ONX Witness



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Nx Witness VMS is a lightning-fast, easy-to-use, cross-platform IP video management system (VMS) / video surveillance software designed to discover, view, record, and manage IP video cameras so you can monitor, analyze, and react to critical events in real-time. Nx Witness is open and extensible with Cloud, Server, Desktop Client, and Mobile applications.

Cloud

Server

A cloud-based service that enables simple, centralized remote access and insight into any **Nx Witness** system.

Browsers

- Google Chrome
- Mozilla Firefox
- Microsoft Edge
- Safari
- Opera

A powerful, lightweight media server designed to discover, add, and manage system devices and resources.

Operating Systems

• Arm / Raspberry Pi OS

Windows

Ubuntu Linux

A rich media player with a flexible GRID interface designed for connecting to and managing an **Nx Witness** system.

Operating Systems

Windows

Client

- Ubuntu Linux
- macOS

Mobile

A mobile application for iOS and Android devices designed for remote viewing and control of **Nx Witness** systems.

Operating Systems

- Android
- i0S



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Connect

- NAT Traversal
- Data Proxy via AWS
- LDAP Credentials
- Encrypted Connections
- WiFi/LAN/WAN
- 4G/LTE/Data

View

- Live Video [adaptive]
- Recorded Video [adaptive]
- Camera Details
- Keyword Search
- Calendar Search
- Scalable Timeline

Manage

- System Settings
- User Permissions
- Cloud Connections
- Email Notifications
- Push Notifications
- Health Monitoring

Scale

- Unlimited # of Systems
- Unlimited # of Users
- Unlimited # of Devices
- Cloud API

SCALABILITY

Maximum # Of Connected Systems Unlimited

Maximum # Of Users Unlimited

Nx CLOUD SERVICES

Cloud Connect

Connect any Nx Witness System to Nx Cloud for simple remote connectivity from anywhere using Network Optix's NAT Traversal and Cloud Data Proxy technology.

Manage Users

Add an unlimited number of users to a single Nx Cloud System. Share access to your Nx Witness System in seconds using only email addresses. Create Custom Roles to quickly assign access to multiple Nx Cloud connected Systems.

UNIQUE CAPABILITIES

Connectivity

Cloud Data Proxy: Connect via Nx Cloud to view System data and video. NAT Traversal [DEFAULT]: Connect directly to System via Cloud addressing

SECURE COMMUNICATIONS

Security

Password Recovery: Reset password via email. Two Factor Authentication: Combine password with Authenticator Encrypted Connections: HTTPS OpenSSL Encrypted Video: Encrypt transmitted and stored video archives

INTERFACE

Cloud Interface

Systems: View connected System tiles in Cloud WebAdmin Settings: View users, rename systems, disconnect systems View: View live or recorded video from connected cameras & streams Information: Integrated Health Monitoring for the last 24 hours Monitoring: Real-time Server monitoring and Logs

Supported Browsers

Mobile & Tablet: Chrome, Safari, Firefox, Edge [and others] Computers: Chrome, Safari, Firefox, Edge [and others]

INTEGRATION TOOLS

For Developers Cloud API: Integrate with 3rd party applications and devices

For Admins Zapier: Create connections to other Cloud apps with Zapier.com



Discover

- 99% of IP Cameras & Webcams
- I/O Devices
- Encoders
- RTSP/HTTP/UDP Streams
- SAMBA NAS Devices
- Nx Systems & Servers

Manage

- Device Configurations
- System Rules
- Failover/Redundancy
- Connections [HTTP, HTTPS]
- Archived Video
- Flexible Archive Backup

View

- Server Health
- Live/Recorded Video
- System Configuration
- Log Files
- Audit Trail
- Storage Status

Integrate

- HTTP Events & Actions
- Server API
- Metadata SDK
- Video Source SDK
- Storage SDK
- Server via Cloud API

