



Qu'est-ce que CRYSTAL ?

- Un système VMS* complet de mise en œuvre de la sécurité par vidéo-protection.
 - Ouvert
 - Sécurisé
 - Puissant
 - Centralisé
 - Multi-sites
 - Multi-utilisateurs
 - Multi-enregistreurs





Quels composants logiciels ?



- Un Serveur Principal (Main Server module) qui est le chef d'orchestre de l'ensemble.



- Un à « N » enregistreur-serveur vidéo (Recorder(s) module(s)) qui enregistrent le contenu vidéo sur disques et qui diffusent ce contenu à la demande des postes Clients, en live ou en relecture.



- Un Serveur de Métadonnées (Meta-Data server module) qui échange des données avec des systèmes externes de sécurisation (Contrôle d'Accès par exemple)



- Un à « N » module Client (NuClient) pour la consultation en live ou en relecture des vidéos.

Quels composants hardware ? (1)

- Pour héberger les modules suivants:
 - Le serveur principal
 - Le(s) Enregistreur(s)
 - Le serveur de métadonnées



- 4 Hardware NUUO, sous LINUX
 - Le CT-4000, « Tower », 4 baies de disques
 - Le CT-4000R, rackable, 1U, 4 baies de disques
 - Le CT-8000R, rackable, 2U, 8 baies de disques
 - Le CT-8000RP, rackable, 2U, 8 baies de disques, alimentation redondée



Quels composants hardware ? (2)

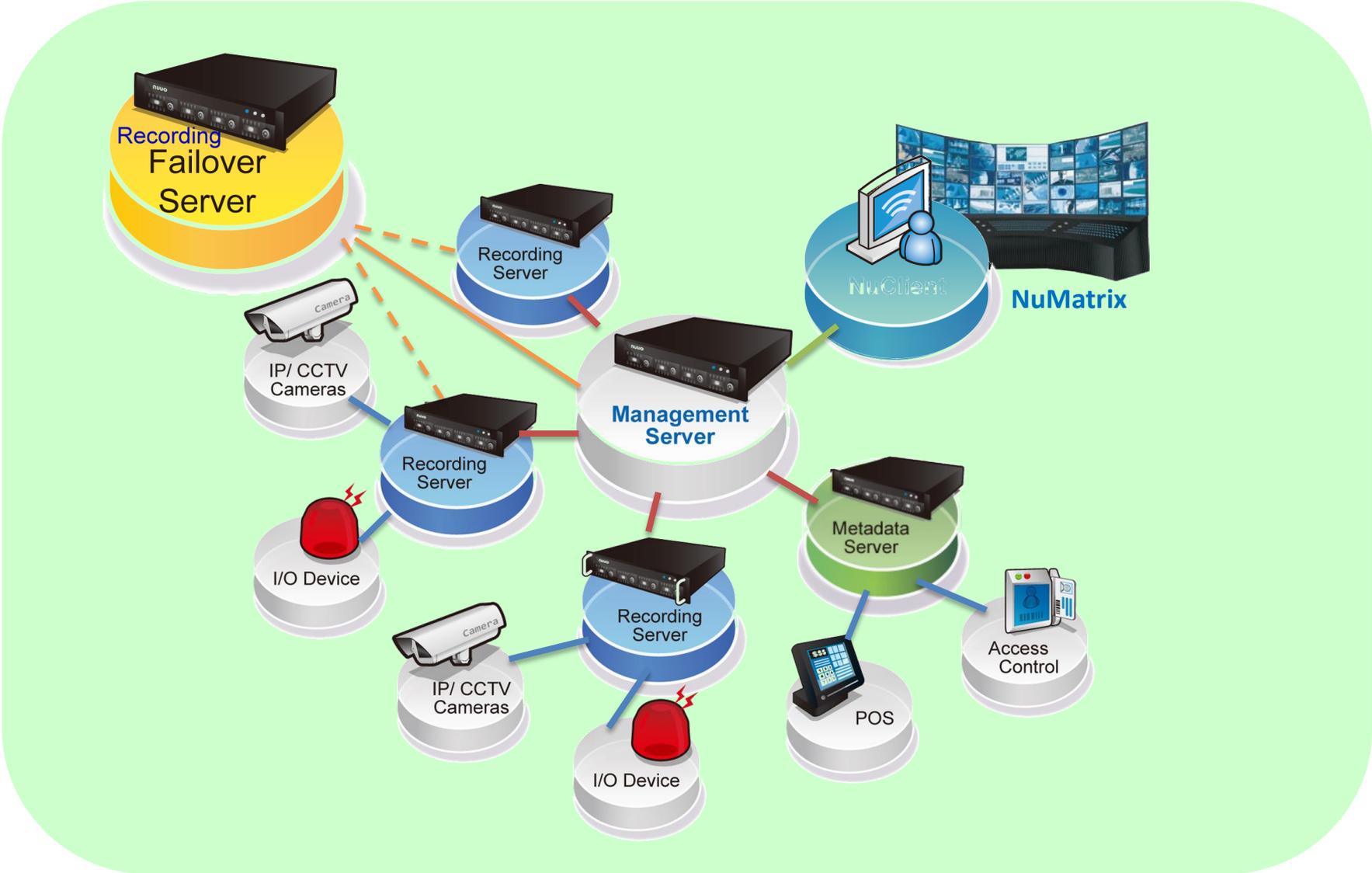
Pour héberger le(s) client(s) ou « CRYSTAL NuClient »:



- 5 plateformes
 - PC Windows
 - MAC OS
 - iPad / iPhone
 - Smartphone Android



Architecture





Les avantages de CRYSTAL

- Le Prix
- Le choix LINUX
- Traitement innovant de la vidéo
- Les Performances
- Ouverture





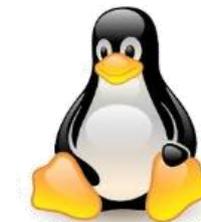
Le Prix



- 20 à 30% moins cher que les solutions type Milestone ou Genetec
- Items facturables: Les licences caméras et le hardware uniquement
- Toutes les mises à jour logicielles sont gratuites et en ligne
- LINUX → Pas de licences Windows / MS-SQL additionnelles à payer
- LINUX → Puissance processeur et mémoire nettement moins importantes (donc moins chères) que sur les enregistreurs basés sur Windows, à volume de données égal à traiter.



Le choix LINUX



- Pas de fragmentation disque, préservation des performances, optimisation de l'utilisation de l'espace de stockage
- Mode écriture RAID (0,1,5,10) natif au niveau de l'OS
- Sécurisé: Peu ou pas sujet aux attaques virales
- Facilement VIRTUALISABLE & gestion des volumes logiques immédiate
- LINUX → Puissance processeur et mémoire nettement moins importantes (donc moins chères) que sur les enregistreurs basés sur Windows, à volume de données égal à traiter.



Gestion des volumes logiques

The screenshot displays the 'Config' tab of the NUVO software interface. The left sidebar shows a tree view of the system components: Management Server, Recording Servers (2, 4, 1, 3), Metadata Servers (1, 2, 3, 4), and Matrix (1, 2). The main panel is titled 'Volume Group' and contains several sub-sections:

- Available Volume Group**: A list of available volume groups.
- Second Priority Camera**: A section for configuring second priority cameras.
- Third Priority Camera**: A section for configuring third priority cameras.
- First Priority**: A section for configuring first priority cameras. It includes:
 - Volume 1: 0.20 GB / 1.00 GB
 - Volume 4: 0.78 GB / 1.00 GB
 - Volume 5: 0.98 GB / 1.00 GB
 - Volume 11: 1.17 GB / 2.00 GB
 - Video Device 1 - Camera 1
 - Video Device 1 - Camera 2
 - Video Device 2 - Camera 1
 - video device (8) - camera
 - video device (9) - camera
 - video device (10) - camera
 - video device (11) - camera
 - video device (12) - camera
 - video device (13) - camera
 - video device (14) - camera
 - Storage usage: 62% (3.1 GB / 5.0 GB)
- Megapixel**: A section for configuring megapixel cameras. It includes:
 - Volume 2: 0.39 GB / 1.00 GB
 - Volume 3: 0.59 GB / 1.00 GB
 - Volume 13: 1.56 GB / 2.00 GB
 - Video Device 2 - Camera 2
 - video device (3) - camera
 - video device (4) - camera
 - video device (5) - camera
 - video device (6) - camera
 - video device (7) - camera
 - Storage usage: 63% (2.5 GB / 4.0 GB)



