Surveon NVR Solutions Advantages



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Surveon NVR Advantages







- High Throughput
- Storage Expansion via JBOD
- Storage Expansion via iSCSI
- NVR Supports H.265
- Multiple Access
- Built-in 12 Video Analytics
- SurveOne
- EonOne Lite
- Sphone (Mobile Client)



Data Protection

- Failover Solution
- Triple Data Protection
- Backup / Archive to Storage
- Cloud Backup / Synchronize
- Intelligent Driver Integrity (IDR)

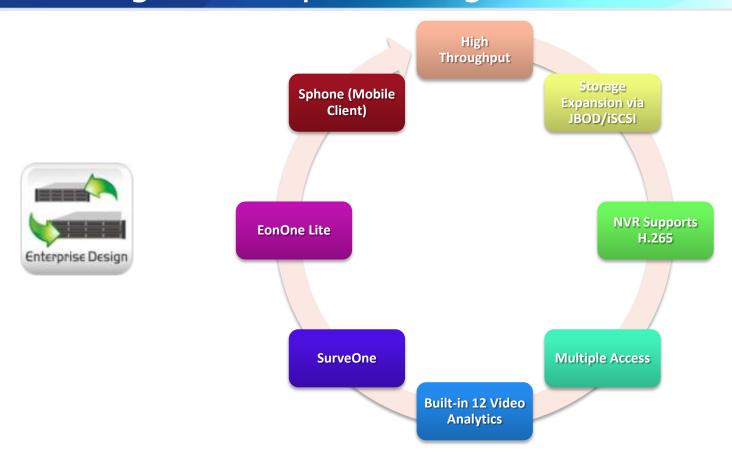


High Reliability

- Easy Maintenance Design
 - ➤ Cableless Modules
 - Swappable Control Board
 - ➤ Hot-swappable HDD
 - ➤ Redundant Power Supply
- Industrial-grade Component
- 3-year Warranty

NVR Advantage – Enterprise Design



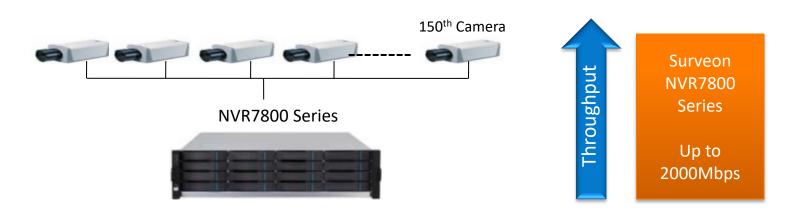




High Throughput



- Support up to 150-channel 3MP cameras based on the performance test for continuous recording by Milestone (Available in NVR7800 Series)
- The system results in a high level of recording throughput up to 2000Mbps, ensuring cameras to be recorded and viewed reliably (Available in NVR7800 Series)





Storage Expansion via JBOD



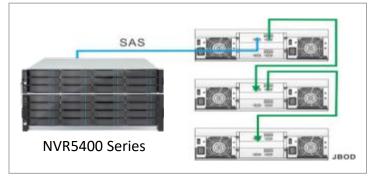
- Built-in up to 128TB 16-bay storage capacity
- SAS ports for JBOD expansion up to **316HDDs**
- Local expansion with simple cable connections; faster read/write performance and better stability

Recording Days Expansion

	HDD	64 CH
NVR5400	16	30 Days
NVR5400 + 1 JBOD	32	45 Days
NVR5400 + 2 JBOD	48	60 Days
NVR5400 + 3 JBOD	64	90 Days

■ Based on 4TB HDD, 2Mbps bit rate, 24 hr recording, RAID 5 best data protection

Easy Local Expansion with JBOD



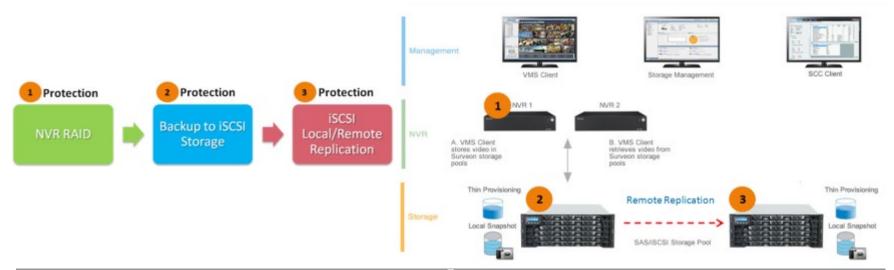


Storage Expansion via iSCSI



Backup to iSCSI Storage

- > For data backup or recording purpose, use iSCSI Storage to guarantee no video loss by triple data protection mechanism.
- > This powerful feature is applicable to all Surveon NVRs.

