

Next Generation Solution for Video Surveillance

In the past decade, digital video and integrated access control and alarm monitoring solutions have turned surveillance systems into powerful tools that can not only help identify, tag and compile surveillance information that even the most eagle-eyed guard might have missed, but also assist in monitoring facility status and employee productivity from any point in the world. With the addition of modern intelligent video analytics and data tools, surveillance footage and security data can be mined for business insights, allowing businesses to identify retail hotspots and friction points.

With these developments, it is apparent that security and surveillance resources and storage need to be managed just like any other sensitive, mission critical data. Even apart from cyber-security concerns, modern privacy and security statutes mean that surveillance data must be securely archived for extended periods. The adoption of higher resolution video and body-worn cameras will also require more storage than ever. Extended storage, quick retrieval, and high processing power are all required to glean useful insights from surveillance data, while functionality enhancements such as access control and alarm monitoring require specialized applications.

Promise VSky Solutions are designed to bring Security and IT together, merging IT best-practices and the benefits of Hyper-converged infrastructure with modern surveillance solutions available today to meet the needs of modern businesses.

Scalability and Flexibility

Security and surveillance needs will grow as your business scales. For surveillance the Hyper-converged VSkyCube solution removes a major barrier to system expansion by allowing effortless scaling as demand for either or both compute and storage capacity surge.

For example adding one 1 Megapixel resolution camera at 15FPS can easily generate 10 GB per day of storage (50% static frames, 10% high-motion). Once redundancy is figured-in, almost 0.5 TB is required to store video from this camera for 30 days. In certain cases, where the business may desire to store video for longer period of time (such as 2 years to cover the a statute of limitations for personal injury), storage space required can easily balloon to 4TB - an entire drive- even if the camera is only running during business hours. In traditional NVR or VMS setups, this would require the capacity to be pre-reserved (meaning increased CapEx) or would require expensive planning and/or downtime to add additional storage to the existing system (increasing OpEx).

With VSkyCube Solutions adding additional capacity is as simple as adding additional drives or adding another VSkyCube Node to the system. Node and volume expansion occurs quickly and transparently allowing your surveillance solution to change with updated requirements. The same VSkyView application continues to be the single management point for the entire system. With 3-bay to more than 70-bay appliances available, storage capacity can be procured and expanded to seamlessly meet updated data-retention requirements, increased video quality resolution frame-rate, or just to add more cameras or physical security hardware. And with up to 4 compute nodes on a single chassis, providing computing capacity to perform even the most complex Video Analytics and data mining.

Resiliency and Availability

As surveillance demands ever higher volumes of data, the potential impact of system or disk failures becomes a larger risk. VSkyCube Hyper-converged solutions can distribute data over multiple nodes or disks, and if necessary even apply both RAID and RAIN for maximum protection. Security workloads can be migrated quickly between nodes, assuring that single node failures do not bring down the entire security system. This also allows for online hardware maintenance without having to shut down the entire system.

In the event of a hardware failure or a major catastrophic event affecting the entire datacenter locally, Promise VSkyMotion allows for the entire VMS solution to be backed up or even migrated to run at another geographic location, providing Disaster recovery or data retention capabilities that would otherwise only be supported by top-of-the line VMS structures or expensive customizations. VSkyMotion also allows workload migration to AWS public cloud, allowing the security system to respond to higher workloads automatically or even run as a cloud service if necessary.

These inherent benefits in system performance, data availability, and ultimately the integrity of a surveillance solution assure that both current and archived security data will be quickly available for immediate response, investigations and ultimately, use as evidence.

Commonality

Promise VSkyCube solutions help companies consolidate their surveillance and security ops on the same enterprise-grade platform as your other business processes. Instead of the siloed infrastructure common with traditional NVR or VMS-server-storage setups, a VSkyCube solution helps integrate security into your existing IT platform, eliminating overlapping CAPEX and OPEX costs.

With advanced workload migration capabilities, VSkyCube based solutions can also help migrate existing platforms. Using VSkyStor a VSkyCube appliance can be used first as a secure, accessible secondary storage for existing sites. Once existing hardware reaches the end of its useful life, the VSkyMotion workload migration application can help migrate your entire system, along with customizations directly onto the VSkyCube platform and take over, providing a clear upgrade path for future expansion.