Traitement innovant de la vidéo



- Fusion d'images pour créer des panoramiques (jusqu'à 10 caméras)
- Mise à plat générique des caméras FISHEYE 180° et 360°
- Incrustation de données externes sur la vidéo (ex: Points de Ventes)
- Export AVI, ASF, MOV ou format propriétaire avec Viewer NUUO
- Pilotage des caméras PTZ et gestion des murs d'Images
- Détection intelligente des mouvements



Exemple de fusion d'Images

Live View Playback Config

Image Fusion

Field View Cam 01

Field View Cam 02

Field View Cam 03

1 [Navigation icons]

Date: 2011/05/06 | Time: 15:31:31 | User: admin | Management Server: 192.168.3.105:18084 | CPU usage: 3% | MEM usage: Total 2047MB Free 858MB | dddd



UI pour la fusion d'images

The screenshot shows the configuration interface for image fusion in the NUVO system. The interface is divided into several sections:

- Navigation and Controls:** At the top, there are tabs for "Live View", "Playback", and "Config". Below these are icons for home, settings, and refresh.
- Left Sidebar:** A tree view showing the system hierarchy:
 - User Group
 - User Group - Admin
 - User Group - Power User
 - User Group - User
 - User Group - Guest
 - Security Guard
 - Role
 - Role - Admin
 - Role - PowerUser
 - Role - User
 - Role - Guest
 - Role - Security Guard (Ken)
 - Role - Security Guard (Smith)
 - Schedule
 - Always
 - Work Hour
 - Lunch Time
 - After Work
 - Weekend
 - Layout
 - Image fusion
 - layout (2)
 - Image_fusion
 - layout (3)
 - layout (4)
 - layout (6)
- Properties Panel:** A "Properties" tab is active, showing:
 - Name: Image fusion
 - Description: (empty text box)
 - Initial layout type: column 6 x row 6
 - Monitor aspect ratio: 4:3 (unselected) and 16:9 (selected)
- Preview Area:** A large monitor icon displays a 2x3 grid layout, representing the image fusion configuration.
- Bottom Bar:** Contains "Merge" and "Unmerge" buttons, along with zoom and refresh icons.
- Status Bar:** At the very bottom, it displays system information: Date: 2013/10/25 | Time: 16:33:28 | Username: admin | Server address: 192.168.5.58:5250 | CPU loading: 3% | Memory usage: Total 4045MB Free 1801MB | Network: Displayed streaming bit rate 0.00 kbps



Mise à plat Fisheye

The screenshot displays a security camera management software interface. The main window shows a live view of a blue and white bus on a city street, captured with a fisheye lens. The interface includes several panels on the left: a View List, Content List, PTZ Panel, and Properties. The PTZ Panel shows controls for pan, tilt, and zoom, along with a digital zoom slider. The Properties panel displays technical details such as resolution (320 x 240) and frame rate (7.00 fps). At the bottom, a status bar provides system information including the date, time, user name, server address, CPU loading, memory usage, and network statistics.

View List

- New Group
- New View(12)
- New View(2)

Content List

- Camera
 - ttan157 GG
 - Vivotek Fish Eye camera
 - 1234567890123456789012345678901234567...
 - Arecont AV5105 (Virtual Megapixel)
 - Fine MD-D1612
 - Axis 214 Wall

PTZ Panel

101 Vivotek Fish Eye camera

Optical Digital Origin

PTZ Preset(s) Select one preset

Event List I/O PTZ Panel

Properties

Content Title: Vivotek Fish Eye camera

Vivotek Fish Eye camera

Profile: Original

Video format: MPEG4

Frame rate: 7.00 fps

Resolution: 320 x 240

Bit rate: 393.14 kbps

Display type: Fixed aspect ratio

Monitor#1, View: New View(2), 1 contents added

Date: 2012/03/22 | Time: 17:27:10 | User name: admin | Server address: 192.168.3.157:5250 | CPU loading: 2% | Memory usage: Total 3582MB Free 1813MB | Network: Download 552.39 kbps Upload 46.41 kbps