RECOMMENDED BASED ON # OF STREAMS

Maximums

- # of Resources Per Organization: Unlimited
- # of Resources Per Site: 2560
- # of Clients per Site: 3333
- # of Dual Recording Streams per Server: 256
- # of Servers in a Server Hive: 10

SUPPORTED OS

Windows: 10, 11, Server 2016, Server 2019, Server 2022 Ubuntu Linux: 18.04 LTS, 20.04 LTS, 22.04 LTS, 24.04 LTS Arm Devices: Raspberry Pi, NVIDIA Jetson Devices

UNIQUE CAPABILITIES

Server Hive Synchronization: Servers synchronize system data in real time. Failover: Automatic camera failover when server fails.

Archive Integrity

Integrity Check: Notification when files manual modified. Backup: Real-time [concurrent] or scheduled.

No Prerequisite Software Required Database: SQLite+ Proprietary archive index.

Lightweight: 123mb Install file.

Storage

LAN/WAN: HDD, SSD, NAS [SAMBA]. Storage SDK: Integrate new storage mediums [e.g. FTP, Cloud].

Security

User Rights: LDAP/Active Directory, secure password recovery. Technologies: HTTPS, OpenSSL, Salted MD5 Hash, TLS/SSL. Encryption: Secure connections, encrypted video.

SUPPORTED MEDIA STREAMING

Live Streaming [via Server API]

Video: H.265, H.264, MJPEG. Audio: AAC, PCM (Mu-Law, A-law), G711, G726, MP3. Protocols: RTSP, WebM, HLS. Transcoding: Supported [for web client, mobile, API].

Other Media Videos: AVI, MKV, MP4, MOV, TS, M2TS, MPEG, MPG, FLV, WMV, 3GP. Images: PNG, JPG, GIF, BMP, TIFF. Virtual Camera: Upload footage from offline cameras [e.g. wearable cameras].





A lightweight media server designed for discovering, adding, and managing system resources and their related metadata.



Deskto Teskto

A rich desktop application with a flexible GRID interface designed for connecting to, viewing, and managing your Nx Witness System.



Configuration

- Events & Rules Engine
- User Management
- IP Video Devices
- Server Management
- I/O Device Management
- Storage Management

Search

- Smart Motion Search
- Keyword Search
- Calendar Search
- Object Search
- Bookmarks
- Audit Trail

Usability

- Drag & Drop Interface
- Consilidated Notifications
- Adaptive Playback
- Customizable Layouts
- Digital Maps
- Adaptive Scaling

Media

- IP Video Cameras & Devices
- RTSP/HTTP Streams
- I/O Devices
- Web Pages / URLs
- Recorded Video Files
- Static Image Files

SUPPORTED OS

Windows: 10, 11 Ubuntu Linux: 18.04 LTS, 20.04 LTS, 22.04 LTS, 24.04 LTS MacOS: 11 Big Sur, 12 Monterey, 13 Ventura, 14 Sonoma, 15 Sequoia

UNIQUE CAPABILITIES

Desktop Modes Connected Client: Manage any connected Nx Witness System. Media Player: View, edit, and export offline videos and images. Video Wall: Put Nx Desktop into Video Wall mode to control remotely.

Unique Features

Multilingual Support: Support for 20+ languages. Showreel: Fully customizable viewing sequences of any GRID media. Customizable Branding: Customize desktop background. Drag & Drop Reassignment: Move cameras/streams between Servers. Nvidia & Intel Quick Sync: Decoding support.

Search

Advanced Object: Search by detected object and metadata attributes. Flex Timeline: Search by date/time using calendar or mouse movements. Events: Quickly search System event log to find event-driven video. Smart Motion: Select specific pixels to search a year of archive in seconds. Bookmarks: Create bookmarks manually or automatically with Rules Engine.

