Powerful engines for your security base

M6 Series Enterprise NVRs

M6024/6016/6012
& Extended Storage Server S6024

Defined by GVD as rack-mountable "**Enterprise**" NVRs, the **M6 Series** features a number of extra robust NVR models with rich hardware redundancy such as dual power and dual LAN ports to ensure non-stop service in unexpected situations. The series is optimized for enterprise-level, high-capacity storage applications, such as service in a server room.

An NVR alone allows max. 128 channels, with excellent read/write to handle bandwidth up to 384 Mbps for 24 x 7 x 365 recording. For storage, an NVR alone carries 144TB while joining two optional storage servers, **S6024**, will boost the storage to 432TB. Also on option is a backup server, GVD's **X6024**, to keep an insurance copy of your video data.

The **M6 Series** NVR plays an fundamental part in GVD's large-scale video management platforms. It takes only flexible add-on of GVD products to scale the NVR to these platforms. If you are looking for an extra robust and reliable NVR for enterprise and multi-site projects, look no further than GVD's **M6 Series Enterprise NVR**s.

- IP camera license of 48, 64, 96 or 128 channels on option
- Built-in with 24, 16 or 12 hot-swappable 3.5″ hard disk trays for max. 432TB storage
- Storage server **S6024** on option to extend storage capacity up to 432TB
- RAID 0,1,5,6 for video data protection
- Excellent redundancy with dual power units
- Outstanding write at 384 Mbps for 24x 7x 365 video recording

Product Highlights

◼ Virtual Hard Disk (VHD) - Painless system recovery

In order to protect users from data loss, GVD loads the NVR with a SSD-based "virtual hard disk" to help the NVR retrieve the state of the system (and also the software) at a particular time. The application is able to quickly fix serious system failures and OS/software corruption by just a few clicks of yours. This application reduces not only RMA but also the need for on-site support. For users everything just falls back into place so soon.

◼ Extra Robust - Better reliability than most NVRs

The NVR is extra robust with hardware redundancy. It features dual LAN ports and dual power units to prevent unexpected data disconnection and power failure.
RAID setup is also provided to prevent data loss once a hard drive becomes unavailable. Dual watchdogs are integrated for a hardware watchdog to monitor system health and a software watchdog to make sure the important programs run properly. Further equipped are a number of hot-swappable PWM fans capable of changing their speed to make the system heat sinking far more efficient compared to the NVRs with potentiometer fan control.

◼ Time Sector Engine (TSE) – Excellent read / write

The NVR has high data transmission rate at max. 384 Mbps, and it handles high bandwidth throughput up to 600 Mbit/s over 1G LAN port, up to 128 IP cameras @ 3Mb/s, and processes video at high speed with 150ms~190ms latency. The NVR gives you the best real-time PTZ control by this exclusive TSE it features.

Immediate Video Processing

◼ High Capacity – Maximum storage and cameras

Optimized for enterprise applications, the NVR supports high-density HDDs in a 4U form factor and features 24 hot-swappable 3.5" SAS3/SATA hard drive trays at its front. The storage can further increase to 432TB with the help of two external storage servers, **S6024**. The NVR also features optimized HDD signal trace routing and improved HDD tray design to dampen HDD vibrations and to maximize HDD performance. Standing alone the NVR supports max. 128 cameras while a group of stacked-up NVR can support up to 8000 cameras.

◼ Modbus Support & TCP Message – Promise smart buildings and smart cities

The NVR supports Modbus, the popular serial-communication protocol widely-used for the connection of industrial electronic devices. Users of this NVR don't need to invest extra effort and cost to quickly incorporate a 3rd-party system. The NVR also features powerful alarm management that is capable of sending TCP messages to alarm security operators. These advantages make the NVR highly eligible for the promising solutions such as Smart Buildings for DCS (distributed control system) and Smart Cities for CAP (common alerting protocol) such as IBM IOC.

