




## NUUO Hybrid Appliance

	NH-4500-PRO	NH-4500-ENT	NH-4500-EXT
			
<b>CPU</b>	Intel Haswell i5-4570S, 2.9GHz	Intel Haswell i7-4770S, 3.1GHz	Intel Xeon E5-2620, 2.0GHz
<b>Memory</b>	4GB	4GB	8GB
<b>Maximum Supported Channel</b>	64 ch (IP + Analog)		
<b>PCIe Slot Quantity for NUUO DVR card</b>	4	4	3
<b>IP Camera Decoding Capacity</b>	Refer NUUO Design Tool for estimation*		
<b>Recommended Combination</b>	Refer NUUO Design Tool for estimation*		
<b>Operation System</b>	Windows 7 Professional 64 bit / Windows 7 Ultimate 64 bit	Windows 7 Professional 64 bit / Windows 7 Ultimate 64 bit	Windows 7 Professional 64 bit / Windows 7 Ultimate 64 bit
<b>System Drive</b>	250 GB		
<b>Embedded Data Drive(S)</b>	4 bay, each bay support up to 4TB	6 bay, each bay support up to 4TB	8 bay, each bay support up to 4TB
<b>Power Supply</b>	Standard power supply	Standard power supply / Redundant power supply (optional)	Standard power supply / Redundant power supply (optional)
<b>Ethernet Port(s)</b>	2 x Gigabit Ports, RJ45		
<b>Video Output (Dual Monitor)</b>	VGA: 1 DVI-D: 1 HDMI: 1	VGA: 1 DVI-D: 1 HDMI: 1	VGA: 1 DVI-I: 1 HDMI: 1
<b>Graphic</b>	Intel HD Graphics 4600	Intel HD Graphics 4600	ATI HD5450
<b>Throughput</b>	80 Mbps (w/ 1 HDD); 130 Mbps (w/ 2 HDDs); 180Mbps (w/ 3 HDDs); 230 Mbps (w/ 4 HDDs)		
<b>DVD+-RW</b>	8X Dual Layer DVD+-RW		
<b>RS-485 (Optional)</b>	Support NUUO I/O card		
<b>Alarm (Optional)</b>	Inputs: 4 /Outputs: 4 (NUUO I/O card)	Inputs: 4 /Outputs: 4 (NUUO I/O card)	Inputs: 4 /Outputs: 4 (NUUO I/O card)
<b>Dimensions (H x W x D)</b>	177 x 482 x 502 mm (7" x 19" x 19.8")	177 x 482 x 502 mm (7" x 19" x 19.8")	177 x 482 x 600 mm (7" x 19" x 23.6")
<b>Keyboard</b>	Yes (USB)		
<b>Mouse</b>	Yes (USB)		
<b>Warranty</b>	2-year		

