The Oosto Vision AI Appliance

The power of Vision AI. Where it belongs.

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Introducing the
Oosto Vision AI Appliance

Historically, video surveillance systems with facial recognition have been difficult to scale (e.g., when new cameras are added) because of the expense and IT complexity associated with adding incremental servers and GPUs.

The Oosto Vision AI Appliance is equipped with our state-of-the-art neural network models that have been optimized to support low-power devices while still offering superior performance and recognition accuracy that previously required expensive and energy-intensive GPU processing servers. By shifting the video processing to a small, GPU-rich, near-edge appliance, the Vision AI Appliance now saves up to 40% of traditional GPU costs and dramatically simplifies the expansion challenges of video surveillance.

But, this is only the beginning of the story. By moving computer vision to the edge – where it rightfully belongs – you can benefit from stronger security, easier failover, and far greater IT simplicity.

Gartner predicts that by 2025, **75% of enterprise-generated data** will be created and processed at the edge, outside of traditional centralized data centers or the cloud.

Gartner®

Top 5 Hardware Challenges with Traditional Video Surveillance Systems

1

Running real-time computer vision (e.g., facial recognition) requires significant processing power which has historically meant purchasing expensive high-performance servers with ample GPUs.

2

Dedicated servers focused on video processing usually require expensive power and cooling systems to avoid overheating.

3

If the GPU fails, it typically takes down the server (in which it's embedded) as well all the supported cameras. When this happens, the video surveillance system takes time to recover – unless a failover server with adequate GPUs is readily available.

4

Traditional servers are often open-boxes, and unused services and open ports can introduce security vulnerabilities.

5

Traditional hardware configurations used for video surveillance are server- and GPU-intensive and require routine oversight to ensure they are properly maintained, patched, and running optimally.

Oosto Vision AI Appliance: Key Features

The Oosto Vision AI Appliance delivers the power of computer vision to better protect your people, customers and assets without the traditional scaling costs, failovers, and IT complexity. The appliance is built on the NVIDIA® Jetson Xavier™ NX system on module which brings supercomputer performance to the edge in a small form factor SOM and is housed within a fanless, ruggedized box.

Dramatically Lower TCO

TCO Savings	The Oosto Vision AI Appliance can help save up to **40%** of traditional GPU costs by shifting the GPU-heavy compute load from expensive on-premise servers to small, dedicated power-efficient appliances. Check out our online TCO Calculator to see how much cost savings you could realize (compared to traditional server-centric configurations) by switching to the Vision AI Appliance, compared to several popular server-centric configuration benchmarks for video surveillance.
Power & Cooling	The Vision AI Appliance doesn't take up space in a rack, consume a lot of power, or place a burden on your cooling systems, which helps to further reduce TCO.
Ruggedized for Longevity	When GPUs run within traditional servers, their operating life and reliability is limited. The Vision AI Appliance is a "ruggedized" device — without fans or moving parts — offering a longer operating life with fewer failures and less downtime.

IT Simplicity

Data Security

The Vision AI Appliance is a purpose-built closed-box for video processing. This means the surface area for attacks on the appliance is significantly less than traditional servers.

Fits in the Palm of Your Hand

Simple GPU-rich appliances which can literally fit in the palm of your hand enable real-time visual analytics, such as facial recognition and video forensics, without the burden of a complex IT infrastructure.

All-in-One Appliance

The Oosto Vision AI Appliance is a complete system on module (SoM) which includes CPU, GPU, memory, power management, high-speed interfaces, and more.

Easy to Manage and Maintain

The Oosto Vision AI Appliance offers reduced complexity (e.g., installation, administration and maintenance) and faster deployment by hiding the operating software and embedding the application within the device.

Improved Flexibility

Scale Quickly

With traditional deployments, there's a typical scaling limitation as you add more and more channels (video streams) that necessitates greater server investment. With the Oosto Vision AI Appliance, you can keep adding appliances to meet your growth/expansion needs in a cost-effective manner.

Rapid "No Fuss" Failover

The ability to easily "rip and replace" one appliance for another with all device settings stored automatically enables a faster, more efficienct failover process.

Kubernetes at the Edge

Leveraging Kubernetes, you can easily containerize and distribute workload across devices which enables cloud-like scale and flexibility of your compute resources.

What Makes Oosto Different?

Superior Accuracy

The Oosto Vision AI Appliance runs our industry-leading neural networks for facial and body recognition which are trained in the toughest conditions on low-quality images. Our algorithms have been battle-tested by the most demanding users and academic standards to ensure the highest accuracy in real-world conditions. We optimized our neural networks specifically for the Vision AI Appliance to achieve the same superior performance and accuracy – even when running on compact, low-power devices.

Enterprise Class Failover

It's a fact of life: GPUs fail. Often, they fail due to overheating from dust or lint in your computer. Other times, they fail because of a faulty installation to the motherboard, frequent overclocking, or a power surge from an electrical outage. With the low-cost Vision AI Appliance, you can failover in real-time to a secondary Oosto appliance which can absorb the payload in the event of an outage or failure.
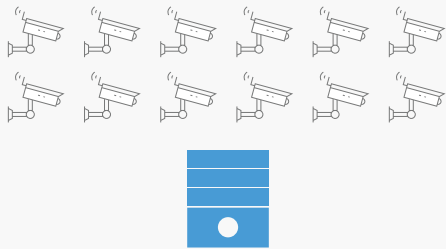
Unprecedented TCO Savings

By pushing more analytic capabilities closer to where data is collected, customers are achieving greater responsiveness, efficiency, and TCO savings with a small, low-power, near-edge appliance.

