Quantum

Security Integrator Finds High-Performance, High-Density Video Upgrade Solution for Eastland Shopping Center

When a leading security integrator tried to help Eastland shopping center upgrade its video surveillance system, they were quickly overwhelmed by the massive amount of data being captured, analyzed, and stored. The answer turned out to be a combination of open-platform solutions from Axis Communications, Milestone Systems, and Quantum. The new system provides the coverage the customer needs, supports enhanced analytics, and fits neatly into the shopping center's existing data center—all while meeting tight budget constraints.

PMT SECURITY SYSTEMS

ANIXTER

EASTLAND

FEATURED PRODUCTS

StorNext

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>
> **Daniel McMahon**
> Project manager, PMT

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PMT SECURITY SYSTEMS

SOLUTION OVERVIEW

- Quantum M440 appliance powered by StorNext® 5 software
- StorNext QXS™-5600 disk, 1PB
- Axis Communications IP cameras
- Milestone Systems VMS software
- RetailNext Analytics software

KEY BENEFITS

- Open-systems solution provides maximum combination of flexibility and value for the life of the system
- Collaborative design and installation approach between key partners provides easy deployment in a wide range of settings
- Combination of high-streaming performance and high-density video supports new higher-resolution system upgrades using existing data centers
- Proven interoperability between solutions ensures easy installation and long-term, trouble-free operation

Australian security integrator PMT Security Systems was faced with a difficult problem for one of its customers, a large shopping center undergoing major renovation and refurbishment of everything from décor to video surveillance systems. The company that managed Eastland Shopping Center wanted to upgrade to the latest state-of-the-art video monitoring and analytics systems, but was having trouble finding a solution that would fit Eastland's budget and the space in its data center.

The old system used a combination of roughly 300 analog and low-resolution digital cameras, and kept the data for two weeks. It was used primarily for monitoring current activity in the major public areas, so the network, storage systems, and data center were all designed with that load in mind. But, the customer wanted to make the new system perform on an entirely different level.

"They wanted to cover more areas and have much higher-resolution images to make identification of activities and individuals much more specific and reliable," explains Darren Taylor, managing director at PMT Security Systems. "And they wanted to roll out newer technology with the capability of turning security images into a tool for making better business decisions for Eastland and its tenants."

EXPANDED CAPABILITIES CREATE CRISIS FOR EXISTING DATA CENTER

To provide more coverage, more cameras would be needed—about 600 to start. The new system needed to provide higher-resolution images, and the data needed to be retained for a much longer period of time—a full 90 days. The software had to provide additional levels of recognition, tracking, and analysis. The new solution also had to fit the customer's budget, and the space in their existing data center.

"The extra resolution, additional cameras, and longer retention were essential to giving the analytics software the data to provide an additional layer of business intelligence," explains Daniel McMahon, project manager at PMT. "Video analytics have come a long, long way in the last few years. The best give good

approximations of demographics for people visiting the location, including age and gender, and overlay that data with behavior patterns, so businesses can see where customers stop—at what displays or stores they spend the most time. It's a potentially powerful tool for helping retailers do a better job of serving their customers, but it takes a lot of data to make it work. It meant upgrading from relatively simple video appliances to a full-blown enterprise-scale network and storage system."

"We looked at solutions from literally everybody in the storage and surveillance market," adds Jack Caponnetto, operations manager at PMT. "And we eventually found a solution set combining technology from several different vendors that solved all the problems neatly and worked together seamlessly."

THE AXIS, MILESTONE, QUANTUM SOLUTION

PMT came to Anixter, the leading global provider of security products, seeking a solution that met the performance and site requirements of Eastland Shopping Center: a high-resolution, scalable solution that would meet the growth required as Eastland completed phase 1 of redevelopment and continually added cameras through phase 2 and 3 in the coming years. This solution was the combination of Axis Communications cameras, Milestone VMS, and Quantum storage.

"Axis provides premium IP cameras with the range of resolutions that we needed for different applications," Caponnetto notes. "They offer pan, tilt, and zoom, protected dome mounting for areas needing that feature, and they do an incredible job of pinpoint autofocusing—even in really challenging light conditions."

