

NVRmini

Simply Plug and Play







The Intelligent Surveillance Solution




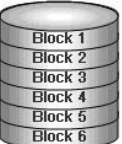
Agenda

- Outstanding Features
- Features
- Supported Brands
- Structure Comparison
- Spec Comparison
- Product Positioning
- Application
- Appendix:
 - Specifications
 - Functionality Comparison
 - Remote PC Minimum Requirement
 - RAID Comparison

Outstanding Features

-  **Linux** based NAS NVR standalone, free from PC crash and virus attack
-  **Web-based** network appliance architecture, remote live viewing
-  Supported by **NUUO CMS**
-  Open platform for **14 brands** IP camera

Outstanding Features

-  Support **up to 5 mega-pixel** camera
-  Support **H.264** compression format
-  **Smart Search** for 5 events
-  Support **RAID** 0,1,5,10

Features

- Recording without PC turning on
- Easy installation
- Support D1, real-time recording
- Manage 4/8/16 IP Cameras
- Real-Time A/V viewer
- Instant playback control
- I/O device integration
- Online GUI recording schedule
- Support AJAX
- Up to 2/4 SATA 3G/s drives

Supported Brands

- ACTi, Arecont, Axis, Cisco, D-Link, IQinVision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio

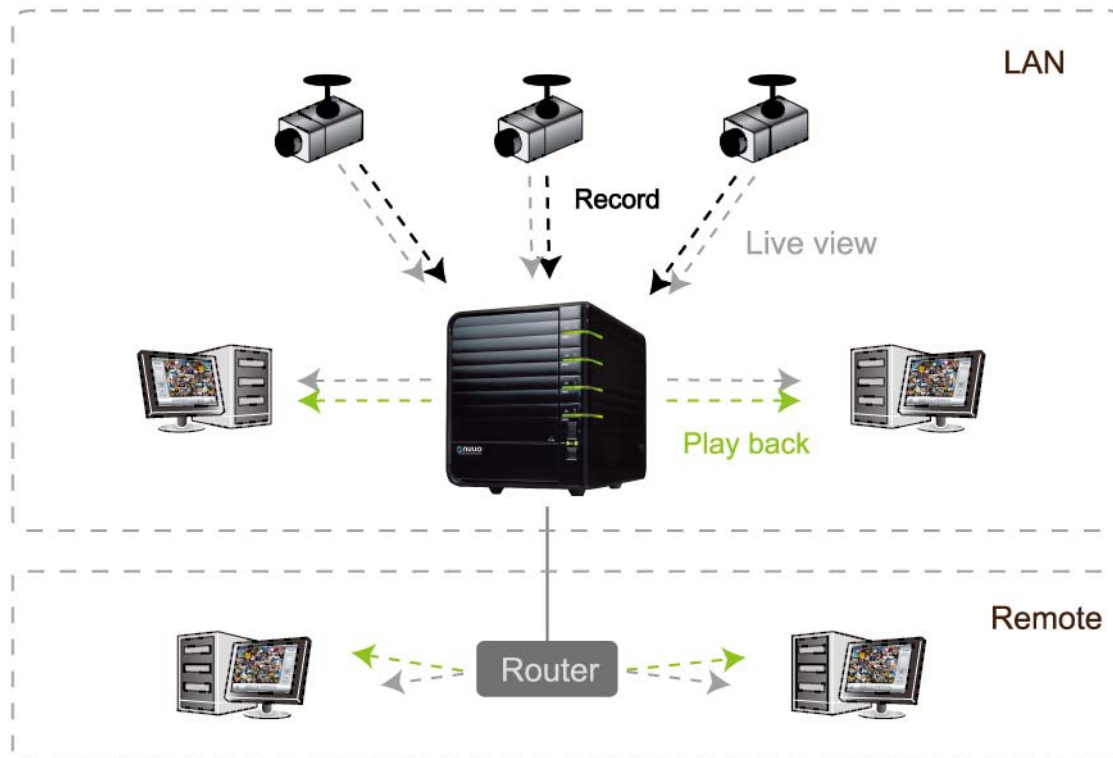


Structure Comparison

- NUUO NAS NVRmini Standalone:

