VBrick Distance Learning Application

Delivering Classes and Campus Events Live and On-Demand at the Naval Postgraduate School: Monterey, CA

Customer Overview

Established in 1909, the Naval Postgraduate School (NPS) provides unique, professional, military-relevant graduate education that meets the highest academic standards while responding to the dynamic educational and research needs of the Department of Defense (DoD), other federal agencies, and our international allies.

NPS develops new curricula, explores unique delivery methods and modifies its existing programs to meet the emerging requirements of the services. From its main campus, NPS reaches out to numerous off-campus locations and fleet concentration areas including Washington, D.C., Norfolk, Virginia, San Diego, California, and Annapolis, Maryland. NPS also offers executive education programs for U.S. and international students that prepare leaders to operate in a complex world.

Challenge

Develop a reliable and quality distance learning program using video streaming technology

In addition to its eighteen-hundred resident students, the Naval Post Graduate School serves a population of one thousand distance learning (DL) students that includes both military personnel and employees of military contractors. Over the next two to three years, the school plans to increase the number of its distance learning students to nearly 3000. Four years ago, the school realized some DL efficiencies when it moved from a video teleconferencing system to a streaming video system. But in order to meet its new ambitious growth goal, the school recently decided it needed to invest in a new streaming solution that offered more advanced features, including LDAP (Lightweight Directory Access Protocol) integration, password protection, support for multiple formats, and a dynamic portal.

Solution

An EtherneTV system designed to deliver live and stored video from classroom lectures to both on campus and remote students

The school's new streaming solution is centered around two VBrick portal servers—an internal server that serves those on the school's internal network and an external server that handles the needs of remotely-located distance learning students. These servers are the heart of the operation, where the students go to access the streams, and where the tools are that manage the video files and schedule the streams.

The portal servers are fed by seven dual encoder VBrick appliances located in the school's seven DL classrooms, and two mobile appliances, which are moved about campus to capture video of special events such as graduation and guest speakers. Each of the appliances, or bricks, encode the streams in MPEG- 4 and Windows Media (WM) format simultaneously, giving end-users the option of two formats from which to choose. Finally, a tenth dual MPEG-4 encoder broadcasts CNN and CSPAN over the school's IP network to internal users. This was a last-minute, unanticipated addition to the school's system configuration that saved the school from having to wire nearly 30 buildings on campus with coaxial cable.

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Case Study

In addition to sending live streams to the portal servers, the VBricks also send the video streams to a network video recorder, which records the streams and stores them on four VBrick VOD (Video on Demand) servers—two each in MPEG-4 and Window Media format. Two of the servers are located on the internal network, providing redundancy for the two located on the external network.

Benefit

NPS can now provide a quality education through live and on-demand video to its students-- regardless where they are located.

Students who use the system have praised its quality video resolution and faster buffering time. They also like that they can log into the system using the same network password they use to access their email, a capability made possible by VBrick's compatibility with the school's Active Directory infrastructure. Most important for users, however, is that they can now access the video in either MPEG-4 or WM format.

It was critical to have multiple video formats because it ensures that students can access the content regardless of what player installed on their computer. Because military computers are tightly locked down, it's not easy for military students to add a new player to their computer—they have to work with what's installed, which is usually Windows Media. At the same time there are many students from academia who use Linux-based systems. So providing multiple format offerings was key.

From an administrative viewpoint, the graphic look of the media player can be customized so that it feels like its part of the school's Web site. The system is all based on a Web GUI. It's easy to manipulate the system's folder structure, making it simple to schedule classes and name files. From a scheduling standpoint, a whole quarter's worth of courses can be recorded and no one has to touch it again.

The school now has a system that's easy to maintain, scalable in size, and can meet the need of any student regardless of where they are located, the type of computer they use, or their technical expertise. All critical benefits given the school's DL growth plans.

VBrick has also allowed increased flexibility of who can be accepted into the program. It takes away the barrier of a physical location so the school can now select the best and most qualified students regardless of the location of their current duty station. They are no longer limited to just major military bases in places like San Diego or Norfolk, but can go globally to reach the gas station in Maine, the aircraft carrier, or the student in Afghanistan.

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