SUPPORTED MEDIA PLAYBACK & CONTROL

Live Streaming Codecs: H.265, H.264, MJPEG

Offline Media Files

Video: AVI, MKV, MP4,MOV, TS, M2TS, MPEG, MPG, FLV, WMV, 3GP Image: JPG, PNG, GIF, BMP, TIFF

Control Devices

I/O Devices: Status and Triggers Servers: Server Health Monitoring

Built-In Browser Browser Support: Websites, URL's and IP addresses with built-in Chromium browser



Connect

- NAT Traversal
- Data Proxy via Cloud
- Encrypted Connections
- WiFi/LAN/WAN
- 4G/LTE/Data

View

- Live Video [adaptive]
- Recorded Video [adaptive]
- Camera Status
- Layouts
- Adjustable Resolutions
- Portrait/Landscape

Control

- Fisheye Dewarping
- Pan-Tilt-Zoom [PTZ]
- Soft Triggers
- 2-Way Audio
- Cloud or Local Systems
- Unlimited # of Systems

Search

- Keyword Camera Search
- Calendar Search
- Thumbnail Search
- Push Notifications
- Flex Timeline
- Smart Motion

SUPPORTED DEVICES

Android: 9.0, 10.0, 11.0, 12.0, 13.0, 14.0, 15.0 iOS: 16, 17, 18 iPadOS: 16, 17, 18

VIEWING & PLAYBACK

Viewing Modes: Portrait, Landscape

Adjustable Resolutions: Highest Speed [secondary stream], Best Quality [primary stream], 1080p, 720p, 480p, 360p

KEY FEATURES

Connect From Anywhere

LAN/WAN: Connect to Systems using public IP address or Dynamic DNS Via Nx Cloud: Login to Nx Cloud to view all shared Systems Adaptive Connections: Works well on WiFi or Data [4G, LTE, 3G]

View Live or Recorded Video

Live Video: View live video remotely in real-time Archived Video: Review archived footage remotely

Control Cameras

Fisheye Cameras: Universal dewarping for fisheye cameras PTZ: Control PTZ cameras with Joystick and/or tap to move UX Soft Triggers: Control soft triggers on cameras 2-Way Audio: Talk through I/O or IP cameras that support audio in/out

Search

Keyword: Search for cameras or layouts by name Calendar: Search by date and time Layouts: View thumbnails of System layouts Live Thumbnails: Thumbnails refresh in real-time Flex Timeline: Search using the same timeline interactions as Nx Desktop Smart Motion: Search using Smart Motion Push Notifications: Receive customizable push notifications for key events



A mobile application for 105 and Android devices designed for on-the-go viewing and control of system devices.

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VIDEO SOURCE SDK

3rd Party Video Devices

The Video Source SDK provides the ability to integrate virtually any live or recorded video source (IP Cameras, NVRs, DVRs, etc) into System. It also allows integrating device I/O ports and motion detection information.

3rd Party I/O Devices

The Video Source SDK also provides the ability to integrate 3rd party I/O devices which can increase hard wire interoperability with 3rd party systems and connected devices.

STORAGE SDK [C++]

3rd Party Storage

The Storage SDK allows developers to read from or write to any storage location: local, remote, and cloud. Creating a storage plugin requires implementing standard functions such as: I/Ostream, if file exist, delete file, list of files in the folder, etc. The Storage SDK also contains an example for using an FTP server as astorage location.

SERVER API [REST API]

Integrate ANYTHING using HTTP API Calls

A REST API that gives developers the ability to access almost every system feature available in the regular client: query/manage system resources (servers, cameras, users, permissions), pull live or recorded video out of System, generate events, create rules, control PTZ cameras, and more.

METADATA SDK

Create plugins that run on Nx Server

The Metadata SDK allows developers and tech partners to create installable Plugins for Nx Witness which run on the Nx Server application to create tight, seamless integrations. The Metadata SDK is focused on bringing object metadata from 3rd party Systems - like Face Recognition, Retail Analytics, License Plate Recognition, etc - to enhance both real-time system intelligence and post-event, post-capture video search and review.