Server-Client Architecture

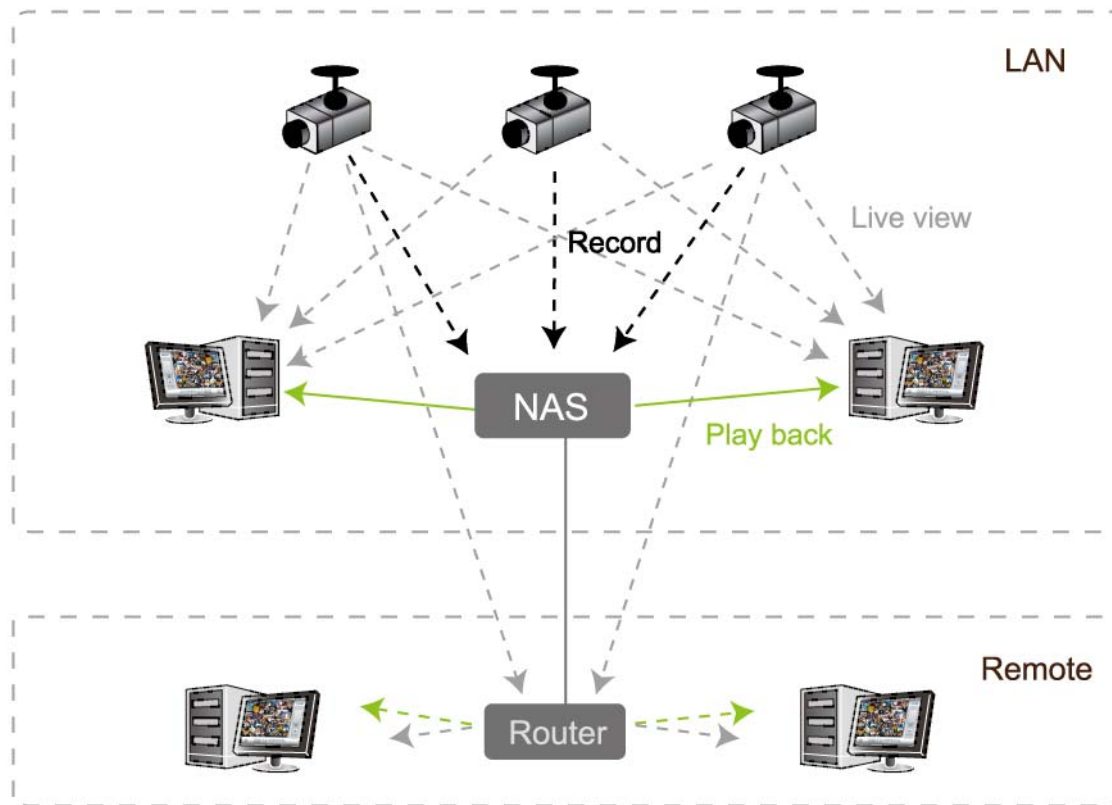
NAS directly connects to cameras. Users access NAS to receive the live streams.



Structure Comparison

- Koukaam IPCorder and QNAP VS series:

Cameras provide the live video streams to users directly, not through the NAS.