Ex d'incrustation video « POS »

101 metadata source metadata channel

==== THANK YOU VERY MUCH! ====

==== WELCOME TO NUVO MARKET ====

2013-07-08(Mon) 20:00

APPLE JUICE	\$73 TX
ORANGE JUICE	\$29 TX
COKE	\$45 TX
TOTAL	\$150

==== THANK YOU VERY MUCH! ====

==== WELCOME TO NUVO MARKET ====

Monitor#1, View: Office_B (9 contents invisible)

Date: 2013/10/23 | Time: 11:00:23 | Username: admin | Server address: 192.168.5.58:5250 | CPU loading: 50% | Memory usage: Total 4045MB Free 841MB | Network: Displayed streaming bit rate 3479.45 kbps



Détection de mouvements

The screenshot displays a video management software interface with the following components:

- View List:** A tree view on the left showing 'Public Views' (Office_A, Office_B, Office_C, Parkinglot_exit) and 'Private Views'.
- Motion Search:** A panel with 'Content name: default name', a 'Motion Search' dropdown, and 'Motion Search Parameters' including Pixel Sensitivity (80%), Zone Sensitivity (80%), Consecutive frame hits (2), and Check frame every (1 second).
- Zone Tools:** A set of icons for drawing and editing motion zones.
- Content List:** A list at the bottom left showing 'Immersion', 'default name', 'Hall (1.3M)', 'default name', and 'Vito Supermarket'.
- Video Playback:** A central window titled '104 Hall (1.3M) default name' showing a live video of a lobby with a red grid overlay on a person. The time display shows '16:25:48' and 'Paused Friday, 2013/10/25'.
- Time Span:** A timeline at the bottom showing motion detection events as red vertical bars across a time range from 15:30 to 17:20.
- System Status:** A footer bar with system information: 'Date: 2013/10/25 | Time: 16:47:01 | Username: admin | Server address: 192.168.5.58:5250 | CPU loading: 20% | Memory usage: Total 4045MB Free 1404MB | Network: Displayed streaming bit rate 976.31 kbps'.



Les Performances



- Gestion centralisée (Main Server) réduit les temps de configuration
- Brevet « File Ring » de NUUO offre jusqu'à 450 Mbps en lecture / écriture sur 3 volumes logiques sous LINUX
- Haute disponibilité: Enregistreurs en mode Fail-over & redondance de volumes logiques.
- Haute disponibilité: Architecture 100% modulaire et virtualisable.
- Technologie « IRC » permet de définir un espace de stockage unique par caméras
- Nb illimité de canaux vidéos affichés sur le client et sur le mur d'images



Gestion centralisée multi-enregistreurs

The screenshot displays the NUVO management interface. At the top, there are tabs for 'Live View', 'Playback', and 'Config'. Below these are sub-tabs: 'Properties', 'License', 'Server Overview' (selected), 'Client Overview', 'SMTP', 'Address Book', and 'Event Action'. A left sidebar shows a tree view under 'Management Server' with categories: Recording Server (2, 4, 1, 3), Metadata Server (1, 2, 3, 4), and Matrix (1, 2). The main area contains a table with the following data:

Failover / Link Status	Name	Service	LAN Address 1	LAN Address 2	WAN Address
	Recording Server 2	Recording Server	192.168.1.2:5252	192.168.10.2:5252	140.112.112.2:5252
	Recording Server 4	Recording Server	192.168.1.4:5254	192.168.10.4:5254	140.112.112.4:5254
	Recording Server 1	Recording Server	192.168.1.1:5251	192.168.10.1:5251	140.112.112.1:5251
	Recording Server 3	Recording Server	192.168.1.3:5253	192.168.10.3:5253	140.112.112.3:5253
	Metadata Server 1	Metadata Server	192.168.2.1:5270	192.168.2.2:5270	140.112.1.2:5270
	Metadata Server 2	Metadata Server	192.168.2.3:5270	192.168.2.4:5270	140.112.2.3:5270
	Metadata Server 3	Metadata Server	192.168.2.5:5270	192.168.2.6:5270	140.112.1.4:5270
	Metadata Server 4	Metadata Server	192.168.2.7:5270	192.168.2.8:5270	140.112.1.5:5270

