

Asset Protection Solution Stack

Platform Features

- > A modular, future-proof, scalable platform for real-time insights in stores
- > A proven and highly scalable, edge-to-cloud solution tested with multiple applications on predefined server configurations
- > Everseen is fully tested and optimized on T4 GPUs and can be deployed and managed with one touch using Fleet Command management
- > Sustainable business value by implementing proven asset protection solutions that have performed with 99% accuracy, helped reduce theft by up to 40%, and increased ROI between 300 to 500%²
- > Reduce costs with NVIDIA Fleet Command—a hybrid-cloud platform for managing and scaling AI at the edge. From one control plane, any authorized person with a browser and an Internet connection can securely deploy applications, update software over the air, and monitor location health. Fleet Command combines the benefits of edge computing with the ease of cloud

Products Used

- > Everseen Visual AI™ applications
- > Dell Technologies servers with NVIDIA T4 GPUs
- > NVIDIA GPUs and Fleet Command

PROTECTING RETAIL ASSETS WITH AI-DRIVEN COMPUTER VISION

Industry Challenges

Shrinkage—the loss of inventory from theft, errors, fraud, waste and damage—is a persistent and growing problem in retail. The industry is losing \$100 billion a year globally and over \$61 billion a year in North America alone¹. And it is only getting worse: According to NRF over 23% of retailers have seen their shrink rate increase from 1.8 to 2%+.

Intelligent video analytics (IVA) is key to reducing shrinkage at checkout lanes and throughout the store with asset protection applications, as well as increasing revenue through customer and store analytics. These solutions are a combination of hardware and applications from independent software vendors (ISVs) like Everseen, that need to be designed, sized, integrated, and configured—a complex process that decreases capital and operating expenses.



NVIDIA, Dell Technologies and Everseen: Working Together to Deliver Modern Visual AI™

Innovative retailers are working with NVIDIA and Dell Technologies to implement validated AI-driven intelligent video systems like Everseen that combine camera sensor data and AI to produce real-time actionable insights. Computer vision systems enable retailers to respond faster and with greater precision to market demands and day-to-day business requirements—such as improving safety and security in store, minimizing asset shrinkage, streamlining logistics and store operations, and delivering better shopping experiences both in stores and online.

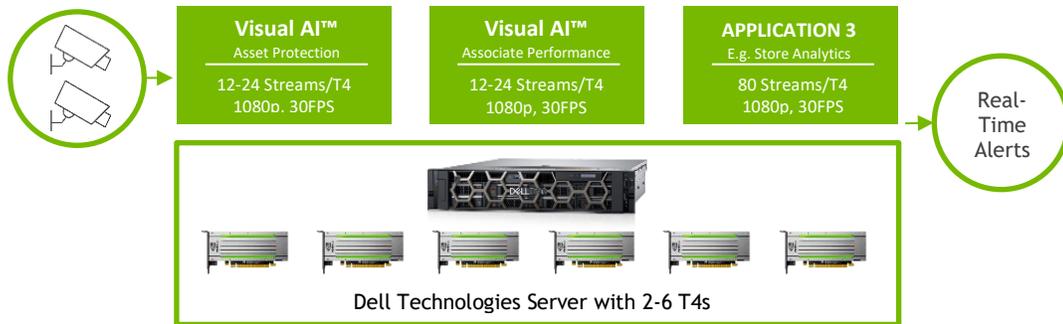
NVIDIA Metropolis Application Framework

Everseen's Visual AI™ platform, deployed in thousands of retail stores, uses advanced machine learning, computer vision and deep learning to bring real-time insights to retailers to prevent shrinkage and streamline distribution system processes.

Optimized on NVIDIA's inference GPUs using the Metropolis Application Framework, Everseen's proprietary applications have 10 times higher compute performance on GPUs vs CPUs and can scale from 3-5 checkout camera streams per CPU to 12-24 on each NVIDIA T4 GPU. This enables retailers to reduce errors and shrinkage in real time, increase customer throughput and sales, and optimize operations in distribution centers.