\*NUUO Design Tool website: <http://www.nuuo.com/calculator/>


NUUO DVR Card		SCB 8000 series		SCB 7100 series		SCB 7000S series			SCB 6000S series		
Model		8004HD	7108	7116	7004S	7008S	7016S	6004S	6008S	6016S	
Video Input		4	8	16	4	8	16	4	8	16	
Audio Input		0	8	16	4	8	16	4	8	16	
Maximum Cards		4 Cards	1 Card	1 Card	4 Cards	4 Cards	4 Cards	4 Cards	4 Cards	4 Cards	
Maximum analog input per system		16***	16		64			64			
Display Rate (FPS)		120/100	240/200	480/400	120/100	240/200	480/400	120/100	240/200	480/400	
Recording Rate @CIF (FPS)		720p@120	240/200	480/400	120/100	240/200	480/400	120/100	240/200	480/400	
Recording Rate @D1 (FPS)		1080p@120	240/200	480/400	120/100	240/200	480/400	30/25	60/50	120/100	
Video Resolution	NTSC	1080p, 720p	704x480; 352x240; 176x120		704x480; 352x240; 176x120			704x480; 352x240; 176x120			
	PAL		704x576; 352x288; 176x144		704x576; 352x288; 176x144			704x576; 352x288; 176x144			
TV Output Rate	w/ DP**	N/A	RCA and DP: 10fps		N/A			N/A			
	w/o DP**	N/A	RCA: 25fps		N/A			N/A			
	Only DP**	N/A	DP: 14fps		N/A			N/A			
Compression Format		H/W H.264	H/W H.264		H/W H.264			H/W H.264			
Interface		PCI-E x1	PCI-E x1		PCI-E x1			PCI-E x1			
Maximum I/O Card		4	2	4	4	4	4	4	4	4	
Available I/O Box		Support	Support		Support			Support			
Hardware Watchdog		Support	Support		Support			Support			
Dimension (W x H, mm)		178 x 126	216x126	216x126	188 x 121	188 x 121	188 x 121	188 x 121	188 x 121	188 x 121	
Warranty		2-year*	2-year*		2-year*			2-year*			
<b>System Minimum Requirements (per card)</b>											
OS Supported		32bits: MS Windows XP pro SP3 / Vista SP1 / Win 7 SP1 / Win 8 64bits: Win 7 SP1/ Win Server 2008 R2 / Win 8 / Win Server 2012									
CPU		Intel Core 2 DuoE5300	Intel Core 2 QuadQ8400		Intel Core 2 DuoE5300			Intel Core 2 DuoE5300			
RAM		2GB									
		<b>Above RAM amount is recommended based on one DVR card installation. For system with multiple DVR cards, stacked 1G RAM for system under 16ch, 3G RAM for system under 32ch, and 4G RAM with 64 bit OS for system with 32ch or above are recommended.</b>									
HDD		250 GB									
Motherboard		Intel P55, H55, X58, P45, P43 chip, MB vendor ASUS, Gigabyte, or MSI with Intel Chipset recommended									
Display		ATI Radeon HD 4350 or above (ATI Driver V11-5 recommended ATI Driver V10 not support)									