◼ Total Solution – Solves multiple problems

Alongside the robust **M6 Series** is GVD's complete product line to meet the needs of almost every industry for large-scale video management. After scaling the NVR to a centralized video management platform, (**VMS**), a control center (**E300**) becomes available, and a video wall (**D300**), backup server (**X6024**), failover server (**X5016**) and integration gateway (**C5001**) are allowed to the system. Software-wise the NVR also aims at complete service, to feature the abilities to incorporate POS and ATM, to perform video content analysis, to manage alarms and so on.

Software Features

Self-Diagnostics of System Hardware – With enhanced alarms

The system features some facilities to monitor the health of its own hardware. It features a hardware tree with all critical system components on it with their important data called out, such as chipset temperature, fan speed, fan RPM, CPU temperature, CPU voltage, SSD temperature and so on. Powerful alarm management is featured along to warn you when a hardware component goes out of control.

Video Content Analysis – Ensures evidence for law enforcement

The NVR features sophisticated **Video Content Analysis**, including **VMD** (Video Motion Detection) that detects moving objects, **E-Fence** that discerns objects crossing a virtual line by a certain direction while **People Counting** adds up how many objects have crossed a virtual line. Users can set up an interested VCA event for alarms and retrieve an certain VCA video with the powerful search feature. In some worst cases VCA can provide you with the evidence for law enforcement.

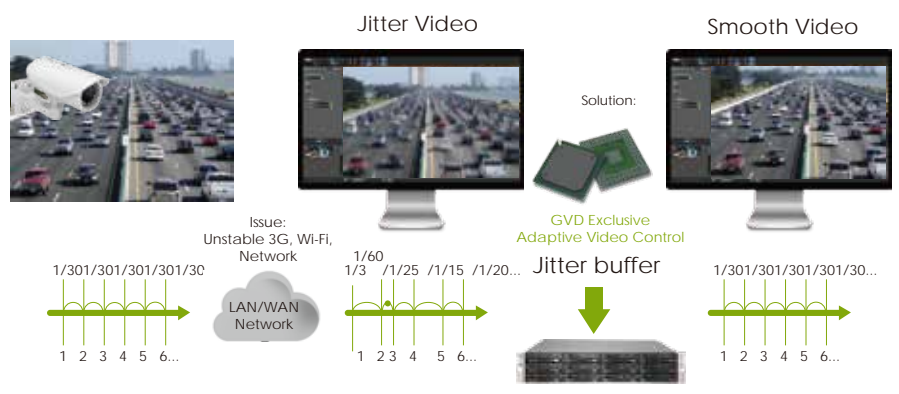## N+M Failover – Extra capable failover

For mission critical projects, a failover server **X5016** is available on option for **M6 Series** NVRs. As a turnkey product with ready-to-use hardware and software, the **X5016** is able to take over an NVR that broke down within less than 45 seconds. The **X5016** has adopted advanced design to allow uninterrupted video recording and seamless video display. The failover solution is extra capable with **N+M** feature for one failover server to watch over up to 10 NVRs.

VMS as M6 Platform - Safeguards your large project

The NVR is based on GVD's **HD NVR**, a collection of sophisticated utilities to work with the brain (**E300**) of GVD's centralized video management system called **VMS**. The **VMS** may be comprised of a group of NVRs and a number of different kinds of servers to bring max. 8000 cameras under control. A control center solution is available with **VMS**. Through network connection, an NVR can stay perpetually connected to the control center hundreds of miles away. Clients are available on web browser and portable devices such as iOS/Android phones/tablets. Users can easily view a live or recorded video on the go.
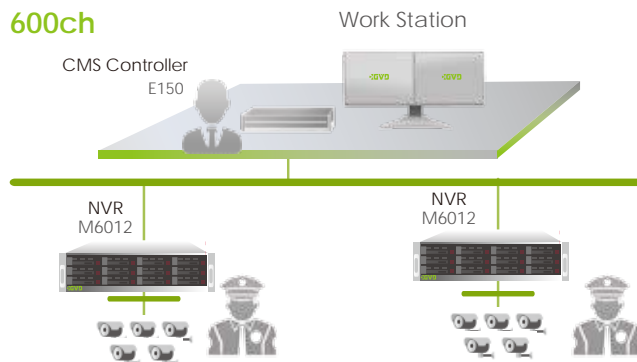
Playout Control – Smoothens video streams in unstable networks

