Why subsystem storage is a better choice?

Application Notes

Surveon
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RAID Subsystem Storage

The RAID subsystem storage is an advanced data storage system for server, PC and NVR. It connects the server through SAS, Fiber or iSCSI interface. The controller based system with a dedicated "RAID controller" provides the highest performance and reliability for mission critical applications such as database, banking, multimedia and security. IBM, Dell, EMC, Infortrend and HP are some of the subsystem storage providers.

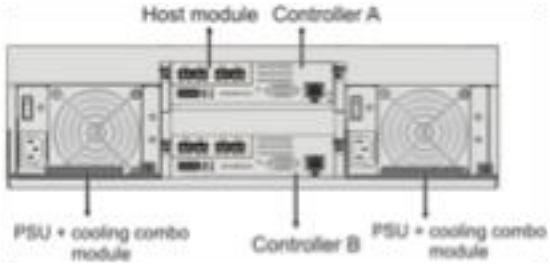
Surveon RAID subsystem storage, full modular designed, is featured with high density modules, less cable, hot-swappable disks, and several RAID levels. Each component can be replaced and repaired separately.

When using the RAID subsystem, there is no need to worry about the data integrity; all your data is protected and backed up; even when one of your HDD is down, your system still can work as usual. RAID subsystem NVR will stay intact even when some of the storage subsystems are down.

Surveon RAID subsystem is a fully integrated and tested product. You don't need to worry about the integration or compatibility issues. When you get the system, all you need to do is install and it is ready to use. Since the whole storage is designed, manufactured, tested by Surveon, the stability is also guaranteed.

Besides, the storage is communicated and accessed by network; the free space can be shared with other NVR, even your PC. With the central storage pool, high data

security and superior IO performance, there is no need to expand the storage capacity one by one anymore.



Surveon Storage Controller

A controller contains the “Host Controller” and “PSU + Cooling Module”.

Each component is pluggable. It can be changed whenever there is a malfunction.

Surveon Subsystem Storage

The ESDS S16S-G2240 is an external 16 bay RAID subsystem for the NVR2100. The subsystem provides a multi-lane Serial Attached SCSI (SAS) host interface, delivering exemplary performance for surveillance applications.

The ESDS S16E-G2142 is a 3U, 16 bay, iSCSI-SAS/SATA RAID subsystem for iSCSI NVR servers. The subsystem utilizes Infortrend's 5th generation ASIC400 RAID architecture along with RAID6 protection to provide a higher performance and fault tolerant storage solution for demanding surveillance applications.

The ESDS_S16S-J2000-S is the video JBOD subsystem for the ESDS S16S-G2240 and ESDS S16E-G2142. It provides up to 112 disks worth of high performance, fault tolerant storage.

All In One PC Solution

One of the common solutions for NVR is to use a commercial off-the-shelf (COTS) solution to assemble the motherboard, chassis and the RAID card to build a storage system. The benefits for the COTS are flexibility and low cost. The disadvantages are integration and reliability risks. Its storage solutions come from a PC + RAID card. This all-in-one architecture brings the low cost advantages but with lower reliability and performance compared to the subsystem storage.

Moreover, sometimes the integration efforts can be very huge. Both hardware and software are issues that need to be put into consideration. You must be sure that all the hardware components used can work together without any problems, and the all drivers can incorporate various products into its system.

After the integration of hardware is done, you still have lots of work to do with the software issues. Since different VMS might contradict one another, you will have to find suitable and compatible software to build up your own system.

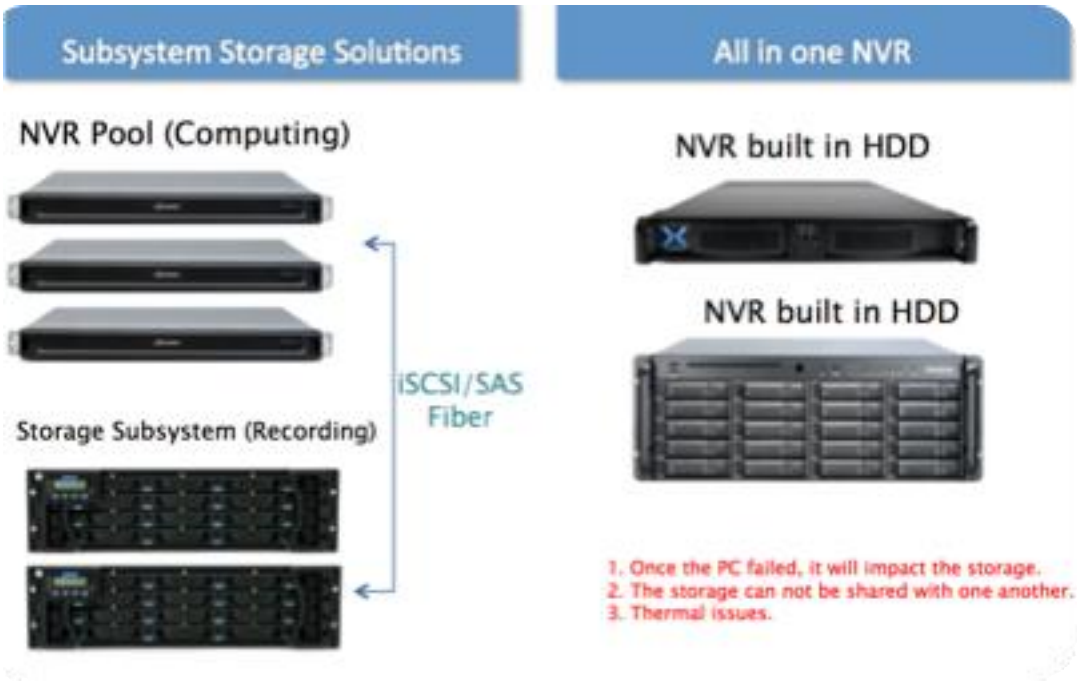
The availability and utilization of COTS solutions are also questionable. When some of the PCs failed, you storage will be impacted as well. The free space cannot be shared; that is to say, you will probably have free space on every device, but you cannot use any of them.

The all-in-one PC solution has some drawbacks. But if the project scale is small and no need to scale up, or only few cameras and basic functions, like recording and playback are being used, this solution can still be considered to save the installation cost by selecting easy hardware components to meet the budget.

Dust, Cable, Thermal, Interference, Integration problems...

Storage RAID Subsystem V.S. All In One PC

Comparison on the Hardware Implementation



The comparison table

	Subsystem Storage	All in one Solutions	Pro and Con
System Architecture	RAID Subsystem	PC Built in	When PC is down, so is the storage.
Overall Design	Cable less, whole module designed, anti-vibration and advanced thermal design	Cables, dusts, vibration and need to combine thermal issues with CPU and HDD	HDD are prone to failure
Total HDD need	less	More	Over Provisioning
Performance	Enterprise RAID Subsystem	RAID Card or software RAID	High performance and high stability
Maintenance	Hot swappable hard disks, controller & central management,	None or Difficult	Lower maintenance cost and risk
Scalability	Yes	None	Costs on expansion
Occupied space	Less than 1/3	Standard	Save space
Data services	Yes (Local, remote replication..)	NO	More Features
Size	Standard short Rack	Need the long depth rack	Space & Cost
Power	Lower power consumption	Standard	Save operation cost