

A Platform Approach to Intelligent VSaaS

A rapid way to develop full-stack edge and AI-enabled
Video Software as a Service products with Powered by Nx VPaaS.





About Us

Quick Company Facts

- Founded in 2010 with the goal of creating a platform approach to enterprise video management.
- Headquartered near Los Angeles, California.
- Offices in San Francisco, Portland, Texas, London, Taipei, Adelaide, Kiev, and Bogota.
- 120 FTE's - 90% technical

Awards / Recognition

- On the Inc 5000 6 years running.
- Recently voted the #1 VMS in the world, beating out rivals by 25% in favorability.
- 3 million IP cameras under management (that we know about!)

Inc. 5000

N°

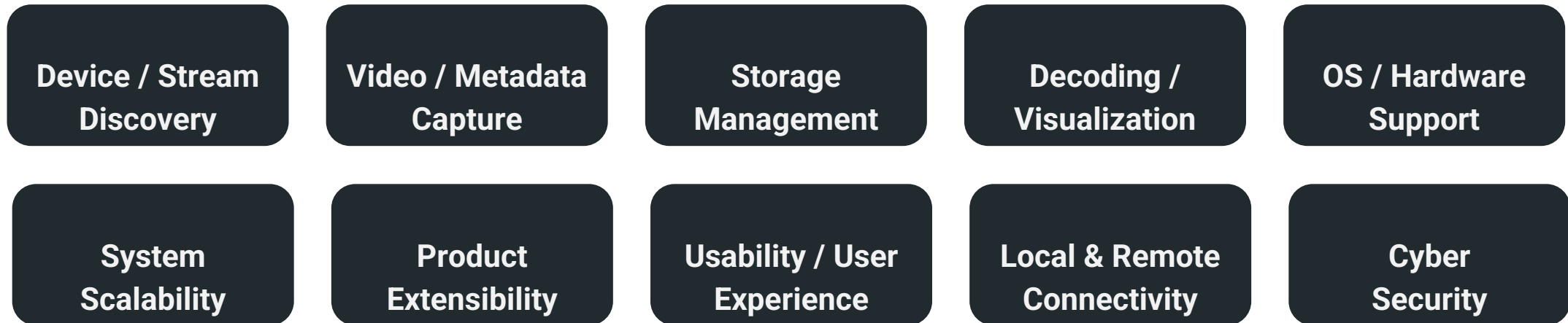
293

2021

IND **SOFTWARE**

10 Big Challenges

when creating Intelligent Video Products



Bottom Line: Creating an intelligent video application is **HARD**.

Nx came up with our **VPaaS** approach to make it easier.



Nx Meta

A full-stack (Cloud, Server, Desktop, Mobile) intelligent video platform for creating intelligent video platforms.



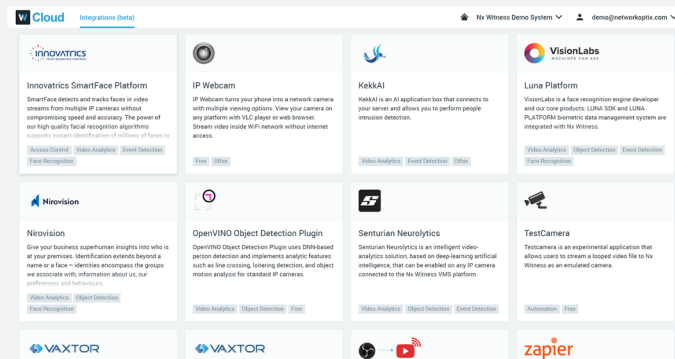
Nx Meta
VIDEO DEVELOPMENT PLATFORM

APIs

SDKs

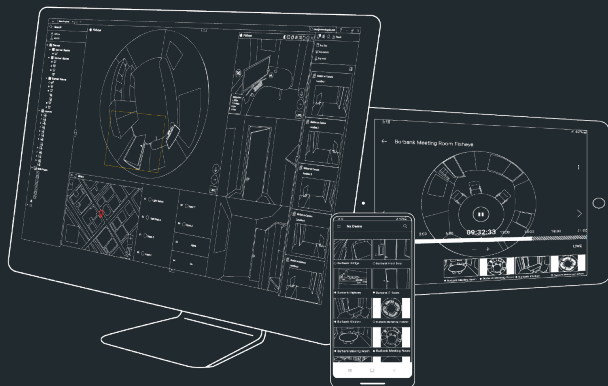
Works With 

An **Ecosystem** where partners, customers, and end users can discover and promote integrated complementary technologies.



Powered By 

Private labeled **VSaaS** solutions built for and with partners for a target market with a recurring revenue business model.



Nx Witness
VIDEO MANAGEMENT SYSTEM

A Powered by Nx **VMS** (Video Management System) sold via distributors and system integrators around the world.

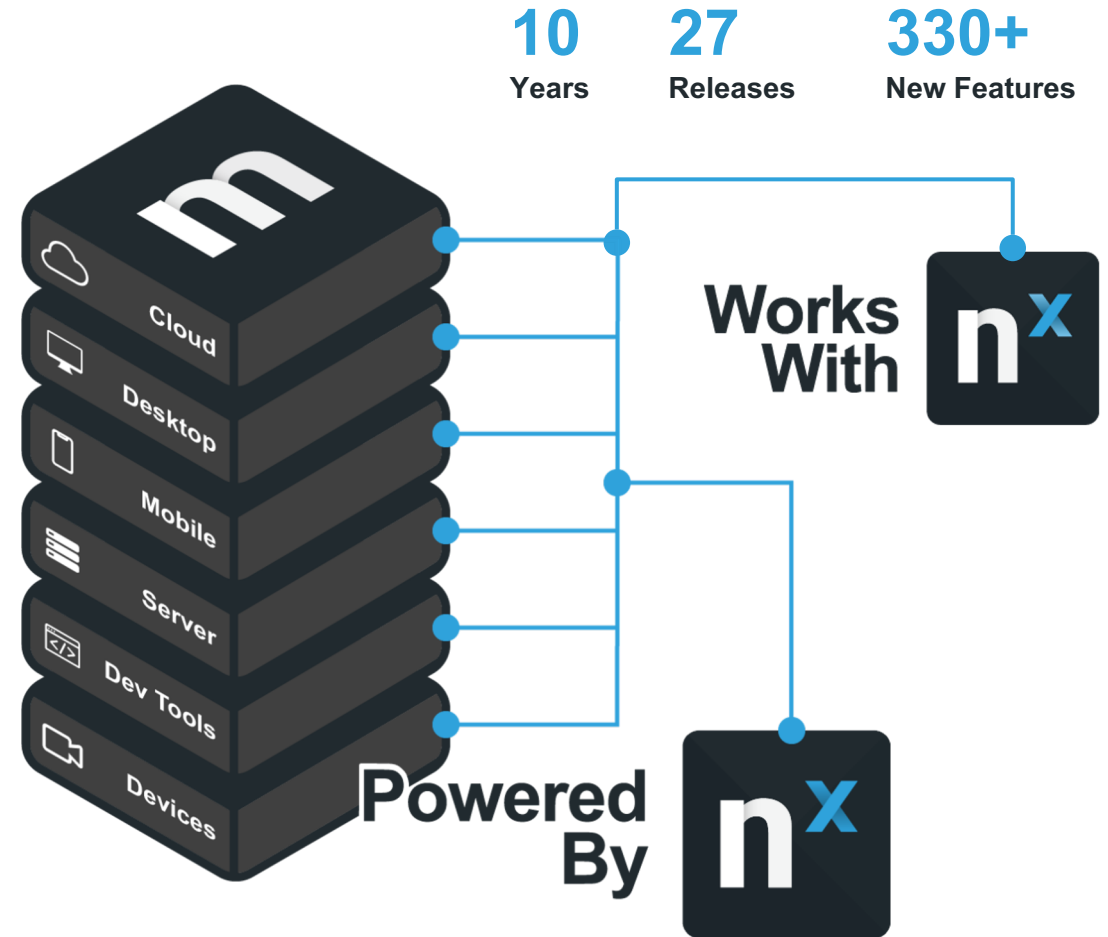


What Nx Meta is.

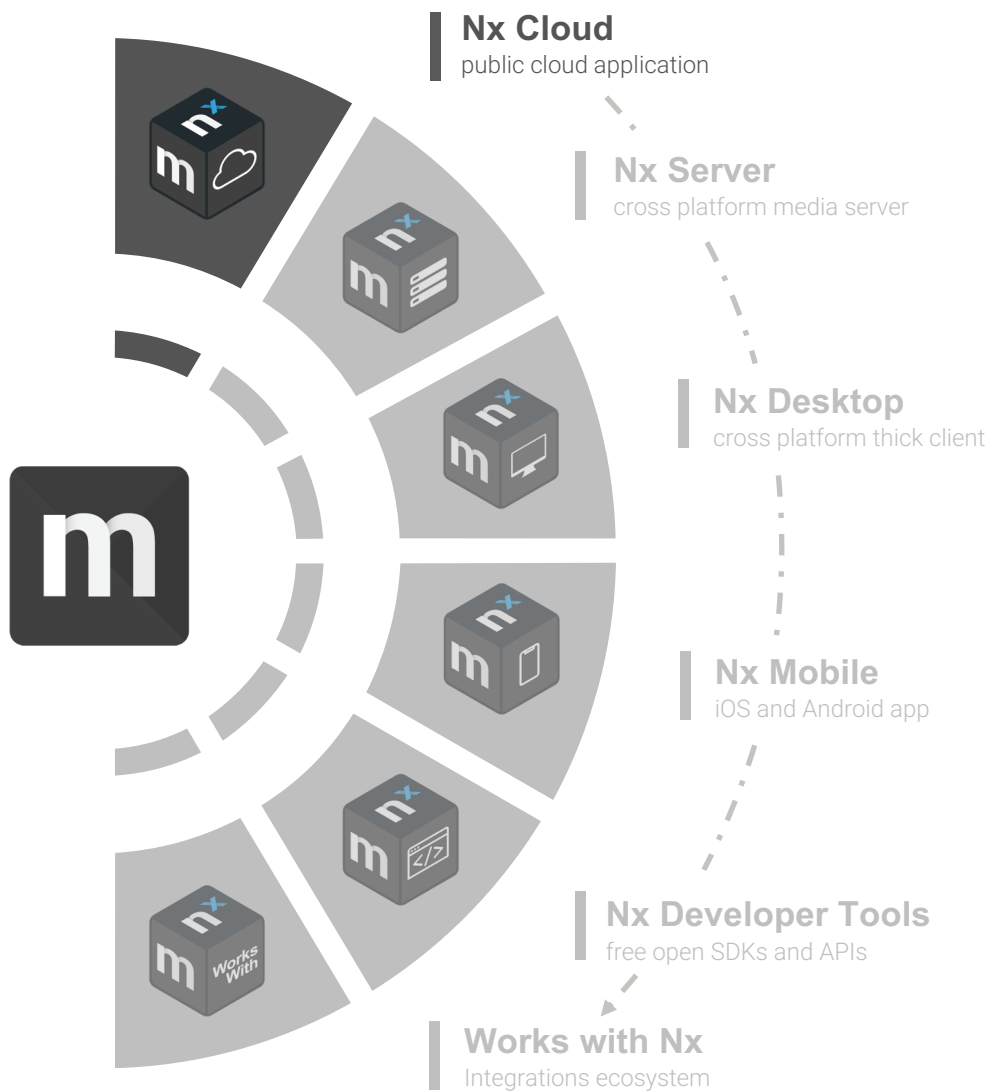
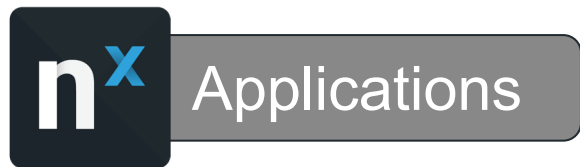
- Nx Meta has **cloud, desktop, mobile, and server** applications that you can customize with **developer tools**.
- Nx Meta takes you **95% of the way to a finished, full-featured intelligent video product**, and then **you can add value with custom hardware and software solutions** relevant to your business.

