



Building a reliable and high-performance video surveillance system

Seagate® delivers a solid, reliable, and high-performance surveillance solution with Bosch® Security Systems

Solution Summary

The Bosch Video Recording Manager combined with Seagate's Exos® X enterprise storage systems provide an integrated security, safety, and video management solution. This reliable and high-performance video surveillance system is easy to setup, lowers TCO, and offers performance that supports multiple concurrent video streams with the highest data protection for your surveillance deployment.

Benefits Summary

- Optimized streaming by delivering high bandwidth—saving higher frame rate video recordings without losing a single frame.
- ADAPT data protection, enabling fast rebuild times.
- First-to-market, highest capacity drives to manage increasing surveillance storage demands.
- Encryption to keep your data safe even if your drives are lost, stolen, or misplaced.
- Bosch Video Recording Manager, providing edge recording with little to no frame loss—removing the need for an edge-recording network video recorder (NVR), reducing a single point of failure in the system.

Today's high-demand video management system (VMS) applications can easily generate terabytes of data, challenging users to find a reliable and high-performance video surveillance system that is not only capable of meeting today's challenges, but of transcending them to keep up with tomorrow—without breaking the bank.

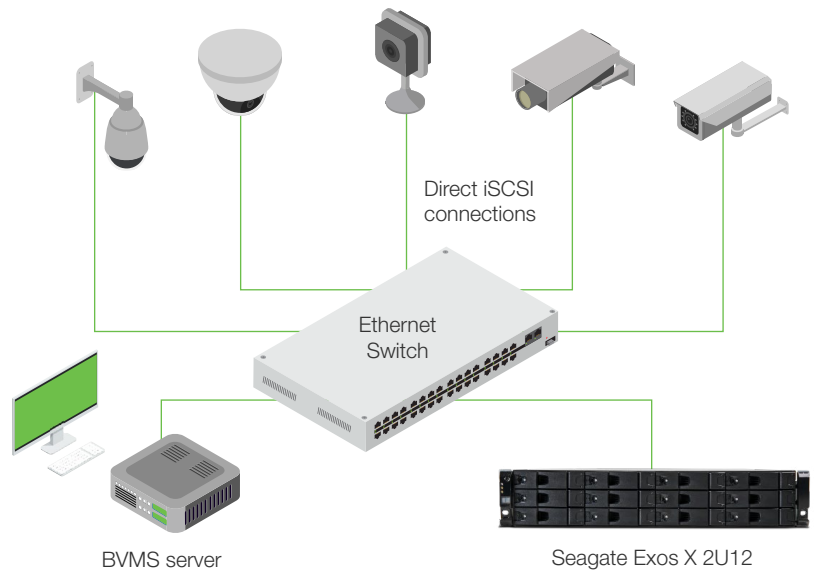
Video recording manager (VRM) software is required in order to deploy a surveillance solution. It acts as a point of aggregation for various devices such as sensors and on-premises and remote IP cameras. Today's contemporary video surveillance systems easily encompass much more than security and require the VMS to assume many roles—one of which is to help organizations investing in such a solution generate a return on investment (ROI).



The Challenge

High-demand VMS applications requiring security and throughput performance generate copious amounts of data. As a result, users need to consider a centralized shared storage solution for their VRM, such as a Storage Area Network (SAN) or cloud-based services. On-premise SAN, rather than cloud-based solutions, continue to provide value in both areas.

As the number of connected devices continues to grow and video analytics and AI create more data, the need for greater capacity and higher performance becomes paramount. Enter in Seagate's Exos X 2U12—a maximum capacity, high-performance solution that expands with your business.



Solution Approach

The combination of Seagate Exos X storage devices and Bosch video surveillance components has been extensively tested. Not only has the solution's performance been considered, but several failure scenarios have been examined to ensure the system continues to operate as expected. Seagate Exos X storage devices provide direct iSCSI recording under extreme conditions without dropping video

frames. Moreover, the Exos X 2U12 platform uses Seagate's ADAPT data protection which enables fast rebuild times, thereby limiting exposure time.

These capabilities in combination with the scalability of the Bosch Video Management System (BVMS) make this joint solution suitable for multiple video surveillance applications including healthcare, transportation, commercial buildings, and education.



The Seagate Solution

Seagate is the leading expert in building tightly integrated data storage solutions that offer big capacity with a small footprint, fast access with ease of management, and cost-effective protection for future technology refresh.