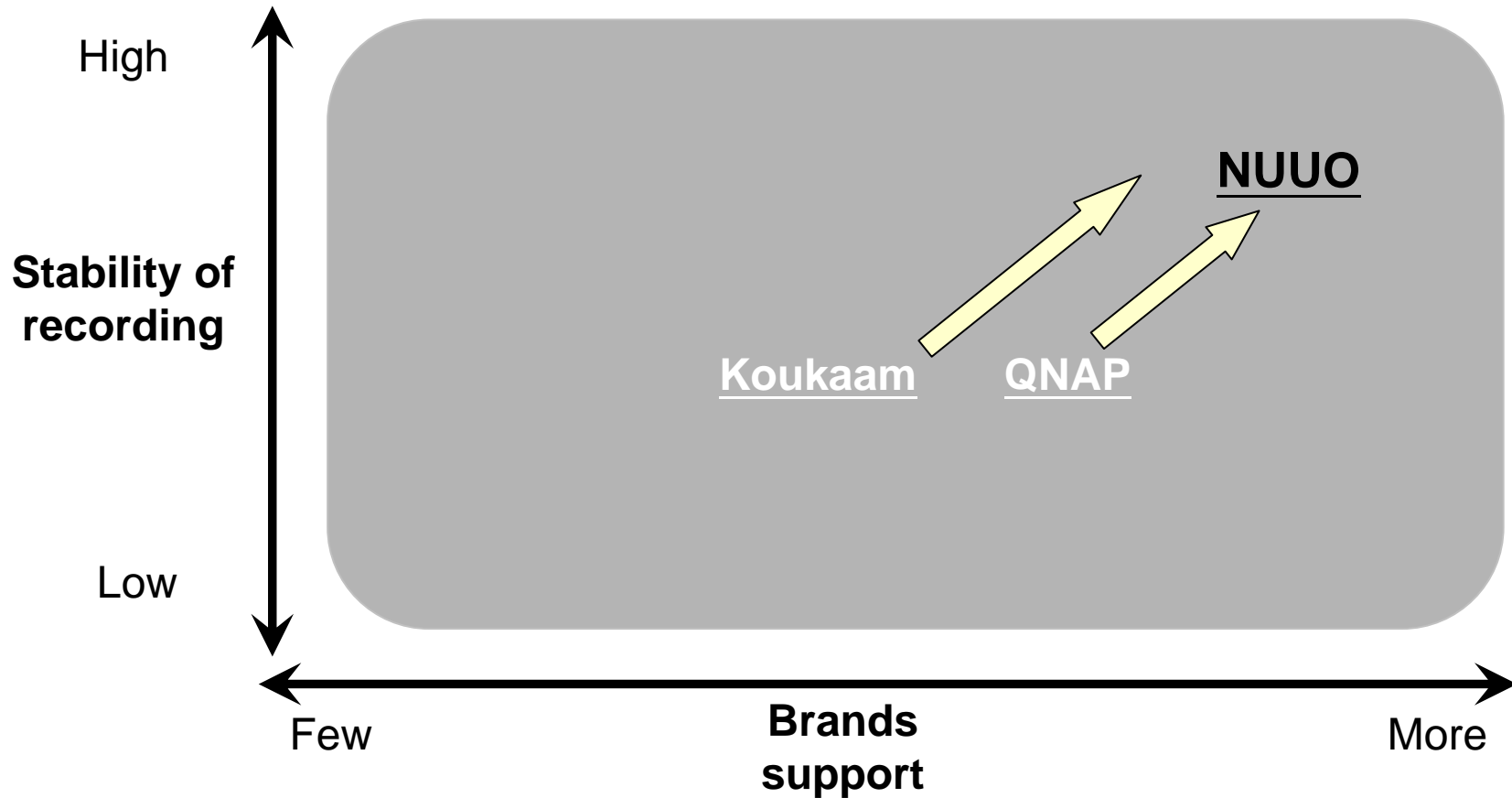
Structure Comparison

item	brand	NUUO	Other brands
Recording frame rate and live view frame rate		★ Stable with high recording quality	Unstable with lower recording quality (Easily loss frame)
The number of ports need to be set in router (for remote side)		★ 3 ports for NAS, live view and playback	The more cameras, the more ports should be set up. (Need to open 2 ports (AV) in router for each camera)

Spec Comparison

	NUUO	QNAP	Koukaam
Number of Brands Support	14	P: 9 A:8 V:9	8
Compression Format	H.264, MPEG4, M-JPEG	MPEG4, M-JPEG	H.264, MPEG4, M-JPEG
Smart Search	General motion, Foreign object, Missing Object, Lose focus, Camera Occlusion	None	None
CMS	Support	Support	None
GUI - Schedule	Yes	No	No
Camera auto detection	Yes	No	No

Product Positioning



Application

- **What we provide?**

Stable recording, video playback and event smart search via Internet anytime and anywhere

- **Where to apply?**

Home, retail, banking (ATM), branch, warehouse, parking lot, library, school, pre-sold house (building), villa, gas station, VRS, transportation, etc.

