

wysLink e Series Network Video Recorders

Outline

wysLink Network Video Recorders are built by Windows server, provide secure, reliable and scalable video surveillance performances with an end-to-end security solution. It is developed for large scale video surveillance deployment for the application with multi locations and up to thousands of cameras.

High secured system

The system is a clean and closed system, which works without relying on any other servers. It is Canadian-developed production, and all the source codes are in-house, Consequently, there is little to no possibility of malicious access to the software.. The cameras are connected in a separate network segment where internet access is blocked.

Multi-layer pyramid architecture of NVR deployment

NVRs and Servers can connect as NVR clusters at 2 or 3 layers pyramid structure, edge NVR is the one which camera connects to, second layer servers can be deployed at local or cloud. Video can be recorded at edge NVR, up layer NVRs, or multiple NVRs. Live and recorded video can be accessed from local NVRs, or from up-layer NVRs. It provides great flexibility, video safety, to deploy a large scale video surveillance system at the application for airport, government, banks, schools, manufactures, etc.

All in the Software package

- CMS Server Services (installed at all NVRs)
- Alarm and Notification Management (installed all NVRs)
- Surveillance Station (installed at Client PC)
- System Configuration (installed at Client PC)
- Utility application of PC screen and Webcam streaming.
- Video Analytics, and Smart Surveillance (Option and separate license, installed at NVR or Client PCs).

We are happy to customize the software to suit all kinds of your video surveillance requirements.

Stream PC Monitor video to CMS

A utility application software is provided to stream the PC monitor screen video, or webcam video to the system, which can run at front explicitly or in the background. Our customers use it to monitor the equipment status, and some use it to keep logs of each PC activity.

With High performance and reliability





NVR models come optimized with RAID technology, hot-swappable drives, and warranty with dedicated support from us to increase system uptime and availability.

Can store multiple copies at different NVRs, locally or remotely. All the hard disks are specially optimized for the video surveillance system.

Cyber Security

With these NVRs, you don't need to be an IT expert to deploy a system that meets the highest security standards. The NVRs are designed with high security site requirements in mind. Unused operating system services, ports and applications are all disabled to minimize attack vectors while also maximizing performance. Our system is designed for the application of government, enterprise and critical infrastructure facilities.

Specifications

	Premium	Standard	Value	Compact
Model	eNVR -PRM-48TB eNVR -PRM-64TB eNVR -PRM-96TB eNVR -PRM-120TB eNVR -PRM-168TB eNVRPRM-Customize	eNVR-STD16TB NVR-STD-24TB eNVR-STD-36TB eNVR -STD-Customize Model for YCDSB	eNVR-VAL-8TB eNVR-VAL-16TB eNVR-VAL-24TB	eNVR -CPT- 1TB
Hardware	DELL PowerEdge Rack Server 2U	DELL PowerEdge Rack Server 1U	DELL PowerEdge Mini tower Server	Aluminum Case, Fanless PC
				
Description	Video recorder for large scale deployment With Enterprise level server High reliable, 3 year warranty	Video recorder for most of facilities With Enterprise level server High reliable, 3 year warranty	Value type video recorder for small business, Mini Tower Server with 1 year warranty	Compact recorder, and streaming server to up server Works for outdoor, Non-air-conditioned environment 1 year warranty
Cameras to be connected, as a guide	Up to 200	Up to 100	Up to 50	Up to 50
	In software, there is no limitation of maximum cameras. Camera total will be decided by Disk volume, camera video stream rate and requested records day. As reference, typically for 4MP(2560 x 1440 pixels) IP camera, 30fps, variable bit rate at max. 8Mbps, Video Data is estimated about 10-25GB/day			
wysLink CMS software package	CMS Server Services (in all NVRs) / Alarm and Notification Management (In all NVRs) / Surveillance station (Client PC) / System Configuration (Client PC) / PC screen and Webcam streaming Video Analytics Application (Not released yet) Note: Software Cost is not charged by license per camera, which is not included in NVR cost.			
Video Streaming performance				
Port Connection	1Gbe x2	1Gbe x2	1Gbe x1	1Gbe x2
Recording Rate	Up to 640Mbps	Up to 640Mbps	Up to 320Mbps	Up to 200M

