

EMBEDDED VMS STORAGE SYSTEM
COLDSTORE® NX
 3U PRO | 16 NX



Application | COLDSTORE 3U Pro 16 Nx delivers enterprise recording performance



COLDSTORE 3U Pro 16 Nx with embedded Nx Witness video management system

The powerful Nx Witness VMS combined with COLDSTORE 3U Pro 16 Nx sequential recording and extreme disk reliability provide a unique CCTV recording solution in a single box.

- | Integrated Nx Witness server and storage system
- | Up to 256 full HD channels at 30 FPS per channel
- | Up to 416TB capacity using only 90 watts
- | No recurring software licence fees
- | Incorporates COLDSTORE LAID™ and SFS™
- | Fully-featured, powerful Nx Witness VMS
- | Nx Cloud option for mobile device access



Embedded Nx Witness transforms COLDSTORE into a fully-featured video management system server

Nx Witness is one of the most powerful and easy-to-use VMS software solutions available. Combined with COLDSTORE this unbeatable duo offers high performance and low TCO.

Veracity - Network Optix Partnership

Veracity was founded in 2005 and has been a partner of Network Optix since their foundation in 2011.

Nx Witness has developed into one of the most powerful, easy-to-use and cost-effective video management systems available. Fully embedded in COLDSTORE, this provides the optimum combination of high performance video surveillance recording and management in a one box solution.

Nx Witness Architecture

The Nx Witness system consists of four components - desktop, server, cloud and mobile. The desktop component is the client application which can run on any PC system (Windows, Mac or Linux). The server component is effectively the VMS engine, which in this case runs inside the COLDSTORE storage system.

The cloud component enables simple remote connectivity, streaming, and management of one or an unlimited number of Nx Witness installations, whilst the mobile application allows users to view, control and playback their cameras on tablets or smartphones.

Nx Witness Desktop Client

The Nx Witness Desktop application is a rich media player with a flexible GRID interface, unmatched speed and responsiveness, instant notifications, an embedded browser, and a user experience unlike any other video management software. All features are

available on every system, stand-alone or enterprise, providing a consistent user experience on all sites.

Nx Witness Server

The Nx server auto-discovers 99% of known IP cameras and is ONVIF S and T compatible, including H.265 support. Dual (hi-res and low-res) streams enable adaptive scaling for Nx Client displays using minimum bandwidth. A hive architecture synchronises user settings and system configurations between all local servers. Combined with automatic failover protection, this ensures a resilient system with no single point of failure in multiple server installations.

Nx Witness Cloud

Administrators can connect systems to Nx Cloud for easy merging and management of remote sites. All video and communications are encrypted for secure access, which can be shared easily with other users. Nx systems can be accessed from anywhere, via Nx desktop or mobile clients.

Nx Witness Mobile Client

Nx Mobile is a low-latency client application for iOS and Android which provides remote viewing, PTZ control, fisheye dewarping, playback and smart searching from a smartphone or tablet. Connecting with encrypted links via Nx Cloud, it provides secure access to an unlimited number of Nx systems, with live thumbnails and remote system control. Full integration development tools are available for Nx Witness.

Nx Witness Feature Set

- | Flexible grid user interface
- | Advanced EDGE analytics support
- | Easy bookmarking and export
- | Bitrate throttling
- | Enhanced export
- | Advanced PTZ control
- | Advanced user management
- | Archive encryption
- | Adaptive video scaling
- | Fast search and smart search
- | Manual event triggers
- | Audio Video Mapping
- | Event rules engine
- | Optimised update process
- | Universal fisheye dewarping
- | Custom video watermarking
- | Multi-sensor camera support
- | Webcam support
- | Notifications panel
- | IP camera auto-discovery
- | ONVIF S and T support
- | H.265 support
- | Server hive architecture
- | Automatic failover
- | Encrypted video with TFA
- | Synchronisation of configuration
- | Encrypted cloud connections
- | Mobile device support
- | Unlimited scalability
- | Shared access
- | Cloud client system
- | Low-latency
- | Live thumbnails
- | No recurring licence fees
- | Camera grouping over all servers
- | Integration development tools
- | Video source SDK
- | Nx Server API
- | Metadata SDK

Combined COLDSTORE features and Nx Witness Pro licence model deliver the ultimate in low TCO



Rear view (above) showing the dual gigabit Ethernet ports, dual hot-swap power supplies and mirrored hot-swap solid-state OS disks.

