

Surveon NVR7800 Series

The Enterprise NVR with Milestone & Genetec VMS Fully Compatible



NVR7800 Series Overview

Product Advantages

Technical Information



NVR7800 Series Overview

Certified with
Milestone & Genetec
VMS Solutions

Throughput
Up to 150 CH@3MP for
nearly 2000 Mbps

Storage Expansion
Up to 316 HDDs



Server-storage design

Cost-effective performance with built-in H/W
RAID function for stable system integration

User-friendly GUI
Easy setup and storage
monitoring

Reliability

Cableless design + hot swappable redundant
power for low maintenance efforts

- Two types of **Milestone XProtect®** Software Suite are pre-loaded



XProtect® Corporate

Advanced surveillance solution in large-scale and high-security projects, such as city surveillance and airport



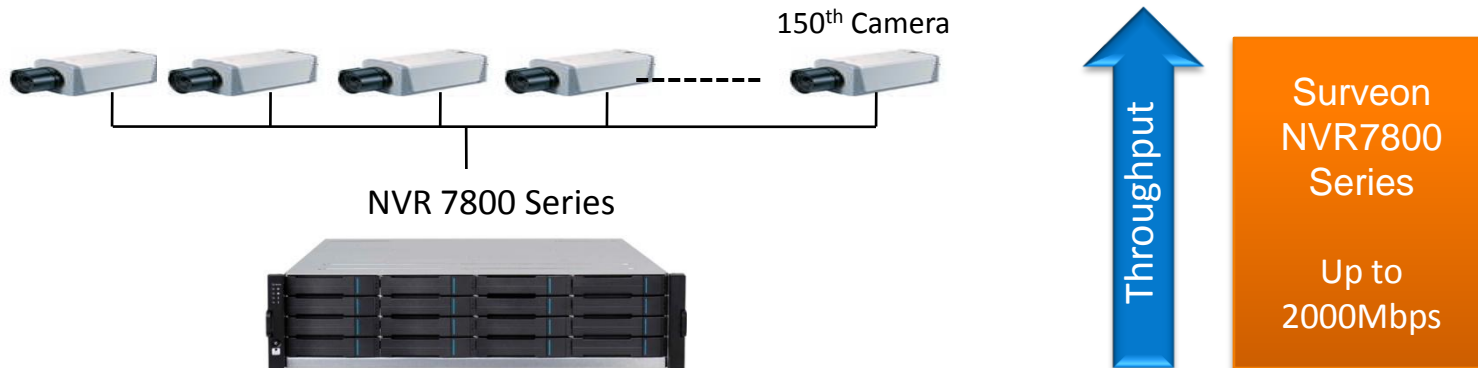
XProtect® Enterprise

Medium to large surveillance solution for medium-large scale areas, such as train stations and power plants

- [NVR7800 Series test report on Milestone website](#)

Milestone Performance Test (1/2)

- Support up to **150 CH 3MP** cameras recording, more than **twice Milestone's benchmark level** in a non-stop recording scenario
- The system is even capable of supporting more than **four times** the number of cameras estimated by benchmark under the testing scenario where motion detection is enabled
- The system results in a high level of recording throughput of **nearly 2000 Mbps**, ensuring cameras can record and be viewed reliably



Milestone Performance Test (2/2)

Xprotect Corporate - Continuous Recording

Test Scenario 1 (NVR only)	NVR Model	Processors	Stream Profile (#of cameras, compression %)	Live Video Database Read Latency(millisceonds)	Individual Video Stream Size(Mbps)	Maximum Disk I/O (MBps)
Benchmark	NVR7812 NVR7816	i3-4330	60 camera, 30%	2	10.17	120.64
		E3-1225	60 camera, 30%	2	10.17	375.92
		E3-1275	60 camera, 30%	9	10.65	119.98
Maximum	NVR7812 NVR7816	i3-4330	110 camera, 60%	4	13.94	293.71
		E3-1225	145 camera, 60%	7	9.91	267.61
		E3-1275	150 camera, 60%	10	14.41	498.1