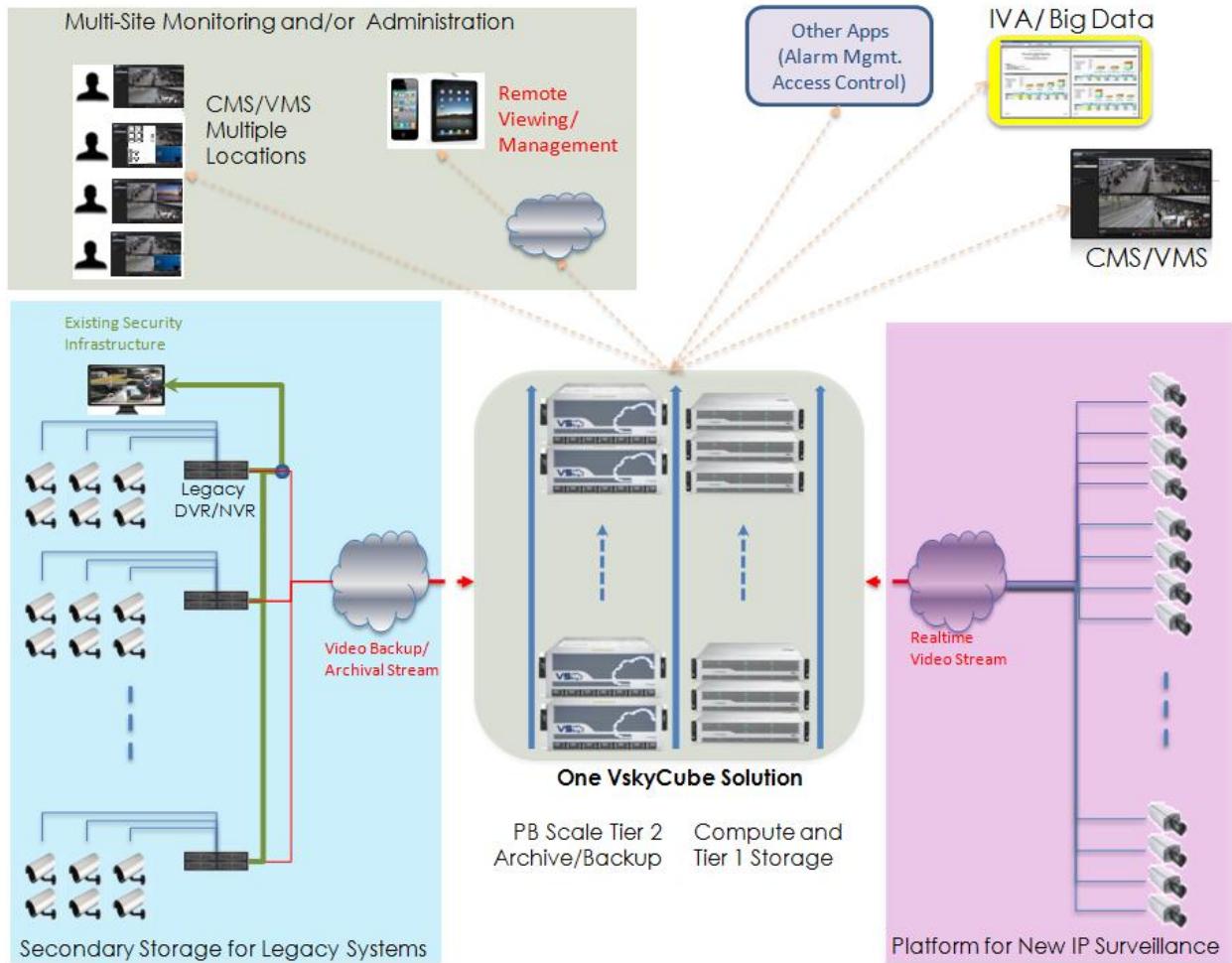
Mobility

Promise VSkyCube solutions enable access to secure, centralized video management and viewing without the need to be tied down to a single locations, and open up numerous use cases that would otherwise be impossible or require lengthy configuration and expensive client devices. The VSkyCube virtual desktop capabilities allow security personnel the freedom to manage their systems from both on-site and remote locations using the exact same interface, and also offer the same Client choices for security-monitoring are also greatly expanded offering access to VMS through mobile devices as well as existing computers and thin clients.

