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*Andy Guerrero
 Security Manager
 Brocade*

Brocade

INDUSTRY Technology

SOLUTIONS **Modular Platform, Virtualization**
Hardware — Hitachi Adaptable Modular Storage 2100
Software — Hitachi Dynamic Provisioning
Services — Installation and support services provided by Hitachi Data Systems Global Solution Services



BROCADE

Brocade Selects Scalable, Reliable Hitachi Storage to Support Digital Surveillance Strategy for New Campus

The security department at Brocade wanted to modernize its surveillance equipment and strategy as the company consolidated several office locations onto one campus. To support best practices for online video storage and high-resolution digital cameras with 99.999 percent availability and seamless expansion, Brocade selected the Hitachi Adaptable Modular Storage (AMS) 2100.

Anywhere. Anytime. These words often conjure up the idea of how to access information, something Brocade supports very well as one of the world's premier data networking solution providers. Established in 1995 and headquartered in San Jose, California, Brocade has firmly wedged its way into the SAN industry with highly reliable solutions aimed at helping organizations converge and virtualize applications and information for anywhere access. Having recently acquired Foundry Networks, the Brocade portfolio also includes enterprise Ethernet switches, routers and application management products for end-to-end, core-to-edge networking infrastructure.

When Brocade decided to consolidate five San Jose area office locations and develop a purpose-built main campus, the focus was on sustainable design, energy efficiency and technology innovation. The blueprints included three office buildings totaling over half a million square

feet, a six-story parking facility and room to expand. Brocade's data center was being designed to leverage the company's own technologies and to harness greater availability and bandwidth while simplifying operations. For Brocade's security department, the time was right to capitalize on the consolidation and construction by pioneering a state-of-the-art video surveillance strategy that would be scalable, meet industry standards and take advantage of the data center infrastructure.

The Transition to IP-based Surveillance

Video surveillance is an integral part of any good security system, helping to protect and deter while gaining awareness and control. As Brocade began consolidating the separate office buildings in favor of the new campus, its security department was deciding what to do with its supply of 100 plus analog-based video cameras and seven digital video recorders used for surveillance at the old sites. The existing

inventory was not enough to cover new construction requirements. Also, the security team was managing point to point, from equipment purchases, configuration and installation to digital video recording, including running coaxial cable and power cords and establishing power sources. In the case of multistory buildings, installs could be extensive. Retaining a history of video activity meant that the security team was managing individual storage devices located in IT closets throughout the old buildings. Brocade did not have enough storage capacity to meet the industry guideline of 30-day retention.

To effectively transition from its analog camera environment, Andy Guerrero, Brocade security manager, began looking into IP cameras. This type of digital video camera is used for surveillance and can send and receive data via the computer network and the Internet. IP cameras offer higher resolution than analog video and a more cost-efficient way to manage visual information from any location, at any time.

"I was convinced that we could orchestrate a much more efficient and modern surveillance operation by letting go of what we'd been doing. When we were planning out the new campus, I wanted to partner with IT, which is quite frankly an innovation in the security business. Most security teams want control over everything from point to point. By moving to an IP camera network, I'm able to take advantage of the data center's redundancy and enterprise-class network, our IT department's expertise to manage my surveillance infrastructure and WAN connectivity to view video remotely," Guerrero says.



"Surveillance video is considered mission critical. Our Hitachi storage has five nines of availability and is part of the Brocade data center now, so video is available in real time, anytime."

Andy Guerrero
Security Manager
Brocade

He estimated an initial purchase of 130 high-resolution IP cameras and three servers to adequately provide surveillance across the campus buildings and parking garage. The high-resolution cameras require more storage than analog cameras. Since Guerrero also had a goal to institute best practices for retaining high-resolution video history for 30 days, he began estimating new storage requirements.

“In the surveillance industry, there are formulas to determine how much storage is needed for digital cameras. Initially, we needed to support 64 IP cameras per server with up to 10TB of storage. We have three servers, so we’re talking 30TB of readily available, easily scalable storage. Our IT department recommended the Hitachi AMS 2100,” he says.

Mission-critical Support with Hitachi Storage

Brocade selected an IP camera surveillance strategy to manage the new campus that included the Hitachi Adaptable Modular Storage 2100 for primary storage. Designed for cost-effective data growth, the AMS 2100 dynamically responds to changes in the storage environment with data-in-place upgrades and the ability to scale capacity, performance and connectivity. This highly resilient enterprise-class system uses its dynamic load balancing and symmetric active-active controller features to automatically balance workloads across both controllers and eliminate bottlenecks. The system’s SAS architecture enables simultaneous sending and receiving of data or commands along the same link. And Hitachi Dynamic Provisioning helps simplify data movement and eliminates application service interruptions. The AMS 2100 relies on RAID-6, double parity, data protection and 99.999 percent availability, with no single point of failure and mirrored cache with battery backup.