Seagate's Exos X storage platform features a unique IO controller that uses Seagate ADAPT— Autonomic Distributed Allocation Protection Technology. This technology takes on the concept of distributed RAID and implements it in an innovative way that permits the storage platform to:

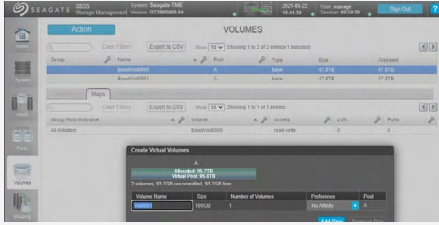
- Grow your storage easily and seamlessly, allowing mixed drives with additional expansions to scale your storage out.
- Choose between different RAID configurations to either enhance performance or increase fault tolerance in the case of drive failure.
- Rebuild your storage volume faster than traditional RAID. Rapid Rebuild allows up to a 95% faster rebuild when compared to a RAID 6 solution.
- Work with mixed-type drives such as SSDs, HDDs, and traditional RAID, allowing you to choose what works for you and your budget.

Partner Solution

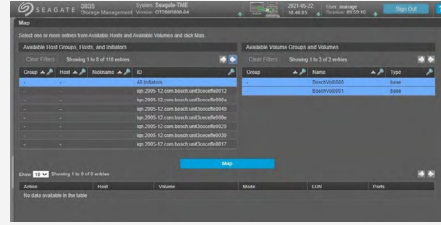
Combining BVMS and the Bosch Video Recording Manager with Seagate Exos X storage devices enables customers to deploy a reliable and high-performance video surveillance system. The Seagate/Bosch solution offers several benefits:

- With the number of connected devices growing in deployed surveillance environments, more storage is required. Scale up to petabytes of storage easily, when needed, at lower cost.
- High-definition cameras require more bandwidth. This combined solution delivers high bandwidth in saving video recordings with higher frame rates—without losing a single frame.
- The need for storage is growing—with our high-capacity storage, you'll be able to have longer retention periods of both video and static images without data loss.
- Fragmented systems don't allow for redundancy or easy scalability—centralizing VMS management to store and manage the recorded videos from a distributed implementation allows for data protection and growing your deployment.

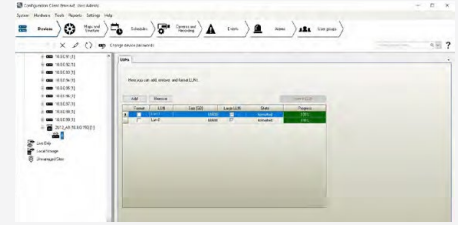




To add storage to VRM, an ADAPT disk pool needs to be created from which one or more virtual volumes can be created afterwards.



In the next step, the newly created volumes are exported from the Seagate Mapping wizard to be used in BVMS.



The BVMS Configuration Client is used to add the Seagate Exos X iSCSI array to a BVMS Device Pool and format the virtual volumes.

Total Solution

Using the Bosch Video Recording Manager and edge recording, frame loss will be a thing of the past. Additionally, edge-recording removes the need for an NVR—reducing a single point of failure in the system.

The Seagate storage management console (SMC) makes initial system setup and configuration easy through a web-based user interface. Using the SMC, iSCSI storage volumes can be created and exported to the BVMS within minutes. The SMC also provides logging, monitoring, and an easy way to identify performance bottlenecks.

This combined Seagate and Bosch solution offers verified performance under challenging conditions. An extensive performance test was done to ensure customers can utilize the performance offered by the hardware platform and rely on continuous operations. This solution also provides cost efficiency—direct iSCSI recording reduces the need for dedicated NVRs and decreases the initial cost as well as the total cost of ownership (TCO), especially related to cooling and power.

Features	Benefits
Streaming Optimized	Delivers high bandwidth to support more video recording devices with a higher frame rate without compromising video recording quality.
ADAPT	Autonomic Distributed Allocation Protection Technology—Rapid Rebuild technology that rebuilds storage volumes up to 95% compared to traditional solutions. In addition, ADAPT provides GUI-driven management for system compossibility, storage provisioning, and performance affinity to allow the customer to select desired Seagate storage features.
First to Market	Provides the highest capacity for ever-increasing surveillance storage demand and longer retention periods of both video and static images without data loss.
Encryption	Seagate Secure™ encrypted hard drives keep your data safe even if your drives are lost, stolen, or misplaced.



Conclusion

BVMS is a unique enterprise IP video security solution that provides seamless management of digital video, audio, and data across any IP network—offering the best VMS

to go with Bosch video surveillance devices. Combining BVMS and the Bosch Video Recording Manager with Seagate Exos X storage devices—which are certified to use

with BVMS—enables customers to deploy a reliable, high-performance, and cost-effective video surveillance system suitable for multiple applications.

Ready to Learn More?

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