It is quite often to see the quality of streamed media suffer from network delays. The NVR features Playout Control, a technique that adopts dynamic buffer size to tolerate poor network conditions, whether 3G or WiFi.
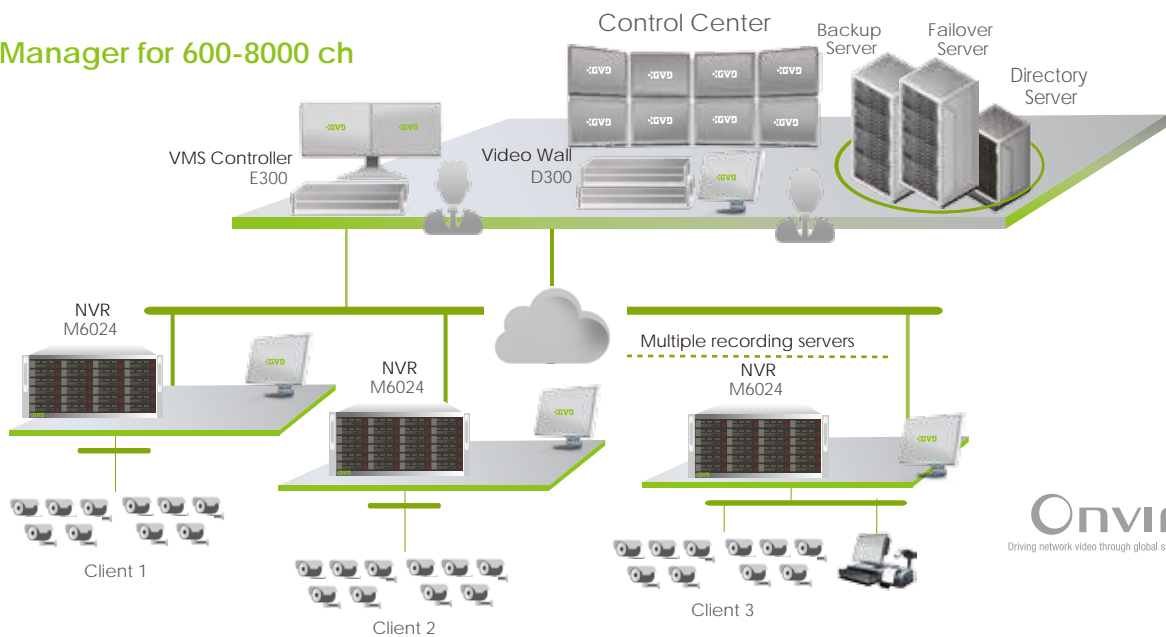
Jitter Video

Smooth Video

Solution:

GVD Exclusive
Adaptive Video Control

Jitter buffer

Issue:
Unstable 3G, Wi-Fi,
Network

1/301/301/301/301/30

LAN/WAN
Network

1 2 3 4 5 6...

1/60
1/3 /1/25 /1/15 /1/20...

1 2 3 4 5 6...

1/301/301/301/301/30...

1 2 3 4 5 6...