“These capabilities distinctively support our goals to manage, protect and access security activity. Surveillance video is considered mission critical. Our Hitachi storage has five nines of availability and is

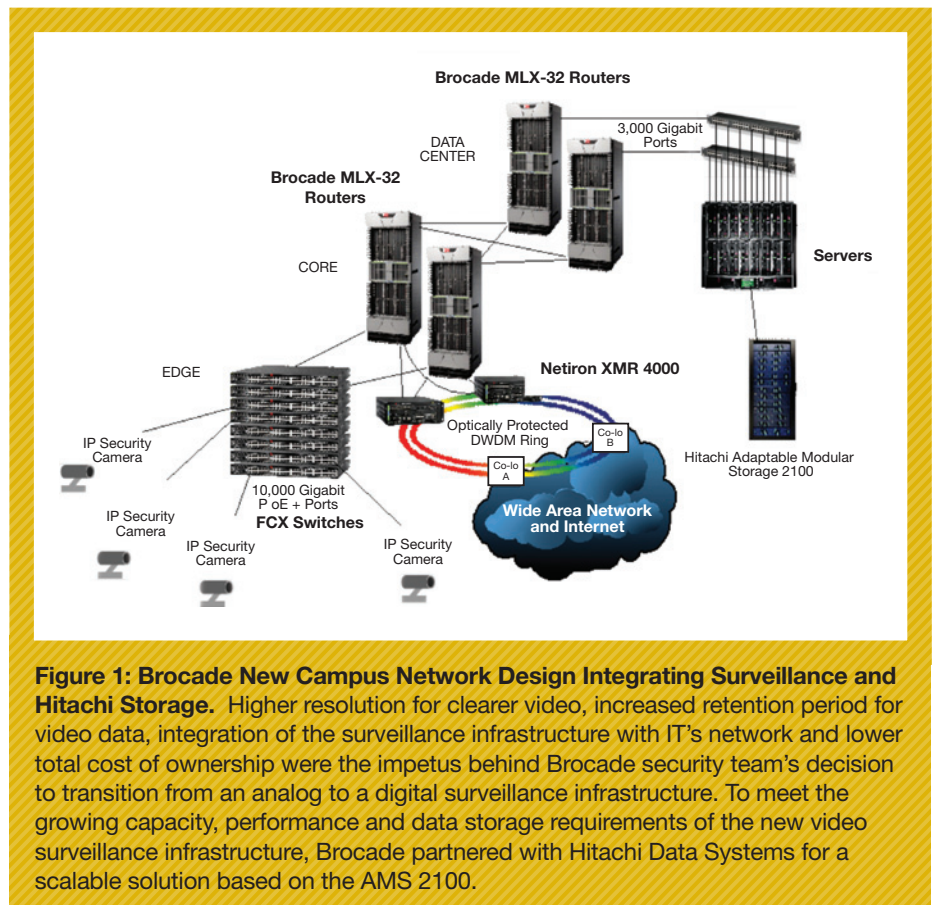


Figure 1: Brocade New Campus Network Design Integrating Surveillance and Hitachi Storage. Higher resolution for clearer video, increased retention period for video data, integration of the surveillance infrastructure with IT’s network and lower total cost of ownership were the impetus behind Brocade security team’s decision to transition from an analog to a digital surveillance infrastructure. To meet the growing capacity, performance and data storage requirements of the new video surveillance infrastructure, Brocade partnered with Hitachi Data Systems for a scalable solution based on the AMS 2100.

part of the Brocade data center now, so video is available in real time, anytime,” Guerrero says.

The AMS 2100 is located in the campus data center and connects to core SAN infrastructure via blade servers. Hitachi Data Systems Global Solution Services installed the AMS 2100 and is providing system support to the Brocade IT department.

As part of the core infrastructure, the data center uses Brocade MLX-32 Routers to support greater traffic, virtualization and surveillance requirements. For edge infrastructure, the IT department placed a Brocade FCX Series switch in each data closet, one on each floor of each building, for a total of 10,000 Gigabit PoE (Power over Ethernet) ports across campus. The Brocade FCX Series switches use Gigabit PoE ports to help power IP cameras and

other edge devices, such as user computers, VoIP (voice over IP) desk phones and security panels that handle employee badge access. The PoE technology runs on Cat-6a cables to facilitate safe and fast data movement along the Ethernet lines. The switches connect to edge Brocade MLX-32 Routers in each building, which then link to the data center.

“Essentially, I am a customer of my own IT department. As that customer, I feel confident that I now have the right storage equipment to support security goals and future expansion needs.” Guerrero explains. “And by shifting to this model of partnership with IT, I’m able to take advantage of the tools, capacity, expertise, reliability — all of that and more — without having to worry about whether or not my stuff is being backed up and safeguarded.”

Easy, Cost-efficient Storage Expansion

Since implementing the IP camera network, Brocade has been operating a comprehensive and cost-efficient security program.

“Now we have an entirely different way to approach and support security. The IP camera network affords us active viewing and access control in real time. Real time visibility helps facilitate real time issue resolution. And having the ability to house 30 days of video history on highly available Hitachi storage means we can quickly bring up and view after-the-fact incidents,” Guerrero says.

When Brocade consolidated from its five locations to one, Guerrero was able to save the company approximately US\$75,000 in installation costs by implementing the IP surveillance network and partnering with the data center. The savings will continue even as Guerrero expands the base security package to include additional IP cameras and surveillance equipment. “More cameras

mean more video history to store. That’s why we configured the AMS 2100 with the high density storage expansion tray that can hold up to 48 disks for extra support of capacity growth,” he explains.

Reflecting on how life has changed since Brocade security department implemented its IP surveillance network on campus, Guerrero concludes, “There’s no need for convoluted cabling anymore, no running out to buy storage disks every time we need to add more cameras. We’ve gone from [a] very involved, intricate configuration and installation to simple, straightforward and secure. The surveillance runs on the same network as my phone and my computer. What’s great is that I don’t have to be an expert in networking or data center management, but I have access to excellent support, excellent infrastructure, and I have storage that is reliable and scalable to take me forward. It’s all much higher end than anything I could have done on my own.”

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