At the bottom of the interface, a status bar provides system information: Date: 2013/10/17 | Time: 16:22:32 | Username: admin | Server address: 192.168.5.58:5250 | CPU loading: 27% | Memory usage: Total 4045MB Free 869MB | Network: Displayed streaming bit rate 0.00 kbps

Gestion centralisée des utilisateurs



The screenshot displays the NUVO user management interface. On the left is a navigation tree with categories: User Group (Admin, Power User, Guest, 1), Role (Admin, Power User, User, Guest, 1, 2), Schedule (Always, Daily, Weekly, monthly, yearly, specific days), and Layout (Grid Layout 1-4). The main area is titled 'Config' and has tabs for Properties, Privilege, Permission (selected), Priority, and Matrix. Below these are sub-tabs for Device permission, and a list of devices with a grid of permission checkboxes. The 'Recording Server 2' group is expanded, showing various video and digital devices. A status bar at the bottom provides system information.

Device	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Recording Server 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Video Device 1_Camera 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Video Device 1_Camera 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Video Device 2_Camera 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Video Device 2_Camera 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Video Device 2_Video Device 2 - DI 1	✓																			
Video Device 2_Video Device 2 - DO 1	✓																			✓
video device (3)_camera	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
video device (4)_camera	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
video device (4)_digital input	✓																			
video device (4)_digital output	✓																			✓
video device (4)_digital output (2)	✓																			✓
video device (5)_camera	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
video device (6)_camera	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
video device (6)_digital input	✓																			
video device (6)_digital output	✓																			✓
video device (6)_digital output (2)	✓																			✓

Date: 2013/10/17 | Time: 16:46:01 | Username: admin | Server address: 192.168.5.58:5250 | CPU loading: 26% | Memory usage: Total 4045MB Free 886MB | Network: Displayed streaming bit rate 0.00 kbps

Taille d'enregistrement sur évènement par caméra



The screenshot shows the NUVO software interface for configuring recording schedules. The left sidebar displays a tree view of the system hierarchy, including Management Server, Recording Server, and Metadata Server. The main panel is titled 'Recording Schedule' and shows a weekly view of recording schedules for 'Recording Server 2'. The time zone is set to UTC + 07:00. The recording schedule is visualized as a grid where red bars represent 'Always' recording, blue bars represent 'On Event' recording, and cyan bars represent 'Boosting' recording. The schedule shows 'Always' recording on weekends and 'On Event' recording on weekdays from 8:00 to 17:00. A legend at the bottom of the grid identifies the colors: red for 'Always', blue for 'On Event', and cyan for 'Boosting'.

Time zone of RecordingServer(Recording Server 2): UTC + 07 : 00

Daily view Weekly view

2013/10/13 ~ 2013/10/19

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Sun.	Always	Always	Always	Always	Always	Always	Always	Always	Always	Always	Always	Always	Always	Always	Always	Always								
Mon.	Always	On Event	Always	Always	Always	Always	Always																	
Tue.	Always	On Event	Always	Always	Always	Always	Always																	
Wed.	Always	On Event	Always	Always	Always	Always	Always																	
Thu.	Always	On Event	Always	Always	Always	Always	Always																	
Fri.	Always	On Event	Always	Always	Always	Always	Always																	
Sat.	Always	Always	Always	Always	Always	Always	Always	Always	Always	Always	Always	Always	Always	Always	Always	Always								

Recording schedule list

Priority	Name	Property	Description	Pre-record	Post-record
1	Working hour	Boosting	Mon. to Fri. 8:00 to 17:00	--	--
2	Holiday	On Event	Holiday all day	30	30
3	Always	Always	7/24	--	--

