



Lenovo & NVIDIA power RadiusAI solutions for driving store insights & operational efficiencies

RadiusAI provides a proven retail AI solution generating actionable insights from lot-to-store and everywhere in between. The technology is a game changer for retailers looking to apply the next generation of real-time AI driven customer analytics, employee gamification, and store optimization.

Summary

Retailers need a better understanding of checkout analytics to improve scan times and throughput, as well as in-store analytics to understand where bottlenecks can have a negative impact on sales, or where product placement needs to be reworked to appeal more to customers.

Using camera infrastructure with RadiusAI software, supported by Lenovo and NVIDIA technology, they can analyze customer behavior, food spoilage, restroom use and make the necessary improvements to improve customer satisfaction, reduce costs and improve safety.

Challenge

Retailers face varied challenges in our dynamic world. Slow checkouts, long queues, inadequate product placement and food spoilage can be detrimental to profits and frustrate customers reducing satisfaction.

Furthermore, food spoilage along with restroom cleanliness can affect safety and impact both customer satisfaction and employee turnover. Associate to customer ratios are disproportionate and this increases operational expenses in a tight labor market.

Retailers need a better understanding of store-based consumer behavior if they want to maximize customer satisfaction and profits.



Solution

Lenovo and NVIDIA, in partnership with RadiusAI utilize a retailers existing camera infrastructure with RadiusAI software and hardware powered by the NVIDIA platform and GPUs, to analyze:

- Queue Analytics to reduce wait time and queue length
- Checkout Analytics to reduce transaction times and improve associate to customer ratios
- Restroom Analytics to improve restroom safety and cleanliness, while reducing occupancy rates over time
- Food Warmer Analytics to improve customer safety with food replenishment and reduced food spoilage

Results

The implemented solution streamlined customer checkout, improving satisfaction. This also allowed fewer associates to serve more customers, resulting in cost reduction. Spoilage is also reduced and restrooms are cleaner and more available, having an impact on customer safety and overall satisfaction and reduced turnover impact on performance.

Validated Architecture

RadiusAI deployments typically utilize edge devices to process real-time camera streams. The processed meta-data is then sent to the cloud for additional analysis and centralized, easy viewing of insights through our web dashboards. Edge processing ensures the privacy of anyone present in the store by neither utilizing nor storing their personally identifiable information, and saves on the cost of data transmission. RadiusAI provides a software tool, Config Central, to aid in installation. It provides guidance on camera placement and adjustment, store deployment status, and other system health metrics.

To deploy RadiusAI Viztel™ visual intelligence solution, the ideal solution is the ThinkEdge SE450, a rugged, compact-sized and versatile Edge AI server focused on enhanced processing power, increased security, and remote manageability for edge environments for any location, powered by an NVIDIA L4 GPU for 30 to 40 cameras. This solution can also be deployed on a ThinkEdge SE360 V2 with an NVIDIA L4 GPU for 20 to 30 cameras.

Design Components

	Servers	Memory & Storage	Cameras	Accelerator	Software
Edge	Lenovo ThinkEdge SE450	RAM 64Gb 2 SSD 960Gb	30 - 40 cameras	NVIDIA L4	RadiusAI Viztel
Edge	Lenovo ThinkEdge SE360 V2	RAM 64Gb 2 SSD 960Gb	20 - 30 cameras	NVIDIA L4	RadiusAI Viztel



Resources

- [Explore the Lenovo AI Innovators Program](#)
- [Explore the Lenovo HPC and AI Innovation and Briefing Center](#)
- [Lenovo Validated Design for AI Infrastructure on ThinkSystem Servers](#)
- [RadiusAI Website](#)
- [Lenovo and NVIDIA Alliance](#)
- [Lenovo and NVIDIA Generative AI Solutions](#)

Why Lenovo

Focused on a bold vision to deliver smarter technology for all, Lenovo is developing world-changing technologies that create a more inclusive, trustworthy, and sustainable digital society. By designing, engineering and building the world's most complete portfolio of smart devices and infrastructure, we are also leading an Intelligent Transformation - to create better experiences and opportunities for millions of customers around the world.

Why NVIDIA

NVIDIA pioneered accelerated computing to tackle challenges no one else can solve. Our work in AI and the metaverse is profoundly impacting society and transforming the world's largest industries — from gaming to robotics, self-driving cars to life-saving healthcare, climate change to virtual worlds where we can all connect and create.



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