**Note**

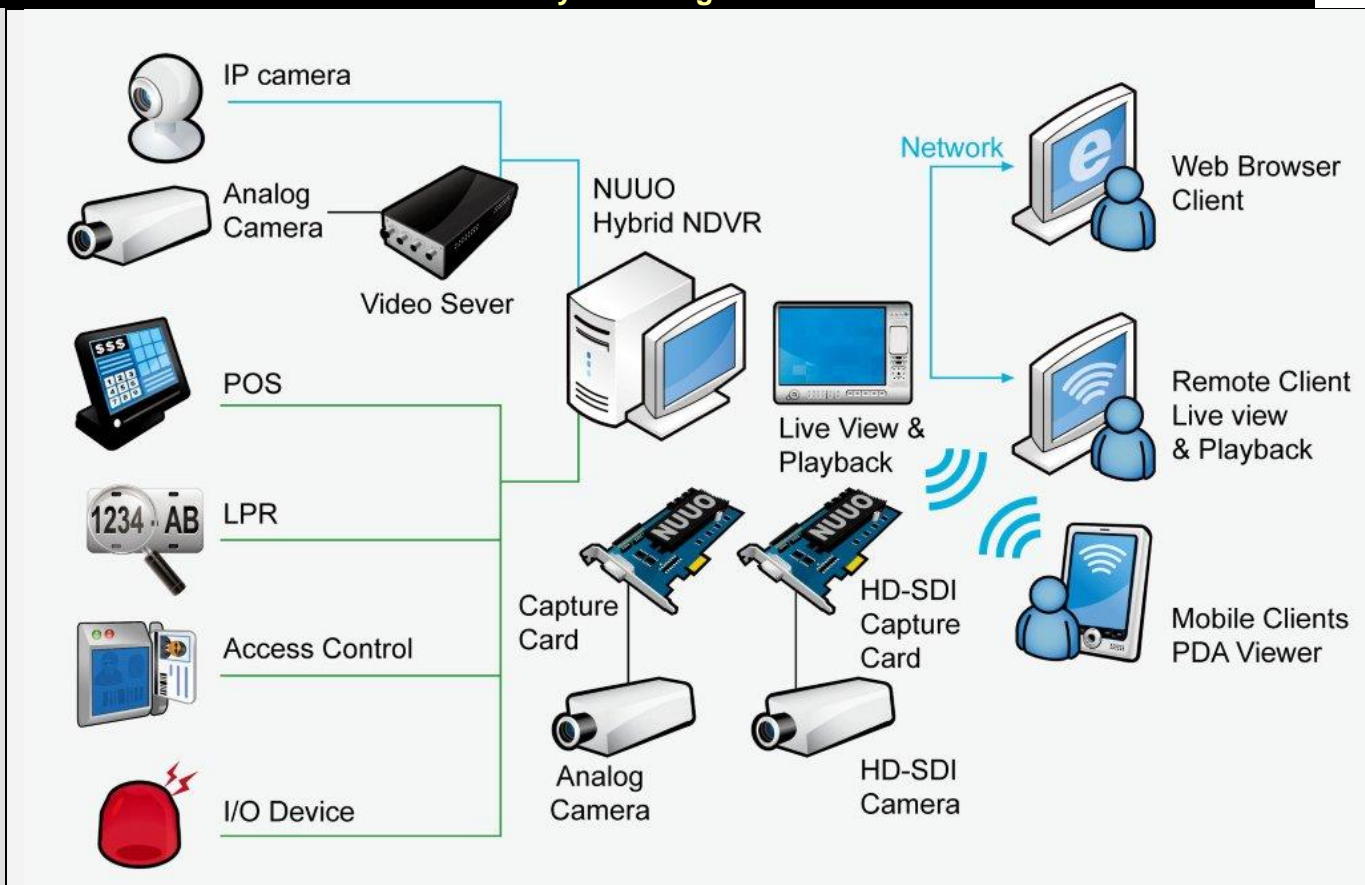
\* The warranty in US area is 3-year.

\*\*DP stands for digital output

\*\*\*8004HD card support 720p25/30, 720p50/60, and 1080p25/30 transmission over at least 100m of RG59 coaxial cable. For further information please refer to <http://www.highdefcctv.org/hdcctv-specification>

NUUO I/O Card	SCB-G3-I/O
	
Input	Inputs: 4
Output	Outputs: 4
RS-485	RS-485: 1
Dimension (mm)	105 (W) x 120 (H) mm

## System Diagram



## NUUO Software v4.1

### Main Features

- Supports up to 64\* channels
- Supports analog, HD-SDI and IP cameras
- Supports H.264 compression format
- Triple monitor display
- Supports auto backup
- POS, I/O device, LPR and access control integration
- Windows Active Directory
- Privacy Mask
- Boosting Recording
- On the edge motion integration
- OnGuard (Software watchdog)
- Failover Recording Server
- E-map
- Instant Playback
- Two-way audio
- Unique GUI recording schedule
- Digital PTZ and multi-view
- Smart detection of 6 events with 11 instant responses
- Counting application
- Advanced Intelligent Video Surveillance with 4 types counting filter and 8 types surveillance suite
- Intelligent playback system with 5 video analytics searches
- Up to 128\*\*CH remote live view
- Supports transcode and multiple stream profiles
- Supports digital watermark
- Remote playback, remote backup, remote I/O control and remote desktop configuration
- Supported by NUUO Central Management System
- Supports 108 brands of IP cameras and over 2,450 models

- Supports 31 languages
- Supports iPhone, iPad and Android clients

\* The maximum number of camera connections depends on the server's hardware configuration and the total bit rate of the IP cameras. Please check NUUO Calculator on <http://support.nuuo.com/calculator/>

\* \*The maximum number of camera connections depends on the server's and client's hardware configuration.

