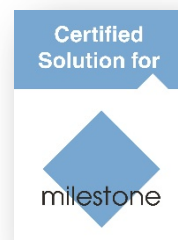




Milestone Certified Solution



Dahua ES512S server with
EVS7048S-R storage

Date certified : 2018-12-04

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About Dahua Technology

Dahua Technology is a leading solution provider in the global video surveillance industry. With more than 13,000 employees all over the world, Dahua solutions, products, and services are used in over 180 countries and regions. Dahua has 42 subsidiaries globally covering Asia, the Americas, Europe, Middle East, Oceania, Africa, etc. With its surveillance solutions, Dahua delivers unparalleled quality, reliability and stability. Dahua is committed to providing its highest quality solutions and products with the latest technologies to enable end users to perform their business successfully.

About Milestone Systems

Milestone Systems is a global leader in providing open platform IP video surveillance software. Milestone has provided easy-to-use, powerful video management software in more than 200,000 installations, worldwide.

Milestone XProtect® provides open architecture products that are compatible with more IP cameras, encoders, and digital video recorders than any other manufacturer. Because Milestone provides an open platform, you can integrate today's best business solutions and expand what's possible with future innovations. Visit www.milestonesys.com for more information.

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Executive Summary

This report highlights the performance results of certification tests performed on Dahua ES series server and EVS series IPSAN storage solutions. The ES series server hosts XProtect Recording Servers and EVS series IPSAN storage provided hard disk space for both the long term archive and live video database storage within a Milestone XProtect® video management software (VMS) surveillance system. The Milestone Technology Partner (MTP) Certification program seeks to confirm that server, storage and network solutions provided by qualified MTP vendors meet the performance benchmarks required to support the Milestone XProtect VMS applications, and to measure the maximum performance available to Milestone customers if they choose to build a solution using certified MTP products.

Certified Products

- ES512S server
- EVS7048S-R IPSAN

These products are members of the following families of servers and storage units from Dahua Technology

Product	Drive Cages	Max Storage	Controller
ES Series server			
ES311S	4	4 * 8TB	1 x Intel E3
ES512S	8	8 * 8TB	1 x Intel E5
ES512D	8	8 * 8TB	2 x Intel E5
EVS5000 Series IPSAN			
EVS5016S-R	16	16 * 8TB	Single
EVS5024S-R	24	24 * 8TB	Single
EVS5036S-R	36	36 * 8TB	Single
EVS5048S-R	48	48 * 8TB	Single
EVS7000 Series IPSAN			
EVS7024D-R	24	24 * 8TB	Dual
EVS7024S-R	24	24 * 8TB	Single
EVS7048D-R	48	48 * 8TB	Dual
EVS7048S-R	48	48 * 8TB	Single

Other

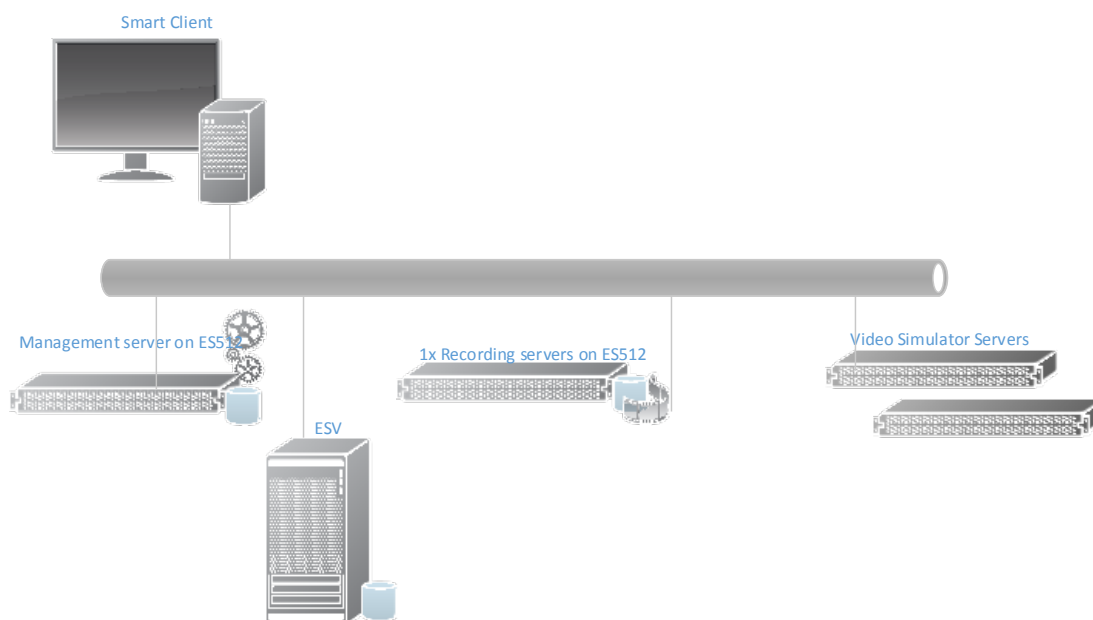
The products certified are compatible with the Milestone XProtect products version 2017 R1 and newer

Performance of the solution may vary if different XProtect products and/or system components not listed in the tests details are included.

Test Setup

(50 cameras) – ES512, EVS7048, 1X Recording Servers and 1X Management Server

Milestone XProtect Corporate 2017 R3 (11.3a)



- 50 cameras with the following video stream profile
 - 2048x1536 resolution
 - H.264
 - 20 FPS
 - Approximately 12 Mbps stream size
 - This works out to 2 total Stable FPS devices for the benchmark (32 streams each)
- 625 Mbps network bandwidth per Recording Server
- 78 MB/s disk throughput to EVS
- RAID6 8x HDD array as Live DB target via iSCSI

All simulated video streams used in this test were configured at 30 frames per second (FPS). All video streams were configured to use the H.264 video codec. The image resolutions used in this test included the following:

- 1920x1080 (2.1 Megapixel / 1080p / 2.3 Mbit/s)

Performance Results / Features Tested Described

The Dahua ES server and EVS IPSAN storage solution performs as a video recording and archiving platform within the Milestone XProtect VMS system.

# Cameras	Image Resolution	Frame Rate	Write Latency (milliseconds)	CPU %	Stream Size (Mbps)	Disk I/O (MB/s)
50	720P	25	17.42	14.24%	1.57	8.72
50	1080P	25	28.32	19.51%	3.85	19.17
50	3MP	25	42.12	23.85%	5.18	28.60

Conclusion

The system performs at a high level of data throughput, and with acceptable read/write latency when using the optimal logical disk configuration. The ES series server and EVS series IPSAN products are certified MTP solutions. Integrators and end users designing, installing and operating surveillance systems which incorporate these solution components can have confidence that the system will record and archive video reliably. Customers who wish to gain the maximum value and performance out of their surveillance system can also refer to the best practices and performance limitations outlined in this document to help design a system that exceeds the benchmark limitations for video recording which are followed by the Milestone Server and Storage Calculator.