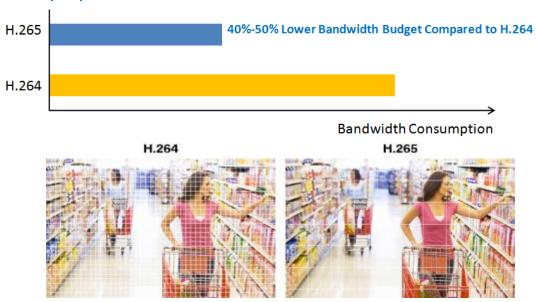




NVR Supports H.265



- 40%-50% lower bandwidth budget compared to H.264
- 50% bit rate reduction compared with H.264 at the same visual quality
- Potential to realize UHD, 2K, 4K for Broadcast and Online



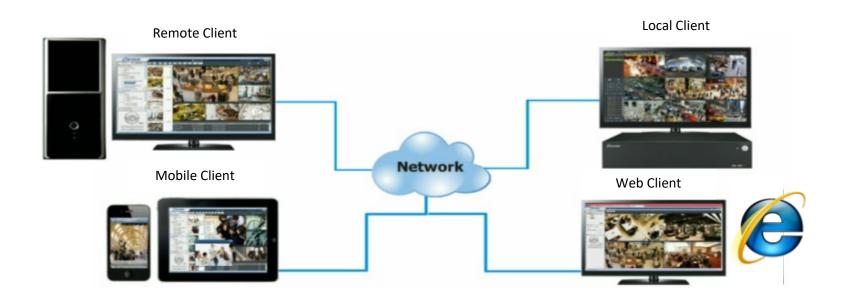
Notice: Available for Hikvision and Dahua H.265 cameras now.



Multiple Access



- Support all types of NVR (all-in-one and client-server) to monitoring **locally and remotely**.
- Give partners an **easier installation** experience.





Built-in 12 Video Analytics



Category	VA by NVR		
	Intrusion Detection		
	Forbidden Area Detection		
Intrusion	Virtual Fence		
	Object Motion Detection		
	Camera Motion Detection		
	Missing Object Detection		
Investigation	Foreign Object Detection		
	Fisheye Auto Tracking		
Tracking	Tailgating Detection		
	Going Out Detection		
Counting	People / Vehicle Counting		
Abnormality for Camera	Tampering Detection		



Forbidden Area Detection



Tailgating Detection



Missing Object Detection



People / Vehicle Counting



Going Out Detection



Object Motion Detection



SurveOne



- · An exclusive web-based management tool at no cost
 - > NVR/camera real-time system status overview and monitoring
 - NVR/camera configuration copy , restore and backup
 - > NVR/camera real-time event log information
 - > Easy to check the status in a browser by using HTTP
 - > Batch upgrade for Camera FW, IP and configuration revision





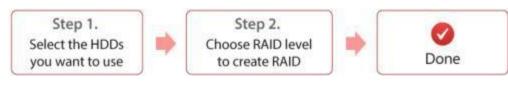
EonOne Lite



A friendly and intuitive management tool for storage

Visualized UI

- Enable to map and show the real-time usage of HDDs on monitor
- Enjoy the smooth hand-on experience through visualized UI
- > 2 Steps to Create Recording RAID



- > Easy to Check the System Status & Performance
 - Device information, system health check, system performance and hardware RAID status





Sphone (Mobile Client)



- Support iOS/Android platform
- Preset up to 20 NVRs on the server list (64 CH/server) for large scale surveillance
- Live view by full screen in 1080P (Stream 1) or 2x3 screens and snapshot
- Playback & PTZ Control (Zoom in/out and Preset)
- · Check camera info, including IP address, resolution, fps and bit rate
- Check DI\DO status