Playback	Up to 640Mbps	Up to 640Mbps	Up to 320Mbps	Up to 200Mbps
Storage				
Raid	Raid 6	Raid 5	No Raid	No Raid
SATAs HDD	Front 12 x 3.5"HDD Rear 2 x 3.5"HDD Hot-Plug hard drive (Max. 14TB/HDD)	4 x3.5" HDD Hot-Plug hard drive (Max. 14TB/HDD)	3 x3.5" HDD Hot-Plug hard drive (Max. 12TB/HDD)	1 x2.5" HDD
Storage Capacity	196TB 168TB(Effective Raid 6)	56TB 42TB (Effective Raid 5)	36TB	1TB
Operating system	Windows Server 2019, standard	Windows Server 2019, standard	Windows10	Windows10
Network Interface	2 x 1GbE RJ45 2 x 10GbE RJ45	2 x 1GbE RJ45	1 x 1GbE RJ45	2 x 1GbE RJ45
Memory	16GB RDIMM, 2666 MT/s	8GB RDIMM, 2666 MT/s	8GB UDIMM	8GB DDR3
Processor	Intel Xeon Silver 4208 2.1G 8c	Intel Xeon Bronze 3204 1.9G 6c	Intel Xeon E-2224G, 3.5GHz 4c	Intel Bay-Trail-D J1900 2.0GHz, 4c
Video Port	1xVGA	1xVGA	1xVGA, 2x HDMI	1 DVI-I, VGA, HDMI
Form factor	2U 19" rack mount chassis	1U 19" rack mount chassis	Mini tower	Small box
Dimensions	H: 86.8mm (3.41") W : 434.0mm (17.1") D: 595.6mm (23.5")	H: 44.45mm (1.70") W : 434.0mm (17.1") D: 595.6mm (23.5")	H:19.38" / 492 mm W:18.5" / 470 mm D:13.88" / 353 mm	H:63mm W: 247mm D: 152mm
Weight	13.6kg (29.9lbs.)	29.68kg (65.43lbs)	23.3lb/ 10.6 kg	2.7kg

Power Input	Single, Hot-plug Power Supply, 495W Option1 : Hot-plug, Redundant Power Supply, 495W Option2 : Single, Hot-plug Power Supply, 1100W 100V-240VAC 50/60Hz	Single 350W hot-plug redundant power supplies Option1 : Hot-plug, Redundant Power Supply, 350W Option2 : Hot-plug, Redundant Power Supply, 550W 100V-240VAC 50/60Hz	Power Supply APFC 300W	, DC9-36V Input Adaptor 12V/5A Attached
Environmental	Operating Temperature 10° C to 35° C (50° F to 95° F) Storage Temperature -40° C to 65° C (-40° F to 149° F) Operating Humidity 10% to 80% relative humidity with 29°C (84.2°F) maximum dew point Storage Humidity 5% to 95% RH with 33°C (91°F) maximum dew point. Atmosphere must be non-condensing at all times		Operating Temperature -20°C ~ 50°C Storage Temperature -40°C ~ 80°C Operating Humidity 0% ~ 90% non-condensing	
Certificates	UL, cUL, CE, RCM, BSMI, CCC, EAC, KC, NOM, NRCS, VCCI, RoHS, Reach (SVHC), WEEE, BIS Safety UL/CSA/EN/IEC 62368-1 Electromagnetic Emissions CFR Title 47, FCC Part 2, 15 Class A, ICES-003(A), EN 55032 Class A, EN 61000-3-2, EN 61000-3-3		FCC, CE, RoHS	

System features

System integration and deployment

- Uses Windows Server.
- Multiple layer deployment (edge / Second layer/ top layer)
- Connect NVRs by LAN or WAN as one system, local/remote
- From one top layer server, able to access videos of any camera in the system.
- Multiple recording of a camera. At edge NVR or at cloud server.
- No limitation on number of cameras
- Share camera software license within whole system.

Flexible and Expandable

- Interface with utility application to output and input streams, events.
- NVR main software is simple, stable and robust

Maintenance and support

- Support from Richmond Hill
- Support provided directly by service engineers and developers of the software.
- Easy replacement of hardware.

Security feature

- . This is our own production and we own all the source codes. Unlike most CMS software in the market there is no hidden access given to other third party servers..
- . NVR works WITHOUT relying on our server and any other servers
- All client applications on PC work WITHOUT relying on our server and any other servers
- Inside software source, No hidden functions to communicate with others
- Little to no possibility of malicious access to the software

NVR software feature

Camera Management

- Add camera via auto search via ONVIF
- Advance adding by URI
- Add camera by maker's private protocol

Role and User Management

- Manage user permissions and roles for camera and control
- Assign user to defined roles
- Restrict user access by MAC of used device
- Restrict user access by IP region where the user is. (City, province, country)

Event Management

- Set alarm type
- Set alarm scheme: all day, weekday, weekend,
- Send Event to add-on utility application

Video Recording

- Ability to record continuously or on motion
- Available to save video at edge, at up layer servers or both
- Set record days individually by camera
- Auto load balance to all HDDs in a NVRs
- Hard disk RAID

System Logs

- View system, administrator, and client logs
- Search and export logs

Video surveillance station Features

Live View

Order Information

1. The Hard disk (surveillance) configuration can be customized upon requested
2. At the case where the eNVR is deployed as upper server, which accept camera stream from edge server, then the license is not required.