## Specifications

### System, setting, management and integration:

- **Open Platform:** Supports over 2,450 models of IP cameras, megapixel cameras and video servers from 108 brands of network camera manufacturers; supports H.264, MPEG-4, MJPEG, MxPEG video formats; integrates various systems including point of sale (POS) and I/O devices, license plate recognition and access control system. SDK for access control integration available upon request.
- **Multi-site/Multi-server:** Each NH-4100-ENT supports up to 64\* channels, from IP cameras and video encoders with analog cameras, and can be managed by NUUO CMS or remote live view client for centralized management in multi-site projects.  
\* The maximum number of camera connections depends on the server's hardware configuration and the total bit rate of the IP cameras. Please check NUUO Calculator on <http://support.nuuo.com/calculator/>
- **Disk Load Balance:** NUUO NVR improves recording performance to utilize several disks and dynamically distributes the video loads among the disks to improve throughput.
- **Multiple Video Clients:** NUUO NH-4100-ENT can stream video to multiple Remote Live Viewers, web clients and mobile clients simultaneously.
- **Intelligent Video Analytics:** NUUO IVS supports 6 types of video analytics including general motion, missing object, camera occlusion, foreign object, focus lost and signal lost. Each IVS alarm can trigger up to 11 unique instant notifications include push notification on mobile.
- **Advanced Intelligent Video Surveillance:** NUUO support 3 types of counting filters including people counting, vehicle counting, stabilizer and tamper detect and 8 types of surveillance suite including presence, enter and exit, appear and disappear, dwell, tailgating, stopping, direction and tamper detect.
- **Intelligent PTZ:** Joystick support on PTZ cameras and software enabled digital PTZ function are both available in NUUO NVR. Preset points and patrol functions are also available on many camera models.
- **GUI Recording Schedule:** Intuitive GUI recording schedule featuring continuous recording, motion recording and the 6 unique event recording modes. Users can define the recording schedule for each camera on a day by day basis.
- **Triple Monitor:** Up to 64\* channels of live view video can be displayed per monitor. Monitor 1 and monitor 2 can both display live view video or act as alarm monitor while the 3<sup>rd</sup> monitor can be used for playback  
\* The maximum number of camera connections depends on the server's hardware configuration and the total bit rate of the IP cameras. Please check NUUO Calculator on <http://support.nuuo.com/calculator/>
- **Transcoding:** Record and display live video at different frame rate and resolution.
- **Boosting Recording:** Dynamically boost recording quality on motion and other events to optimize recording storage.
- **OnGuard (Software Watchdog):** NUUO OnGuard brings NVR Server back from the unresponsive state such as a hang and neglects restore to normal operation.
- **Failover Recording Server:** Failover server can be on standby for a single or a group of Recording Servers.

Automatic switch to on standby server upon the failure or abnormal termination of the Recording Server ensure continuous system availability.

- **Advanced E-Map:** Capability to import custom image file, place the cameras and I/O on the map to indicate where events are being triggered with a convenient video preview window.
- **User-Friendly Interface:** GUI recording schedule, camera drag and drop, I/O control menu and PTZ control menu.
- **Automatic Camera Model Detection:** automatically search for all available IP cameras within the network (camera must support UPnP protocol). For cameras that don't support UPnP, users can manually insert the IP camera. The auto detection function will help the user to find the brand and model of the camera after specifying its IP address.
- **Counting Application:** intelligent 2-way (in and out) counting of object, people and traffic.
- **User Authority Management:** Support unlimited number of users with detailed and fully customizable user privilege on each user.
- **Windows® Active Directory:** Synchronized with Windows® Active Directory server to manage user privilege and control of camera action.
- **Network Flow Monitor:** Data streaming bandwidth of each remote client connection to the NH-4100-ENT can be monitored and blocked if flow rate is too high.
- **Auto Recycle:** Automatically recycle recording files when the storage is full. Separate recycle schedule between recordings and varies log files.
- **SDK Integration Support:** Open SDK for integration with third-party systems such as access control, automation, burglar alarm, video analytics and others.
- **Upgrade notification:** Automatically obtain upgrade notification from NUUO website to download the latest version.
- **Panorama PTZ Camera (360°):** for 180° panoramic view (wall mount) or 360° surround view (ceiling/floor/table mount) without blind spots.