What Nx Meta is not.

- **A front-end website** for taking payments and managing accounts. (this is up to you!)
- **A video analytics platform** (we integrate with most of them! but we don't make them!)



Powered
By



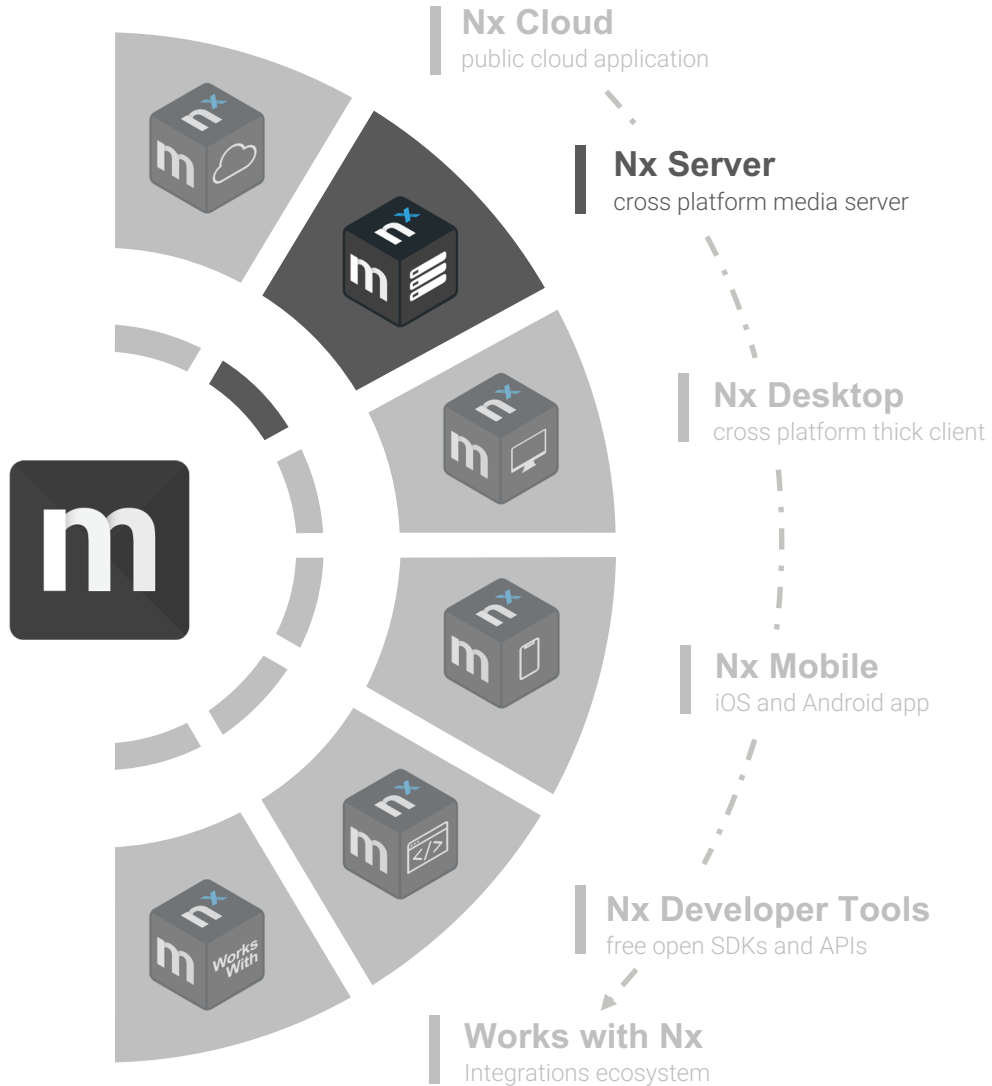
Nx Cloud

A public cloud application built on AWS that allows customers to scale their VSaaS business to any size.

- Connect and manage **unlimited number of systems**
- **Manage and monitor** system health and devices
- **Control customer access** to systems with custom roles
- Easily **integrate with existing cloud infrastructure** (Cloud API)
- Host in your own Private Cloud (coming soon)



Powered
By

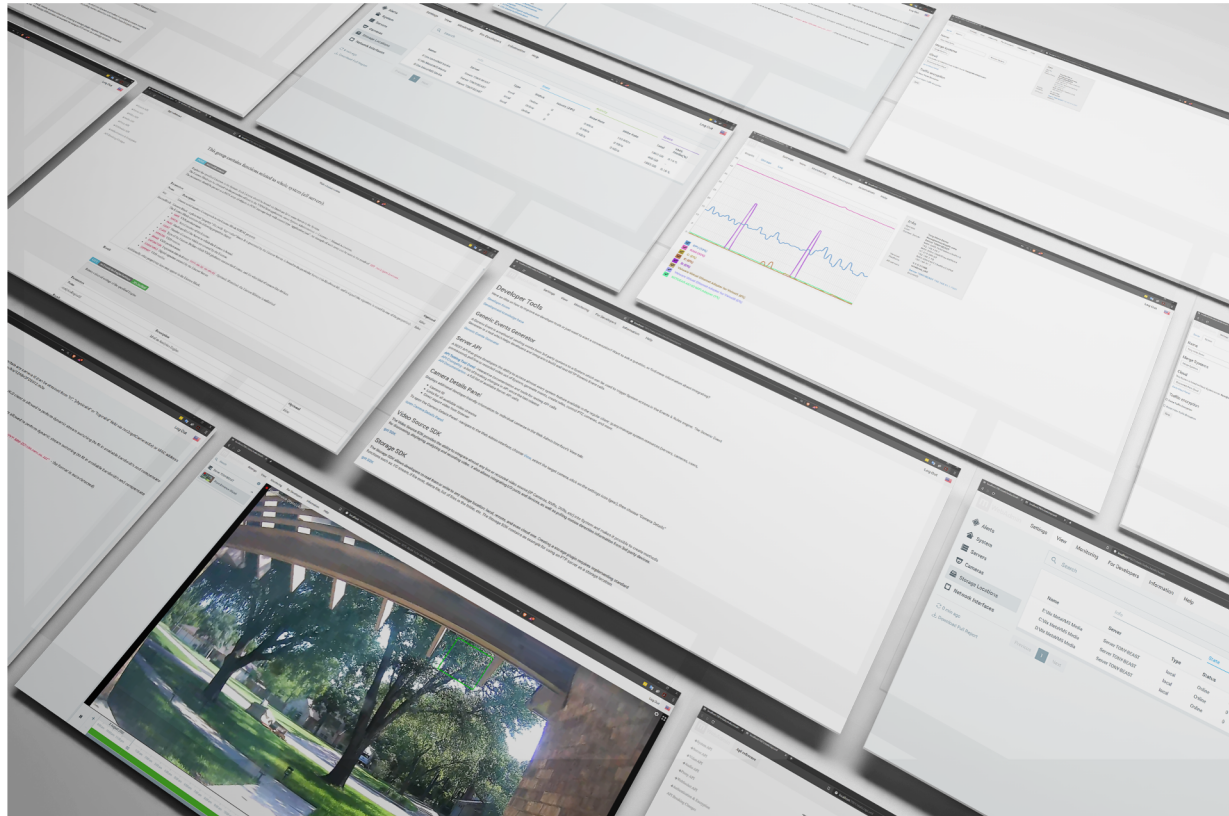


Nx Server

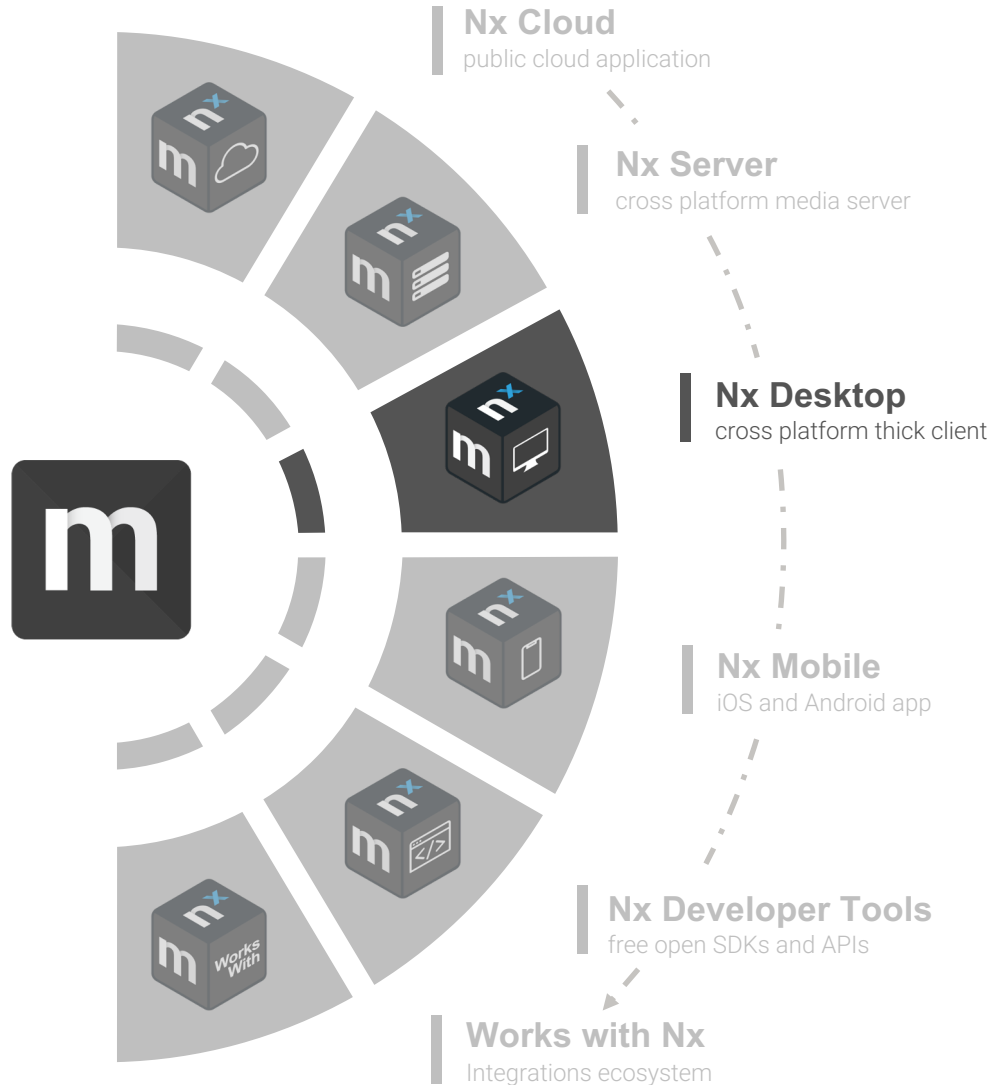


A lightweight, cross-platform media server with unique capabilities that manages system connections, data, access, and automations.