Nx Witness developer tools are FREE to use and can be accessed by installing Nx Witness VMS and opening the Server Web Admin interface.

Download Nx Witness today at:

NetworkOptix.com/Nx-Witness



VIDEO

SOURCE SDK

STORAGE SDK

VIDE0 SOURCE

REMOTE & CLOUD STORAGE

SERVER

SERVER

NX WITNESS

NX WITNESS







Nx Maps

An intelligent Geographic Information System (GIS) mapping tool, Nx Maps enhances any Nx solution with advanced geolocation data visualization. It allows users to globally visualize their system within the Nx client, transforming users' ability to monitor and manage their IP devices - all through a simple, unified interface. With Nx Maps, users can add cameras to a GIS or image-based map, configure their field of view, apply color-coded markers, and launch cameras from the map.



Nx Al Manager

Nx AI Manager is a universal AI inference pipeline that optimizes any AI model to run on a wide range of industry-leading accelerators with customizable pre and post-processing configurations. It allows developers to easily configure and control their AI setups, ensuring optimal performance across their fleet of edge devices. With Nx AI Manager, developers can effortlessly enhance any video application with intelligence by simply uploading an AI model - no extra engineering is required.

8



Nx Connect

KEY FEATURES

Add Channel Partners and Organizations Create, edit, and oversee downstream partners across multiple channels.

Apply and Manage Services Customize service prices, set currency preferences, and control access to different services.

Add Users and Adjust Settings Create portal users with role-based permissions and personalized settings.

Revenue Reporting and Usage Statements Access monthly statements and data charts for revenue and service usage.

Integrations [Coming Soon] Connect with major platforms such as HubSpot, Salesforce, QuickBooks, and more.

UNIQUE ADVANTAGES

Centralized Management Manage all subscription & channel operations in one unified system.

Granular Oversight & Control Gain complete downstream visibility and tailor offerings to align with your business strategy.

Revenue Insights Leverage data-driven insights to track performance, predict growth, and manage risk.

Accelerated Business Growth Unlock recurring revenue streams with a subscription-based pricing model.

Scalable Operations Grow your business efficiently while minimizing administrative overhead.

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A cloud-based portal built for Nx Channel Partners to simplify channel management and streamline the administration of licenses and services.



About Network Optix

ABOUT US

Network Optix [n^x] is a global leader in video software development, empowering the creation of intelligent video solutions that transform video into actionable intelligence. Built on over a decade of innovation, the Network Optix Enterprise Video Operating System (Nx EVOS) enables organizations to rapidly and affordably develop custom-tailored, enterprise-scale video products and solutions optimized for data-driven decision-making and operational efficiency.

Nx is headquartered in Walnut Creek, California with additional locations in Burbank, California, Portland, Oregon, Belgrade, Serbia Taipei, Taiwan, and regional teams distributed across the globe. Recognized on the Inc 5000 Fastest Growing Companies list for 9 years, we are committed to expanding our teams cross-functionally and globally.

At Network Optix, we aim to power the world's most intelligent video solutions, striving to revolutionize the landscape of video technology and transform how it is used to navigate and understand the world around us.



OUR MISSION

Our mission is to empower organizations to harness the full potential of intelligent video, driving smarter decision-making and greater operational efficiency at scale. How? By providing forward-thinking organizations with the tools to build world-class, enterprise-scale video solutions that transform video into actionable intelligence. We are dedicated to fostering innovation, growth, and value creation as we redefine the future of video technology and its role in shaping how we navigate and understand the world around us.

FACTS & FIGURES

- Nx has been recognized on the Inc. 5000 list for 9 consecutive years.
- Nx is ISO 27001 and SOC 2 Type 2 Compliant, signifying our dedication to safeguarding the security, privacy, and trust of our customers' data.
- Nx software intelligently manages 4M+ devices worldwide.
- Nx has a global reach, with a presence in 190+ Countries.





Notes