## Live Display:

- **Multi-view:** NUUO NVR can duplicate the same live view video onto multiple channels and digitally zone in to see the details of different spots on cloned channels without losing the original live view video.
- **Intelligent PTZ:** Joystick support on PTZ cameras and software enabled digital PTZ function are both available in NUUO NVR. Preset points and patrol functions are also available on many camera models.
- **Monitor Resolution:** Supports 1024x768, 1200x900, 1280x1024, 1366x768, 1440x900, 1600x1200, 1680x1050, 1920x1080, 1920x1200 screen resolutions
- **Advanced E-Map:** Freedom to import custom image file, place the cameras and I/O on the map to indicate where events are getting triggered with a convenient video preview window.
- **Bandwidth Monitor:** Monitor and display the bandwidth usage of individual cameras and remote viewing clients.
- **Two-way Audio:** Listen and record audio from camera's microphone. Talk to IP camera's speaker.

- **Instant Playback:** Allow to play the last few minutes of any live video channel on MainConsole and Remote Live View
- **Privacy Mask:** Protect privacy of the sensitive image by blocking out sensitive areas from view and covering the areas with black boxes in live, playback and exported video.

## Playback, Search, Export and Secure data:

- **Post-Recording Processing:** Search for 5 types of different analytics events, digital PTZ and video enhancement tool are all available in playback.
- **Multi-Channel Playback:** Play up to 16 channels of recorded video simultaneously both locally and remotely. Forward playback at 1/16x, 1/8x, 1/4x, 1/2x, 1x, 2x, 4x, 8x, 16x, 32x, 64x.
- **Video Enhancement:** Fine tune the image's visibility, sharpen, brightness, contrast or even grey scale.
- **Intelligent Search:** Search for 5 different special events (general motion, missing object, foreign object, camera occlusion and signal lost) in recorded files with date, time and log file.
- **Video Export:** Take a snapshot of the recording in JPEG/BMP format or export a section of the video in "AVI" and "ASF" format.
- **Auto and Manual Backup:** Schedule or manual backup the recording for archiving purposes or backup the recording with an embedded player to watch at a separate location. NVR supports both local and remote backup to local HD, CD, and DVD.
- **Log data:** Unusual event, system log, counting application, POS log and export and backup can export to "xls" or "txt" file
- **Watermark:** Protect for original recording from alternation with our watermark verification tool.
- **DBTool:** Reconstruct, repair or relocate the recordings in local drive, or external drive.

## Remote operations:

- **Multiple Live View Display:** Streaming live video from multiple NH-4100-ENT simultaneously. Dual monitors support with up to 128 channels per monitor (64\* channels per monitor).  
\* The maximum number of camera connections depends on the server's hardware configuration and the total bit rate of the IP cameras. Please check NUUO Calculator on <http://support.nuuo.com/calculator/>
- **Multi Playback Channels Display:** Remote playback of 16 channels recording from any one of the NH-4100-ENT.
- **Intelligent PTZ:** Joystick support on PTZ cameras and software enabled digital PTZ function are both available in NUUO NVR. Preset points and patrol functions are also available on many camera models.
- **I/O Event Control:** Easy to use input and output control panel to remotely trigger digital outputs and monitor input status.
- **E-Map:** A map view of where each camera and I/O devices are located with a convenient preview window.
- **Two-way Audio:** Listen and record audio from camera's microphone. Talk to IP camera's speaker.