NVR Advantage – Data Protection





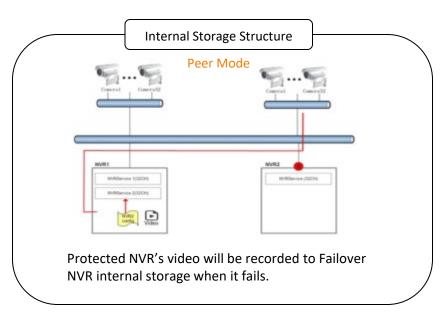


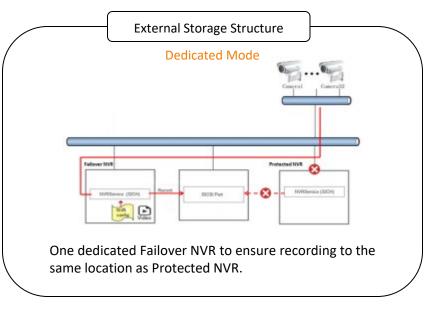


Failover Solution



- Allow recording to be continued by Failover NVR within the system.
- One or more NVRs can take over other protected NVRs under various system structures.
- No spare NVR needed. Failover can share the licenses of camera.







Triple Data Protection (1/3)





- Solid Data Protection
- Intelligent Driver Integrity(IDR)
- Archiving to Storage
- Easy Setting

- Local Replication by Snapshot &
 Volume Copy/Mirror
- Remote Replication



Triple Data Protection (2/3)



- Solid Data Protection
 - Built-in RAID 1, 5, 6, 1+Spare, 5+Spare, 6+Spare to provide volume mirror and storage capacity for data integrity and long retention period

RAID Level Comparison Table

RAID Level	Min. HDD	Storage Capacity*	Data Protection
RAID 1	2	½ N HDD	Middle-high
RAID 5	3	N-1 HDD	General
RAID 6	4	N-2 HDD	Middle
RAID 1 + Spare	3	½ N-1 HDD	Highest
RAID 5 + Spare	4	N-2 HDD	Middle-general
RAID 6 + Spare	5	N-3 HDD	High

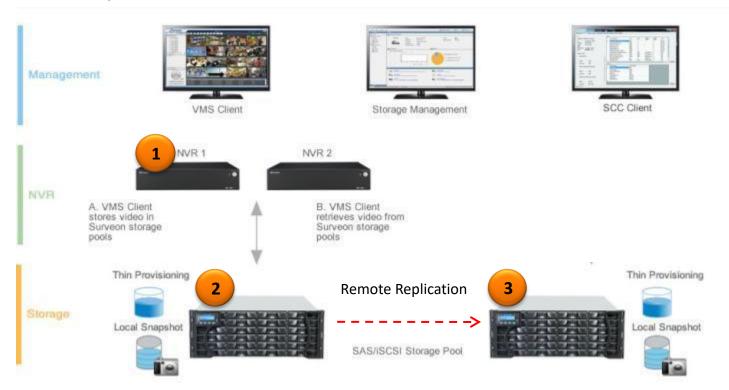
^{*}N is the HDD installed in Surveon NVR



Triple Data Protection (3/3)



Surveillance System Architecture

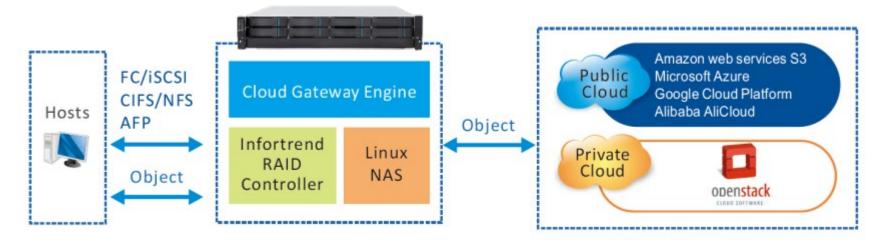




GSe Pro Cloud-Integrated Storage



Cloud-integrated Unified Storage



Block-level RAID Controller

Delivers excellent performance for enterprise database, mail server, and virtualization

