STORAGE SWITZERLAND BRIEFING REPORT

TIMESIGHT SYSTEMS VIDEO SURVEILLANCE DATA DILEMMA

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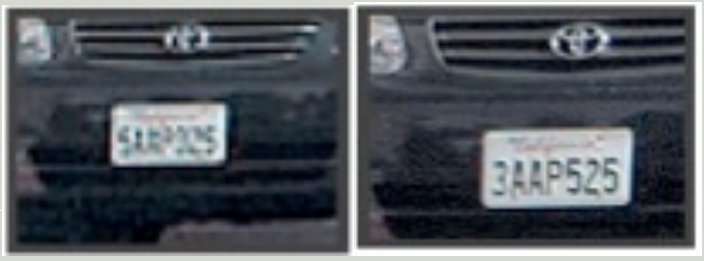
The storage of video surveillance data is now the storage manager's problem, not security's problem. What has caused this change? Significantly easier deployment, significantly better integration to IT storage and significantly higher resolution. These three factors lead to a massive increase in the number of cameras being deployed, where that storage is coming from and how much capacity these images require. Now the surveillance team wants the storage team involved.

The first factor in ease of deployment is coming from IP based cameras that can send video information over a standard Ethernet network, or even a WiFi connection. That means mounting a camera and "connecting" it to storage is as simple as knowing its IP address. With power over Ethernet (POE), no separate power has to be run, and with WiFi no cables to run to highly customized storage interfaces. As a result cameras proliferate because every angle of a facility can be monitored; more cameras means more data.

The second factor is this data can essentially be consolidated on standard ITstorage, versus the "DVR farms" that sprung up over the past decade. Integration of the camera to IT is no more difficult than adding another user. These cameras are essentially "users" that produce data all 24 hours per day.

The third factor is that these cameras are able to produce much higher resolution images than in the past and these higher resolution captures can be utilized by software programs to recognize faces, license plates or other pertinent information. Technology commoditization has absolutely changed the equation of how much it costs for this better data, with the cost of high-resolution IP cameras plummeting to a fraction of the cost they were a few years ago. The value of these images is best documented here. The first picture is an image taken at CIF 320x240 resolution. The second is a 2.0 Megapixel resolution. The difference is one image has value the other is worthless.



These higher resolution images come at the expense of storage capacity. To attempt to address this problem, the industry had developed Record On Motion (ROM) solutions that only record video when there is thought to be motion within view of the camera. That means if there is only motion 40% of the time you will see a reduction of 60% of the storage required. The problem is this then only records events when something happens, sometimes in a legal case you need to prove that something didn't happen. You need the ability to produce evidence that during a certain point of the day everything was normal, or you need to provide context that there was definitively no action leading up to an event in question. With ROM solutions you didn't record that.

These two issues – exploding storage requirements and the 'gaps in visibility' created when trying to save storage costs - is where TimeSight Systems' solution comes in. This system, designed for the IP camera generation, provides a massively scalable, highly available solution that can reduce the size of stored video data over time according to customer-defined business rules. By optimizing video storage it allows for months of video on days of storage, freeing up 50% - 90% of the storage otherwise required.

The TimeSight solution employs Video LifeCycle Management (VLM), which is the practice of compressing video data over time as it ages, becomes less valuable, and less relevant to the business. In essence, it realizes the 'time value of video'; video is very important in the hours/days surrounding initial capture. However, time mitigates risk; as time goes by and nothing bad happens, the value of that video decreases, as the risk periods are passed.

Customers move from an 'acute risk' period protecting against events such as violent crime and theft (which are immediately made known), to more moderate risk events such as employee theft, workmen's comp claims, etc. (which tend to be discovered weeks later), to lower risk events such as slip-and-fall claims which are often filed weeks/months later. Taking a cue from the datacenter storage philosophy of ILM (which makes things cheaper to store as they get older and less relevant), the TimeSight solution applies increasing levels of compression to stored video through a dynamic, rules-based video encoding engine. This means that a user can set 'rules' that video from one type of camera should be stored at a certain compression level for 'x' days, a deeper compression level for 'y' days, and an even deeper compression level for 'z' days, all the while making the video footprint smaller and smaller and smaller as it ages. The result: much less storage required, and the opportunity to retain that video to cover the user's risk much longer.

To address the motion/non-motion dynamic, the TimeSight network video recorders with Motion Optimized Recoding (MORe) understand that recording no motion may be as important as motion when mitigating risk. The MORe technology allows rules to be set governing the storage settings for non-motion oriented data differently than motion-oriented data. So, in the event that the system detects no motion, those video frames are stored at a much higher compression rate (up to 90% smaller than standard) and much lower frame rates (possibly one frame per second versus a standard fifteen frames per second), allowing non-motion video to be stored with up to 98% savings. The user gets a time-stamped video of each second of each minute of each day, yet without paying the storage penalty; statistically, it's free!

MORe enables organizations to store all motion and non-motion video at the appropriate quality and retention at far less storage than recording on motion only. The result: elimination of video security gaps with up to 90% storage savings.

These appliances can be integrated into almost any storage platform allowing traditional storage suppliers that you use in the rest of your data center to offer this solution. This is ideal for the IT Storage Manager since it allow them to avoid having to support a new platform solely focused on video which is most likely a storage platform with similar but not as effective types of video optimization as a TimeSight combination.

TimeSight is something that both IT teams as well as storage manufacturers should explore to help store this important data without making the job of managing that data outweigh its benefits.