GVD Genius Vision Digital
www.gvdigital.com

System Architecture

CMS Manager for 16- 600ch

Work Station

CMS Controller
E150

NVR
M6012

NVR
M6012

VMS Manager for 600-8000 ch

Control Center

Backup Server

Failover Server

Directory Server

VMS Controller
E300

Video Wall
D300

NVR
M6024

NVR
M6024

Multiple recording servers

NVR
M6024

Client 1

Client 2

Client 3

Onvif
Driving network video through global standardization

Dimensions

M6016

437mm

132mm

M6012

437mm

89mm

M6024

437mm

178mm

HDD Tray

IPMI LAN

COM1

USB 3.0

Redundancy
Power Supply

USB 2.0

Dual LAN Ports

VGA

UID
SWITCH

DVI x 2

DAS (for S6000 Series)
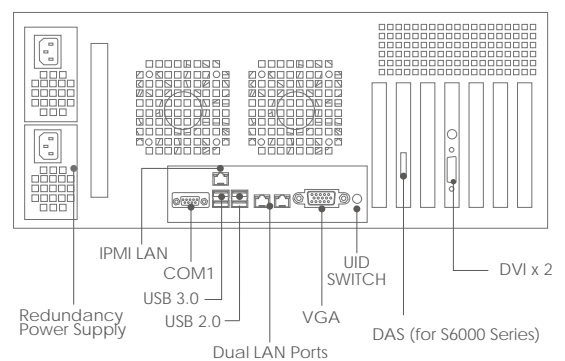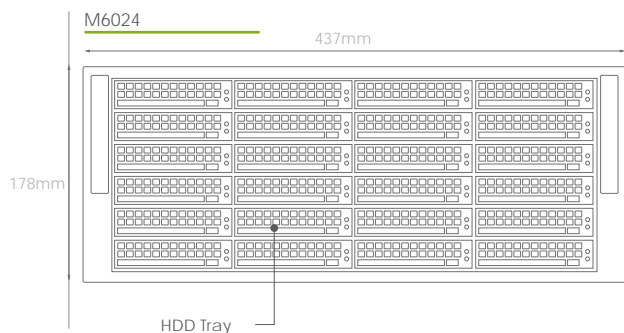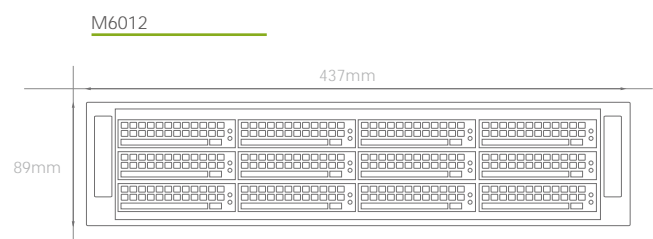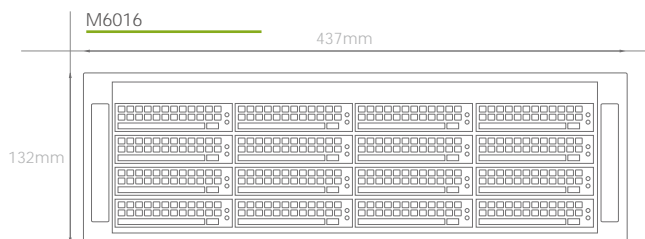
Specification

Product		M6024	M6016	M6012
System	Item	Rackmount Enterprise NVR		
	CPU	Intel® Xeon® E3-1225 V3		
	Memory	DDR3-1333 8G		
	Operation System (OS)	Windows 7 Embedded		
	Network Protocols	TCP/IP ,UDP, HTTP, HTTPs, SMTP,SNMPv3, DNS, DHCP, NTP, ARP, ICMP, FTPc, FTPs,		
		DDNS, RTP (RTCP, RTSP), IGMPv3, UPnP, CIFS, NFS, IEC802.1x		
	Language	English, Spanish, French, Dutch, Italian, Japanese, Chinese, etc.		
	Watchdog	Supports Hardware Watchdog, Software Watchdog		
	System Update	Supports NVR Software Update		
	Certification	CB / CE / FCC / VCCI		
Video & Recording	IP Camera License	64ch, 96ch, 128ch	64ch, 96ch	48ch, 64ch
	Local Video Display Frame Rate	D1@1200fps		
	Live Video Stream Output Number	144	112	80
	Video Recording Rate	Max.384Mb		
	Recording Resolution	D1, 1.3~20 Megapixel		
	Video Codec	H.264 High Profile, MPEG4, M-JPEG, MxPEG		
	Audio Codec	Two-Way Audio, G. 711, G.726, AAC		
	Streaming Type	Unicasting, Multicasting		
	Onvif Supports	Onvif 2.2, Profile-S		
	Recording Capacity (RAID 0, 1, 5, 6)	144 TB (24x HDDs)	96 TB (16x HDDs)	72 TB (12x HDDs)
	Extended Storage Capacity	Max. 288 TB (2 x S6024)		