- **Remote Backup:** Backup the video into .DAT format with a NUUO player attached for easy achieve and viewing purposes.
- **Web-browser (client):** Display up to 64 channels of live video stream or 16 channels of playback in I.E. from any single NH-4100-ENT. Support direct login information (user/pass) in a URL address
- **Mobile Client:** Support iPhone, iPad and Android application client to live view video and control PTZ functions.

## Extension Service

- **Central Management System:** Ultimate central monitoring solution for grand scale projects and projects with multiple sites. Fully compatible with NH-4100-ENT.  
\*Advanced Intelligent Video Surveillance will support on CMS v 1.7
- **Remote Desktop Service:** Embedded remote desktop server that will host for any NUUO remote desktop clients to remotely configure the NVR software (remote desktop client is installed separately).

## External Device

- **Point of Sale (POS):** NUUO Point of Sales system works on NUUO NVR by overlaying the transaction text from cash register onto live video channels. All POS recordings are searchable.
- **External I/O Capacity:** Support USB(SCB-C08) and Ethernet (SCB-C31A) converter. Please refer to our I/O box section: C24/C26/C28 for more details.
- **Panomorph PTZ Camera (360°):** Integrates ImmerVision Lens (IMV1-1/3 Lens supported) to view Live, record and playback the complete 360x180 FOV. Users can easy to detect, track and analyze throughout the entire area.
- **Vivotek Fisheye Camera:** Integrates Vivotek fisheye camera FE8171V equipped with a fisheye lens for 180° panoramic view (wall mount) or 360° surround view(ceiling/floor/table mount) without blind spots.
- **3<sup>rd</sup> Party Integration:** Metadata Plugin technology support 3<sup>rd</sup> party software including license plate recognition, access control and so on. Though Metadata Plugin, users can manage metadata by recording real time information in databases which can describe events that link to video and audio. The system provides smart search tool to retrieve information and recorded video.  
\*V4.0 will support VIT(LPR), Soyal and Falco (access control) and dStore (POS).

## Smart Guard:

- **Smart detection** of 6 camera events, 14 different user-defined POS events, digital input events and 4 system events. The combination of our smart guard events is a powerful tool to combat vandalism and provide a platform for operators to monitor and respond to live events immediately.
  - Camera Events:
    - General Motion (Multiple sensitivity)
    - Edge Motion
    - Missing Object
    - Foreign Object
    - Focus Lost



- Camera Occlusion
  - Signal Lost
  - Signal Digital Input Event
  - System Event:
    - System alarm on Disk Space Exhausted
    - System alarm on System Health Unusual (CPU temperature)
    - System alarm on Resource Depleted (CPU loading)
    - System alarm on Network Congestion
- **Instant alarm notification** is the fastest and most cost efficient way to automatically respond to any smart detection event.
- 11 automatic instant alarm responses:
    - On Screen Display
    - Play Sound
    - Send E-mail
    - Phone Call
    - PTZ Preset Go
    - Signal Digital Output
    - Send a SMS message
    - Send to Central Server
    - Send Snapshot to FTP
    - Popup E-Map on Event
    - Push notification on mobile