- Display device tree;
- Display device IP address or device name on the tree
- View real-time video
- Apply a common layout up to 32
- Control PTZ cameras
- Take Snapshots
- Perform instant playback
- Audio talk
- Adjust the video image and the display mode (full screen or original)

Video Wall

- Up to 16TV

Playback

- Playback recording from edge NVR or up layer NVR
- Multiple cameras Sync playback
- Reverse playback
- Support fast forward, and fast backward
- clip video for file output
- Take a snapshot
- Decode to a TV wall

Event

- View real-time and alarm logs
- View detailed alarm information
- Acknowledge alarms
- video pop up when an event occurs

Map

- View live video or recorded video on the map
- Select camera from map

Model	Description (Raid 6 N-2)
eNVR -PRM-48TB	48TB NVR Premium with Microsoft Windows Server 2019 (8TB x 8 HDD) , 3 year warranty
eNVR -PRM-64TB	64TB NVR Premium with Microsoft Windows Server 2019 (8TB x 10 HDD) , 3 year warranty
eNVR -PRM-96TB	96TB NVR Premium with Microsoft Windows Server 2019 (12TB x 10 HDD) , 3 year warranty

eNVR -PRM-120TB	120TB NVR Premium with Microsoft Windows Server 2019 (12TB x 12 HDD) , 3 year warranty
eNVR -PRM-168TB	168TB NVR Premium with Microsoft Windows Server 2019 (14TB x 14 HDD) , 3 year warranty
wysLink-CMS-lic60	wysLink CMS bundled with eNVR-PRM, with 60 camera license

Model	Description (Raid 5 N-1)
eNVR -STD-16TB	16TB NVR standard with Microsoft Windows Server 2019 (8TB x 3 HDD) , 3 year warranty
eNVR -STD-24TB	24TB NVR standard with Microsoft Windows Server 2019 (8TB x4 HDD) , 3 year warranty,
eNVR -STD-36TB	36TB NVR standard with Microsoft Windows Server 2019 (12TB x 4 HDD) , 3 year warranty
wysLink-CMS-lic40	wysLink CMS bundled with eNVR-STD, with 40 camera license

Model	Description (Not Raid N)
eNVR -VAL-8TB	8TB NVR value with Microsoft Windows 10 (8TB x 1 HDD) , 1 year warranty
eNVR -VAL-16TB	16TB NVR value with Microsoft Windows 10 (8TB x 2 HDD) , 1 year warranty
eNVR -VAL-24TB	24TB NVR value with Microsoft Windows 10 (8TB x 3 HDD) , 1 year warranty
wysLink-CMS-lic-24	wysLink CMS bundled with eNVR-VAL, with 24 camera license

Model	Description (Not Raid N)
eNVR -CPT- 1TB	Compact NVR with Microsoft Windows 10 (1TB x 1 HDD) 16 camera licenses included

wysLink-CMS-lic License	<p>CMS Server Services (in all NVRs)</p> <p>Alarm and Notification Management (In all NVRs)</p> <p>Surveillance station (Client PC)</p> <p>System Configuration (Client PC)</p> <p>PC screen and Webcam streaming</p> <p>1 year technical support.</p> <p>* Licenses are required for all the cameras connections in a system. One camera needs one license to connect into the system. Up layer NVR which accept camera stream from edge server, the license is not required.</p>
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License	Surveillance station with Video Analytics
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Consideration to deploy the surveillance system

Video surveillance systems for large scale deployment, there are several main considerations.

1. Select cameras

Cameras normally are selected by camera resolution, shapes, and if need pan/tilt. Our CMS software needs the camera ONVIF protocol supported.

Be noted that we suggest contacting us to confirm if the camera is connectible to our system, since some cameras in the market are with Onvif support, but not fully supported

2. Select NVR and Storage volume

In the software, there is no limitation of maximum cameras. Camera total will be decided by Disk volume, camera video stream rate and requested records day.

Premium and standard types of eNVR use enterprise level 19 inch rack mount type servers, and with windows server 2016, and raid hdd . It is recommended to select these types, if the video recording is very important.

Value type eNVR is suggested for those customers who want to balance the cost and performances.

We strongly suggest that the camera is set to use streams with variable bit rate, not constant bit rate. Otherwise, the video will be huge. As reference Typically for 4MP IP camera, 30fps, variable bit rate at max. 1Mbps, Video Data 8-25GB/day.

The recording days of video can be set by the camera channel individually. So the number of recording days can be set according to the camera's importance.

3. System Architecture

The system is deployed with pyramid layers, the video can be recorded at the low layer of edge nvrs, or at nvrs of the higher layer. From edge to top layer eNVR (or servers), if the camera video stream passes the NVR, then the video can be watched and recorded from this server, and upper layer server.