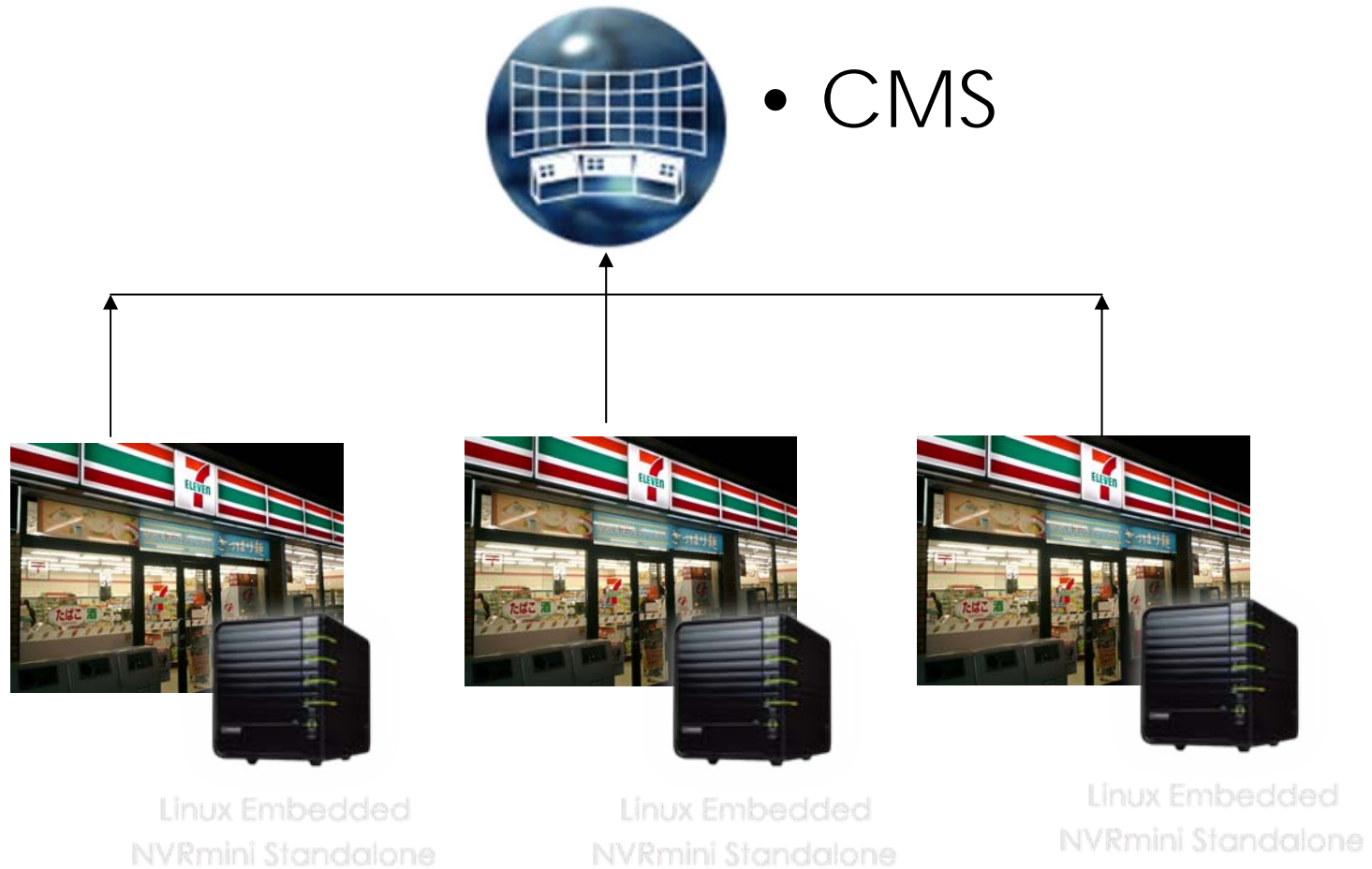
- **What customers benefit?**

Security, safety, theft prevention, user-friendly interface, fast and easy event searching, remote recording, etc.

