

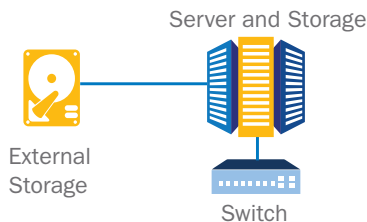
WHAT IS IT?

Storage is the retention of the data collected by the optical sensors (cameras) in either a file or block format. Storage architecture is the organization and management by video management software (VMS) for later retrieval and analysis. The data retention format used will usually follow an industry standard such as MJPEG, H.264, H.265, or some other recognized codec.

The type of storage needed for video surveillance systems is dependent upon the architecture of the customer's network and storage requirements.

Types of Storage Architectures

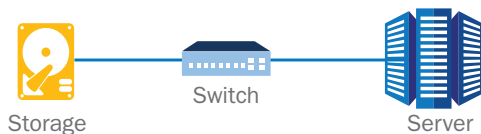
DAS Direct Attached Storage: Server and storage is in the same physical appliance. This storage device is typically provided by VMS companies in the form of an appliance that also runs the software application.



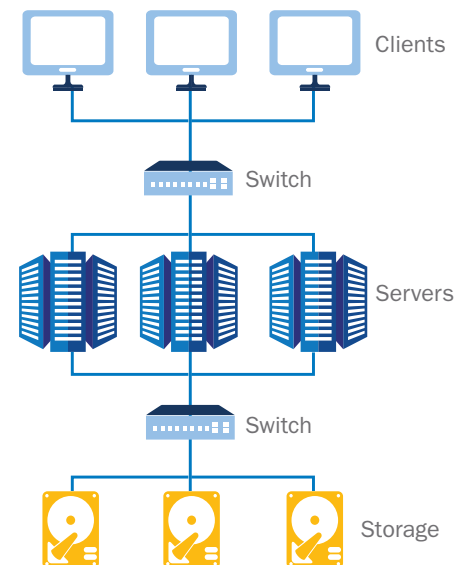
NAS Network Attached Storage: Physical appliance is separate from the server.

RAID Redundant Array of Independent Disks: This is only applicable to DAS and NAS architectures and gives the ability to create redundancy as equipment fails over time to mitigate the loss of information.

Edge Video is recorded to an SD card that fits into the camera. It is typically used in conjunction with another storage architecture as a means of redundancy.



SAN Storage Area Network: The VMS client deciphers the data and stores the information in larger blocks, which requires the client workstation to have more processing power. It uses protocols to allow general sorting of the data such as Fibre Channel, iSCSI, ATA over Ethernet and HyperSCSI.



Cloud Video is uploaded over the network to a server and storage architecture owned by a host. It reduces the amount of hardware at the customer's site and is paid for on a monthly basis.



Storage System Technologies

Series of packets are stored in either block- or file-based formats. The video management software used in the application defines which format will be used.

File A series of packets is defined by the video management software and includes a header and footer, which makes it more efficient for the server and processor.

Block Reduces the amount of space needed to store data.

TECHNOLOGY APPLICATION GUIDE

Storage for Video Surveillance



TYPES OF DRIVES

Drives are the spinning disks that reside within the storage appliances. The primary factor in choosing one over the other is the speed of the system.

Type	Description	Pros	Cons	Common Applications
SATA (Serial ATA)	Communicates in half-duplex Typically spins at 7,500 rpm	Cost effective	Can only send or receive information at one time	Long-term storage Video data moved from SAS drives to SATA drives
SAS (Serial Attached SCSI)	Communicates in full-duplex Typically spins at 15,000 rpm	Sends and receives information at the same time Faster delivery of the information to the viewing client	More expensive than SATA drives	First 24 hours of recorded video
Solid State	Contains no moving parts	Highly durable Ideal for harsh environments	Costly Limited storage capacity	Extreme weather conditions Mobile applications

WHY IS IT IMPORTANT?

Implementing a storage architecture designed to meet a system's specific requirements provides the following:

- **Accessibility:** Recall both recent and older video without delay.
- **Reliability:** Redundancy to mitigate the risk of losing critical video evidence.
- **Scalability:** Flexibility to add more devices to systems as camera prices decrease.
- **Cost management:** Know what is needed now and budget to grow with the system.

STANDARDS

SATA-IO – INCITS T13 subcommittee ATA, the INCITS T10 subcommittee (SCSI), a subgroup of T10 responsible for Serial Attached SCSI (SAS)

INCITS – The T10 technical committee of the International Committee for Information Technology Standards (INCITS) develops and maintains the SAS protocol

SCSITA – The SCSI Trade Association (SCSITA) promotes the SAS technology

Is your storage architecture designed to handle increasing capacity and processing demands for higher resolution and growing systems?

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- Our technical sales team and Technology Support Services experts are dedicated to helping you find the right network and security solutions.
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