpoints at specified times.
Increased Responsiveness to New Application Requests
At 7:00 a.m. on the first day of class, the Vol State mathematics department requested that the IT team install a new application in the student computer lab. The IT team was able to comply in one hour, not the estimated 30 hours needed on any other system, because they needed to install the application only once, on the Cisco UCS, instead of once on each desktop.

Desktop management overhead has also decreased. Instead of patching and upgrading applications and operating systems on every desktop, the IT department can make these changes centrally.

Foundation for Online Learning
Cisco VXI is also helping Vol State to move more classes to an online format, a valuable capability to serve a growing student population without new classroom construction. Previously, students had to come to campus to work with lab applications. “Now we can host lab applications in the cloud, on Cisco VXI with XenApp, and students can access the applications on personal devices,” says Kraus. “This is helping us make sure that online students get the same learning experience as onsite learners.”

Dependable Support
Vol State appreciates the dependable support from Cisco. “If we have issues, Cisco appears onsite right away and knows exactly who to contact to fix an issue,” Kraus says. “We’ve truly had overwhelming support.”

Next Steps
Vol State is currently replacing laptops in two other student labs with Cisco VXC 6215 endpoints, and is also planning to provide the endpoints to faculty and staff. Employees’ Cisco VXC endpoints will support high-quality campus voice and video services in addition to virtual desktops. “With our virtual desktop environment, faculty members who don’t have a course-specific application can use a shared resource instead of making a purchase themselves,” Kraus says. Storing course content centrally instead of on standalone laptops will also give the college more control over sensitive information such as test files and grades.

Another idea under consideration is allowing students and faculty members to work with their virtual desktops from personal laptops and tablets, supporting the Bring Your Own Device (BYOD) trend in higher education.

For More Information
Learn more about Cisco Desktop Virtualization and Cisco Virtualization Experience Infrastructure: http://www.cisco.com/go/vxi.