- Server **Hive Architecture** (Automatic Failover)
- **No prerequisite software** (database included)
- Extremely **lightweight** (can even run in cameras)
- Auto-discover **tens of thousands of video devices** from **700+ manufacturers**



Powered
By



Nx Desktop



A super **responsive, easy to use**, built-**close-to-the-metal media browser** that allows for **customized management** and **monitoring** of system resources.

- **Lightning fast** video playback and search w/o need for GPUs
- Combine images, videos, web pages, I/O devices to **increase situational awareness**
- Runs on Windows, Apple, or Ubuntu Linux devices.
- **No prerequisite software** required



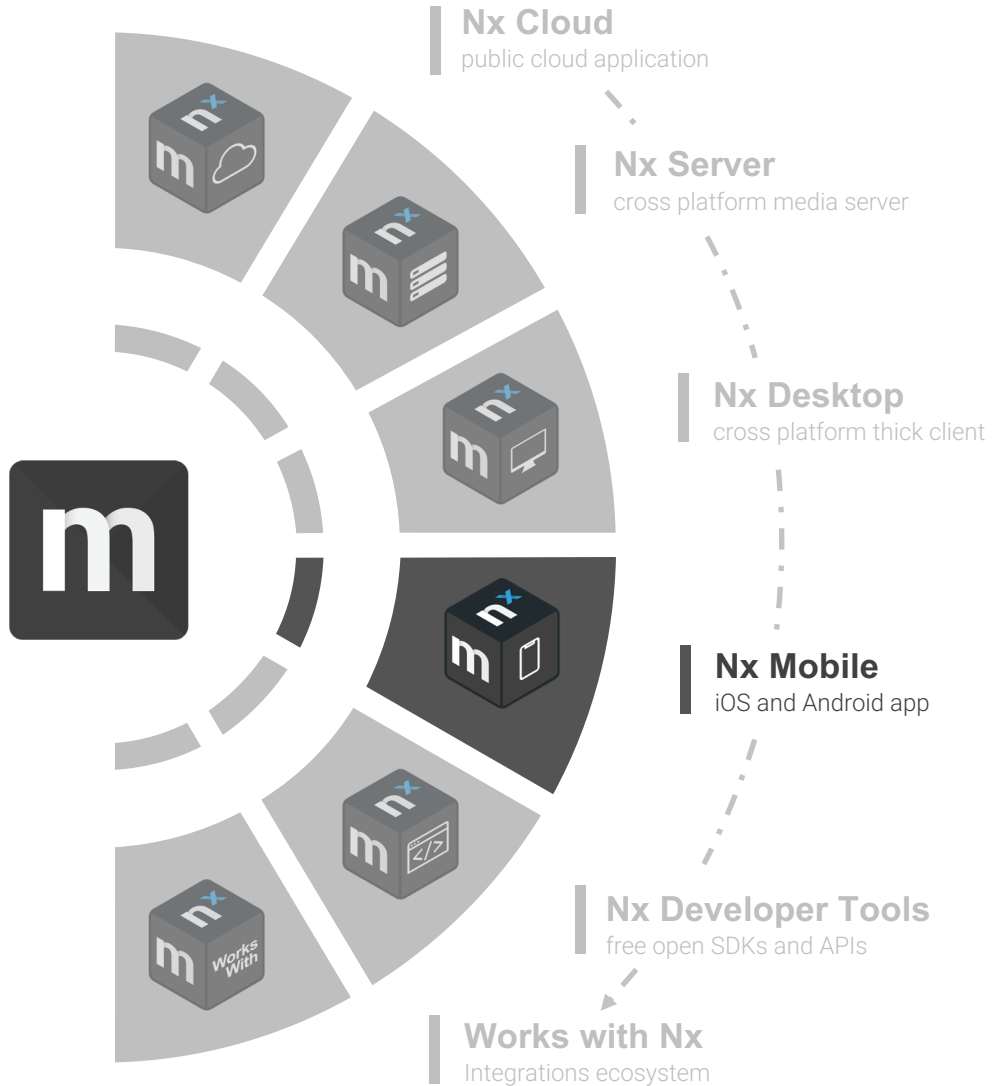
Powered By



Nx Mobile

A mobile app built for iOS / Android devices with a focus on **getting alerts** and being able to **view / control devices in response**.

- Custom built media player = **low latency**.
- Soft Triggers allow **remote control of peripheral devices**.
- View live / search video / playback based on **push notifications**.
- **Fisheye dewarping / PTZ control / Live Thumbnails** etc.



Powered
By

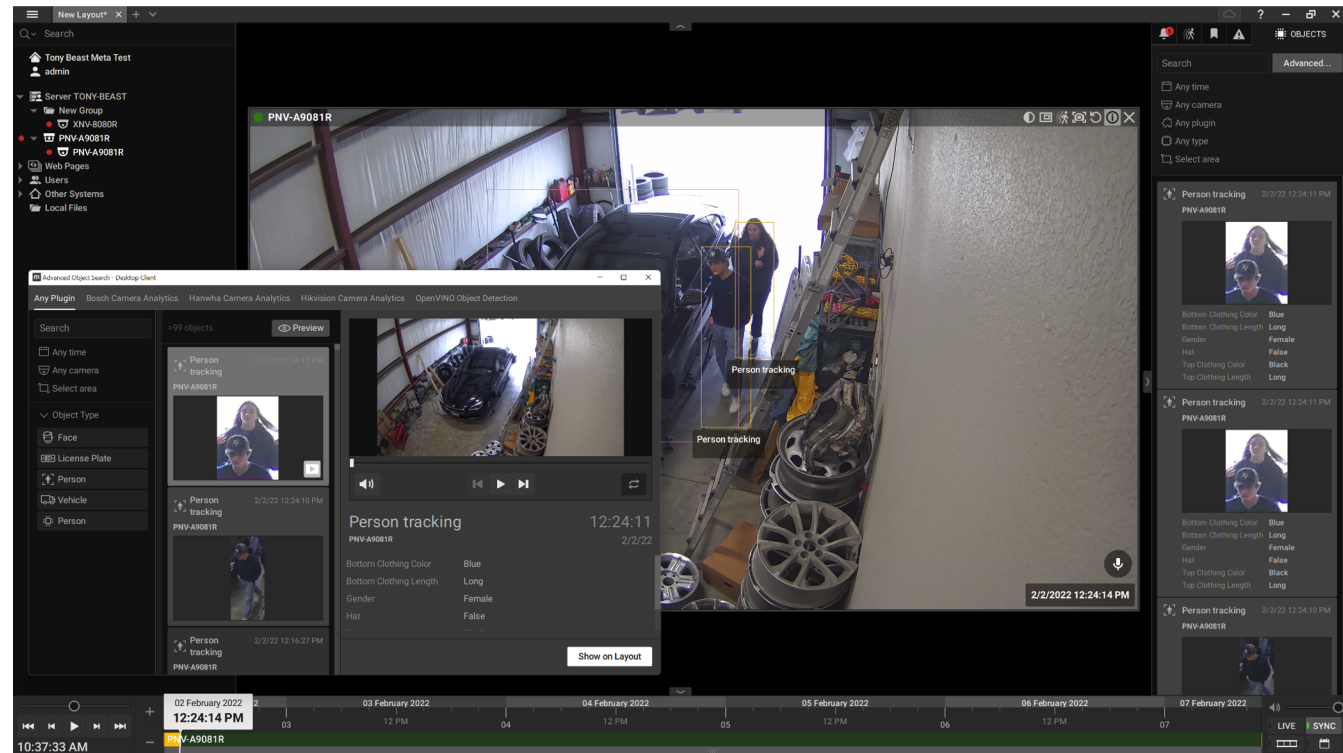
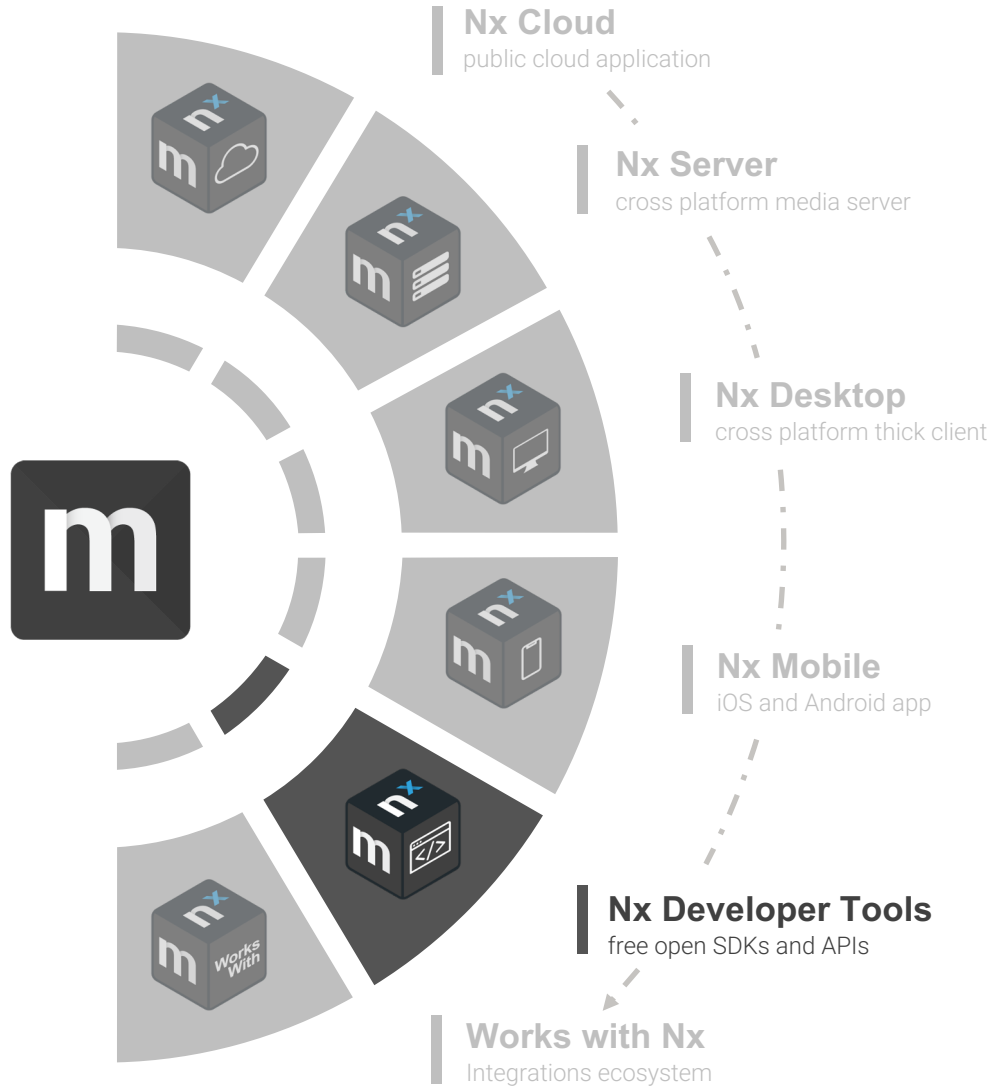