Cloud Gateway Engine

Integrates with cloud storage for data caching, tiering, or backup

Object Protocol Support

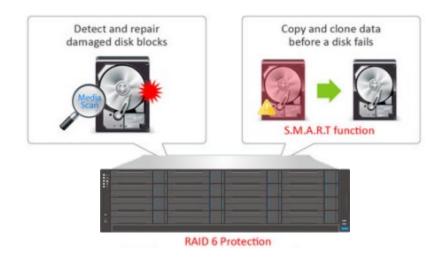
Allows users to access a file by using AWSS3 and OpenStack-compatible object storage protocols



Intelligent Driver Integrity (IDR)



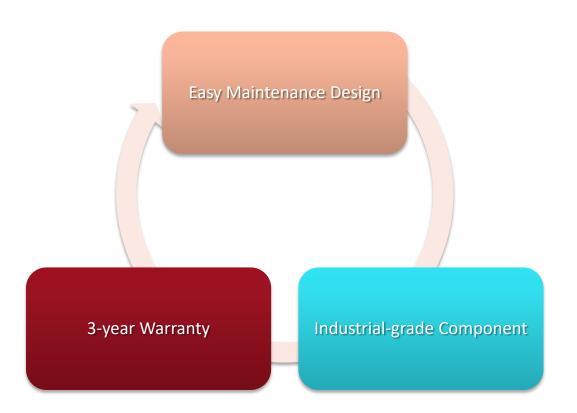
- Data corruption prevention: Smart data recovery mechanism: Detect and recover bad blocks
- Drive rebuild prevention: Failing drive prediction: Copy and Clone data before a disk fails



NVR Advantage – High Reliability









Easy Maintenance Design



- Cableless design to reduce dust and create better circulation to lower the heat inside the machine. (Available in Enterprise & Corporate Series)
- **Swappable control board**, fans and power supplies makes maintenance simple and lowers repair cost. (*Available in Enterprise & Corporate Series*)

Cableless Modules



Swappable Control Board





Industrial-grade Component



- Wider Operating Temperature: designed for a substantially operating temperature range from -40°C to 85°F
- **Longer Product Life Cycle**: exist for more than 10 years in many cases
- More Stable Performance: featured with improved signal sensitivity, or greater tolerance to electrical noise
- Reliable Quality: certified with ISO 9001 & ISO 14001 via full operation line











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3-year Warranty



- 3-year warranty & RMA service
- E-Support System to report technical issues more efficiently
- FAE to respond customer issue within 24 hr/8 working hr





Surveon NVR Solution Benefits



- Flexibility to expand system with hassle-free integration
 - > Various ways for storage expansion based on customers' needs
 - > Upgrade system within scalable architecture
- Power data protection mechanism to prevent any data loss
 - > Failover function to ensure continuous recording when the protected NVR fails
 - > Triple data protection by RAID and backup to storage system
- Cost-effective software architecture for maximum usage
 - > Enterprise-level video management with built-in VI analytics features
 - > Efficient system monitoring anytime, anywhere
- Reliable quality to save maintenance cost
 - > Industrial-grade component to give robust performance
 - Cableless & modularized design for easy repairing process



Product Segment



Professional Economical

Desktop Standalone RAID NVR





SMR2110/5110/8300 & NVR3000 Series

4 – 64 Channels 2/4/5/8 HDD For Entry to Mid-Range Projects

Enterprise Standard

NVR Server + Subsystem Storage



NVR2100 Series

16 – 64 Channels Up to 240 HDD For Enterprise Projects

Corporate Mission-Critical

NVR Storage Server (3-in-1)