Xprotect Corporate - Video Motion Detection - RAID5 - Archiving

Test Scenario 2 (NVR + JBODs)	NVR Model	Processors	Stream Profile (#of cameras, compression %, Motion detection %)	Live Video Database Read Latency(millisceonds)	Individual Video Stream Size(Mbps)	Maximum Disk I/O (MBps)
Benchmark	NVR7812 NVR7816	i3-4330	30 camera, 30%, 30%	3	10.06	493.41
		E3-1225	30 camera, 30%, 30%	2	5.2	486.79
		E3-1275	30 camera, 30%, 30%	1	10.23	557.91
Maximum	NVR7812 NVR7816	i3-4330	70 camera, 60%, 30%	1	5.09	445.29
		E3-1225	110 camera, 60%, 30%	2	5.07	631.17
		E3-1275	140 camera, 60%, 30%	2	5.18	516.83

Surveon VS. Pro---e Test Result

- Under the same Milestone performance test, NVR7800 Series supports more cameras and has larger throughput



Surveon

Test Scenario 1 (NVR only)	NVR Model	Processors	Stream Profile (#of cameras, compression %)	Live Video Database Read Latency(millisceonds)	Individual Video Stream Size(Mbps)	Maximum Disk I/O (MBps)
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Pro---e



Test Scenario	NVR Model	Stream Profile (# of cameras, compression %)	Live Video Database Read Latency (milliseconds)	Individual Video Stream Size (Kbps)	Total Array Throughput (MBps)
Benchmark:	A2200	7 Cameras, 60%	0.44	670 – 600	4.57
	A2600	20 Cameras, 60%	1.18	670 – 600	13.05
Maximum:	A2200	55 cams, 60%	2.14	670 – 600	32.79
	A2600	90 cams, 60%	2.48	670 – 600	53.66

Surveon VS. D--I Test Result

- Under the system structure of Server + Storage, NVR7800 Series has better C/P ratio and higher throughput



Surveon

Test Scenario 1 (NVR only)	NVR Model	Processors	Stream Profile (# of cameras, compression %)	Live Video Database Read Latency(millisceonds)	Individual Video Stream Size(Mbps)	Maximum Disk I/O (MBps)
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D--I

Product Benchmark test results per Recording Server:



Average Live Database Write Throughput	72 MBps
Average Individual Camera Stream Size	3.6 Mbps
Average Recording Server CPU Utilization	12%
% Frames Lost	0.0%
Average Live DB Read Latency	2.5 ms

- Up to 150 cameras per server

Compatible with Genetec VMS

- NVR7800 Series is fully compatible with Genetec Omnicast™ VMS



Provides organizations of all sizes the ability to deploy a surveillance system that addresses their unique video security needs

Genetec Performance Test

- With Genetec Omnicast™ VMS, NVR7800 Series can serve **300 CH 1.3MP** cameras with continuous recording or **190 CH 1.3MP** cameras with motion detection recording

Continuous Recording

Test Scenario 1	NVR Model	Processors	Stream Profile (#of cameras, resolution)	Live Video Database Read Latency(millisceonds)	Individual Video Stream Size(Mbps)	Maximum Disk I/O (MBps)
Maximum	NVR7816	i3-4330	300 camera, 1.3MP	-	1	-
		E3-1225	300 camera, 1.3MP	-	1	-
		E3-1275	300 camera, 1.3MP	-	1	-
		i3-4330	60 camera, 1.3MP	-	5	-
		E3-1225	60 camera, 1.3MP	-	5	-
		E3-1275	60 camera, 1.3MP	-	5	-

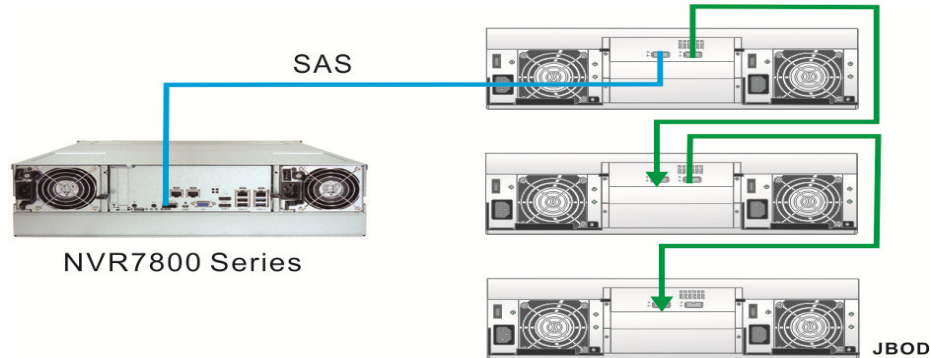
Motion Detection Recording

Test Scenario 2	NVR Model	Processors	Stream Profile (#of cameras, resolution)	Live Video Database Read Latency(millisceonds)	Individual Video Stream Size(Mbps)	Maximum Disk I/O (MBps)
Maximum	NVR7816	i3-4330	110 camera, 1.3MP	-	1	-
		E3-1225	150 camera, 1.3MP	-	1	-
		E3-1275	190 camera, 1.3MP	-	1	-
		i3-4330	45 camera, 1.3MP	-	5	-
		E3-1225	60 camera, 1.3MP	-	5	-
		E3-1275	60 camera, 1.3MP	-	5	-

