



Buena Vista University Bolsters Network Uptime and Security, Taking Back Control and Increasing Productivity

Extreme Networks® Ethernet Automatic Protection Switching (EAPS) Delivers Superior Resiliency While Universal Port Provides Control, Automation and Convenience that Saves Costs

Buena Vista University was founded by the Presbyterian Church in 1891 with the motto “Education for Service,” and is accredited by the North Central Association of Colleges and Schools. BVU enrolls approximately 1,300 students at its main campus in Storm Lake, Iowa, and an additional 1,500 students at 14 branch sites (BVU Centers) located throughout Iowa. The University also offers online courses.

The Need for Resiliency, Capacity and Security

By 2008, Buena Vista University’s network was eight years old, and a lot of its equipment was outdated and underperforming. While the University had the world’s first fully wirelessly accessible campus as early as 1999, it was obvious that the time had come to add more security, higher resiliency and more capacity.

According to David Boyer, Senior Network Administrator for Buena Vista University, “There was no single compelling reason to replace the network the last time we looked a few years ago, but in 2008, we knew we were going to be adding applications that would require higher capacity, more resilience and a fresher approach to security, including 802.11n.”

Extreme Networks Meets Specific Needs and More

BVU issued a Request for Information, received proposals from all of the leading network equipment vendors, and evaluated solutions from Alcatel/Lucent, Cisco, Enterasys, Extreme Networks, Foundry, Hewlett-Packard, and Nortel. The assessment and testing phase was thorough, lasting a full six months. With priority placed on network resiliency, security, capacity, and the ability to support the University’s Avaya Voice-over-IP (VoIP) solution, the choice came down to Extreme Networks.

Extreme Networks provided BVU with two BlackDiamond® 8810 switches for the core, 40 Summit® X450e Power over Ethernet (PoE) modular switches for the edge, and two Sentrant® NG appliances for threat detection. The network spans the entire distributed campus, which includes more than 30 buildings (eight of which are residence halls, and the rest of which are communications, recreation, administrative, and technology centers, as well as classroom buildings, science and art centers, libraries, etc.). Finally, Extreme Networks EPICenter® is used for comprehensive network management, simplifying configuration, troubleshooting and status monitoring, and it also allows the University to handle similar tasks for all switches at the same time, saving time and resources.

The Challenge

Buena Vista University needed to update its network to boost bandwidth capacity and resiliency and tighten security controls. Its network was outdated and the network was crashing, on average, every three months, causing students and staff to lose more than an hour in productivity.

The Solution

Extreme Networks provided a complete solution that would provide the reliability and performance required to support 24/7 traffic, including the University’s online student population, and scale to meet future growth and application demands.

The Benefits

- Extreme Networks EAPS ensures continuous network operation even in the event of a fiber ring outage or interruption. Instructors can now plan their curriculum any way they want because they know the network will be up.
- Modular architecture of the Extreme Networks equipment allows BVU to upgrade in increments, which helps contain costs and stretches ever-shrinking educational budgets.
- Extreme Networks Universal Port puts control into the University’s hands, allowing administrators to make changes directly to the switches and replicating changes across the entire network.

Universal Port Management Meets Budget Requirements

Boyer points to Universal Port, Extreme Networks distinctive management automation platform that greatly reduces the time to operate the network. Universal Port discovers devices such as phones and gaming consoles, authenticates users, and provisions key network services automatically and instantaneously. Universal Port provides a comprehensive, event-driven management framework on every switch spanning across the network edge, supporting every device connecting to it. Universal Port also leverages an open architecture supporting multi-vendor strategies, including the University's Avaya VoIP system.

"Universal Port puts the control into our hands to save us money," said Boyer. "Universal Port dynamically configures ports based on the devices plugged into them, which is a huge time savings. Also, it used to be that if we needed to make a change in the network, we'd have to wait for a vendor to make a change and send out scripts. Now if we have to address a virus, we can write our own scripts and make changes ourselves to the entire network. Extreme Networks has given us a great deal of control with Universal Port. I consider the strength of Universal Port to be the fact that it's whatever each institution needs it to be. I can adapt the behavior of a port to our specific needs rather than hoping a given feature eventually makes it into the hardware or software. That's huge."

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Another selling point for Extreme Networks was its modular architecture. "We love that we can upgrade the modules within each chassis without replacing the whole chassis," said Boyer. "It means we can replace things incrementally and spread upgrades out over budget cycles rather than having to do everything within a single budget cycle. That's a great selling point."

EAPS for Resiliency

One of the most important features of the solution, according to Boyer, was network recovery due to Extreme Networks EAPS. EAPS provides improved levels of fault tolerance for the University network, enabling sub-second ring recovery with continuous operation. This means that even in the event of a fiber ring or interruption, BVU's network is still in business and traffic can still get through via the failover ring, says Boyer. "No one else is doing anything like EAPS right now," he said.

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The technology was also the perfect fit for the University's VoIP solution since failover switching times of less than 50 milliseconds are achievable with EAPS, meaning services are recovered so quickly that it will not be noticed during a phone call. According to Boyer, "There was a noticeable drop in VoIP service with all the other gear [during testing]."

According to Boyer, "the University has had almost no unplanned service interruptions since installing the new gear, which means no calls for me at home when I'd rather be relaxing." While he says this jokingly, it is not without seriousness. "From a standpoint of administration, interruptions with the old network used to cost us quite a bit of productivity loss. Network outages would happen about once every 90 days and that would cost us at least an hour of downtime for the entire university, not to mention those students who take courses online. That's just not acceptable, and now it's not a worry. The network as it is now has earned everyone's trust, and instructors now make different assumptions about teaching, planning their curriculum any way they want because the network is up all the time."

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Future Ready

BVU relies on Extreme Networks Policy-based QoS capabilities for its VoIP system. The network can also easily meet the demands of other delay-sensitive applications with enforceable bandwidth and latency guarantees, and the University plans on taking advantage of these capabilities by deploying video streaming (in the case of live streaming of football games and graduations, for friends and relatives who cannot attend in person). The VoIP system will also be extended as will the wireless LAN. With the new network, these are all possible, and then some.

“We’re happy with our decision to go with Extreme Networks,” said Boyer. “It’s made everyone very happy, not least of all me and the other network support staff, as well as the helpdesk personnel. We just don’t get calls about the network anymore, so now we can focus most of our time on proactive projects.”



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