Applications

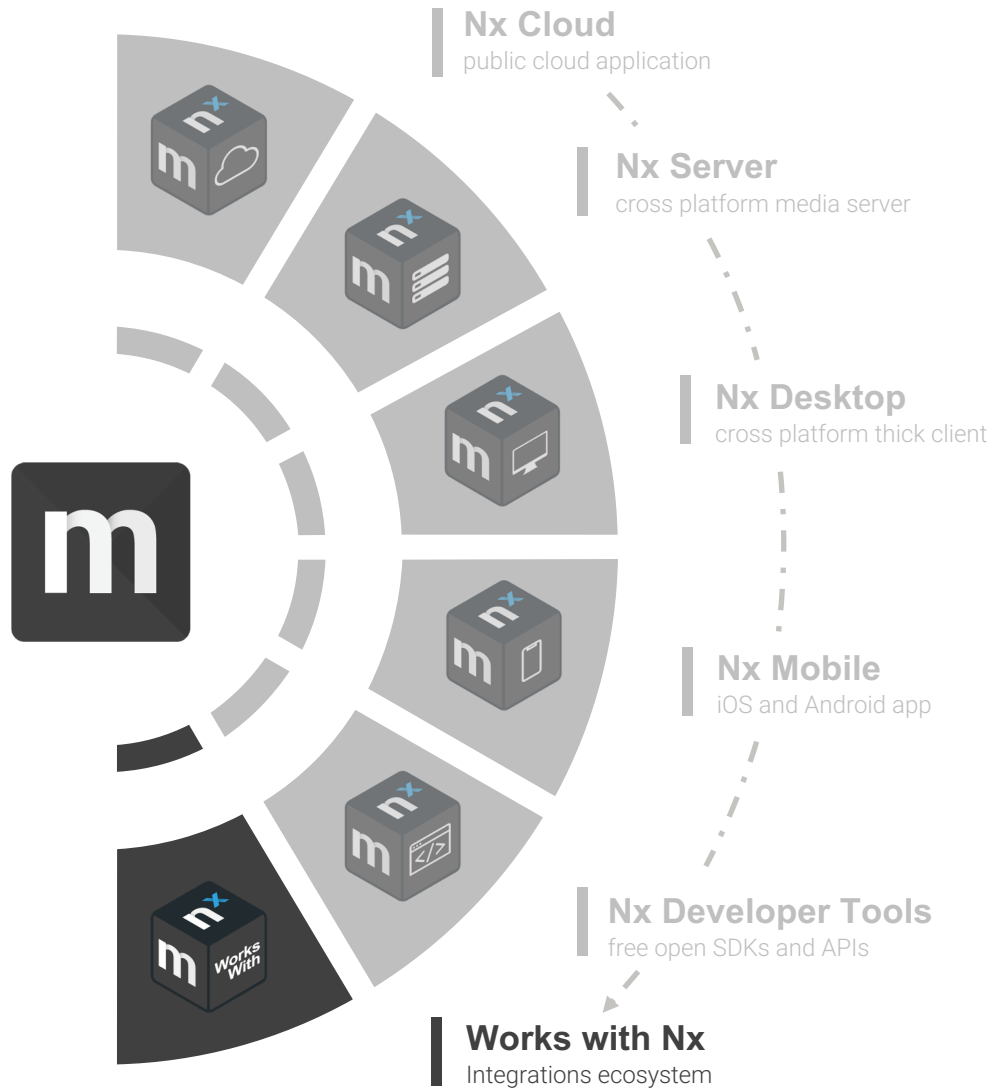
Nx Developer Tools (C++, CRUD, Javascript)

Built right into the product, Nx Developer Tools make it easy for developers to **integrate Powered by Nx products with any 3rd party hardware / software** to capture / generate video-associated metadata..

- Server API (HTTP) - REST CRUD API
- Cloud API (HTTP) - FRONTED HTTP REST CRUD API, OAUTH
- Metadata SDK (C++) - an advanced SDK to for rapidly integrating object-driven video analytics.
- Storage SDK (C++) - integrate with your own storage
- Video Source SDK (C++) - integrate new video devices / sources



Powered By

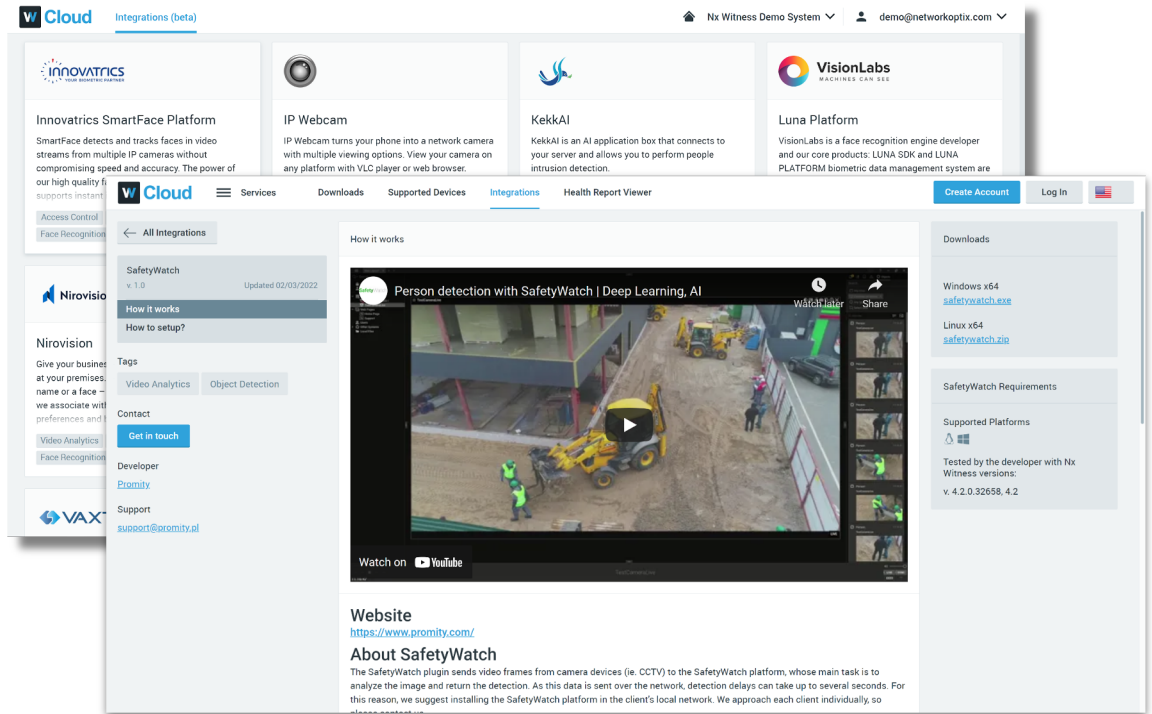


48 Published Integrations and Growing

Works with Nx Ecosystem

An integrations ecosystem that's **built right into Nx Cloud** as an optional add-on.

- Helps companies **discover and promote value-added, complementary products** (Face Recognition, Object Analytics, Behavioral Analytics, etc) that **work with Powered by Nx software products.**



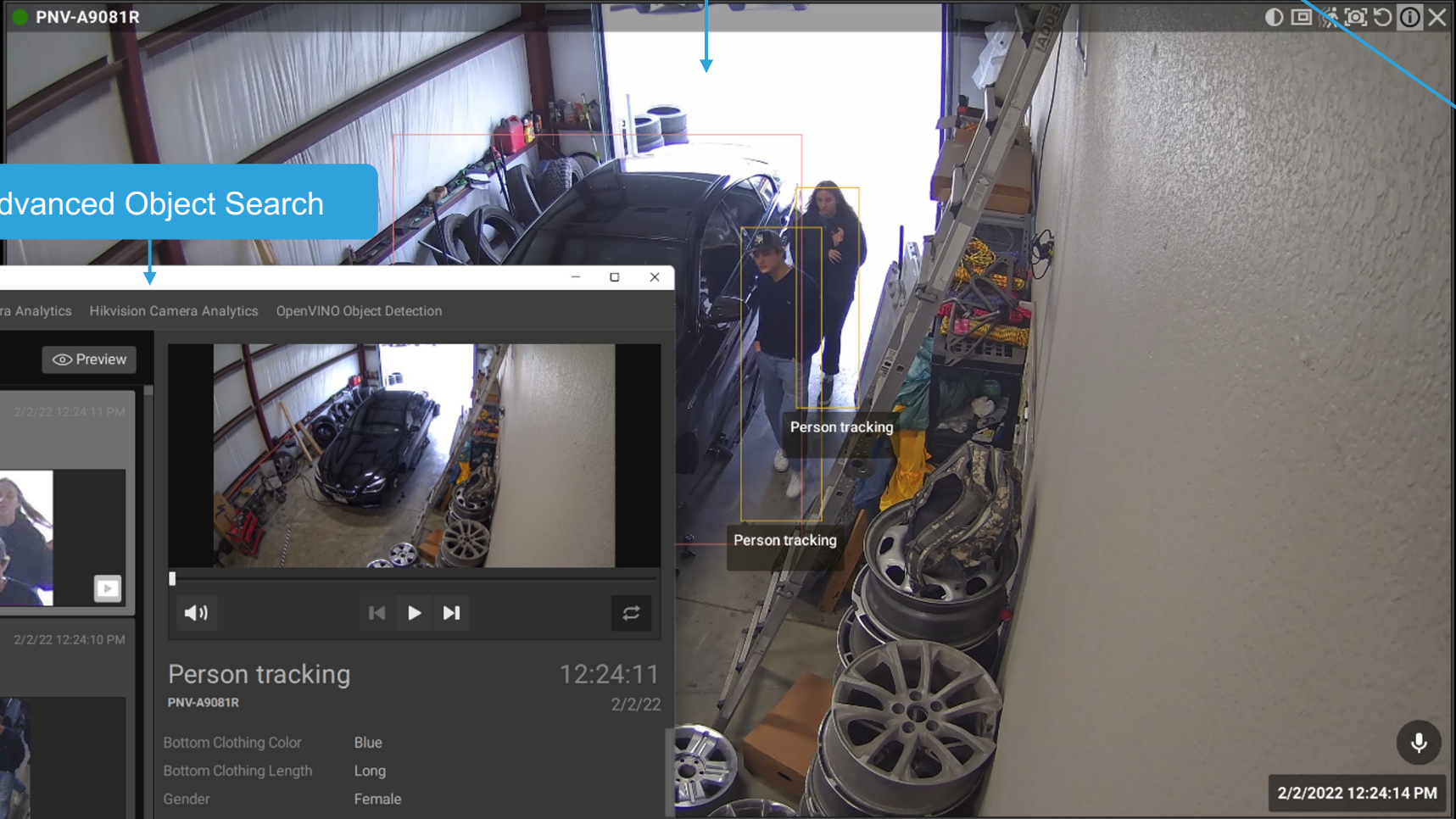
Search

- Tony Beast Meta Test admin
- Server TONY-BEAST
 - New Group
 - XNV-8080R
 - PNV-A9081R
 - PNV-A9081R
 - Web Pages
 - Users
 - Other Systems
 - Local Files