Product Advantages

Storage Expandability

- Local JBOD expansion with SAS port connections; faster read/write performance and better stability
- Support up to **316 drives** with high density **4U 60-bay expansion** enclosure (maximum capacity of up to 2.5 PB with 8TB HDD)
- Provide flexibility to easily expand number of retention days with large capacity



Multi-functional Combination

- The **Server + Storage design** provides high integration with other devices for system stability
- Easy installation without the need to add card or internal cable connection
- Built-in H/W RAID 0, 1, 5, 6, 10, 50, 60, 1+Spare, 5+Spare, 6+Spare
- Simplified server and storage management via single GUI

RAID Storage built-in Server



NVR7800 Series



Server



Legacy Server + RAID card

RAID Card



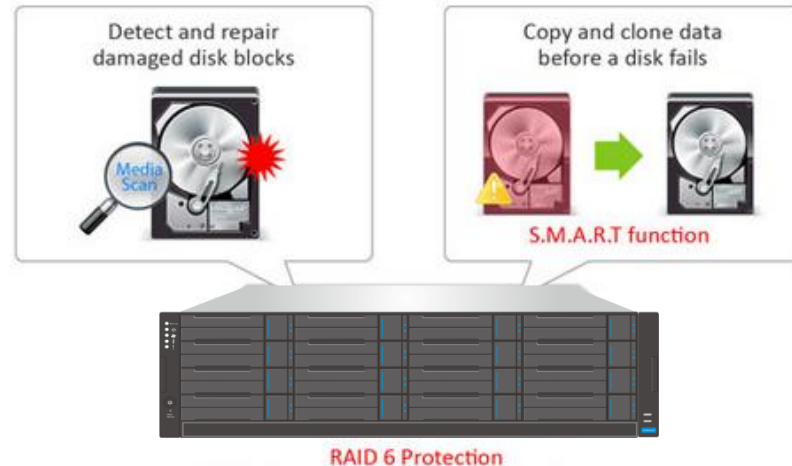
Intelligent Drive Integrity (IDR)

- **Data corruption prevention**

- Smart data recovery mechanism: Detect and recover bad blocks

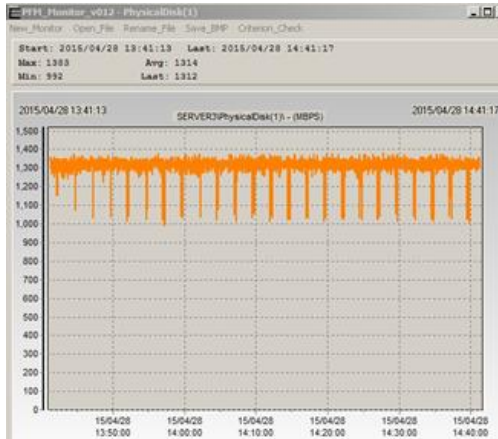
- **Drive rebuild prevention**

- Failing drive prediction: Copy and Clone data before a disk fails

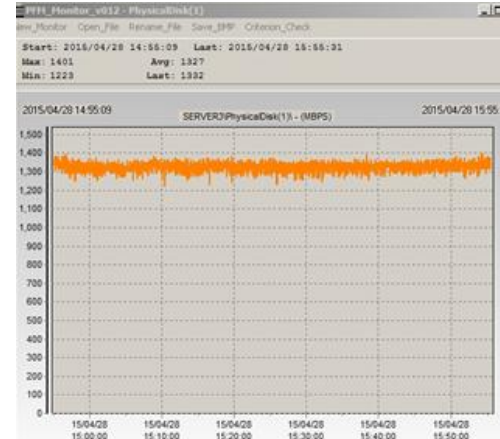


Ensure Smooth Performance

- **Patented read/write technology** to guarantee performance during drive IO delay
- **Isolate the abnormal drive** to maintain system stability