The team chose Milestone Systems for video management software (VMS), and RetailNext for business analytics software. "Milestone is really the best choice we found for managing the network and all the pieces, and making sure that everything came together," says project manager McMahon. "RetailNext gives end users what is probably the most advanced set of point-of-sale, big-data analytics on the market. Both

Milestone and RetailNext work together via open architecture APIs to provide maximum flexibility and value over time."

STORAGE REQUIREMENTS THREATEN TO SWAMP EXISTING DATA CENTER

All of the data from the cameras, however, substantially increased storage requirements. "We could see immediately that we were going to have a full 600TB of data when the system rolled out. And that it would increase over time when we added more cameras to more areas of the shopping center," says Taylor. "And the data needed to be able to be streamed to the disk at an incredibly high rate."

Surveillance systems have unusual storage requirements that can be particularly challenging. "Data is ingested around the clock from many different sources at the same time, so a system needs to have very high input performance," explains Simon Vagg, systems engineer at PMT Security Systems. "But once the data is set, it has unusually low I/O requirements." Files are written off to portable storage if a file is needed for an investigation, and the analytics software moves metadata to separate servers. But neither of those activities put a heavy I/O load on the disk. The team looked at storage products designed for general-purpose IT environments, but discovered they would be expensive and more complex, which would lengthen the project timeline and delay the rollout of more cameras and features.

STORNEXT SOLUTIONS STORE A PETABYTE IN EIGHT RACK UNITS

"The very best solution that we found for the storage side of our solutions was Quantum's StorNext software and QXS-5600 disk," says McMahon. "The StorNext M440 appliance is easy to install and maintain. And its StorNext 5 software includes a high-performance file system specifically designed for video applications, so it writes data over many parallel streams for maximum performance."

The QXS disk, besides providing cost-effective capacity, works with StorNext to provide very

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ABOUT PMT SECURITY SYSTEMS

PMT is a wholly Australian-owned company that provides a complete spectrum of customized and developed security solutions. The company supplies, installs, and maintains state-of-the-art security and data solutions across a wide range of commercial applications, including retail, commercial, government, hospital, educational, industrial, and small business sites. It offers a complete range of design, installation, and commissioning for all of the elements for integrated electronic security systems.

high-streaming performance, industry-leading density, and easy data retrieval through the VMS—all features that are critical in many security applications.

"With the StorNext solution, we were able to design a system that packed a full petabyte of capacity into only eight rack units. It gave us a combination of cost savings and simplified installation that let us pull the schedule in and give our customer more of what they wanted much faster," says Caponnetto. "We couldn't find any other storage solution that even came close. It was the key to making the new system work for the upgrade."

In the new system, data is streamed from the 600 Axis IP cameras to the QXS-5600 storage through the StorNext software under the control of the Milestone VMS solution. Data is written from the disk to the RetailNext server for analysis and to portable storage when files have to be retained or viewed in a third-party security setting.

"We have implemented the system. It is up and running, and it has been flawless," says Taylor.

COLLABORATIVE APPROACH DELIVERS PERFORMANCE, RELIABILITY, AND VALUE

Just as important to PMT and the customer as the individual pieces of the solution is the fact that all the pieces work together easily in an open architecture, the companies' support teams can collaborate effectively, and additional storage can be added easily as more data is created.

"As we add more cameras and higher-resolution formats, we can see a future need for even more capacity," says McMahon. "We like the fact that StorNext gives us the option of integrating a very high-capacity, very low-cost tape archive to handle all that data.

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"There are lots of people that say they can work well with others, but it really is true for Axis, Milestone, and Quantum—the three key foundations of this solution," says McMahon. "We had cooperation from all the partners during the whole process. Once the system was up and running, it took almost no admin time at all—that is incredibly important for retail settings, which typically have limited IT resources. We have been so happy with this solution that we have already proposed it to several more customers. We plan to make it the standard solution that we recommend."

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