Retention day: 7 day(s)

Enable audio

Date: 2013/10/17 | Time: 16:50:51 | Username: admin | Server address: 192.168.5.58:5250 | CPU loading: 31% | Memory usage: Total 4045MB Free 896MB | Network: Displayed streaming bit rate 0.00 kbps

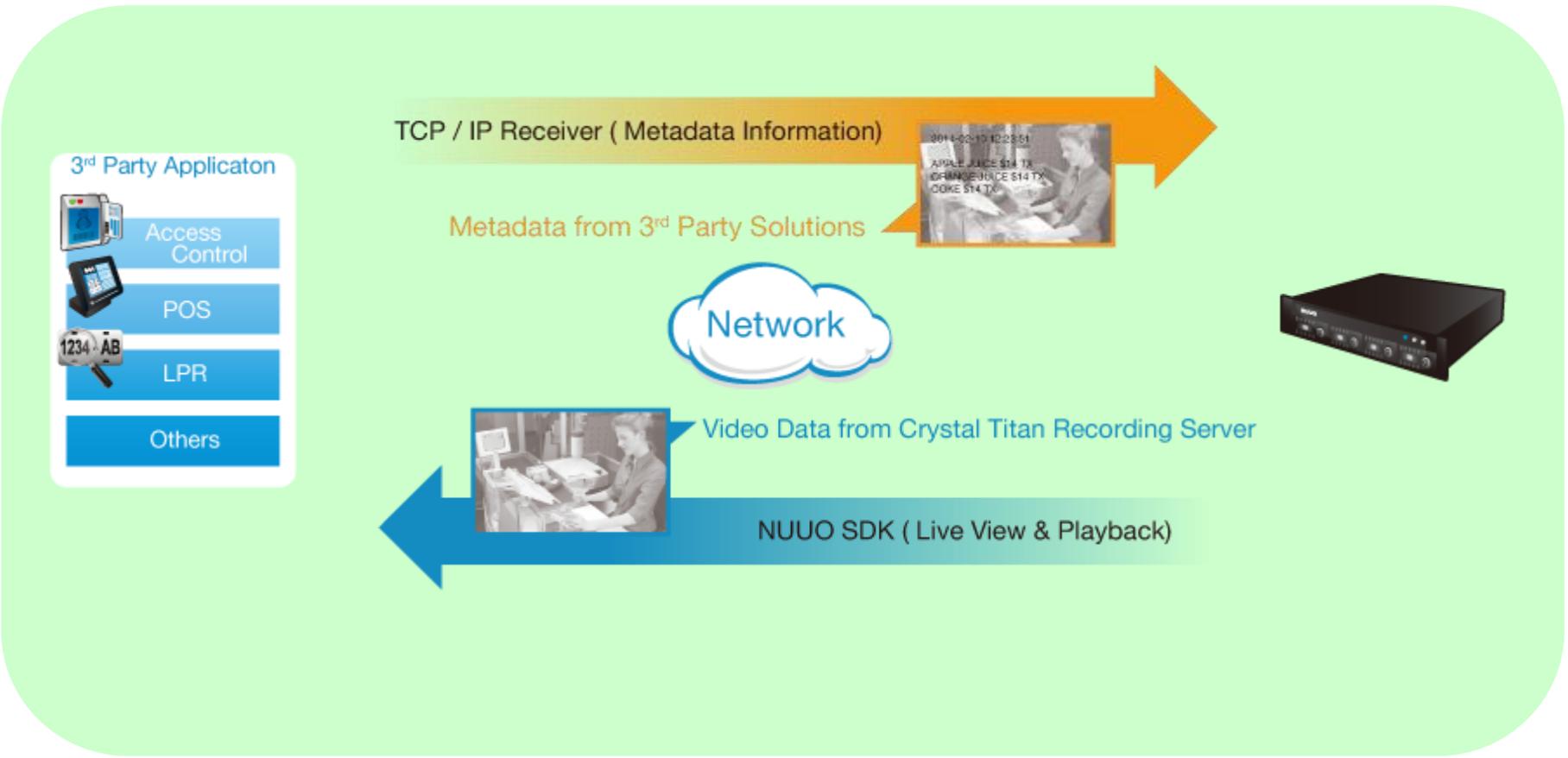


L'ouverture

- Client MAC OS, Windows et Mobiles (iPhone, iPad, Android)
- 80 marques / 2000 caméras compatibles
- Plus de 100 Partenariats et intégrations en
 - contrôle d'accès,
 - Détection d'intrusion,
 - Analyse intelligente de la vidéo,
 - Storage,
 - Serveurs,
 - POS + convertisseur Ethernet/Série SCB-31A NUUO
 - Reconnaissance de plaques d'immatriculations (LPR).
- Boitiers NUUO (SCB A08) de contrôle E/S à contacts secs.



Ouverture et Serveur de métadonnées





Cartographie digitale

The screenshot displays a digital mapping application interface for a school campus. The main view is an isometric 3D map of the school buildings, parking lots, and sports fields. Various monitoring points are marked on the map with icons and labels: 'Counting' (multiple locations), 'POS', 'Demo site Metadata Server', and 'Reception'. Some icons have red exclamation marks, indicating alerts or errors. The interface includes several panels on the left: 'View List' (Public Views: Office_A, Office_B), 'Content List' (Demo site Management Server, Physical Device, Camera), and 'Properties' (Name: School, Server name: Demo site Recording Server, Server type: Recording server, Server status: Connect, IP address: 192.168.5.58, Time zone: UTC + 08 : 00, CPU loading: 5.47264%, CPU temperature: 25, CPU fan speed: 6308 rpm, System fan speed: 1607 rpm, System temperature: 35, Volume 1, Total : 916 GB). At the bottom, there is an 'Event List' panel and a status bar with the following information: 'Date: 2013/10/29 | Time: 18:16:04 | Username: admin | Server address: 192.168.5.58:5250 | CPU loading: 12% | Memory usage: Total 4045MB Free 1220MB | Network: Displayed streaming bit rate 2906.21 kbps'. The top of the window has tabs for 'Live View', 'Playback', and 'Config'. The title bar of the window reads '101 School'.