COLDSTORE Technology

Our Linear Array of Idle Disks (LAID™) and vibration-free Sequential Filing System (SFS™) delivers a powerfully simple storage system for resilient video surveillance. This makes COLDSTORE an ideal server/storage platform for Nx Witness, with up to 390TB effective storage capacity (using 26TB disks, see capacity table under Technical Specifications).

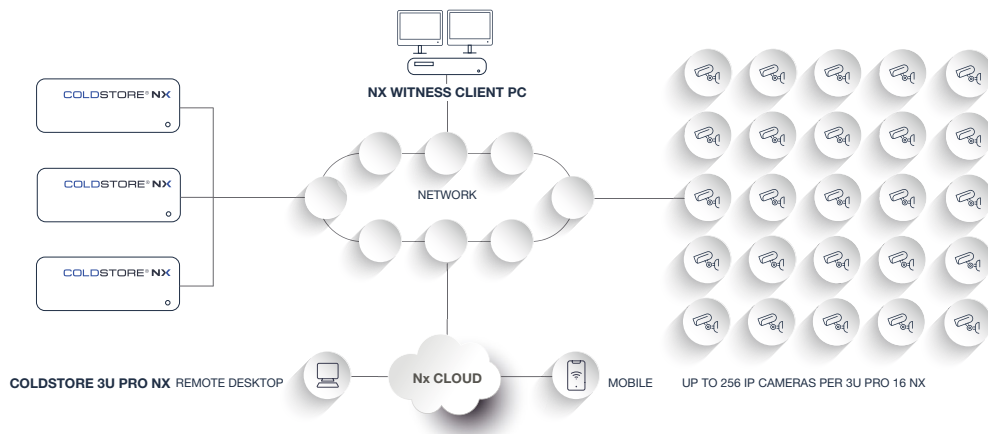
Extended Disk Lifetimes

COLDSTORE disks are used sequentially, saving power and greatly reducing temperature, vibration and wear - the three primary disk killers. Combined with SFS, this greatly extends disk lifetimes. COLDSTORE uses a mirrored overlapping-pair writing pattern which delivers the redundancy of RAID1 on write, but unlike RAID1 does not require twice the number of disks.

Low Power, Low TCO

All COLDSTORE models offer very low power consumption with minimal cooling costs and lower UPS backup power costs. When combined with the one-time licence fee model for the embedded Nx Witness VMS software, the overall Total Cost of Ownership of the COLDSTORE 3U Pro Nx 16 solution is dramatically reduced for the end-user.

COLDSTORE 3U PRO NX APPLICATION DIAGRAM



Single or multiple COLDSTORE 3U Pro 16 Nx servers may be used with single or multiple client workstations.

Workstations may be Windows, Linux or Mac and may be local or connected remotely through Nx Cloud.

Nx Cloud also supports access via iOS or Android mobile devices.

STORAGE PERIOD VERSUS CHANNEL COUNT

TB REQUIRED	2Mbps per Channel				4Mbps per Channel				6Mbps per Channel			
	32ch	64ch	100ch	256ch	32ch	64ch	100ch	128ch	32ch	64ch	100ch	120ch
30 days	23TB	46TB	71TB	182TB	46TB	91TB	143TB	182TB	68TB	137TB	214TB	257TB
60 days	46TB	91TB	143TB	365TB	91TB	182TB	285TB	365TB	137TB	274TB	4U NX	4U NX
90 days	68TB	137TB	214TB	4U NX	137TB	274TB	4U NX	4U NX	205TB	4U NX	4U NX	N/A

Figures define effective storage capacity. Maximum disk size is assumed to be 26TB, as COLDSTORE can use the largest disks available. 4U Nx is recommended for effective capacities above 390TB.

