



# Hard disk drive options for surveillance solutions

Video surveillance is a rapidly growing market with increasing amounts of innovation. This innovation is not only found in the cameras, but also in new drive types for different sized deployments to support short-term and long-term data retention.

One major factor in determining which drives to use is in understanding the environment in which the drives will be used as they have different characteristics and considerations.

Table 1 lists drive recommendations based on environment density. Density is a key consideration as some drive types are susceptible to vibrations from other drives in a single enclosure and also to multiple chassis in a rack. Vibration can limit the amount of drives supported in a specific type of platform. Exceeding the limit can result in unexpected drive failures, which can result in frame loss or even data loss.

Table 1 - Drive type recommendations based on environment density



	Entry density	Midrange density	Enterprise density
Drive density	1-6 drives	6-16 drives	16+ drives
Recommended drive type	<ul style="list-style-type: none"><li>Video surveillance</li><li>Enterprise SATA</li></ul>	<ul style="list-style-type: none"><li>Video surveillance</li><li>Enterprise SATA</li><li>Near-line SAS</li></ul>	<ul style="list-style-type: none"><li>Near-line SAS</li></ul>
Platforms	<ul style="list-style-type: none"><li>DVR</li><li>Appliance</li><li>Desktop</li><li>Tower server</li></ul>	<ul style="list-style-type: none"><li>NVR</li><li>Dense appliance</li><li>Tower server</li><li>Rack server</li><li>DAS expansion</li></ul>	<ul style="list-style-type: none"><li>External dedicated storage (SAN/NAS)</li><li>Dense servers</li><li>Dense DAS expansion</li></ul>

Table 2 - Drive similarities and differences

Drive types	Video surveillance	Enterprise SATA	Near-line SAS
Mechanical similarities	Shares same media, head and form factor		
Mechanical differences	<ul style="list-style-type: none"> <li>Vibration sensors are not on all drives</li> <li>Varying rotational speeds (5.2k, 5.9k, 7.2k)</li> </ul>	<ul style="list-style-type: none"> <li>Vibration sensors are standard</li> <li>7.2k is standard speed</li> <li>Shares similar reliability</li> </ul>	
Interface differences	Based on near-line SAS with tradeoffs to lower price <ul style="list-style-type: none"> <li>Slower drives (5.4k, 5.9k) utilizes firmware enhancements to improve write throughput</li> </ul>	SATA interface <ul style="list-style-type: none"> <li>Lower signal strength compared to SAS, ideal for server storage based configurations</li> </ul>	SAS interface <ul style="list-style-type: none"> <li>SAS command set improves performance for random I/O</li> <li>Better signal integrity, preferred for external storage</li> </ul>

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