NVR5400/7300/7800 Series

16 – 150 Channels Up to 316 HDD For Mission-Critical Projects

Cloud-integrated Scalable

NVR License + Cloud-integrated Unified Storage





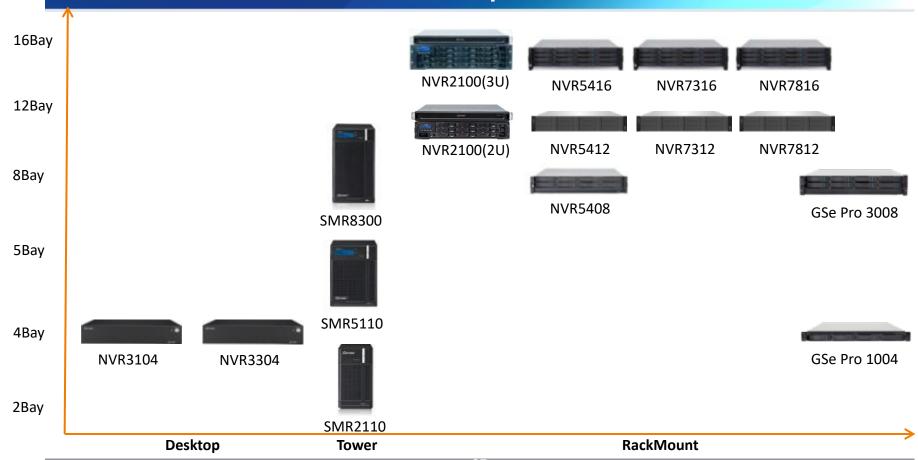


EonStor GSe Pro 1004/3008 Series

16 – 64 Channels Up to 428 HDD For A Variety of Projects

NVR/SMR Product Line Map







Appendix-1: Surveon NVR Introduction

SMR Series Overview



- Highly Reliable All-in-One Tower NVR
 - Support up to 64-ch megapixel recording (up to 5MP or above)
 - > Support **2/5/8-bay** SATA Hard Disk
 - > Support **hot-swappable** hard disks with compact design
 - > Built-in **RAID 1, 5, 6** for data protection
 - > Built-in Enterprise VMS with video analytics and active alarm system
 - > Support SurveOne, the exclusive web-based easy system management tool
 - > Recommended applications: banking, education, retail, healthcare, industrial and transportation

SMR2110/ SMR 5110/ SMR 8300 Tower NVR Series







NVR3000 Series Overview



- Best Cost-effective & Scalable Performance NVR
 - Support up to 32-ch megapixel recording (up to 5MP or above)
 - > Support **4/8-bay** SATA Hard Disk
 - > Built-in **RAID 1, 5, 6** for data protection
 - > Built-in Enterprise VMS with video analytics and active alarm system
 - > Support SurveOne, the exclusive web-based easy system management tool
 - > All-in-one desktop form factor, rack mountable design
 - > Recommended applications: SMBs, retail, healthcare, logistics and intelligent buildings

NVR3104 / NVR3304 Professional Megapixel NVR



NVR5400 Series Overview



- 96-ch Best C/P Value Mission Critical Server-storage NVR
 - > Up to **316 HDDs** with JBOD Expansion
 - > Support **8/12/16-bay** SATA Hard Disk
 - > Built-in RAID 1, 5, 6, 1+Spare, 5+Spare, 6+Spare for data protection
 - > Built-in Enterprise VMS with video analytics and active alarm system
 - Support SurveOne, the exclusive web-based easy system management tool
 - > Affordable budget with excellent performance
 - > Recommended applications: city surveillance, education, industrial, commercial and residential

NVR5416 Enterprise Megapixel NVR



NVR7300 Series Overview



- 128-ch Mission Critical Server-storage NVR
 - > Up to **316 HDDs** with JBOD Expansion
 - > Support **12/16-bay** SATA Hard Disk
 - > Built-in **RAID 1, 5, 6, 1+Spare, 5+Spare, 6+Spare** for data protection
 - > Cableless design + hot swappable redundant power for low maintenance efforts
 - > Built-in Enterprise VMS with video analytics and active alarm system
 - > Cost-effective performance with Linux platform and RAID function for stable system integration
 - > Recommended applications: banking, casino, airport and government

NVR7316 Corporate Megapixel NVR



NVR7800 Series Overview



- Milestone VMS Pre-loaded Server-storage NVR
 - Maximum 150-ch megapixel recording (up to 3MP for nearly 4000 Mbps)
 - > Up to **316 HDDs** with JBOD Expansion
 - > Support **12/16-bay** SATA Hard Disk
 - > Built-in RAID 0, 1, 5, 6, 10, 50, 60, 1+Spare, 5+Spare, 6+Spare for data protection
 - > Cableless design + hot swappable redundant power for low maintenance efforts
 - > Cost-effective performance with built-in H/W RAID function for stable system integration
 - > Recommended applications: banking, casino, airport

