



Building an Efficient and Cost-Effective Video Management Solution

Seagate® delivers unified video management with Genetec™ Security Center



Solution Summary

The **Genetec™** unified security platform combined with Seagate enterprise storage system's Exos® X delivers a centralized storage solution that supports multiple concurrent video streaming with the highest data protection for your surveillance deployment.

Benefits Summary

- Optimized streaming by delivering high bandwidth in saving video recordings with higher frame rates without losing a single frame
- ADAPT data protection
- First to market with the highest capacity for the increasing demand of surveillance storage, and provides longer retention periods for both video and static images without data loss
- Encryption to keep your data safe even if your drives are lost, stolen, or misplaced
- Deliver high bandwidth to allow more video recording devices with higher frame rate
- Enable longer retention period of both video and static images without data loss
- Allow centralized VMS management to store and manage the recorded videos from a distributed implementation
- Genetec™ Security Center offers unified video management, access control, ALPR, intrusion, and communications in a single user interface. It allows you to centralize your operations and make sense out of your security data.

Terabytes of data can easily be generated from high demand VMS applications; in return, users need a scalable, centralized shared storage solution like a SAN (Storage Area Network) for their VMS rather than an all-in-one solution that has limitations, such as an NVR or VMS appliance.

Video Management System (VMS) is an integral part of the entire organization's security deployment plan. The VMS acts as a point of aggregation for all of the sensors and IP cameras on premise or location. Video surveillance in today's world has gone beyond security, requiring that the VMS be responsible for many roles such as helping to generate more ROI for the organization investing in such a solution.

Video recordings no longer sit idle waiting for event replays, and IP cam becomes abundant. Video analytics and AI create more data, and the need for greater capacity and higher performance is delivered by the Seagate Exos X 5U84.



The Challenge

Terabytes of data can easily be generated from high demand VMS applications that require security and throughput performance. On-premise SAN, instead of cloud-based solutions, continue to provide value in

both areas. In return, users need to consider a centralized shared storage solution for their VMS, such as a SAN (Storage Area Network) or cloud-based services.

The Solution

The **Genetec™ Security Center** software VMS solution together with the **Seagate® Exos™ X 5U84** SAN storage platform is an intelligent data storage combination that meets the needs of centralized storage and is capable of scalability, high performance, and data protection for years to come.

Seagate, 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 adopts Seagate ADAPT, or 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 allow mixed drives with expansions of up to 128 drives in a single storage volume
- 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 SSD and HDDs, and traditional RAID allowing you to choose what works for you and your budget

Genetec™, a leader in VMS application, offers Security Center, a unified security platform that provides a single-pane interface to manage video surveillance, situational awareness, access control, and information analytics operations.

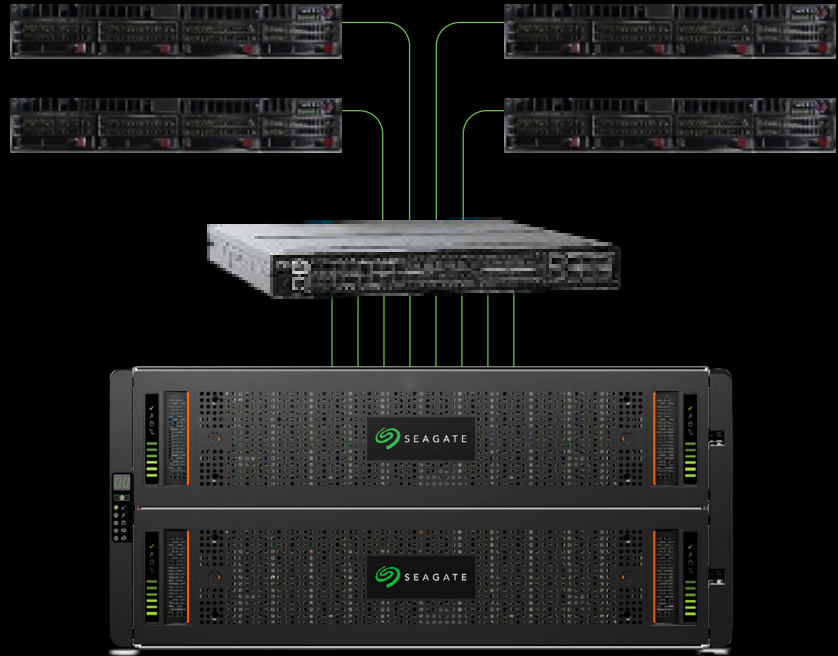
- With the number of connected devices growing in deployed surveillance environments, more storage is required—scale up to petabytes of storage easily, when needed, at lower cost
- High definition cameras require more bandwidth—deliver high bandwidth in saving video recordings with higher frame rates 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



Storage Testing with Genetec™

Configuration:

- The Genetec™ Security Center version used: 5.9.0
- CPU: Intel® Xeon® Silver 4216
- CPU @2.10GHz (32 CPUs), 2.1GHz
- System Model and Manufacturer: PowerEdge R640, Dell Inc.
- Windows Server 2016 Standard
- Memory: 196608 MB RAM



ADAPT Rebuild Time and Performance Under Failure

Metric	Traditional RAID 8+2	24 Drive ADAPT	84 Drive ADAPT	120 Drive ADAPT
Rebuild one drive	55.5 hours	24 hours	7 hours	5.3 hours
Fault Tolerance: after second drive failure	55.5 hours	9 hours	1 hour	25 minutes
Perf impact*, one drive down	-41%	-23%	-8%	-6%
Perf impact*, two drives down	-62%	-37%	-14%	-10%



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

In order to be certified by Genetec™, the validation test results have to demonstrate that they meet the requirements set forth in the following Genetec™ test cases, in addition to following hardware deployment best practices described in the Architecture Review section.

Case	Case type	Expected throughput on storage	Number of simulated cameras	Number of GPUS instances needed
Case 1	1Mbit/s per camera Continuous recording	300Mbit/s	300	3
Case 2	1Mbit/s per camera Motion recording	<>100Mbit/s	<>100	<>2
Case 3	5Mbit/s per camera Continuous recording	300Mbit/s	60	3
Case 4	5Mbit/s per camera Motion recording	<>150Mbit/s	<>30	<>2



The certification test requires a minimum of one Archiver in the test configuration. An Archiver is limited to a maximum of 300 cameras and 300 Mbps throughput.

Seagate submitted the test results to Genetec™ for each of the four test cases, and the results met and exceeded the throughput requirements of the Genetec™ performance test plan for each test case.

However, the performance in the certification test is by no means a reflection of the Seagate 5U84's true performance capability. Rather, during the test we observed that the total throughput generated by all Genetec™ Archivers took only a fraction of the throughput capability that the Seagate 5U84 is designed

to handle.

This solution delivers the performance, security, availability, and scalability demanded by Genetec™ Security Center for storage and retrieval of archived video data. The solution allows surveillance management to store, archive, and manage the recorded videos/audio centrally from a distributed implementation and brings a cost-effective way to grow and expand the number of cameras and expansion servers in the Genetec™ environment without fear of running out of storage capacity.



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