Affordability

All these advantages lead to one result - lower total cost of ownership. By pooling and efficiently allocating resources to reduce upfront costs, consolidating infrastructure into a common platform to cut recurring management and maintenance costs, and providing simple linear scalability and workload portability to save expansion and eventually replacement costs , Promise VSkyCube hyper-converged solutions provide cost-effectiveness throughout the life-cycle of your surveillance and security solution.

Use cases:



Secondary Storage for Existing Security Setups

VSkyCube based solutions can serve as Secondary storage site for video data. For users with existing equipment in the form of NVRs or DVRs, or even previous generation VMS, a VSkyCube with VSkyStor can act as a scale-out storage space.

- Allows existing systems to meet evolving customer and regulatory data retention requirements.
- Supports hundreds of 2MP equivalent cameras on a single VSkyStor NAS head cluster, linearly scalable to thousands of cameras with additional clusters.
- Centralizes video data and provides secure and resilient archival.
- Flexible to adapt to future requirements such as longer retention periods or additional cameras added to the system.
- Can in conjunction with VMS running on VSkyCube platform.

- Provides a predictable upgrade path. Businesses can move to using VSkyCube as primary storage as existing equipment fails.

Multi-Site Management

Remote Monitoring: With VSkyPoint VDI, the VSkyCube can deliver VMS/Video Playback clients wherever they are needed.

- Full-powered, customized, clients can be delivered to any location which can access the VSkyCube, even mobile devices.
- Ability to customize client software extensively for each security role or even individual personnel enhances surveillance and security efficiency. Personnel are no longer tied to a single point.
- Supports rapid deployment of monitoring to multiple points. For example the same client setup can be deployed to the lobby during business hours, then move to a guardhouse in the evening.
- Display can be performed in multiple locations without lengthy setup. Follow the user instead of user follow the device.

Platform for New VMS

The computation, networking and storage flexibility of VSkyCube solutions allows a VMS and any associated functions, as well as storage to be wholly contained in the VSkyCube based solution.

- Centralizes video data and provides secure and resilient archival.
- Flexible to add additional VMS compute power and storage to handle additional cameras or future requirements.
- Capability to easily add IVA functions and additional security features such as access control, alarm and visitor management without separate infrastructure requirements.

Local and Multi-Site Data Protection

In surveillance and security, even a small amount of data loss or corruption can mean the difference between catching an illegal act and missing it altogether. The challenge of surveillance lies in the fact that video streams represent large amounts of data need to be collected in real-time and stored securely. Additionally, the data must be accessed randomly, and delivered on demand for processing and review. Data protection and fault tolerance are necessary to preserve and deliver every frame, and lay at the center of the VSkyCube hyper-converged architecture.

For the capture process VSkyCube solutions enhance security with the following features

- Resource Pooling and Virtualization at the heart of the Hyper-convergence ensures that the system can be easily configured to meet unexpected demands
- In a multi-node solution, capture workloads can be configured to auto-migrate in the event of a node failure, ensuring that a minimal amount of data is lost.
- VSkyMotion allows for disaster recovery and cloud bursting to another VSkyCube setup or AWS, so critical security applications and video capture can continue operating.

For storage, VSkyCube solutions offer the following data protection features:

- Within single nodes, VSkyCube solutions support RAID, distributing data necessary to recover from a drive failure over available drives. In the event of a failure within a single node, the node can continue to function, reconstructing the information on the failed drive on the fly and recovering the information completely once the drive is replaced.
- With 3 or more nodes, VSkyCube solutions also support RAIN, which distributes the information across nodes similar to how RAID distributes data across drives. This ensures that video is available and can eventually be completely recovered even if an entire Node fails.
- For Maximum protection, RAID and RAIN can be used concurrently, protecting the system from multiple drive failures across the device.
- All VSkyCube appliances include Hardware RAID controllers, freeing system resources from data protection duties, and ensuring that the storage loads can scale independently from system computing.