NVR7800 Series Corporate Megapixel NVR

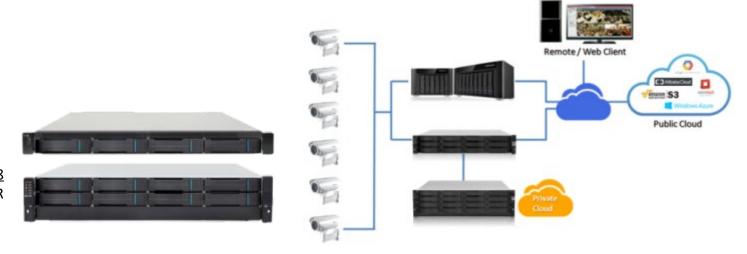




Cloud NVR Solutions Overview (1/2)



- Surveon Enterprise NVR with Infortrend Cloud Storage
 - Native with Surveon NVR advantages of enterprise design, data protection, and high reliability.
 - Support wide range cloud services for both private and public cloud.
 - Powerful data services and rich built-in easy IT networking applications.



GSe Pro 1004 / 3008 Corporate Megapixel NVR

Cloud NVR Solutions Overview (2/2)



- Data Protection & Long-time Recording
 - 12Gb/s SAS connection for JBOD expansion up to 428 HDDs for years recording.
 - Built-in Infortrend patent RAID with Intelligent Drive
 Integrity (IDR) for prevention of data corruption and drive rebuild.
 - Support iSCSI (SAN/NAS) expansion for data backup or recording purpose.
- SAN, NAS & Cloud in Single System
 - One storage supports NAS, SAN, DAS, cloud, and NVR function.
 - File sharing across multiple operating systems, including Windows, Linux, and Mac OS.
 - > Data can be directly written to block level storage with unique technology and architecture.



Appendix-2: Technical Information

2/4/5-Bay NVR



Series	Professional		Cloud NVR	Professional	
Model	SMR2110P	NVR3104P1	NVR3304E1	GSe Pro 1004-16	SMR5110P
Architecture	All-in-One	All-in-One	All-in-One	Client Server	All-in-One
Form Factor	Desktop	Desktop	Desktop	RackMount	Desktop
IP Channel Number	16 - 32	4 - 16	16 - 32	16	16 - 32
HDD Number	2x SATA	4x SATA	4x SATA	4x SATA	5x SATA
RAID	RAID 1	RAID 1, 5, 6	RAID 1, 5, 6	RAID 0, 1 (0+1), 3, 5, 6, 10, 30, 50, 60	RAID 1, 5, 6
Storage Expansion	iSCSI/NAS	iSCSI/NAS	iSCSI/NAS	NA	iSCSI/NAS
Hot-Swappable	V	NA	NA	V	V
Cableless Design	NA	NA	NA	NA	NA
Modules Design	NA	NA	NA	V	NA
Server Processor	Intel® Celeron Quad Core 2.0GHz	Intel® Celeron Dual Core 1.8GHz	Intel® Core i3 Dual Core 3.3GHz	Intel® Atom quadcore, 2.40 GHz	Intel® Celeron Quad Core 2.0GHz
System Memory	DDR3L 4GB	DDR3 2GB	DDR3 4GB	DDR3 4GB	DDR3L 4GB
Video Intelligence	Max. 4ch	Max. 4ch	Max. 8ch	NA	Max. 4ch
Local Live View	V	V	V	NA	V
Video Output	1x DVI-I	1x VGA, 1x HDMI, 1x DVI-D	1x VGA, 1x HDMI	NA	1x DVI-I
USB Port	4	6	8	4	4
LAN Port	1x Gigabit	1x Gigabit	2x Gigabit	4x Gigabit	1x Gigabit
Power Consumption	48W	250W	250W	250W	90W
Redundant Power	NA	NA	NA	V	NA
Chassis	Tower	Desktop/Rack	Desktop/Rack	1U 4-bay Rack	Tower