Advanced Object Search

Live Video

Object Notifications



Advanced Object Search - Desktop Client

Any Plugin | Bosch Camera Analytics | Hanwha Camera Analytics | Hikvision Camera Analytics | OpenVINO Object Detection

Search

- Any time
- Any camera
- Select area

Object Type

- Face
- License Plate
- Person
- Vehicle
- Person

>99 objects

Preview

Person tracking 2/2/22 12:24:11 PM
PNV-A9081R

Person tracking 2/2/22 12:24:10 PM
PNV-A9081R

Person tracking 2/2/22 12:16:27 PM
PNV-A9081R

Person tracking 12:24:11
PNV-A9081R 2/2/22

Bottom Clothing Color	Blue
Bottom Clothing Length	Long
Gender	Female
Hat	False

Show on Layout

OBJECTS

Search Advanced...

- Any time
- Any camera
- Any plugin
- Any type
- Select area

Person tracking 2/2/22 12:24:11 PM
PNV-A9081R

Person tracking 2/2/22 12:24:11 PM
PNV-A9081R

Person tracking 2/2/22 12:24:10 PM
PNV-A9081R

Person tracking 2/2/22 12:24:10 PM
PNV-A9081R

Person tracking 2/2/22 12:24:10 PM
PNV-A9081R

New Layout* x + v

Search

- Tony Beast Meta Test
admin
- Server TONY-BEAST
 - PNV-A9081R
 - PNV-A9081R
 - XNV-8080R
 - Web Pages
 - College Station Map
 - Google Maps
 - Support
 - Users
 - tonyluce
 - All Cameras & Resources
 - Other Systems
 - Caas
 - Digital Watchdog-DWC-MB44Wi650C6
 - Local Files







OBJECTS

Search Advanced...

- Any time
- Any camera
- Any plugin
- Vehicle X
- Select area
- Color=Black X

60 objects

- Truck** 2/11/22 9:37:38 AM
PNV-A9081R

Color Black
- Truck** 2/11/22 9:31:29 AM
PNV-A9081R

Color Black
- Truck** 2/11/22 9:21:15 AM
PNV-A9081R

Color Black
- Truck** 2/11/22 8:25:56 AM
PNV-A9081R




Nx at the Edge

Nx Meta packages for NVIDIA Jetson...and more!





NetworkOptix
VIDEO. POWERED.



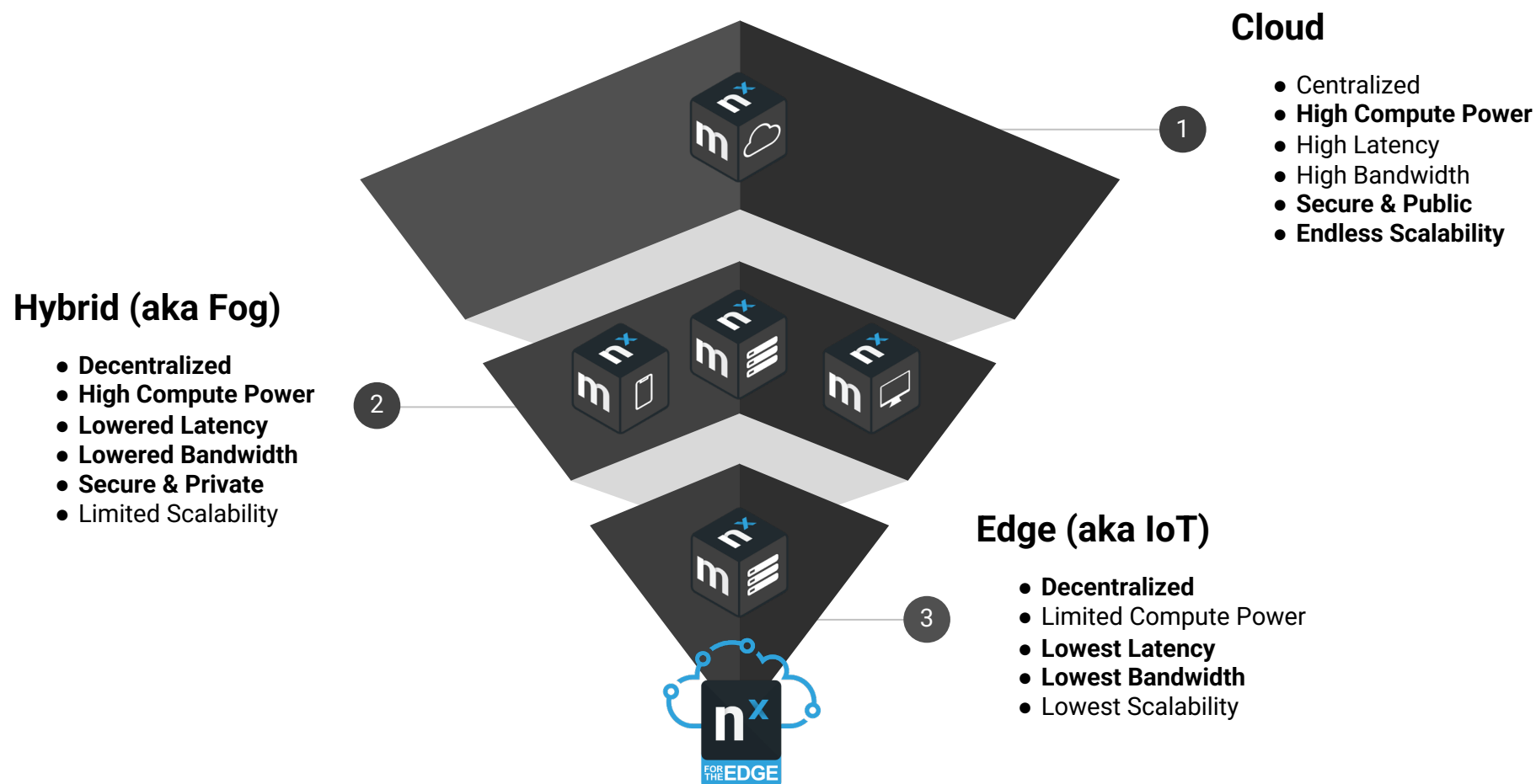
IPVM
IPVM New Products Show | Fall 2021

The rise of edge and the future of Surveillance.

The Opportunity

Getting Edge-y

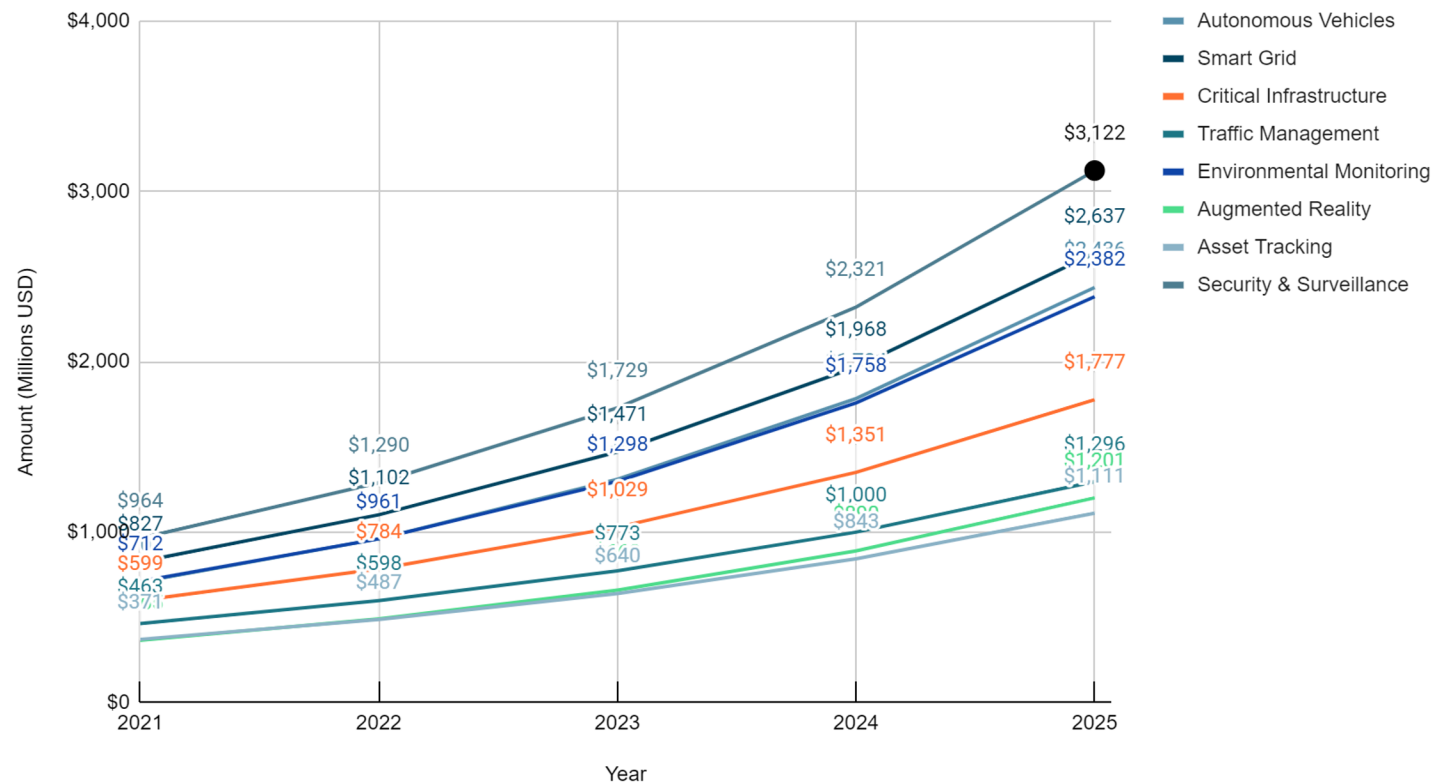
Edge computing is a **distributed architecture** in which **data is processed at the periphery** of the network, as **close to the originating source** as possible.