Deep Industry Experience

Oosto has extensive experience in edge computing and embedded devices. We have collaborated with market leaders including NVIDIA, Ambarella, Intel and Qualcomm Technologies to provide best-in-class embedded SDKs and near-edge devices with our state-of-the-art and optimized neural networks.

Scalability

With traditional video surveillance configurations, expensive on-premise servers are required to support a defined number of camera streams. When new cameras are added to protect different buildings (or more areas within a building), this means adding another expensive server and GPU cards to accommodate the extra compute workload demanded from real-time processing of video streams. With the Oosto Vision AI Appliance, you can simply add more appliances as needed to support the extra video streams – without taking the entire system down, improving overall uptime.

Vision AI Computing and Video Surveillance

	Traditional Model	Oosto Vision AI Appliance
Total Cost	(5 money icons)	(2 money icons)
Power & Cooling	(5 money icons)	(1 money icon)
Built-in Failover	✗	✓
IT Mgmt & Complexity	(5 money icons)	(2 money icons)

How it Works

The Oosto Vision AI Appliance works with your existing camera infrastructure and can be configured in a number of ways for real-time facial recognition as well as for file uploads for forensic investigations. Video streams are either captured in real-time or existing video footage is uploaded.

The Vision AI Appliance processes the video and identifies persons of interest. On the backend, a management server is still needed, but only to manage the Vision AI Appliances.

This management server, however, does not require a large number of GPUs, since the compute workload has shifted to the Vision AI Appliances. This management server is also required to manage very large watchlists (of persons of interest) and to be the central repository for ingested video footage (for investigations and forensic use cases). On the front end, video surveillance operators or investigators can use their own VMS systems or Oosto's Dashboard to manage the entire system from one central location.

Sources
- Live Camera Feeds
- Video Files

Back End
Vision AI
Vision AI
Vision AI
Vision AI

Management Server
- Large Watchlist
- Video Storage

Front End
- Oosto Dashboard
- VMS
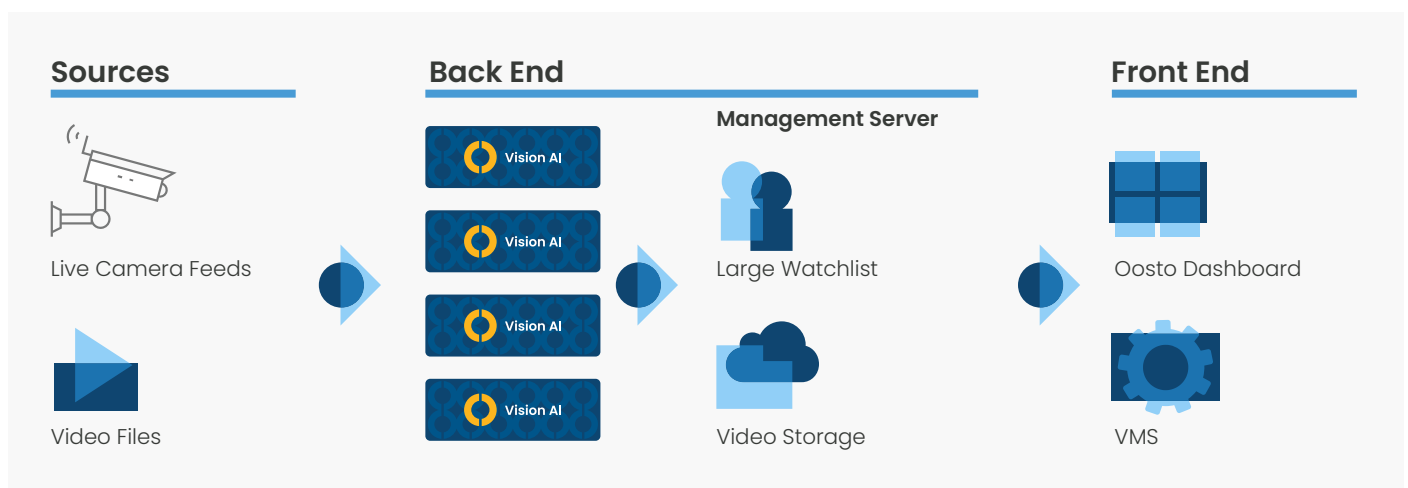
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About Oosto

At Oosto, we're leveraging the power of Vision AI to transform the technologies that enhance the safety of your customers, guests and employees.

Our facial recognition technology is built into industry-leading touchless access control and automated watchlist alerting capabilities that perform with unrivaled accuracy, speed and efficiency in the most challenging conditions. Our solutions deliver actionable insights and intelligence-based alerts to protect these pivotal stakeholders from bad actors and security threats.

Learn more about the Oosto Vision AI Appliance:
oosto.com/visionai-appliance

For more information, please contact us at: **info@oosto.com**

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