8-Bay NVR



Series		Cloud NVR		
Model	SMR8300E	SMR8300A	NVR5408E1	GSe Pro 3008-32/64
Architecture	All-in-One	All-in-One	Client-Server	Client Server
Form Factor	Desktop	Desktop	RackMount	RackMount
IP Channel Number	16 - 32	16 - 64	16 - 64	32-64
HDD Number	8x SATA	8x SATA	8x SATA	8x SATA
RAID	RAID 1, 5, 6	RAID 1, 5, 6	RAID 1, 5, 6, 1+Spare, 5+Spare, 6+Spare	RAID 0, 1 (0+1), 3, 5, 6, 10, 30, 50, 60
Storage Expansion	iSCSI/NAS	iSCSI/NAS	iSCSI/NAS/JBOD	JBOD
Hot-Swappable	V	V	V	V
Cableless Design	NA	NA	NA	NA
Modules Design	NA	NA	NA	V
Server Processor	Intel® Core i3 Dual Core 3.3GHz	Intel® Core i7 Quad Core 3.4GHz	Intel® Core i3 Dual Core 3.5GHz	Intel® Pentium-D quad-core, 1.60 GHz
System Memory	DDR3 4GB	DDR3 4GB	DDR3 16GB	DDR4 8GB/16GB
Video Intelligence	Max. 8ch	Max. 16ch	Max. 16ch	NA
Local Live View	V	V	V	NA
Video Output	1x VGA, 1x HDMI	1x VGA, 1x HDMI	1x VGA, 2x HDMI	NA
USB Port	6	6	4	4
LAN Port	2x Gigabit	2x Gigabit	4x Gigabit	4x Gigabit
Power Consumption	430W	430W	460W	250W
Redundant Power	NA	NA	NA	V
Chassis	Tower	Tower	2U 8-bay Rack	2U 8-bay Rack

12-Bay NVR



Series	Ente	rprise	Corporate				
Model	NVR5412E1	NVR5412A1	NVR2100	NVR7312Ex	NVR7312Ax	NVR7812Ex	NVR7812Ax
Architecture	Client-Server	Client-Server	Client-Server	Client-Server	Client-Server	Client-Server	Client-Server
Form Factor	RackMount	RackMount	RackMount	RackMount	RackMount	RackMount	RackMount
IP Channel Number	16-64	16-96	16 – 64	64 – 128	64 – 128	Based on VMS	Based on VMS
HDD Number	12x SATA	12x SATA	Up to 240 SATA	12x SATA	12x SATA	12x SATA	12x SATA
RAID	RAID 1, 5, 6, 1+Spare, 5+Spare, 6+Spare	RAID 1, 5, 6, 1+Spare, 5+Spare, 6+Spare	RAID 0, 1 (0+1), 3, 5, 6, 10, 30, 50, 60	RAID 1, 5, 6, 1+Spare, 5+Spare, 6+Spare	RAID 1, 5, 6, 1+Spare, 5+Spare, 6+Spare	RAID 0, 1, 5, 6, 10, 50, 60, 1+Spare, 5+Spare, 6+Spare	RAID 0, 1, 5, 6, 10, 50, 60, 1+Spare, 5+Spare, 6+Spare
Storage Expansion	iSCSI/NAS/JBOD	iSCSI/NAS/JBOD	iSCSI/SAS	iSCSI/NAS/JBOD	iSCSI/NAS/JBOD	iSCSI/SAS/JBOD	iSCSI/SAS/JBOD
Hot-Swappable	V	V	V (Storage)	V	V	V	V
Cableless Design	NA	NA	V (Storage)	V	V	V	V
Modules Design	NA	NA	V (Storage)	V	V	V	V
Server Processor	Intel® Core i3 Dual Core 3.5GHz	Intel® Xeon E3 Quad Core 3.2GHz	Intel® Core i3 3.3GHz/Intel® Xeon 3.2GHz	Intel® Core i3 Dual Core	Intel® Xeon E3- 1225/1275 Quad Core 3.2GHz	Intel® Core i3 Dual Core	Intel® Xeon E3- 1225/1275 Quad Core
System Memory	DDR3 16GB	DDR3 16GB	DDR3 4GB	DDR3 16GB	DDR3 16GB	DDR3 8GB	DDR3 8GB
Video Intelligence	Max. 16ch	Max. 16ch	Max. 32ch	Max. 32ch	Max. 32ch	Based on VMS	Based on VMS
Local Live View	V	V		V	V	V	V
Video Output	1x VGA, 2x HDMI	1x VGA, 2x HDMI	1x VGA	1x VGA, 2x HDMI	1x VGA, 2x HDMI	1x VGA, 2x HDMI	1x VGA, 2x HDMI
USB Port	4	4	2	4	4	4	4
LAN Port	4x Gigabit	4x Gigabit	2x Gigabit	2x Gigabit	2x Gigabit	4x Gigabit	4x Gigabit
Power Consumption	460W	460W	350W	460W	460W	530W	530W
Redundant Power	NA	NA	V (Storage)	V	V	V	V
Chassis	2U 12-bay Rack	2U 12-bay Rack	1U 19" Rack	2U 12-bay Rack	2U 12-bay Rack	2U 12-bay Rack	2U 12-bay Rack