And for video decoding Everseen's self-checkout and staffed lanes applications have demonstrated 100 times improvement in performance over CPUs and 60 times greater performance increase for inference. Through GPU acceleration, retailers can deploy Everseen on more compact systems in each store, which reduces the overall cost of the solution.

In addition to improved performance, the NVIDIA Metropolis Application Framework enables retailers to install multiple applications on the same server and dedicate specific GPUs to each application. Other applications such as store analytics, perpetual inventory accuracy (PIA), autonomous shopping or other solutions can be installed on the same server addressing associate performance, customer behavior segmentation, on-hand inventory, and more throughout the stores.



perpetual inventory accuracy (PIA), autonomous shopping or other solutions can be installed on the same server addressing associate performance, customer behavior segmentation, on-hand inventory, and more throughout the stores.

The NVIDIA Metropolis Application Framework makes

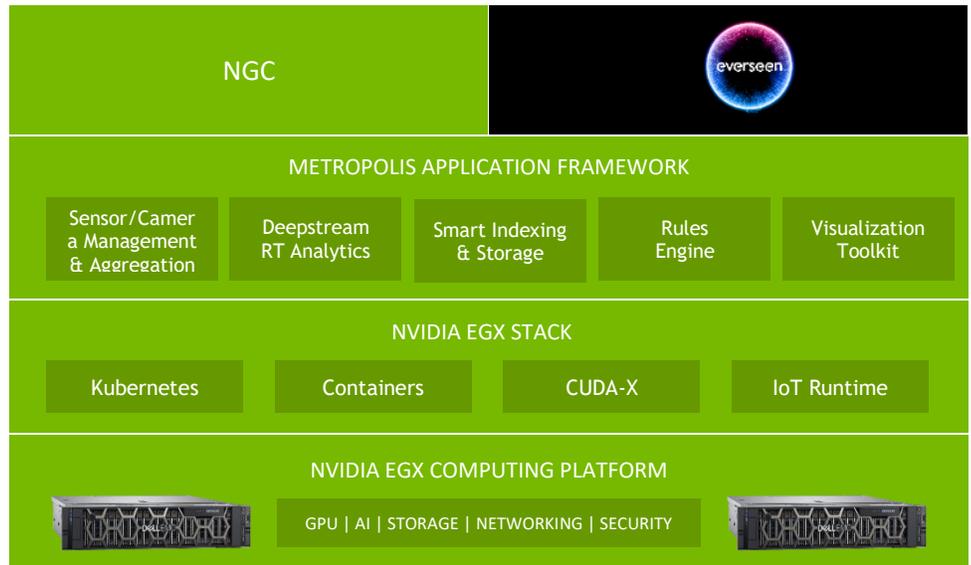
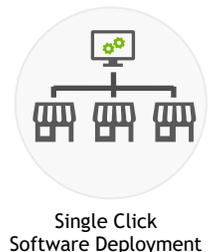
IVA easy to deploy, manage, and scale. It enables multiple video analytics applications to co-reside on a single server in a containerized manner so retailers can get the most performance-per-square-foot possible.

NVIDIA EGX: Bringing Real-Time AI, Security and Scale at the Edge

Intelligent retail stores are possible with today's powerful AI and easily managed with the NVIDIA EGX platform, which brings the power of accelerated AI computing to retail stores. AI computations are performed entirely in the store, delivering real-time insight notification to store associates on shrinkage, and providing insights into customer demographics, shopping preferences, and more.

The EGX edge compute platform delivers the highest security at the edge with 3 levels of security: (1) OS security through secure and measured boot; (2) application security through signed containers; (3) and model security and encryption at the GPU level.

