Surveillance Disk Drives for Security Projects

Application Notes

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There are various hard disk types on the market. What kind of hard disk is suitable for security projects?

Surveillance drives vs. Desktop drives

4 major types of hard disk and their applications from WD, a well-known disk manufacturer:

Type	Desktop	NAS	Surveillance	Datacenter
Model	Blue, Green, Black	Red, Red Pro	Purple, Re, Se	Xe, Ae
Description	Solid performance and reliability for everyday computing	Medium to large size business	Designed for medium to large business and enterprise surveillance systems, including mission critical applications, for 32~64 or unlimited cameras	Datacenter archive storage, cold storage servers, tape library disk layer, tape library replacement and VTL replacement
Designed for	Desktop	1-16 Bay NAS	SME / Large Enterprise	Datacenter
Bay Support	N/A	1~16 bay	6+ bays	Unlimited
Capacity	80GB ~ 6TB	1TB~6TB	2TB~4TB	1TB~6TB
Workload	N/A	Light Workload	Heavy Workload	60TB~180TB
Cache	8 MB~64MB	16MB~64MB	32MB~64MB	64MB~128MB
Warranty	2~5 Year	3~5 Year	3~5 Year	3~5 Year

From the comparison chart of the WD product position, WD stated that surveillance-class storage has been tested to be compatible in a wide range of security systems. These drives are designed to replace standard desktop drives that were not suitable for the non-stop 24/7 operation and high-definition surveillance projects. Desktop drives are built to run for only short intervals and are not engineered to withstand high-temperature environment and vibrations often found in typical surveillance applications. (Appendix a)

AllFrame Improves Performance

Surveillance-class hard drives are equipped with AllFrame technology which works with ATA streaming to decrease frame loss, improve playback and increase the number of supported drive bays. AllFrame reduces video interruptions that often occur when desktop hard drives are unsuitable used as storage in the security systems. Missing frames and losing footage are serious problems for surveillance, what if the lost recording clip is happened to be the vital evidence. Surveillance storage with AllFrame technology ensures the system stability when any footage need to be played back or viewed, you know you will miss nothing.

Lower Power Consumption

Low power consumption is crucial in high-temperature surveillance environments. With exclusive technology, surveillance drives calculate the optimum speeds to lower power consumption, noise and vibration that can damage and cause desktop drives to wear out more quickly. When you invest in a premium surveillance-class drive, your worry is less and the benefits you are getting are more in the long run.

Surveillance Drives Key Benefits

- Reduces video frame loss
- Specifically tuned for surveillance systems
- Caching algorithms are tuned for write-intensive, low bit rate, and high stream
- Priority change for write allocations and preemptive caching policies
- TLER & ATA streaming support.
- Supports up to 8 drives
- Optimized performance for up to 32 HD cameras

Recommendation

Surveillance HDD is tested and recommended for surveillance and security systems up to 8 bays and optimized for 32 HD cameras. For surveillance capacity, Surveon recommends:

a. **NAS series HDD** for a desktop RAID or NAS environment under 8 bays and 32 channels.
b. **Surveillance series HDD** for an Enterprise NVR under 16 bays and 64 channels.
c. **Datacenter series HDD** for rackmount or large RAID configurations for unlimited channels.
d. **DO NOT use desktop series HDD** for any storage in surveillance system.

Appendix: Data reference

a. WD surveillance hard disk introduction.
   http://www.wdc.com/en/products/products.aspx?id=1310
b. Seagate application note “Surveillance selection guide”
   http://www.seagate.com/files/www-content/product-content/sv35-fam/sv35.5/en-us/docs/video-vs-desktop-mb645-1-1403us.pdf
c. Surveon quailed Hard Disk Drive
   http://www.surveon.com/support/hardware.asp