Application

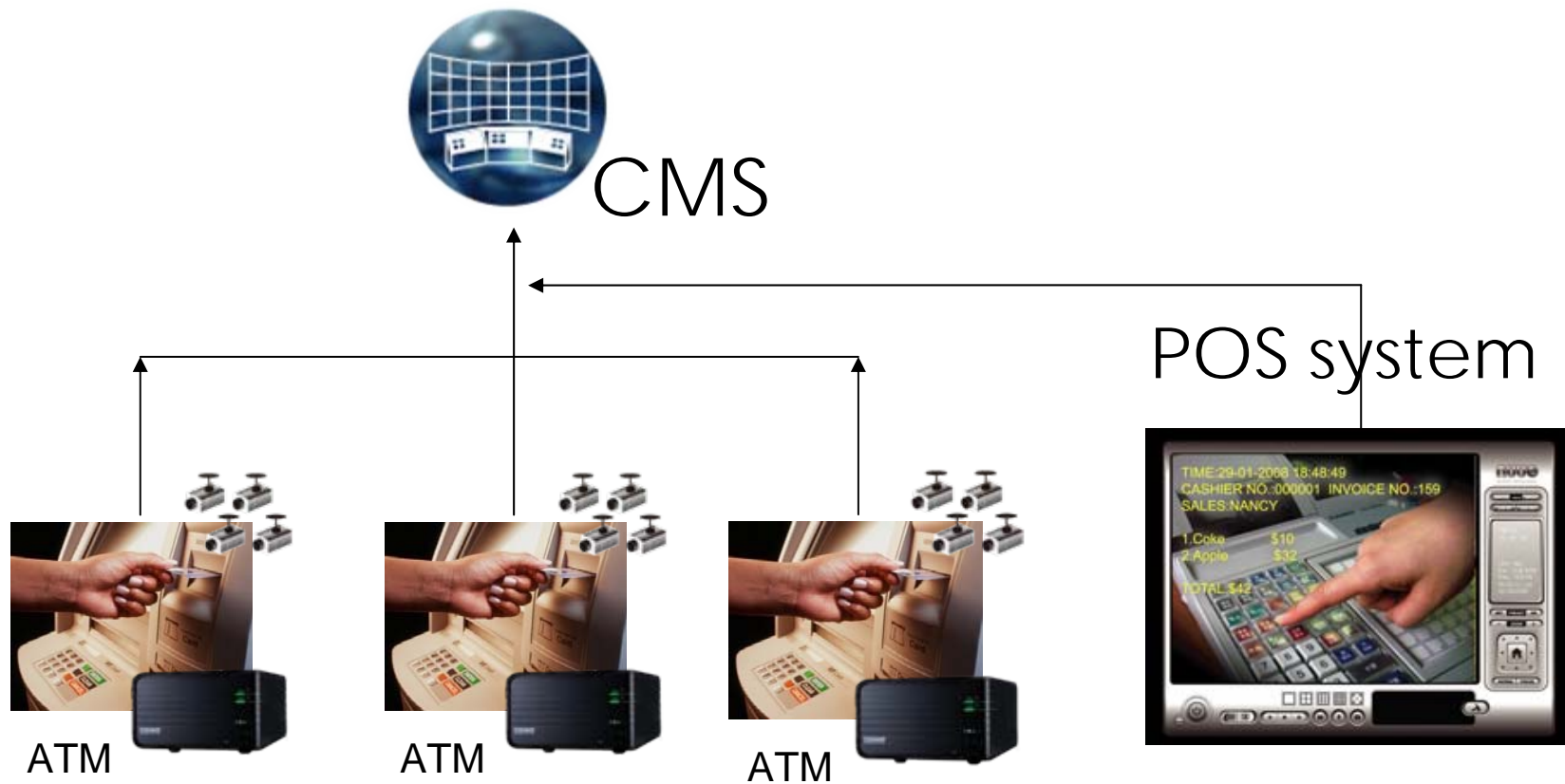
- Retail
- Logistics center
- Banking
- VRS

Application: Retail



Application: Banking

- ATM



Application: VRS



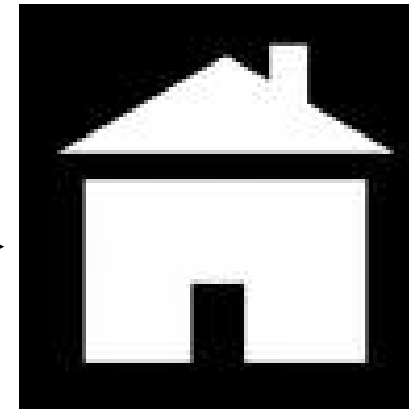
Control center



Linux Embedded
VRmini Standalone



Security Guard



Appendix

- Specifications
- Functionality Comparison
- Remote PC Requirement
- RAID Comparison