TECHNICAL SPECIFICATION

COLDSTORE® NX
3U PRO | 16 NX

GENERAL	<p>System Type: Storage server with embedded Nx Witness video recording system</p> <p>Storage Array Type: COLDSTORE sequential storage system</p> <p>Drive Bays: 16 x 3.5" removable drive bays with locking feature</p> <p>Network Interface: Dual gigabit Ethernet ports</p> <p>Power Supply: Dual hot-swappable</p>
SYSTEM & SOFTWARE	<p>Operating System: Linux OS on mirrored solid-state disk</p> <p>Storage System: COLDSTORE firmware running L.A.I.D.™ and S.F.S.™</p> <p>Embedded VMS: Network Optix Nx Witness VMS</p> <p>Time Synchronisation: Via NTP (TIMENET Pro Recommended)</p> <p>Configuration & Management: COLDSTORE via SITESCAPE on Client PC Nx Witness Server via Nx Witness Desktop on Client PC</p>
VMS SYSTEM	<p>VMS Server: Nx Witness (Linux version) - licenced per channel - integration API available</p> <p>VMS Client: Nx Witness (Windows/Linux/Mac for desktop, iOS/Android for mobile) - licence free</p> <p>Camera Channels: Up to 256 channels (including active VMD on secondary streams)</p> <p>IP Camera Support: Auto-discovery plus manual add and remove</p> <p>ONVIF: S and T supported in addition to native SDKs. H.265 compatible</p> <p>Resilience: Server hive system - synchronisation of user and configuration data on all units</p> <p>Failover: Supported (with multiple COLDSTORE NX systems)</p> <p>Scalability: Up to 100 servers supported</p>
CAPACITY	<p>Disk Type: SATA disks - almost all makes, models and sizes supported (including SMR)</p> <p>Disk Capacity: Maximum available disk sizes supported</p> <p>Array Capacity (Raw): 416TB maximum array capacity (with 26TB disks)</p> <p>Array Capacity (Effective): 390TB in normal COLDSTORE mirrored overlapping-pair mode (with 26TB disks)</p>
POWER	<p>Power Supply Type: Dual-redundant hot-swappable PSU</p> <p>Power Supply Rating: 110-240V AC 50/60Hz Input (Auto sensing)</p> <p>Power Consumption: 90 watts typical maximum (PSU rated at dual 550W)</p>
PHYSICAL/ENVIRONMENTAL	<p>Dimensions: 19" rack width, 3U high, 513mm deep (W 443mm x H 132mm x D 627mm)</p> <p>Weight: 23.2kg (51.1lbs) (including mounting rails but without disks)</p> <p>Operating Temperature: 5°C to 40°C (41°F to 104°F)</p> <p>Relative Humidity: Up to 85%, non-condensing</p> <p>Compliance: CE, FCC, RoHS, UKCA, BIS.</p>
PRODUCT CODES	<p>CSTORE16-3U-PRO-NX-UK: COLDSTORE 16-Bay 3U Pro, embedded Nx Witness VMS, dual PSU & UK power cables</p> <p>CSTORE16-3U-PRO-NX-EU: COLDSTORE 16-Bay 3U Pro, embedded Nx Witness VMS, dual PSU & EU power cables</p> <p>L01-NXWI: Nx Witness VMS IP camera recording licence (per channel)*</p> <p>L06-NXWI: Nx Witness VMS encoder recording licence (per 4 encoder channels)*</p> <p>L08-NXWI: Nx Witness VMS I/O module control and recording licence *</p> <p>L05-NXWI: Nx Witness VMS video wall licence (2 monitors per licence)*</p>

*No recurring annual fees and including free software upgrades (excluding major revisions)

Disk Size	TB	6	8	10	12	16	18	20	24	26
Raw Capacity	TB	96	128	160	192	256	288	320	384	416
Effective Capacity	TB	90	120	150	180	240	270	300	360	390

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