EtherneTV In The Field

A Case Study Of One K-12's Bold New Media Deployment

VBrick Systems, Inc.

Video Communications & Media Retrieval

Desert Sands Unified School District is located in the Palm Springs area of Southern California. Currently there are 9 schools. There are a total of 15 new schools planned for construction between now and 2008. Visionary planners in the district management have foreseen the need for modern network connectivity. As a result of effective fundraising they have deployed a fiber backbone IP network with Gigabit Ethernet. Additionally, it is multicast capable so it inherently is ideal for voice, video and data traffic. The plan called for bold initiatives to increase literacy, teaching effectiveness and modernization with the use of new technologies. VBrick Systems with their integration partner Digital Networks Group provided the visual communications solution to achieve that goal.

High Quality Collaboration

To achieve this it was necessary for classrooms to broadcast lectures and labs to all other classrooms having access to a TV or projector. By sending analog video back to the NOC of each school it is now possible to stream the video over the district backbone as well as to any network node on the campus. This allows other schools to tune into the streaming class in real time. By allowing disparate locations to connect in this way over the district IP network it is now possible to carry on a point to point or multi-point collaboration using MPEG-2 video.

Video Archiving

By deploying the VBrick VBStar, our caching CoDec it is possible to simultaneously stream a multicast and record the event for later recall. The VBStar is configured to automatically save and then upload the recorded video to a centrally located Video On Demand server at the District Head-End. This way anyone who has missed the event or class can recall it from any room on any school campus within the district.

Unified Streaming Portal

EtherneTV was deployed to provide a single, unified look and feel to the content management and user experience. On either a PC or Set Top Box the user has the same experience. The controls and behaviors are the same

substantially reducing the learning curve.

The school district houses the MCS or Media Control Server in the District office next to the Video On Demand Server where content is stored. The MCS server provides the portal to any user that is authorized to access content. Web pages are provided that represent both live and archived streams accessible to the users on the network. EtherneTV provides secure authentication on a content and user basis via this server.

Video On Demand System

The NXG VOD server houses a large amount of MP1, MP2 or MP4 video files that can be accessed over the network at any time by numerous users. Each stream may be manipulated as a personal video recorder would allow giving fast-forward, fast-rewind, pause, play and stop functionality at the request of the person viewing. This can be done similarly on the TV Set Top Box interface as well as on a personal computer.

Live Scheduled Capture

A very important feature of a content management system is the ease at which users and system administrators can add new content. In the case of the school district it is now possible to user one of two methods:
1. Store and forward after hours
2. Live capture and immediate storage
The situation when either of these methods is chosen depends on the viewing preferences or urgency of the session. In either case a benefit of using VBStars allows for live streaming to multicast segments while real time capture and storage takes place. In the store and forward case, VBStar is responsible for FTP'ing the recorded file at a later time over to

the district head-end for ingestion to the VOD server. All of this is achieved via a single touch-screen button that records, stores, transfers and loads to the server. In the second case it is now very easy for the district to arrange a pre-scheduled operation that is accomplished in conjunction with the one-button recording method. The server can capture the stream live on the network and begin to save it in a holding area until it is complete at which time it automatically ingests or consumes the stream file along with the pre-arranged metadata into the server's database for future retrieval and trick play. (FF/REW)

Ease of Installation and Management

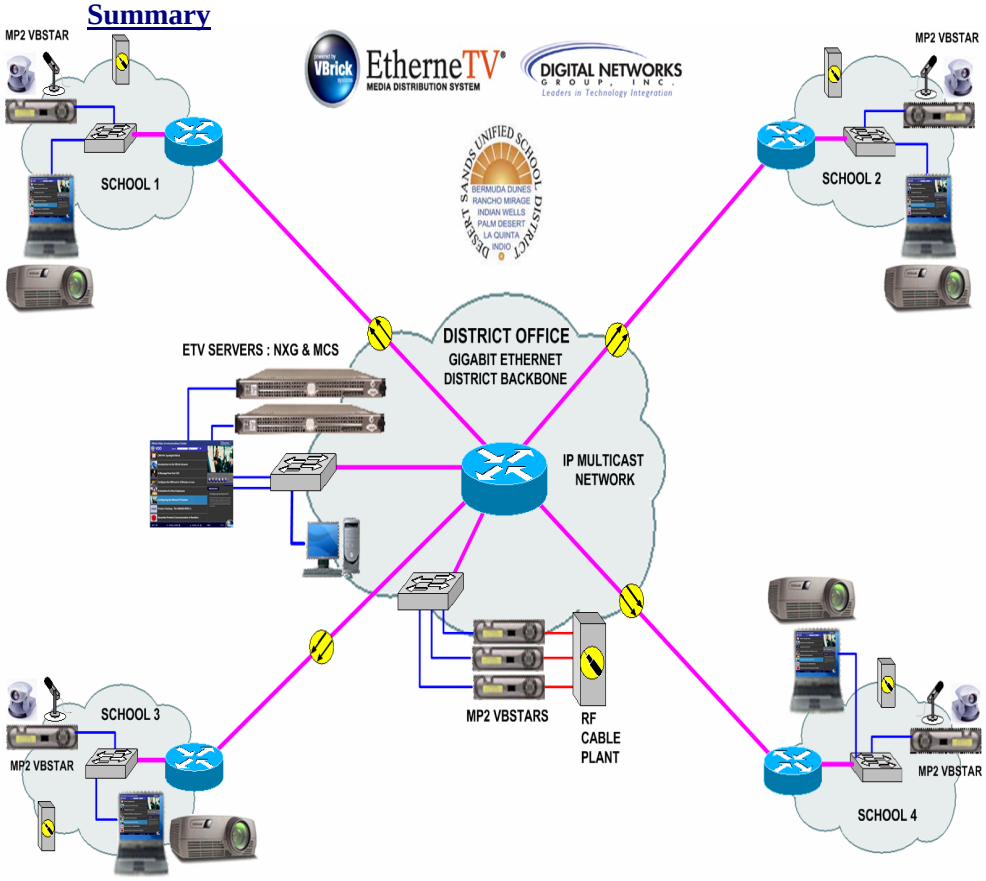
The system consisting of the components shown in the solution diagram was deployed over several days. The VBrick encoders and servers were all installed in a single day. Once the network was verified to be provisioned it was simply a matter of connecting and naming as well as assigning static IP addresses to the devices. Once this was done they all saw each other and began to interoperate as an EtherneTV Media Distribution System.

Viewing clients are automatically loaded on the end-user system once in order to create a plug-in or snap-in to the browser. Consequently, the administrator need not be concerned with a mass installation or SMS push.

Classroom Control System

Digital Networks Group designed a very elegant but simple control system based on the AMX Netlinx technology. With Infra-Red interfaces they were able to transmit teacher's button presses into sophisticated compound controls that were dispersed to all of the devices being controlled. The interface is both Web and touch-panel based to allow remote management and control of the room equipment.

Summary



In order for the school district to achieve the goals set forth in their charter whereby students and faculty can take advantage of the latest technology innovations it was necessary for them to acquire a standards-based video streaming technology that would grow and scale with their needs. Using MPEG-2 gave them the ability to, record, stream and archive video in the same way professional television and broadcasters do today. By deploying VBrick's VB6000 platform they are assured a hedge against obsolescence with our flexible and powerful, appliance-based encoding platform. The use and deployment of the new EtherneTV system was almost prescient on their part due to VBrick's constant exchange with end-users and partners to make sure we deliver exactly what people are dreaming of for their future systems. In this case we arrived at the perfect time.

VBrick systems, inc.