New VCASTLE System Elevates Worldwide Learning into the Cloud

In recent years, students at ECPI University have utilized classroom computers and simulation software to access various types of operating systems and networking devices required to accomplish hands-on lab exercises. However, in many cases, they have not been able to work on lab assignments from home or outside school because the required equipment resided on those same pre-configured classroom computers.

To address this challenge, ECPI University has created one of the most advanced computer information systems laboratory platforms in the country. It's called the Virtualization, Cloud, and Storage Technology Learning Environment (VCASTLE) system and it has been designed to enhance the student experience by providing access to real equipment with built-in advanced operating system and networking lab exercises.

Using a private cloud topology coupled with the power of virtualization and storage, ECPI University leveraged this solution to also offer advanced CIS courses in Cloud computing, Virtualization, Storage Area Networks (SAN), Network Attached Storage (NAS), Disaster Recovery, and Enterprise Security in their latest cloud computing concentration. These world-class technologies and curriculum will be used to prepare the future generation of networking architects and security

administrators to manage the growing demand in cloud-based delivery and access networks across the globe.

The VCASTLE system is a combination of several technologies including NETLAB+, VMWare ESXi, Microsoft and Linux Client/Server, Cisco UCS, Routers/Switches, Adaptive Security Appliance Firewalls, and EMC Storage/Disaster Recovery Systems. The key to this advanced system is the NETLAB+ Appliance developed by Raleigh, North Carolina-based Network Development Group (NDG). It's used to design and configure complex CIS lab environments based on specific courses and make them available for students to schedule and access from anywhere in the world on a 24/7 basis. The other important component of the VCASTLE topology is the VMware Elastic Sky X integrated (ESXi) servers that give ECPI the capability to effectively leverage critical IT resources by simultaneously hosting and managing up to ten thousand virtual machines across a wide variety of CIS courses.

In order to access VCASTLE, the student simply logs into the device from a web browser and can schedule dates and times for lab access to their reserved equipment topologies. The greatest benefit in this scenario is that whatever the students configure on the equipment will be saved in a persistent environment throughout the duration of his/her class. With this

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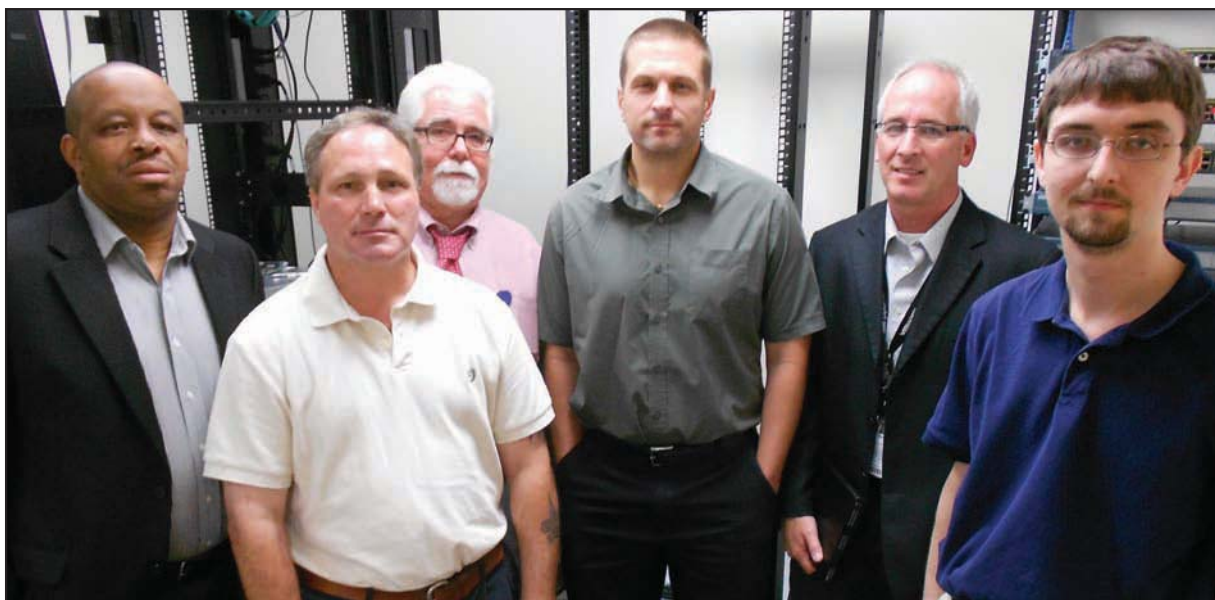
VCASTLE was developed through the joint design and development efforts of ECPI University Information Technology campus faculty and staff members, including IT Director Julian Aiken, VMWare Engineer Keric Mile, Virtualization Manager Chris Scotto, Virginia Beach Curriculum Dean Tom Trevethan, Newport News CDAA Tony Rufi, Online CDAA Lisa Dodson, and faculty members Larry Saccoia, Bill Harding, and Marcia Thompson