Software

Setting	Configurations	Configurations of NVR, Camera, Event, Alarm, Device, DI/DO, etc.
	User Authority	Export Video Clip, PTZ Control, Live View, Playback, Alarm Search,
		Configuration, Remote System Control, etc.
	Recording Mode	Full Time Recording, Recording by Schedule, Event, Alarm, Motion Detection
E-map	E-map	Mapping Cameras and DI/DO Points, Map Hyperlink
PTZ	PTZ Control	PTZ Control, Preset Point, Patrol, Digital PTZ
Live View	Display Pattern	1, 2, 3, 4, 5, 6, 8, 9, 12, 13, 16, 18, 24, 25, 36, 48, 64
	Viewing Operation	ROI (Region of Interest), Tour
Playback	Video Search	Time, Event, Alarm
	Synchronous Playback	Up to 16ch
	Video Playback	Time Slider Control Panel (Forward, Backward, Speed Control, Sync. Playback)
	Video Export	Video Export via USB (Supports .avi and .ava Format), Digital Watermark
VCA	Intelligent Search	Missing Object, Foreign Object
	Intelligent Video Analytics	E-fence, Video Motion Detection
Event	Event Log	Event logs of System, Cameras, User, etc.
Alarm	Alarm Event / Search	Video Loss, Sensor Triggered, HDD Crashed, System Crashed, Abnormal
		Transaction, E-fence, Video Motion Detection
	Alarm Notification	Pop-up, E-mail, DI/DO, Trigger Recording
	Alarm In / Alarm Out	DI/DO Control, Modbus (Master, Slave)
Remote Client	Web Client	Support Browser IE 8.0
	APP Client	iOS (iPhone, iPad), Android
	VMS/CMS Client	VMS(E300), CMS(E150), Thin Client(E90 - Window XP/7/8)
	Supports Client Numbers	16
POS	POS License	8ch
	POS Integration	Integration with all brands via GVD POS Editor
	Transaction Viewing	Live Viewing with Transaction data
	Search / Playback	Time, Item (Keyword), Price with Transaction data and Video
	Abnormal Transaction	Alarm Rule (Item, Value), Alarm Popup, Alarm Search

Hardware

Network	Lan Port	Gigabit Lan (RJ45, On-board Teaming) x2		
	Ethernet	10/100/1000M Auto Negotiation		
Display	Local Display	DVI-Ix 2		
	Local Display Resolution	1920x1200		
Storage	Hard Disk Drive	SATA		
	Hard Disk Trays (Bays)	24 pcs (Hot Swap)	16 pcs (Hot Swap)	12 pcs (Hot Swap)
	Storage Capacity	6 TB		
	RAID Level	RAID 0, 1, 5, 6		
Port	USB Port	USB 2.0 Rear x 2, USB 3.0 x 2, 2.0 x 2 (Back)		
	Communication Port	RS232 (DB9) x1 - Rear I/O ; RS232(Header) x1 - Onboard I/O		
	Power Voltage	100~240 Vac, 50-60 Hz		
Power	Redundancy Power Supply	Support Redundancy Power		
	Power Consumption	575W	485W	385W
Environment	Operation Temperature	10°C ~ 35°C (41°F ~ 95°F)	10°C ~ 35°C (41°F ~ 95°F)	10°C ~ 35°C (50°F ~ 95°F)
	Storage Temperature	-40°C ~ 70°C (-40°F ~ 158°F)		
	Operation Humidity	8% ~ 90% (N/An-condensing)		
	Storage Humidity	5% ~ 95% (N/An-condensing)		
Appearance	Dimensions (WxHxD)	437 x 178 x 660mm	437 x 132 x 648mm	437 x 89 x 660mm
	Net Weight	34 Kg	32.7 Kg	23.6 Kg
	Chassis	4U Rackmount Chassis	3U Rackmount Chassis	2U Rackmount Chassis
		with Drawer Slides	with Drawer Slides	with Drawer Slides
Expansion	Extended Storage	S6024 (24HDDs)		
	Keyboard	K205		
	POS Box	A0003-POS (RS-232)		

