



Solution Brief

RAIDIX Video Storage for 1000 cameras managed by Milestone XProtect



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Milestone XProtect®

Milestone XProtect® is a global market leading Video Management Software (VMS) that brings the puzzle pieces of a video surveillance installation together in a perfect combination to create a solution that keeps people, premises and property safe today – and tomorrow.

With XProtect as the foundation of your video surveillance, you get the freedom to build the entire system just the way you like it. Built on an open platform architecture you can customize your surveillance system and integrate other business applications into it for increased usability and performance.

Challenge

Keeping people safe in all kinds of environments and circumstances is a must for every establishment or production site. Video surveillance is an irreplaceable and widely spread tool to maintain order and proactively react if safety issues happen. Limited video infrastructures with 1000 cameras are commonly used even by relatively mid-sized institutions like local hospitals, schools, universities.

Video surveillance can be actually much more than just video recording and archiving. With the proper software management, it can also provide deep analytical features, for example, face-recognition or motion detection. These advanced elements are composed together by Milestone XProtect® – video management software (VMS), that moves analytical integration to the new level due to its unique architecture. To be highly efficient, VMS needs a reliable data storage that makes surveillance installation flexible and provides it with high bandwidth and low storage overhead.

Solution

RAIDIX Video Storage

RAIDIX Video Storage is a reliable and high performance software-defined storage purpose-built for intensive streaming workloads. To protect integrity of the data and avoid video frame losses, RAIDIX storage provides stable and irreducible writing speed even in case of emergency.

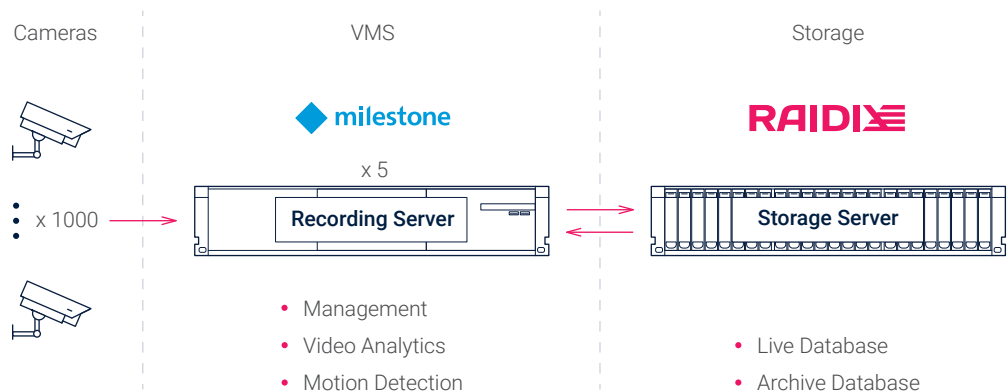
Cost-Effective Storage For Video Surveillance

Working together, Milestone XProtect® and RAIDIX Video Storage deliver video surveillance with less CapEx, as the installation needs less drives, commutations and additional server platforms.

Single Appliance For Recording and Archive

RAIDIX storage works as a single system for live and archive databases that intakes all streaming data from the video servers. That comes from the storage fault-tolerance features powered by ultra-fast RAID rebuild.

Architecture



Performance Test

To verify the joint work quality of RAIDIX Video Storage and Milestone XProtect® we have conducted a series of tests that might be also useful for future projects.

Test Setup

Test environment contains:

- RAIDIX Video Storage as a storage array.
- XProtect Professional+ 2019 R3 Recording as a VMS.
- Milestone Stable FPS Feed Server as a camera network load simulation.

RAIDIX Video Storage included 24 drives formed into a two RAID 6 array. Over the RAID we created a volume of 30TB that was given to Milestone Recording servers as a block device via iSCSI through 10Gb Ethernet link.

	Storage Array	VMS	Camera Simulation
Component	RAIDIX Video Storage	5 x XProtect Professional+ 2019 R3 Recording Server and Management Server	Milestone Stable FPS Feed Server
CPU	2 x Intel Xeon E5-2620 v4	2 x Intel Xeon E5-2620 v4	Intel Xeon E5-2609 v4
RAM	128 GB	128 GB	8 GB
Ethernet	Dual port 10 Gb Ethernet controller	Dual port 10 Gb Ethernet controller	Dual port 10 Gb Ethernet controller
HDD	24 x 10 TB, 7200 rpm, SAS 12 Gb/s	—	—
OS	RAIDIX 5.0.1	MS Windows Server 2019 Standard	MS Windows 10 Enterprise

Test Workload

The test simulated operation of 1000 video cameras with the following parameters of the simulation:

Codec	H.264
Resolution	1920x1080
Frames per second	30
Bitrate	4 Mbit/s

The recording server was writing data to the volume provided by RAIDIX Video Storage.

Test Results

The test was successfully completed without frame losses or any other failures. For the average values of performance metrics for all 7 days of the testing see the table below (the data was collected with MS Windows performance monitor):

%Processor Avg	20.00
Cameras	1000
FPS	30
Codec	H.264
Video File	Door_1920x1080_4Mbit_20_Motion
Media/sec (total FPS)	30000.513
Write Bytes/sec	120,097,170
Sec/write (Latency)	0.006
Read Bytes/sec	25,600
Sec/read (Latency)	0.02

Conclusion

The testing results prove that even low-end configuration of RAIDIX Video Storage effectively works with 1000 cameras managed by Milestone XProtect® VMS.

Moreover, RAIDIX-based storage has reserved throughput to increase video resolution rate and overall number of cameras and recording servers in case of necessity.

RAIDIX Video Storage delivers:

- Reduction of storage overhead with the archive volume growth.
- Steady work with the thousands of high resolution cameras.
- Resilience for the worst-case scenario.
- Unlimited benefits of advanced analytical software.

Milestone XProtect® VMS and RAIDIX storage provide a video surveillance installation with less CapEx, as you will need less drives, commutations and additional server platforms.

Contact Information

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Resources

RAIDIX Video Storage web page
<https://www.raidix.com/solutions/video-surveillance/>

Success Story: Storage subsystem within city network with 20 000 cameras
https://www.raidix.com/uploads/2020/02/City_Video_Surveillance_EN.pdf

Success Story: Storage for video surveillance in the largest poker club in Europe
<https://www.raidix.com/blog/kings-casino-raidix-storage-for-video-surveillance/>

Success Story: Storage for Video Monitoring Services – Good Line
<https://www.raidix.com/blog/good-line-storage-for-video-monitoring-services/>

Success Story: Storage for CCTV Infrastructure in Yongin (Korea) city hall
<https://www.raidix.com/blog/raidix-data-storage-for-cctv-infrastructure-in-yongin-city-south-korea/>

Success Story: Data Storage for Surveillance Infrastructure in Mining University (Russia)
<https://www.raidix.com/blog/mining-university-data-storage-for-surveillance-infrastructure/>

About Milestone Systems

Milestone Systems is a leading provider of open platform video management software; technology that helps the world see how to ensure safety, protect assets and increase business efficiency. Milestone enables an open platform community that drives collaboration and innovation in the development and use of network video technology, with reliable and scalable solutions that are proven in more than 150,000 sites worldwide. Founded in 1998, Milestone is a stand-alone company in the Canon Group. Visit www.milestonesys.com for more.

About RAIDIX

RAIDIX is an innovative software company developing professional storage solutions. We create products for storage environments where applications and services demand high speed access and operate with massive data volumes.