16-Bay NVR



Series	Enter	prise	Corporate				
Model	NVR5416E1	NVR5416A1	NVR2100	NVR7316Ex	NVR7316Ax	NVR7816Ex	NVR7816Ax
Architecture	Client-Server	Client-Server	Client-Server	Client-Server	Client-Server	Client-Server	Client-Server
Form Factor	RackMount	RackMount	RackMount	RackMount	RackMount	RackMount	RackMount
IP Channel Number	16-64	16-96	16 – 64	64 – 128	64 – 128	Based on VMS	Based on VMS
HDD Number	16x SATA	16x SATA	Up to 240 SATA	16x SATA	16x SATA	16x SATA	16x SATA
RAID	RAID 1, 5, 6, 1+Spare, 5+Spare, 6+Spare	RAID 1, 5, 6, 1+Spare, 5+Spare, 6+Spare	RAID 0, 1 (0+1), 3, 5, 6, 10, 30, 50, 60	RAID 1, 5, 6, 1+Spare, 5+Spare, 6+Spare	RAID 1, 5, 6, 1+Spare, 5+Spare, 6+Spare	RAID 0, 1, 5, 6, 10, 50, 60, 1+Spare, 5+Spare, 6+Spare	RAID 0, 1, 5, 6, 10, 50, 60, 1+Spare, 5+Spare, 6+Spare
Storage Expansion	iSCSI/NAS/JBOD	iSCSI/NAS/JBOD	iSCSI/SAS	iSCSI/NAS/JBOD	iSCSI/NAS/JBOD	iSCSI/SAS/JBOD	iSCSI/SAS/JBOD
Hot-Swappable	V	V	V (Storage)	V	V	V	V
Cableless Design	NA	NA	V (Storage)	V	V	V	V
Modules Design	NA	NA	V (Storage)	V	V	V	V
Server Processor	Intel® Core i3 Dual Core 3.5GHz	Intel® Xeon E3 Quad Core 3.2GHz	Intel® Core i3 3.3GHz/Intel® Xeon 3.2GHz	Intel® Core i3 Dual Core	Intel® Xeon E3- 1225/1275 Quad Core 3.2GHz	Intel® Core i3 Dual Core	Intel® Xeon E3- 1225/1275 Quad Core
System Memory	DDR3 16GB	DDR3 16GB	DDR3 4GB	DDR3 16GB	DDR3 16GB	DDR3 8GB	DDR3 8GB
Video Intelligence	Max. 16ch	Max. 16ch	Max. 32ch	Max. 32ch	Max. 32ch	Based on VMS	Based on VMS
Local Live View	V	V		V	V	V	V
Video Output	1x VGA, 2x HDMI	1x VGA, 2x HDMI	1x VGA	1x VGA, 2x HDMI	1x VGA, 2x HDMI	1x VGA, 2x HDMI	1x VGA, 2x HDMI
USB Port	4	4	2	4	4	4	4
LAN Port	4x Gigabit	4x Gigabit	2x Gigabit	2x Gigabit	2x Gigabit	4x Gigabit	4x Gigabit
Power Consumption	460W	460W	350W	460W	460W	530W	530W
Redundant Power	NA	NA	V (Storage)	V	V	V	V
Chassis	3U 16-bay Rack	3U 16-bay Rack	1U 19" Rack	3U 16-bay Rack	3U 16-bay Rack	3U 16-bay Rack	3U 16-bay Rack

Camera Support Capability



For models supported by NVR/SMR, please visit <u>Surveon Support Camera List</u>



























































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Thank You

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