NUUO at a Glance

- Founded in 2004
- Focused on Surveillance Video Management solution
- Complete recording solution with software-centric focus
- NUUO US branch established in 2009
- Local presence in China, France, India, Russia, South Africa, UK
- Public listed company in Taiwan in 2013
- 200+ employees
 - 47% of employees are engineers.
 - 75% of engineers have a Master degree
 - 90% of engineers specialize in software





Garanties NUUO

- Toutes mises à jour logicielles, firmware et Device Pack sont gratuites et en ligne.
- Garantie contractuelle NUUO sur le matériel de 2 ans, pièces et main d'œuvre. Voir conditions générales applicables sur le web.
- http://www.nuuo.com/SupportCamera.php?node_id=10#
- **Warranty Period**
- *NUUO hardware, including all network video recorders (NVR), appliances and I/O boxes, are under warranty against defects in materials and workmanship for two (2) years from the date of shipment from NUUO. For individual device's warranty coverage, please refer to our warranty card included in the shipping box.*
- *If the product is repaired or replaced, the repaired or replaced product shall continue to be under warranty for the remaining time of the original warranty period or for three (3) months from the date of repair or replacement, whichever is longer.*

Spécifications Hardware

PC client et VidéoWall



Hardware Requirement



Crystal V2.0 / 2013.11

Client PC Minimum Requirements		
CPU	Intel Core 2 Duo, 2.6GHz	
Display Card	nVidia or ATI with 1GB memory (OpenGL 2.0 and later)	
OS Supported	Windows XP 32 bit	Windows 7 (32/64-bit) Windows 8(32/64-bit) Windows 8.1(32/64-bit) Mac OS X 10.6/10.7/10.8/10.9(64-bit)
RAM	1GB	2GB
LAN Transmission Speed	10/100/1000 Mbps (RJ45)	
Web Client	Internet Explorer 8, 9, 10, 11 Firefox 29 or above (Windows version)	

*It is suggested to use 64 bit system for best system performance.