Edge Computing Opportunity

- Surveillance is the largest market for Edge computing and by 2025 is expected to hit **\$3.1 Billion USD** with a CAGR of **33.7%**.
- What's driving this trend?
 - lowered cost of compute
 - increased access to high speed Internet
 - cloud / Fog computing advances
 - hardware abstraction
 - networking advances (5G, PoE)
 - storage advances
 - deep learning analytics
 - dedicated neural network chips

Edge Computing by Application



* from Allied Market Research
EDGE COMPUTING MARKET
report



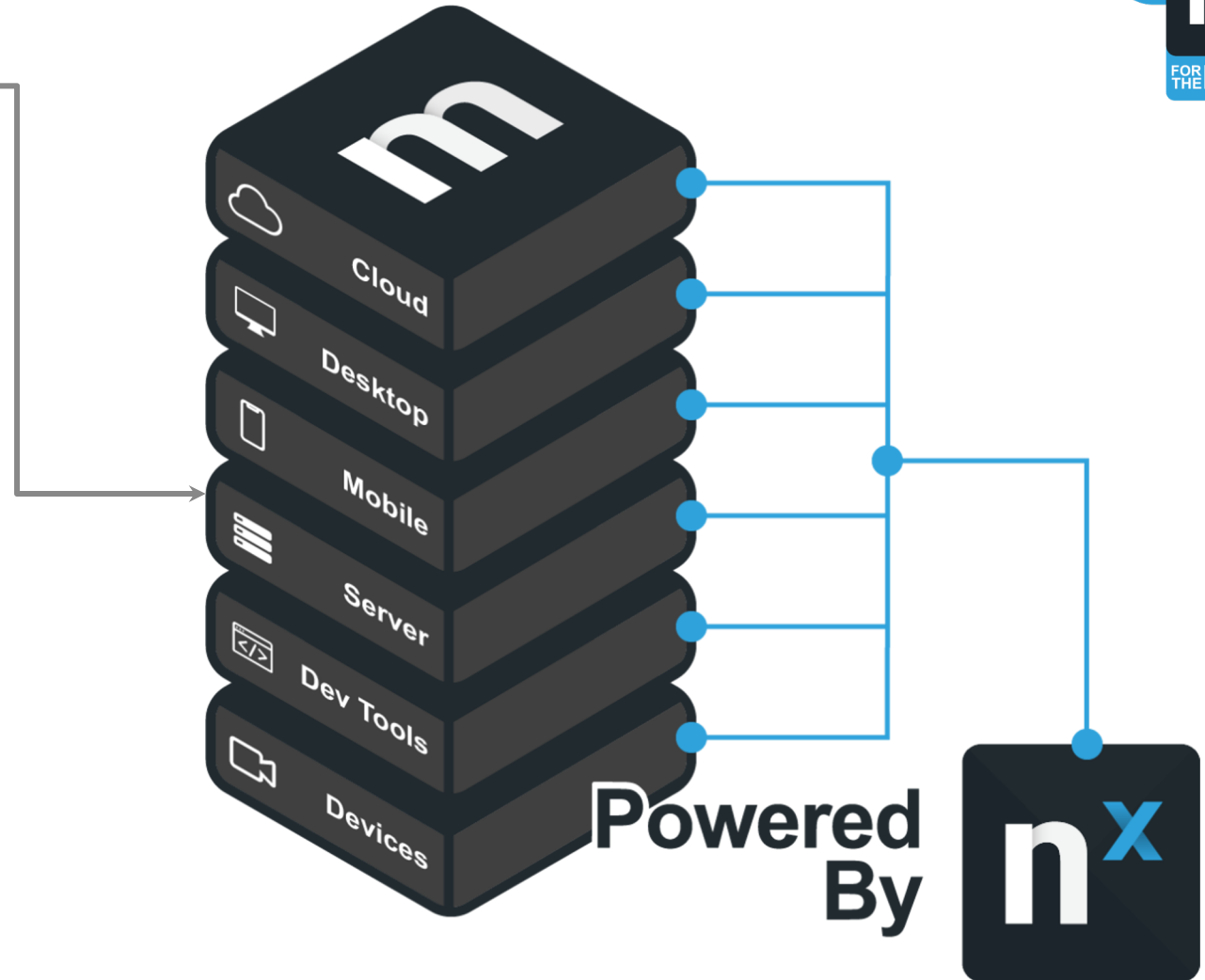
On-Prem • Hybrid • Straight to Cloud

Nx at the Edge

Edge Applications are enabled by the **Nx Server**



- The Nx Server application is a lightweight application **designed to run on both high and low-power computing hardware**.
 - Intel Xeon platforms
 - ARM SoCs
 - *Same exact feature set*
- **Prerequisite requirements** to install Nx Server on an edge device very small - compute, storage, RAM.
- **Existing installation packages for development boards** - including **Raspberry Pi** and **NVIDIA Jetson** hardware.



Nx for Edge Devices

Bridge Devices / Micro Servers & All-in-One Cameras



Bridge Devices

- Small, low-power ARM-based Servers
- Limited storage capabilities
 - 1 x HDD (2.5" or 3.5")
 - NVMe, mSATA, m.2
 - Store video for days / weeks
 - Local Recording w/ remote access + NAS / cloud backup capabilities
- Analytics Enabled (e.g. NVIDIA jetson)



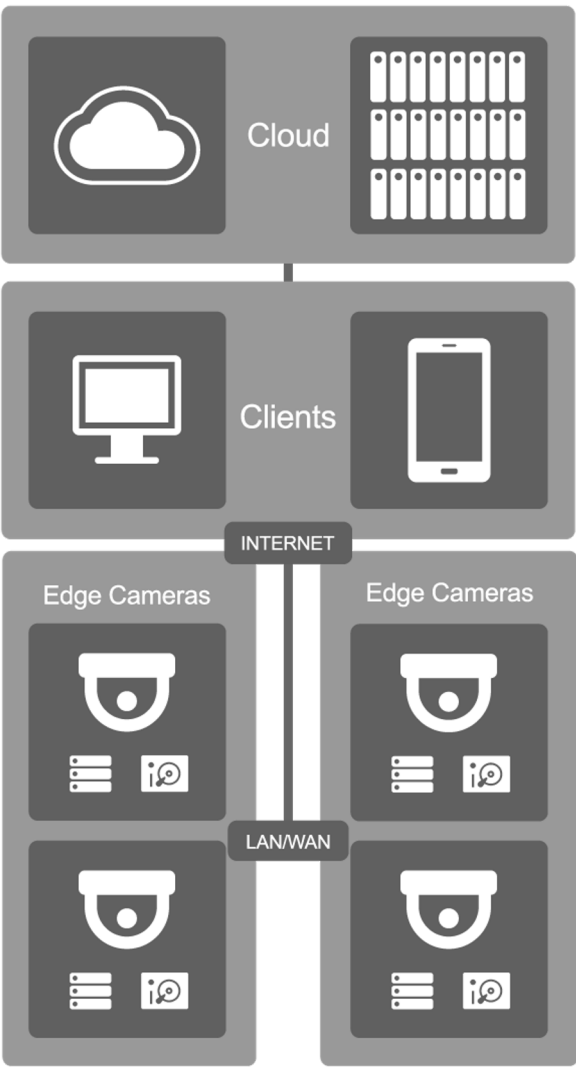
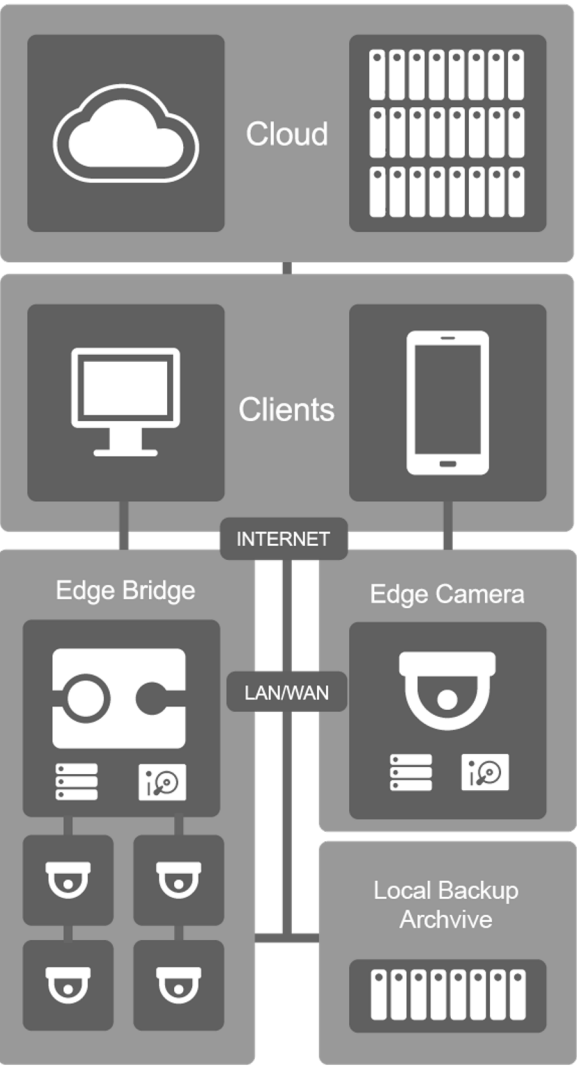
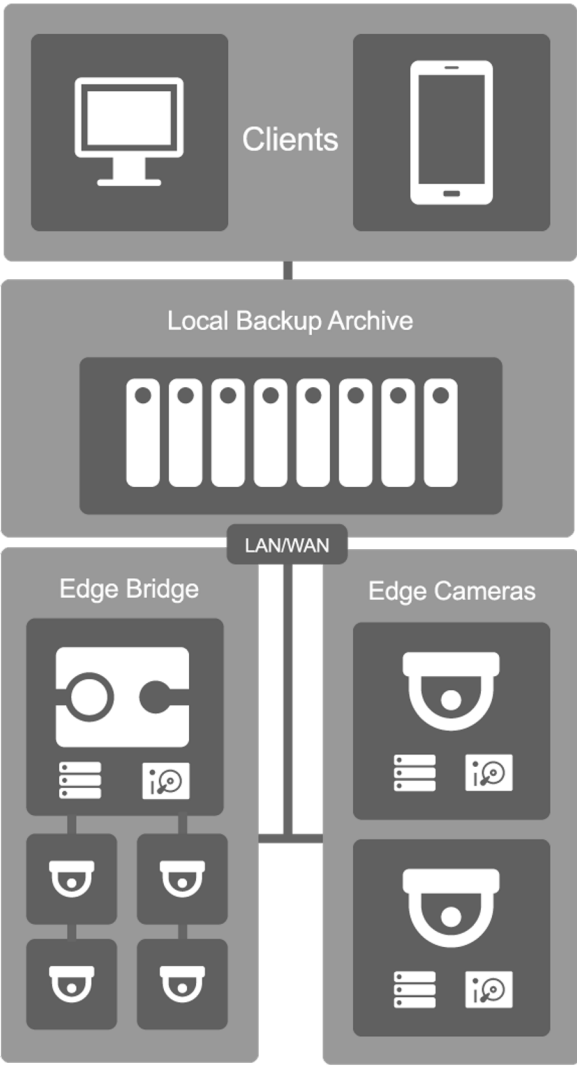
All-in-One IP Cameras

