HDDs or SSDs for Video Surveillance?

The type of storage your system uses matters for performance, reliability and power usage. It's important to understand how SSDs and HDDs work so you can choose the right solution for you.

EDGE is here to help you.

What are the differences between HDDs and SSDs?

SSDs are built using NAND Flash technology so, unlike standard HDDs, they don't have any moving parts. The lack of moving parts translates into several key advantages for SSDs.

These include:

• Speed:

SSDs allow you to access data much faster than HDDs. This translates primarily into IOPS, where SSDs can deliver significant performance gains which means less latency in high-bandwidth applications, such as high-definition video. SSDs reduce strain on the systems CPU allowing systems to run faster and more efficiently.

• Reliability:

SSDs fail much less frequently than HDDs. Research shows that the failure rates of HDDs are more than 3-5 times those of SSDs.

• Durability:

SSDs can be utilized in locations that require more rugged construction, such as surveillance systems that are located outdoors or at sites where vibration may be a damaging factor to standard HDDs.

• Energy Efficient:

SSDs are more energy efficient, in most cases consuming more than 200%+ less elecricity during normal use, comapred to a standard HDD.

SSD vs HDD

0.1ms	Access Times	5.5 - 8.0 ms
at least 6000 io/s	Random I/0 Performance	up to 400 io/s
0.04%	Reliability	2.4 - 5%
1%	CPU Power	7%+
1 - 5 watts	Energy Savings	6 - 15 watts
4 - 6 hours	Backup Rates	20 - 24 hours
20G (10~2000Hz)	Operating Vibration	0.5G (22~350Hz)
1500G for 0.5 ms	Shock Resistance	170G for 0.5 ms
None	Acoustic Noise	0.3 - 0.5 Db
2M+ Hours	MTBF	.07M Hours

• Noise:

Because SSDs have no moving parts, SSDs produce zero noise.





Where Do SSDs Fit with Security and Surveillance Systems?

Video Surveillance Storage Solutions:

The enhanced reliability of SSDs can be critical in any business or institution where surveillance failure could result in massive liability issues.

Think of government institutions such as courtrooms or government buildings; healthcare facilities; shopping malls and universities.

In applications/locations where images are downloaded more frequently and/or solutions that are operating 24/7.

Vehicle Camera Systems:

SSDs are the perfect fit for systems found in police cars, ambulances, public transportation and school buses. They are extremely beneficial at the point of image capture, where reliability, ruggedness, durability, performance and energy efficiency are critical.



What are the key features and characteristics to look for in SSDs for video surveillance solutions?

Surveillance DVR/NVR solutions are complex systems that require top-performance from their storage and rely on mechanisms that are less prone to failures. Fewer rates of failure means higher overall savings in cost of ownership, as well as a higher quality and seamless user experience. Below are key features we recommend are crucial when choosing an SSD for your surveillance DVR/NVR solutions.

These include;

- Fast sequential/random performance
- Solid-long-term endurance
- Range of capacity sizes
- Power Failure Protection (PFail)
- Sustained write speeds of at least 250MB/s
- Price Point
- Low MTBF

What is Power Failure Protection (PFail) and why is it important in Video Surveilance?

Initially used for server and data center applications, PFail protection has expanded into different market segments including video surveillance. This adds another layer of protection against unforseen circumstances that can lead to sudden power loss, in many cases, causing vital data to be lost or severe data corruption.

> PFail Protection aims to mitigate the risk of corruption and ensure consistent data integrity. An added level of protection that standard HDDs are not capable of.