Appendix: Specifications

NVRmini Specifications			
Model	NV-2040	NV-4080	NV-4160
Recording Cameras	1~4	1~8	1~16
Number of Drives	2xSATA II	4xSATA II	4xSATA II
RAID Level	RAID 0,1	RAID 0, 1, 5, 10	RAID 0, 1, 5, 10
I/O Interface	1xUSB 2.0	2xUSB 2.0	2xUSB 2.0
LAN Transmission Speed	10/100/1000 Mbps (RJ45)	10/100/1000 Mbps (RJ45)	10/100/1000 Mbps (RJ45)
Power Supply	100-240V	100-230V	100-230V
Power Consumption	41W	61W	61W
Dimension	92.0 x 145.2 x 213.2 mm	188.2 x 152.5 x 227.6 mm	188.2 x 152.5 x 227.6 mm
Weight	1.0 kg (2.2lbs) without drives	2.5 kg (5.5lbs) without drives	2.5 kg (5.5lbs) without drives
Temperature	Operating: 5°C to 35°C		
Humidity	Operating: 10%-85%		

Appendix: Specifications

Recording			
Model	NV-2040	NV-4080	NV-4160
Recording Performance	D1, 30fps 1280x1024 (1.2M), 12fps(M-JPEG)	D1, 30fps 1280x1024 (1.2M), 12fps(M-JPEG)	Total bitrate: 22Mbps
Recording Resolution	Up to 2580x1920 (5 megapixel)		
Recording Type	Continuous record, Record by schedule, Manual record, Event trigger record, Digital input trigger record		
Auto Recycling Recording	Auto recycling when storage disk is 2% remained.		
Audio & Video Recording	Audio & video recording in synchronization.		
Playback			
Smart Search	General motion, Missing object, Foreign object, Lose focus, Camera occlusion		
Playback Control	Playback, Fast forward/backward, ...		

Appendix: Functionality Comparison

	QNAP Video Server VioStor-101	QNAP Video Server VioStor-201	NV-2040	NV-4080
Bay	1xSATA	2xSATA	2xSATA	4xSATA
Support Brands	<p>P for Panasonic BB, BL and i-pro series, Canon VB-series, Sony, Arecont, Sanyo VCC-series, IQeye, Mobotix, Toshiba, ACTi</p> <p>A for Axis Network Cameras/Video Server, Canon VB-series, Arecont, Sanyo VCC-series, IQeye, Mobotix, Toshiba, ACTi</p> <p>V for Vivotek Network Cameras/Video Server, D-link, Arecont, Level one, IQeye, Mobotix, GANZ, Toshiba, ACTi</p>		ACTi, Arecont, AXIS, Cisco, D-link, IQinvision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio	ACTi, Arecont, AXIS, Cisco, D-link, IQinvision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio
Channels	1-4	1-8	1-4	1-8
Record Rate	VGA, 10fps CIF, 30fps	VGA, 10fps CIF, 30fps	D1, 30fps 1280x1024 (1.2M), 12fps	D1, 30fps 1280x1024 (1.2M), 12fps
Compression Format	MJPEG, JPEG4	MJPEG, JPEG4	H.264, MJPEG, JPEG4	H.264, MJPEG, JPEG4
Playback	4ch playback	4ch playback	4ch playback	8ch playback
Record Search/Smart Search	None	None	General Motion, Foreign Object, Missing Object, Lose Focus, Camera Occlusion	General Motion, Foreign Object, Missing Object, Lose Focus, Camera Occlusion
RAID	None	0,1	0,1	0,1,5,10
Recording on MPEG4	4ch	8ch	4ch	8ch
CIF	Real time for 18.8 days	Real time for 19 days	Real time for 37.6 days	Real time for 37.6 days
D1	Only 10fps for 51.7 days	Only 10fps for 51.7 days	Real time for 16.1 days	Real time for 16.1 days

Appendix: Functionality Comparison

	QNAP Video Server VioStor-101	QNAP Video Server VioStor-201	NV-4160
Bay	1xSATA	2xSATA	4xSATA
Support Brands	<p>P for Panasonic BB, BL and i-pro series, Canon VB-series, Sony, Arecont, Sanyo VCC-series, IQeye, Mobotix, Toshiba, ACTi</p> <p>A for Axis Network Cameras/Video Server, Canon VB-series, Arecont, Sanyo VCC-series, IQeye, Mobotix, Toshiba, ACTi</p> <p>V for Vivotek Network Cameras/Video Server, D-link, Arecont, Level one, IQeye, Mobotix, GANZ, Toshiba, ACTi</p>		ACTi, Arecont, AXIS, Cisco, D-link, IQinvision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio
Channels	1-4	1-8	1-16
Record Rate	VGA, 10fps CIF, 30fps	VGA, 10fps CIF, 30fps	Total bitrate: 22Mbps
Compression Format	MJPEG, JPEG4	MJPEG, JPEG4	H.264, MJPEG, JPEG4
Playback	4ch playback	4ch playback	4ch playback
Record Search/Smart Search	None	None	General Motion, Foreign Object, Missing Object, Lose Focus, Camera Occlusion
RAID	None	0,1	0,1,5,10