NVIDIA Fleet Command enables a secure centralized management for device orchestration and software provisioning to thousands of distributed servers deployed in stores with a single click. Purpose built for managing AI workloads at the edge, Fleet Command is a SaaS solution with a managed service offering, fully set up for IT and system administrators of any level to deploy and manage AI with little configuration needed. It offers one-touch provisioning, over-the-air software



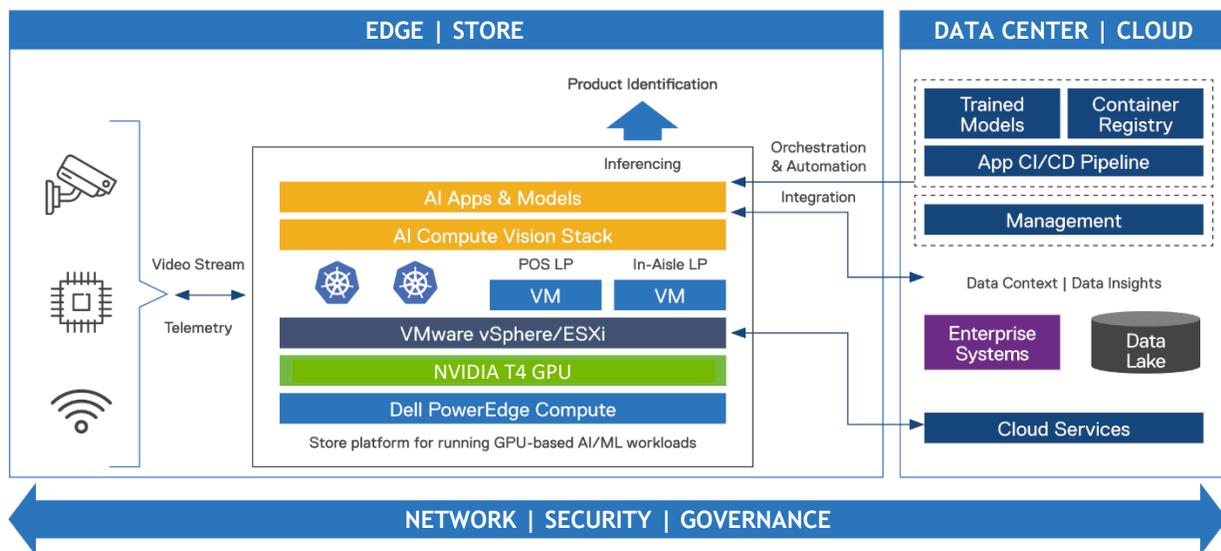
updates, remote management, and detailed monitoring dashboards to make it easier for operational teams to reduce the burden of IT to get the most out of their AI applications.



Everseen is one of NVIDIA’s first software partners to use the EGX platform and Fleet Command to simplify and scale their deployment and to update their AI applications on servers across thousands of retail stores. As AI algorithms retrain and improve accuracy with new metadata, the algorithms can be securely updated and deployed over the air on thousands of servers. This means customers can deploy critical applications like Everseen at the edge with confidence that the underlying infrastructure will be supported.

Retail Reference Architecture

NVIDIA has partnered with Everseen and Dell Technologies for asset protection use cases to maximize the compute performance of edge applications. The Metropolis Application framework and EGX platform provides the confidence to retailers that Everseen is optimized on any T4 Server from all major hardware vendors, including Dell Technologies.



Getting Started

Asset protection solutions with NVIDIA, Dell Technologies and Everseen are deployed at scale across thousands of stores saving both mass merchants and grocery retailers hundreds of millions of dollars.

Reach out to your NVIDIA and Everseen representatives below to find out how you can get started today.

Sources:

- 1: NRF [Retail shrink totaled \\$61.7 billion in 2019 amid rising employee theft and shoplifting/ORC](#)
- 2: Data based on Everseen and Dell Technologies analysis

LEARN MORE

To learn more about NVIDIA Retail Solutions, [click here](#).

Contact a NVIDIA Retail expert: Azita Martin: azitam@nvidia.com

Contact an Everseen Retail expert: Chris Taylor: chris.taylor@everseen.com