*All specifications are subject to change without notice

S6024 Rackmount Extended Storage

GVD's **Extended Storage Server S6024** is meant to hook up 144 more terabytes with the **M6 Series**. Take the highest capacitated model **M6024** for example, the **S6024** can help it build the storage up to 288 TB. These rack-mountable heavyweights are directly attached to each other by the SAS connectors featured at their rear sides. Together they deliver an optimal solution for the large-scale projects or mission-critical projects that need to be online all the time around the clock. They are your best choice for shopping complexes or large banking business.
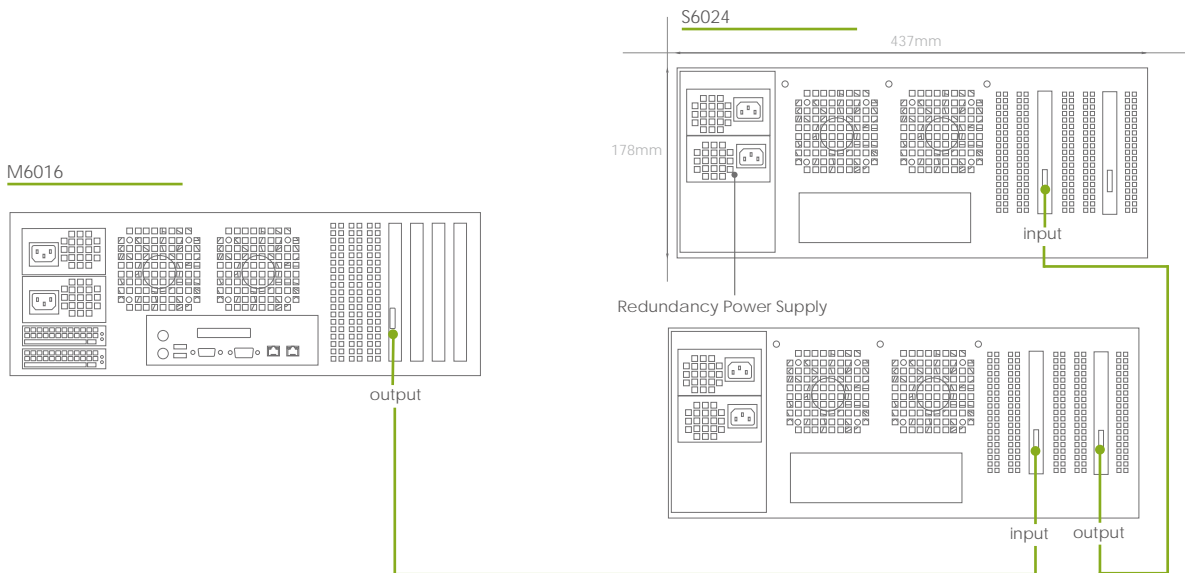
Product		S6024
System	Item	Extended Storage (DAS Server)
Storage	Hard Disk Drive	SATA
	Hard Disk Trays (Bays)	24 pcs (Hot Swap)
	Storage Capacity	6 TB
	RAID Level	Host Dependant
	Recording Capacity	144 TB (24x HDDs)
Power	Power Voltage	100~240 Vac, 50-60 Hz
	Redundancy Power Supply	Support Redundancy Power
	Power Consumption	380W
Environment	Operation Temperature	5°C ~ 35°C (41°F ~ 95°F)
	Storage Temperature	-40°C ~ 70°C (-40°F ~ 158°F)
	Operation Humidity	8% ~ 90% (N/An-condensing)
	Storage Humidity	5% ~ 95% (N/An-condensing)
Appearance	Dimensions	437(W)x178(H)x660(D)mm
	Net Weight	34 Kg
	Chassis	4U Rackmount Chassis with Drawer Slides

*All specifications are subject to change without notice