- IP Cameras w/ a modern ARM chipset
- Designed to run applications natively
- Limited storage capabilities
 - Typically SD Card
 - Store video for hours / days
 - Local Recording w/ remote access + NAS / cloud backup capabilities



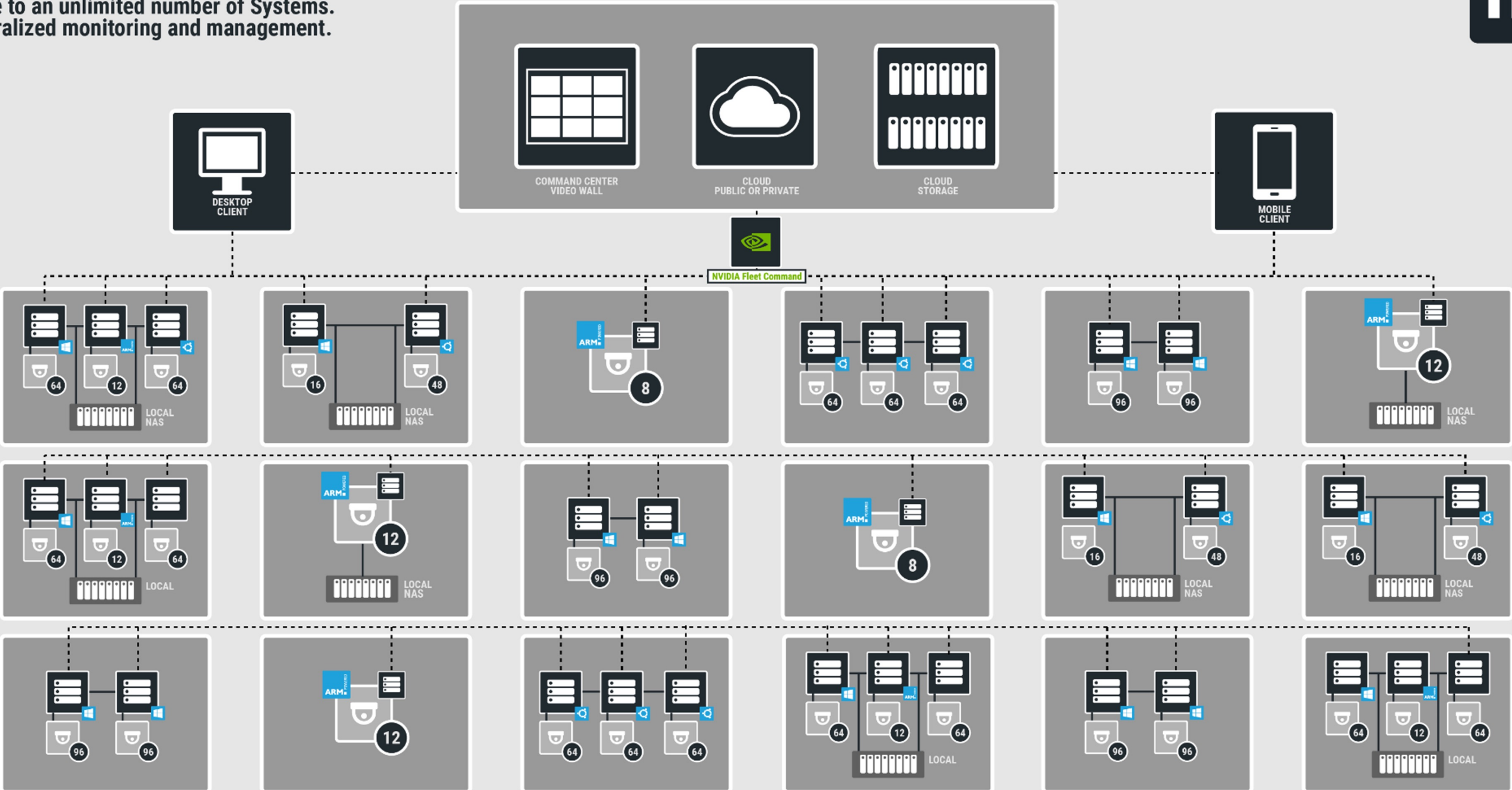
Nx at the Edge

All the Architectures You Need



Multi-Site Enterprise

Scale to an unlimited number of Systems.
Centralized monitoring and management.





Advantages of Nx at Edge

Feature Rich

- Full Nx Server capabilities
- Server Hive Architecture
- Automatic Failover / Redundancy
- Device Health Monitoring (even locally)
- Automatic Discovery of other Servers
- Merge locally or Via Cloud

Flexible Architectures

- Combine Nx Edge capabilities with traditional “Trucks” to build the most redundant, snappy VSaaS solution out there.

ARM Friendly

- Lightweight and CPU-driven - leaves GPUs for analytics.
- Installation Packages for leading developer boards like NVIDIA Jetson
- Can be adapted to run on virtually any modern ARM chipset.

Open for Development

- Same great Powered by Nx developer tools.
 - Server API
 - Metadata SDK



Real-World Solutions available now.

Nx at the Edge



ALLNET Micro Servers

Single Drive NVR

ARM-based compact Servers for Powered by Nx products.

- **ALL2288 - 2.5" HDD**
 - Dual-core Cortex-A72 1.8GHz
 - Quad-core Cortex-A53 1.4GHz
 - Supports 8 IP cameras
 - 64 bit Ubuntu OS
- **ALL2289 - 3.5" HDD**
 - Dual-core Cortex-A72 1.8GHz
 - Quad-core Cortex-A53 1.4GHz
 - Supports 8 IP cameras
 - 64 bit Ubuntu OS

ALL2288



ALL2289



Works
With





AWL Box

Retail Analytics + Video Recording

High reliability edge video storage + retail analytics

- **Edge Analysis**
 - Visitor Attribute Identification
 - Line Queueing
 - Product Engagement Tracking
 - Everything processed at the edge
- **Specs**
 - 200 x 200 x 43.5 mm
 - 1 x 2TB 3.5" HDD
 - 64GB eMMC
 - 30W Power Consumption
 - Custom Linux OS



※ Azure Certified for IoT 取得
Microsoft Azure Certified

Works With





DW CaaS Cameras

All-in-One IP Cameras

Allow business owners to setup a complete single- or multi-site surveillance system with no server or NVR required.

- The CaaS™ solution supports up to 30 cameras running Nx Server in the network (Server Hive), all accessible and manageable locally or remotely.
- Access to up to 30 days of recorded data all stored locally on the camera, manageable and archived remotely.
- Simple to install and setup, painless to maintain w/ automatic updates
- Bandwidth conscious, secure,



Works
With





Iryx

Sensor Fusion Meets AI at the Edge

Detection/Classification

- Person, Face
- Vehicle – Car, Truck, Bus, Bicycle, Motorcycle

Differentiate between vehicles and pedestrians in zero light situations

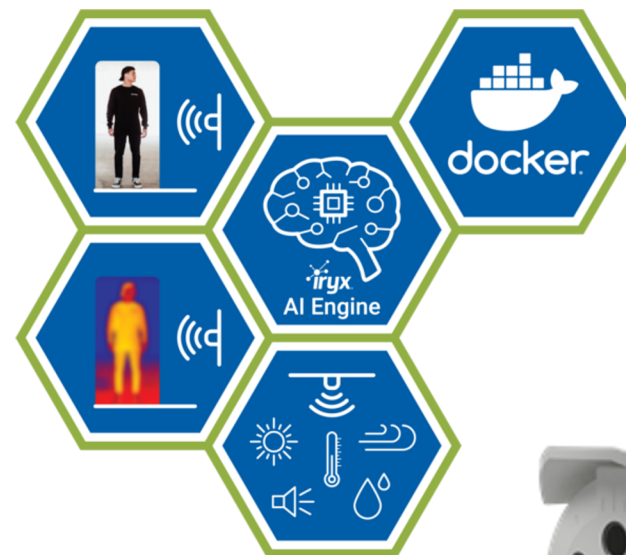
- Multi-Spectral Liveness Detection

Radiometric Information

- EST – Dynamic human elevated skin temperature
- ROI – Detect temperature in defined regions of interest

Integration

- Iryx API
- ONVIF
- Docker to run embedded Nx Server application



Works
With





Raspberry Pi

Computing for Everyone

From industries large and small, to the kitchen table tinkerer, to the classroom coder, we make computing accessible and affordable for everybody.

- Can act as a Server and/ or a camera (Nx Server automatically discovers the Raspberry Pi camera module)
- Store to local SD Card (e.g. WD Purple) and/or to local NAS.
- Great for non-critical IoT applications



Works
With





NVIDIA Jetson

ADVANCED EMBEDDED SYSTEMS FOR EDGE COMPUTING

NVIDIA® Jetson™ is the world's leading platform for AI at the edge.

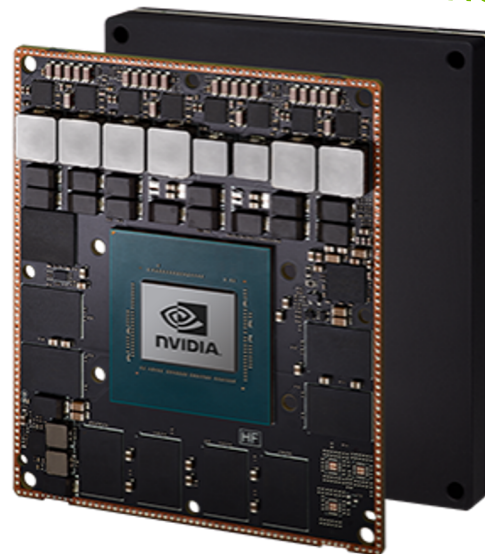
- Run Nx Server + AI video analytics + Nx Client on a single embedded device.
- Micro Servers w/ storage + POE available now from leading manufacturers.
- Simple to install and setup w/ custom built Nx installation packages.

