

What's in store for storage?

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Manufacturers will do more for you and discs will stop spinning—or disappear altogether

Human resources databases? Web sites? Video game systems? Sure, they all need data storage, but they require little thimbles full in comparison to the vast oceans required by large video surveillance systems. It's no wonder, then, that storage manufacturers are coming out of the woodwork to serve the security industry, all of them eager to sell you petabytes of storage at varying costs.

Some understand video more than others, however, and some understand security better than others. How specialized is what they do for security? Or are they just pointing their marketing arm in a different direction and buying booths at different trade shows?

One way to judge a company's commitment to the market is by their partner program—How many camera makers and software developers have they worked with to make sure of interoperability? How formal is that program? Who's in it? Just the big boys or some of the smaller, more specialized companies you might need to turn to for special situations?

"A company should ask, what applications have you been certified with," said Jeff Whitney, VP of sales and marketing with Intransa. "And they'll come back with 'Oracle' or 'VMware,' and they don't know anything about security. Then you realize that it's just IT being sold into security, and it hasn't been certified or tested with the other products you're installing."

"Working with surveillance," agreed Lee Caswell, VP of sales and marketing for Pivot3, "there's a really different mix of server-to-storage needs. It turns out you have a lot of storage relative to the computing resources you need. It's actually really different than a classic IT environment."

In classic IT cases, for example, you might have 60 applications all pointing toward just one terabyte of storage. In surveillance, you might have only one or two applications pointing toward one petabyte of storage. Further, while those 60 applications in the IT environment are constantly writing and reading over and over again, usually for surveillance it's write, write, write all the time.

"You're writing 98 percent of the time, reading two percent of the time," noted Dale Gigandet, director of business development for Xtralis.

So, storage that isn't optimized for that kind of work may not perform as well, agreed just about everyone interviewed by Security Systems News.

Further, they said, your storage needs to be flexible and scalable. Many surveillance systems start relatively small, with a few cameras, then, once the ROI is proven, or the concept is obviously correct, the projects expand rapidly, with the addition of many more cameras and disparate systems.

"Being able to expand it on the fly, and take out the risk of being wrong in the field, is very important," said Caswell. "Instead of over-provisioning, buying more than you need to start with and hoping they're not wrong about the eventual size of the system, you can buy just what you need at the time and expand appropriately later."

Can the company you're working with quickly and easily expand the amount of storage available to the video system? That's becoming more and more likely.

These storage companies are also increasingly cutting out the middle man—the server manufacturer.

"People don't want to have multiple layers of hardware," explained Ravi Pendekanti, vice president of business development and solutions for Overland Storage, one of the newer entrants in the video surveillance marketplace, but with a long history in storage. "It's great if you can go straight to the NVR, rather than hop across different PCs."

For a while when IP came to video surveillance, everyone talked about how great it would be to be able to just port video management systems onto Dell servers, but who wants to use off-the-shelf Dell servers for a security system that needs near-100-percent uptime? Wouldn't you like to eliminate that server altogether?

For smaller systems, for example, Intransa has begun selling its video-optimized storage with video management software pre-installed, so you can plug it in and nearly immediately be ready to discover cameras and get your end user using the system, and the company continues to increase the number of software types that can come pre-installed, so you can choose your favorite flavor.

"It saves money for the integrator," Whitney said, "because it's pre-installed and you don't need to waste labor hours on that." Also, he said, because it's rack-mounted and a relatively small appliance, it's good for the light commercial applications that are a fast-growing piece of the market.

Going toward a larger system, Pivot3's option may not come pre-installed, but "we're going to apply server virtualization in the IP SAN," Caswell said, "and by doing that, now we can consolidate the servers and run them in the same hardware that used to require an external server."

With storage taking up some 30 to 50 percent of an IP surveillance project's budget, any pieces that can be eliminated are important.

"Cold" and solid state storage

One of the other major new trends in storage is the move to get away from the classic spinning-disc drive. One "green" solution being offered in the marketplace is sometimes called "cold" storage, where discs that are not in use actually power down and stop spinning, therefore using less energy and causing less wear and tear on the machine.

"Look at a casino," said Xtralis' Gigandet, "you've got a lot of video, and how much of it are you ever looking at any given time? The archiving piece of this is that you can pull the discs out, put them on the shelf, and then put them back in and do the searching. At any one time, you only have one or two discs spinning; one spins down as the other spins up." As with RAID storage, there are fail-safe features and redundancy built in so that data isn't lost with a damaged disc. But the idea is that fewer discs will be damaged.

"Consistently spinning is the problem with traditional systems," Gigandet said. "The hard discs are the point of failure."

Caswell is a little skeptical. "It's a little scary, mechanically speaking," he said, saying that the start-up of the disc is a point of failure. And if you're not planning on viewing video very often, why not just burn it to DVD? "That's extremely green," he joked. "You don't have to power anything."

But what if you don't have spinning discs at all? Solid state storage, like that storage you find on thumb drives, is starting to become inexpensive enough to consider for surveillance systems.

For some pieces of the security system, it's a no-brainer. For instance, S2 security just introduced completely solid-state appliances that run access and video software. "When we first started," said John Moss, S2's CEO, "it was pure flash memory, like compact flash cards, but it took a long time to write to them. Recently we've gotten into SSDs, solid state discs. They are direct replacements for moving discs and they run at comparable speeds to moving discs, so by using those, we get the speed advantages of the hard disc, but the solid state advantage of the solid state. It costs a little more per gigabyte, but we're pretty miserly with our memory usage."

Of course, the same cannot be said for video surveillance systems. That little extra per gigabyte adds up when you're using a million gigabytes.