Appendix: Functionality Comparison

	QNAP NVR-101	NV-2040	NV-4080
Bay	1xSATA	2xSATA	4xSATA
Support Brands	AXIS, Vivotek, D-link, Panasonic BL-series, LevelOne, Linksys, IPUX, Y-CAM, Trendnet	ACTi, Arecont, AXIS, Cisco, D-link, IQinvision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio	ACTi, Arecont, AXIS, Cisco, D-link, IQinvision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio
Channels	1-4	1-4	1-8
Record Rate	VGA, 10fps CIF, 30fps	D1, 30fps 1280x1024 (1.2M), 12fps	D1, 30fps 1280x1024 (1.2M), 12fps
Compression Format	MJPEG, JPEG4	H.264, MJPEG, JPEG4	H.264, MJPEG, JPEG4
Playback	1ch playback only	4ch playback	8ch playback
Record Search/Smart Search	None	General Motion, Foreign Object, Missing Object, Lose Focus, Camera Occlusion	General Motion, Foreign Object, Missing Object, Lose Focus, Camera Occlusion
RAID	None	0,1	0,1,5,10
Recording on MPEG4	4ch	4ch	8ch
CIF	Real time for 18.8 days	Real time for 37.6 days	Real time for 37.6 days
D1	Only 10fps for 51.7 days	Real time for 16.1 days	Real time for 16.1 days

Appendix: Functionality Comparison

	QNAP Video Server VioStor-5020	QNAP NVR-101	NV-4160
Bay	5xSATA	1xSATA	4xSATA
Support Brands	<p>P for Panasonic BB, BL and i-pro series, Canon VB-series, Sony, Arecont, Sanyo VCC-series, IQeye, Mobotix, Toshiba, ACTi</p> <p>A for Axis Network Cameras/Video Server, Canon VB-series, Arecont, Sanyo VCC-series, IQeye, Mobotix, Toshiba, ACTi</p> <p>V for Vivotek Network Cameras/Video Server, D-link, Arecont, Level one, IQeye, Mobotix, GANZ, Toshiba, ACTi</p>	<p>AXIS, Vivotek, D-link, Panasonic BL-series, LevelOne, Linksys, IPUX, Y-CAM, Trendnet</p>	<p>ACTi, Arecont, AXIS, Cisco, D-link, IQinvision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio</p>
Channels	1-20	1-4	1-16
Record Rate	D1, 30fps	VGA, 10fps CIF, 30fps	Total bitrate: 22Mbps
Compression Format	MJPEG, JPEG4	MJPEG, JPEG4	H.264, MJPEG, JPEG4
Playback	4ch playback	1ch playback only	4ch playback
Record Search/Smart Search	None	None	General Motion, Foreign Object, Missing Object, Lose Focus, Camera Occlusion
RAID	Single, 0, 1, 5, 6, JBOD	None	0,1,5,10

Appendix: Functionality Comparison

	KOUKAAM IPCorder KNR-100	KOUKAAM IPCorder KNR-400	NV-2040	NV-4080
Bay	1xSATA	4xSATA	2xSATA	4xSATA
Support Brands	Axis, ACTi (only MPEG4), D-Link, IQeye, Panasonic, Sony, Vivotek, Y-Cam	Axis, ACTi (only MPEG4), D-Link, IQeye, Panasonic, Sony, Vivotek, Y-Cam	ACTi, Arecont, AXIS, Cisco, D-link, IQinvision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio	ACTi, Arecont, AXIS, Cisco, D-link, IQinvision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio
Channels	1-8	1-16	1-4	1-8
Record Rate	D1, 30fps 1280x1024(1.2M), 12fps	D1, 30fps 1280x1024(1.2M), 12fps	D1, 30fps 1280x1024 (1.2M), 12fps	D1, 30fps 1280x1024 (1.2M), 12fps
Compression Format	H.264, MJPEG, MPEG4	H.264, MJPEG, MPEG4	H.264, MJPEG, JPEG4	H.264, MJPEG, JPEG4
Playback	1ch playback only	1ch playback only	4ch playback	8ch playback
Record Search/Smart Search	None	None	General Motion, Foreign Object, Missing Object, Lose Focus, Camera Occlusion	
RAID	None	0,1,5,10	0,1	0,1,5,10
Recording on MPEG4	8ch	16ch	4ch	8ch
CIF	Real time for 9.5 days	Real time for 18.8 days	Real time for 37.6 days	Real time for 37.6 days
D1	Real time for 4 days	Real time for 8 days	Real time for 16.1 days	Real time for 16.1 days