<https://developer.nvidia.com/embedded/community/ecosystem>

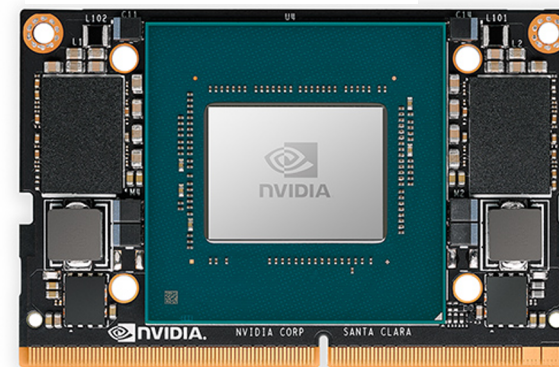
Jetson Nano



Jetson AGX Xavier



Jetson Xavier NX



Works
With



How do I develop my own edge solution with Nx?

Using a supported hardware platform?

- Download installation package
- Test with your device
- Reach out if you run into any issues
- Documentation at <https://support.networkoptix.com>

Using a custom hardware platform?

- Contact us at marketing@networkoptix.com and we'll put you in touch with engineers that will engage with your team.

Powered
By

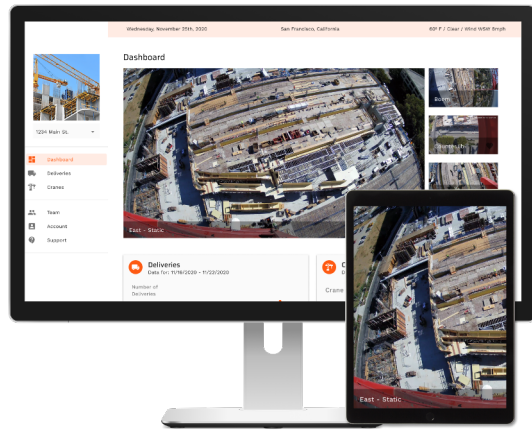


What can you build with Nx Meta?

Warning: The answer to this message may shock you.

Whatever you want.

Video is everywhere. And still growing strong. Don't miss out.



Construction Management



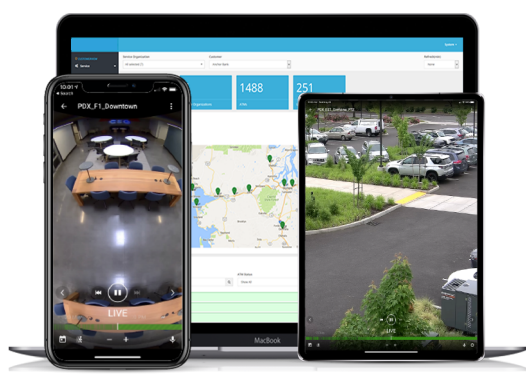
Retail Analytics



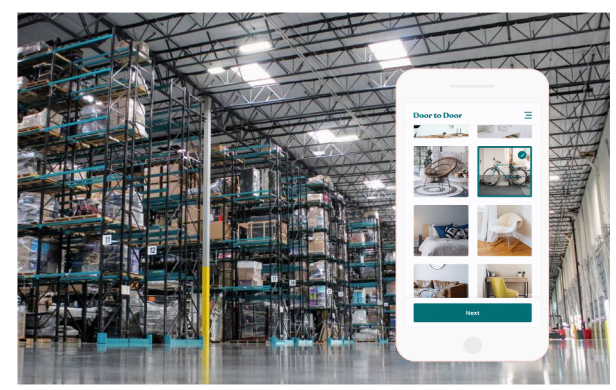
Mining Monitoring



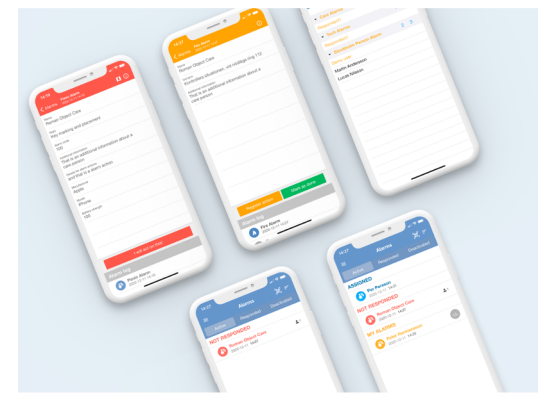
Carrier Solution



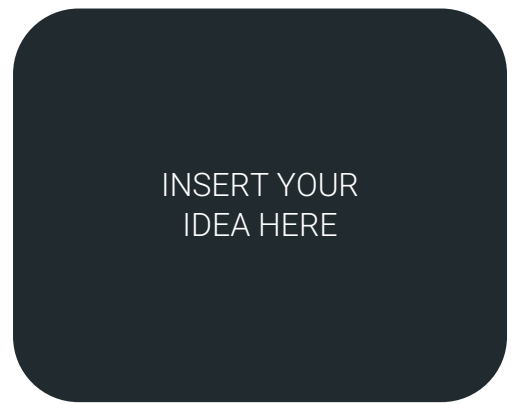
Managed Services



Logistics Management



Elderly Care



INSERT YOUR
IDEA HERE



The Powered by Nx Production Process

Become a Partner • Get Onboard • Launch your Product • Get Support



Powered by Nx Process

Step 1 - 10 Days

Sign Up

Head to networkoptix.com and click on **Request a Demo**.

- NDA
- Learning about your needs
- Strategic pricing discussions
- Technical exchange
- Roadmap coordination
- Custom development
- Quotation / contract signed

Step 2 - 10 Days

Onboarding

Work with our engineering team to set up our build System for your Powered by Nx product.

- Fix Branding
- Add Plugins
- Setup Google / Apple stores
- Setup licensing management / product access / support system.
- Product support and promotional documentation.

Step 3 - 10 Days

Launch Your Product

Launch your shiny new private labeled video product for your market whenever you're ready

- Release build published
- Add mobile apps to stores
- Promote on your website
- Sell the product how you'd like - to the market you want to focus on with your own pricing and support models.
- You get access to new public features as they are implemented.

Step 4

Get Support

You support your customers with your systems and documentation and we support you with ours.

- **My Nx** - documentation about the product from all angles that you can use to build your sales, marketing, and education materials.
- **Support Portal** - technical bulletins, updates, and a forum for communicating with Powered by Nx ecosystem partners.

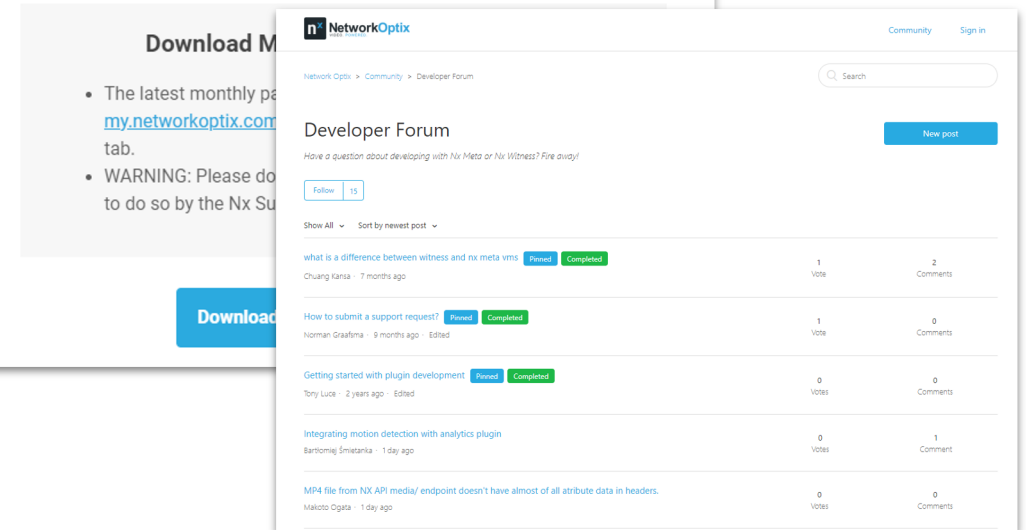
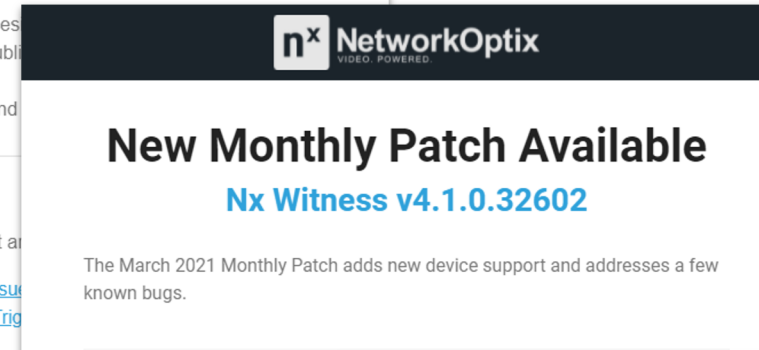


Technical Support

Fast effective troubleshooting and documentation..

Nx wants to make it easy for partners to support their Powered by Nx VSaaS solution.

- **Global** support team
- **Monthly support documentation** updates
- **Monthly patches** to address bugs / introduce project-specific features.
- All included with Powered by Nx VSaaS engagement.
- <https://support.networkoptix.com>



Questions?

Head to <https://networkoptix.com/nx-meta> to learn more!

Empowering Product Creators to Harness Edge AI and Vision



The Edge AI and Vision Alliance (www.edge-ai-vision.com) is a partnership of 100+ leading edge AI and vision technology and services suppliers, and solutions providers

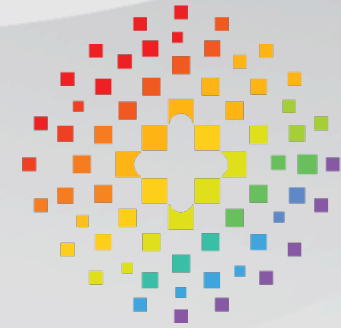
Mission: To inspire and empower engineers to design products that perceive and understand.

The Alliance provides low-cost, high-quality technical educational resources for product developers

Register for updates at www.edge-ai-vision.com

The Alliance enables edge AI and vision technology providers to grow their businesses through leads, partnerships, and insights

For membership, email us: membership@edge-ai-vision.com



edge ai + vision
ALLIANCE™



Join us at the Embedded Vision Summit

May 17-19, 2022—Santa Clara, California



The only industry event focused on practical techniques and technologies for system and application creators

- *“Awesome! I was very inspired!”*
- *“Fantastic. Learned a lot and met great people.”*
- *“Wonderful speakers and informative exhibits!”*

Embedded Vision Summit 2022 highlights:

- **Inspiring keynotes** by leading innovators
- High-quality, practical **technical, business and product talks**
- Exciting **demos, tutorials** and **expert bars** of the latest applications and technologies



Visit www.EmbeddedVisionSummit.com to learn more