**Schedule-based:** Users can define the smart guard schedule for each event on a day by day basis

### NUUO Software Specifications

Model	SCB-IP+ Series			
IP Camera Input(s)	4, 8, 12, 16, 25, 32, 36, 64*			
Version	4.1.12			
<b>IP Camera Brand(s) Supported</b>	ACTi	ADT	Airlive	Alphatech
	AMTK	Arecont	ARM	Asoni
	ATLANTIS	AXIS	BASLER	Beward
	Bolide	BOSCH	Brickcom	Bullwark
	CAMTRON	Centrix	CISCO	CNB
	COP	CORUM	CTCunion	CryptoTelecom
	Dallmeier	Dahua	DIGIMERGE	D-Link
	DYNACOLOR	Eneo	Ernitec	Etrovision
	EverFocus	EYEVUE	FINE	Forenix
	GE	Grandstream	Grundig	Guardeon
	Guardliner	HIKVISION	HiTRON	Histream
	Honeywell	iCANTEK	IQinVision	Jetstor
	JVC	LevelOne	LG	LILIN
	Linksys	LOREX	Lumenera	Messo
	MegaIP	Micronet	MOBOTIX	Moxa
	NetworkCamera	NTIC	Onvif	Panasonic
	PELCO	Pixord	PLANET	PROBE
	Rover	SAE	Samsung	SANTEC
	SANYO	Seorim	SHANY	Sony
	StarDot	Sunell	Techson	Telview
Tiandy	TOSHIBA	TP-Link	TRUEN	
UDP	USAG	vForge	Videosec	
Vision Hi tech	VIVOTEK	Y-cam	Yudor	
Zavio	3Svision			
<b>Digital PTZ</b>	Supported in Live view and Playback			
<b>Multiple Show</b>	Supported in Live view			
<b>Dual Monitor</b>	Enable maximum 64 channels with two screens to show live video and viewer			

	recording video on third monitor.		
<b>Screen Resolution</b>	1024x768, 1200x900, 1280x1024, 1366x768, 1440x900, 1600x1200, 1680x1050, 1920x1080, 1920x1200		
<b>Audio &amp; Video Recording</b>	Synchronized audio & video recording.		
<b>Screen Division</b>	1/4/6/9/10/13/16/25/36/49/64 divided screen.		
<b>Compression Format</b>	H.264;MPEG-4;M-JPEG;MxPEG		
<b>Recording Type</b>	Continuous record, record by digital input, motion record, event recording, boosting recording, record by schedule, manual record		
<b>Playback Channels</b>	Playback Maximum 16 channels under several modes & full screen.		
<b>Playback Control</b>	Playback, backward playback, fast forward/backward playback.		
<b>Auto Recycling Recording</b>	Auto recycling when storage disk is full.		
<b>Available I/O Function</b>	Supporting I/O Box		
<b>Available POS Device</b>	SCB-C31A RS232 to Ethernet Converter		
<b>Software Watchdog</b>	OnGuard		
<b>Hardware Watchdog</b>	SCB-8000, SCB-7100, SCB-7000S, SCB-6000S		
<b>System Minimum Requirements</b>			
<b>OS Supported</b>	32bits: MS Windows XP pro SP3 / Vista SP1 / Win 7 SP1 / Win 8 64bits: Win 7 SP1/ Win Server 2008 R2 / Win 8 / Win Server 2012		
<b>CPU</b>	Intel Core 2 Duo E5300		
<b>RAM</b>	2 GB		
<b>HDD</b>	250 GB or above		
<b>Motherboard</b>	Intel P55, H55, X58, P45, P43 chip, MB vendor ASUS Gigabyte or MSI with Intel Chipset recommended		
<b>Display</b>	ATI Radeon 4650 or above (ATI Driver V11-2 recommended,)		
<b>External Storage</b>	DAS, iSCSI ( <a href="http://support.nuuo.com/mediawiki/index.php/Recommended_hard_drives">http://support.nuuo.com/mediawiki/index.php/Recommended_hard_drives</a> )		
<b>Note</b>			
* The maximum number of camera connections depends on the server's hardware configuration and the total bit rate of the IP cameras. Please check NUUO Calculator on <a href="http://support.nuuo.com/calculator/">http://support.nuuo.com/calculator/</a>			
<b>Support Language</b>			
Albania	Bulgarian	Chinese (Simplified )	Chinese (Traditional)
Croatian	Czech	Danish	Dutch
English	Farsi	Finnish	French
German	Hebrew	Hungarian	Italian
Japanese	Korean	Norway	Polish
Portuguese (Brazil)	Portuguese (Portugal)	Romanian	Russian
Serbian	Slovak	Slovenian	Spanish
Swedish	Thai	Turkish	