Video streaming path and recorded location can be configured.

Multiple layer pyramid deployment

The system can be deployed in either two layers (edge NVRs and top server), or three layers(edge NVR ,second layer server and top layer server).

Edge NVR connects with cameras via the local camera network. It is deployed at the location where the cameras are installed. Since the NVR is with two Ethernet ports, it is suggested that one Ethernet port connects to your local area network, another port connects to cameras via POE switch.

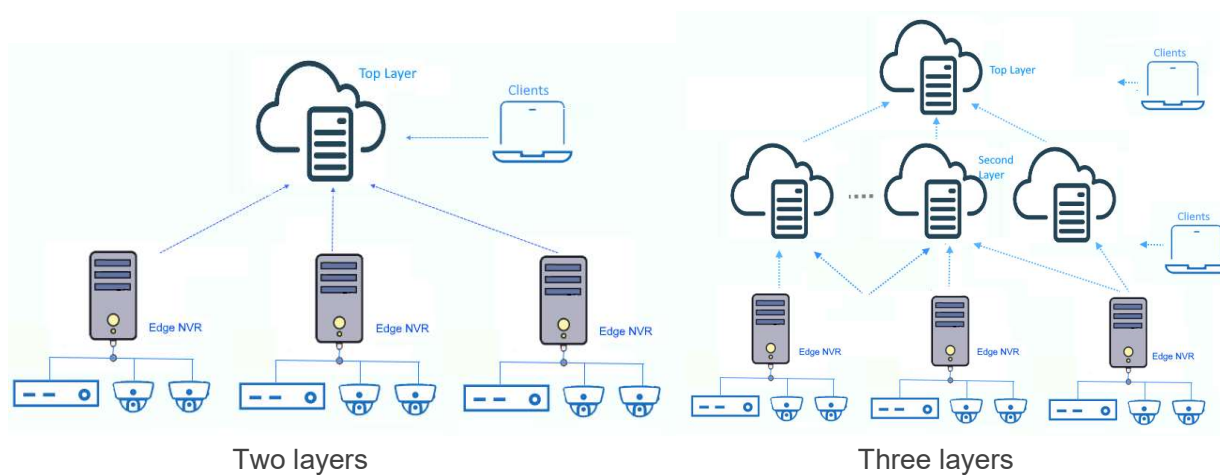
Second layer NVRs (servers) normally are deployed at own data center, or commercial cloud server center. It is to store the video streamed from edge NVRs. Consider saving videos at second layer servers when 1) the environment condition of edge NVRs is not good; 2) there are risks for local staff to delete video purposely

when events happen. 3) Need to save video copies. The disadvantage is that it increases the equipment cost and it needs higher bandwidth of the internet.

Top layer server normally is deployed at its own data center, or commercial cloud server center, it does not need a high performance, and big storage. the main functions are below.

- From the top layer server, all the clients of the surveillance station can access live and recorded video at all NVRs. So there is no need to do special settings on the router which Edge NVRs is connected to.
- This server can check the credentials when users access videos.

So it can greatly enhance the video security and make the Video access simple and safe.



Two layers vs three layers deployment

Three layers of structure can balance the load of storing the videos, and enhance the security. But it increases the equipment cost. In our customer's application like the automobile factory line, they set the second layer server at the data center inside the facility, so it does not request the internet bandwidth. It stores all the videos at edge NVRs for a short period, while storing some videos for those who need to keep for years.

Two layers of structure are commonly used like retail store chain, nursing homes. Some important videos can be set to store video copy at the top layer servers if the server is with enough data storage space.

In our retail customers, they use a compact model (eNVR -CPT- 1TB) and top layer server in the cloud. On the NVRs, only several day's videos are stored, and store all videos at the top server for months. Compact model of NVR can work outdoors, even in winter and summer.

4. Connect cameras to edge NVR

NVR is with two Ethernet ports, it is suggested that one Ethernet port connects to your local area network, another port connects to cameras via POE switch with separate network segments. Make sure the camera network is isolated, and is prohibited from accessing the internet.

5. Access the videos from video surveillance station

There are ways to access the live and recorded videos

1. Access videos on edge NVR itself.

2. Surveillance stations visit Edge NVR, which is the same local area network.
3. Surveillance stations visit the top layer server. if the top layer server is deployed at its own facility, then the server IP needs static IP ,and set the firewall to allow access via the internet.

It is not recommended to directly access the edge NVRs via the internet because the firewall settings are requested, and client security management has to be done at each NVRs.

When a client signs into the system to access video from the top server, it needs to pass the security checks by password, registered trusted device, registered trusted IPs. The client can get live and recorded videos from the accessible cameras which are assigned by the administrator. Account accessible videos can be picked from the same edge NVR, or the combination of cameras from multiple edge NVRs.