Conventional



Surveon

- No internal RAID card cable connection allows for easy deployment
- Prevent accidental disconnections or loose cables
- Low maintenance modular design

Highly integrated controller that is easy to deploy



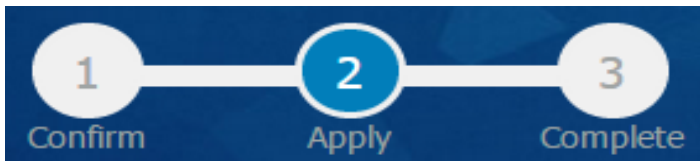
Hot-swappable redundant PSU



User-Friendly GUI

- Easy to set up
- Intuitive design for simple operation

3-step Setup



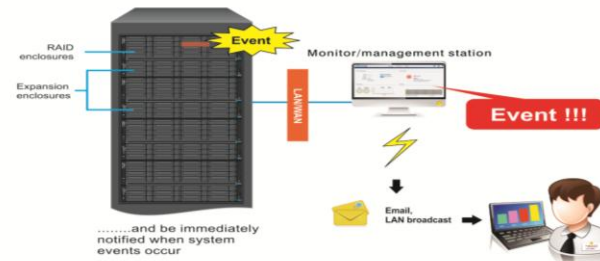
System Events Checks and Notifications

Index	Severity	Date / Time	Event
173	Info	2015-07-24 15:15:24	[020A8202] LD:72E5C39A Logical drive online initialization completed
172	Info	2015-07-24 14:38:52	[020C002D] NAME:part0 ID:06DB09832AADFB4 Partition created
171	Info	2015-07-24 14:38:28	[020B0028] NAME:newLV ID:242FB8AE7D6267BB Logical volume created
170	Info	2015-07-24 14:38:08	[020A8102] LD:72E5C39A Logical drive online initialization started

Quick View of Storage & Server Status



Notification Mechanism



Technical Information

Specifications

Form factor	2U 12-bay (7812) / 3U 16-bay (7816)
Controller architecture	Single controller
System drive	Install two 2.5" SATA HDDs with RAID1
CPU	Default: Intel Core i3-4330, dual-core 3.5G
	Upgradable: Intel Xeon E3-1225, quad-core 3.2G Intel Xeon E3-1275, quad-core 3.5G
DIMM slot	DDR3 slot x 4
Memory capacity	Supports up to 32GB (4 x 8GB) with ECC or non ECC
Rear I/O ports	Gigabit Ethernet x 4
	USB 2.0 x 2
	USB 3.0 x2
	VGA x 1
	HDMI x 2
	Mic. In port x1
	Speaker out port x 1
Service port	Service port x 1 (mini USB connector – RS 232 interface)
Drive interface	6Gb/s SAS
PCI-E Gen3 slot	PCI-E 3.0 x 8 slot x 1
	Support 10Gbe x2 (SFP+&RJ-45) or 1GbE x 4

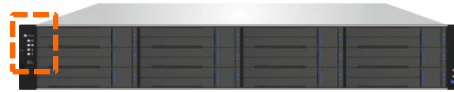
JBOD expansion	6Gb/s SAS wide port x 1
Disk support	3.5" 7,200 RPM NL-SAS 6Gb/s HDD
	3.5" 7,200 RPM SATA 3Gb/s and 6Gb/s HDD
Max. disk support number	NVR7812 312 disks (1 x NVR7812+ 5 x 4U 60-bay JBOD)
	180 disks (1 x NVR7812+ 14 x 2U 12-bay JBOD)
	NVR7816 316 disk (1 x NVR7816+ 5 x 4U 60-bay JBOD) 240 disk (1 NVR7816+ 14 x 3U 16-bay JBOD)
Compatible operation system	Windows 10 Enterprise, 64-bit
	Windows 7 Professional SP1, 64-bit
	Windows Server 2012, 64-bit
	Windows 7 Ultimate, 64-bit
Installation	OS can be installed in backend 2.5" SATA system drive
RAID Functionality	RAID 0, 1, 5, 6, 10, 50, 60, 1+Spare, 5+Spare, 6+Spare
PSU	Dual Redundant PSU
Enclosure Dimension	2U 19-inch rack mount
	3U 19-inch rack mount

Front panel LEDs:

- Service LED: Off
- Power LED: Green
- Cooling fan LED: Green
- Thermal LED: Green
- System LED: Green



NVR7812



NVR7816

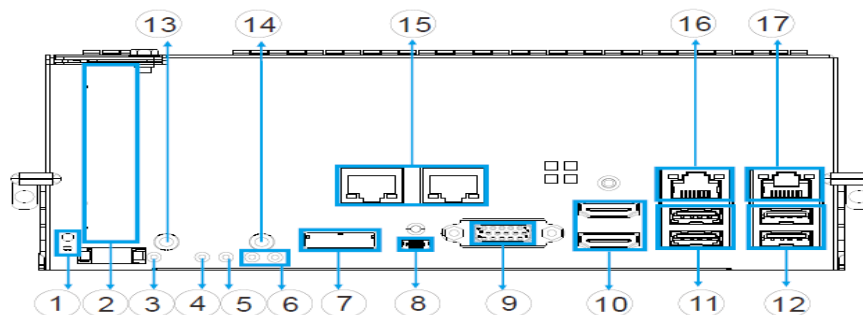
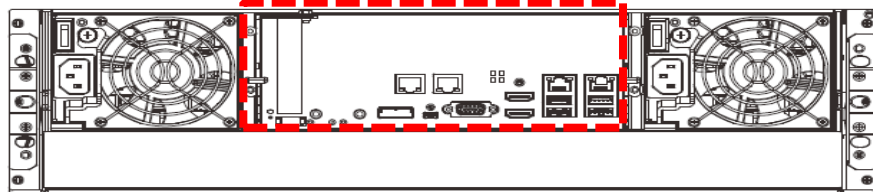


Rear-view & Controller Brief

NVR7812



NVR7816

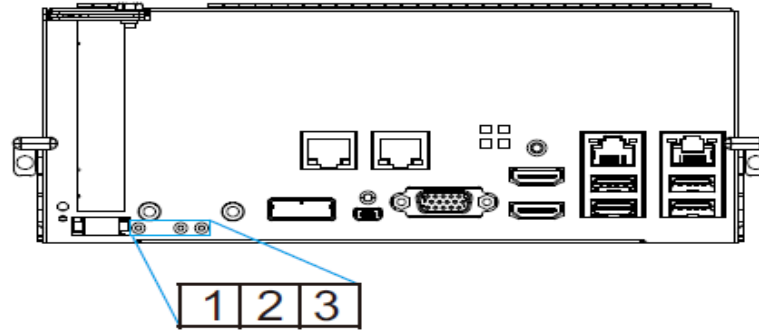


1	Default reset button & LED	10	HDMI
2	PCI-E expansion	11	USB 2.0
3	Controller status LED	12	USB 3.0
4	Cache Dirty LED (type II)	13	3.5mm microphone jack
5	Host Busy LED	14	3.5mm headphone jack
6	Reserved LEDs (type I)	15	1 Gb/s Ethernet (optional)
7	6Gb/s SAS expansion	16	1 Gb/s Ethernet (support Wake On LAN)
8	miniUSB COM	17	1 Gb/s Ethernet
9	D-Sub VGA		

Verifying the Status LEDs

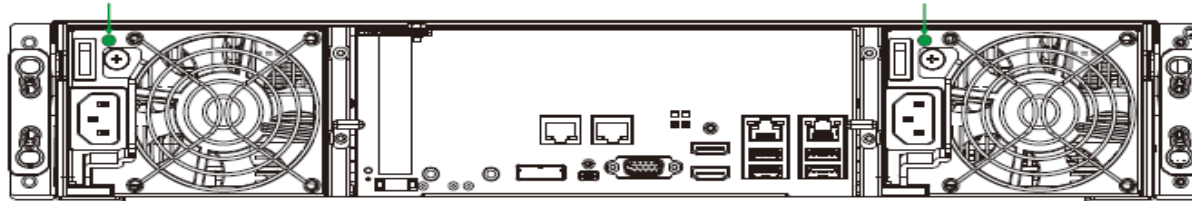
Controller LEDs:

1. Ctrl Status LED: On (green)
2. C_Dirty LED: Off
3. Host Busy LED: On (green)



PSU LED:

- PSU LED: On (green)



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The background features a dark blue gradient with abstract, flowing white and light blue lines that create a sense of movement and depth. A subtle grid pattern is visible in the upper left quadrant, fading into the background.

Thank You

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