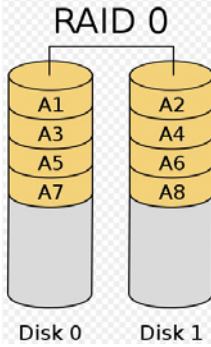
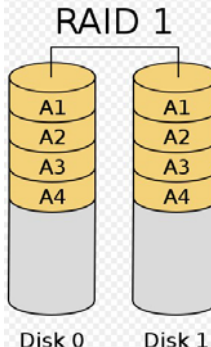
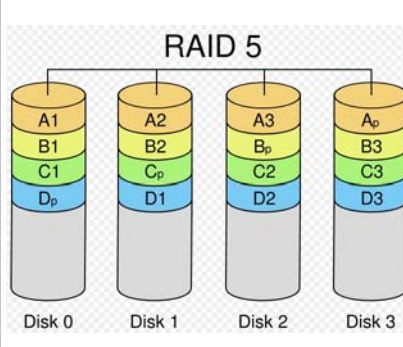

Appendix: Functionality Comparison

	KOUKAAM IPCorder KNR-100	KOUKAAM IPCorder KNR-400	NV-4160
Bay	1xSATA	4xSATA	4xSATA
Support Brands	Vivotek, IQinvision, ACTi (only MPEG4)	Vivotek, IQinvision, ACTi (only MPEG4)	ACTi, Arecont, AXIS, Cisco, D-link, IQinvision, Levelone, Linksys, Lumenera, Mobotix, Panasonic, Sony, Vivotek, Zavio
Channels	1-8	1-16	1-16
Record Rate	D1, 30fps 1280x1024(1.2M), 12fps	D1, 30fps 1280x1024(1.2M), 12fps	Total bitrate: 22Mbps
Compression Format	H.264, MJPEG, JPEG4	H.264, MJPEG, JPEG4	H.264, MJPEG, JPEG4
Playback	1ch playback only	1ch playback only	4ch playback
Record Search/Smart Search	None	None	General Motion, Foreign Object, Missing Object, Lose Focus, Camera Occlusion
RAID	None	0,1,5,10	0,1,5,10

Appendix: Remote PC Requirement

Remote PC Minimum Requirements			
Model	NV-2040	NV-4080	NV-4160
OS Supported	Windows 2000/ XP/ 2003/ Vista		
CPU	Pentium 4 – 2.4 GHz	Pentium 4 – 2.8 GHz	Pentium 4 – 2.8 GHz
RAM	512 MB		
User Interface	<ol style="list-style-type: none"> 1. HTTP Web browser - Internet Explorer 6 or later 2. NUUO Client Application Program 		

Appendix: RAID Comparison

	RAID 0	RAID 1	RAID 5	RAID 10
	 <p>RAID 0</p> <p>Disk 0 Disk 1</p>	 <p>RAID 1</p> <p>Disk 0 Disk 1</p>	 <p>RAID 5</p> <p>Disk 0 Disk 1 Disk 2 Disk 3</p>	 <p>RAID 10 RAID 0</p> <p>RAID 1 RAID 1</p> <p>Disk 0 Disk 1 Disk 2 Disk 3</p>
Min # of disks	2	2	3	4
Function	Striped set without parity	Mirrored set without parity	Striped set with distributed parity	Mirrored sets in a striped set
Speed	****	***	***	***
Cost	*	***	**	****
Fault tolerance	None	****	***	****
Storage efficiency	N	N/2	(N-1)/N	N/2
Advantage	Fast and efficient storage	One disk is broken, able to find the same data in another disk	One disk is broken, able to find the same data from the parity in other disks	One disk is broken, able to find the same data in other disks; Faster
Disadvantage	One disk is broken, all data lose	Inefficient storage	Disk failure has a medium impact on throughput	At least 4 disks; inefficient storage