

Oracle Edge Solutions for Retail



Retailers across the globe seek solutions to enhance customer experience, optimize inventory management, and leverage hyperlocal analytics for seamless omnichannel operations. With AI adoption accelerating, many are turning to edge computing to overcome network challenges and latency issues while enabling local AI processing.

Trends in Modern Retail

Retailers today face critical challenges: limited agility in responding to market shifts, fragmented business continuity threatening operations, profit erosion from operational inefficiencies and \$110B+ annual shrinkage losses, inconsistent customer experiences across locations, and struggles with hyperlocal personalization, staffing optimization, and sustainability goals.

Changing consumer expectations	Economic uncertainty	Supply chain disruptions	Improving customer experience	Loss Prevention and Shrinkage
AI use-cases in-store	In-store operational disruptions	Hyperlocal Analytics and personalization	Executing on sustainability goals	Staffing Optimization

Modern retail success demands unified technology solutions that address these interconnected challenges while improving efficiency and customer satisfaction. Oracle Cloud Infrastructure (OCI) provides a complete cloud infrastructure platform for retailers to strengthen their merchandising core, create efficient warehouses that improve inventory visibility, consolidate customer and purchase data for more effective decision making, and further extend these capabilities to get closer to the customer.

Goals for Retail IT in the future

Get closer to the customer	Build a blueprint for agility	Create space for innovation	Run AI innovations in store
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Benefits of Oracle's Edge Solutions for Retail

Run AI at the Edge: Variety of configurations, from compute, storage, and GPU optimized to run traditional as well as AI workloads.

Extend OCI to the Edge: Take full advantage of OCI capabilities at the edge including Oracle DB.

Address Key Requirements: Meet data residency, security, and latency needs.

Support Disconnected Operations: Maintain business continuity even in offline scenarios.

Scalable Growth: Easily scale as your business expands.

Cloud Economics: Pay for only what you use, benefiting from the flexibility of cloud pricing.

Centralized Data Management: Leverage Oracle Database at the network edge for optimal performance.

Core to Edge with Oracle Cloud Infrastructure

Oracle Cloud Infrastructure (OCI) is the fastest growing cloud in the world, with 174 live or planned cloud regions across the globe enabling customers to rapidly onboard, deploy and scale their workloads. While the adoption of the public cloud is steadily increasing, organizations around the globe are also actively looking for distributed solutions that offer flexibility and scalability while addressing data residency and latency requirements.

Oracle Cloud Infrastructure offers a robust distributed cloud portfolio that spans [public cloud](#), [multicloud](#), [Cloud@Customer](#), and [edge deployments](#). Oracle's edge portfolio delivers the same OCI IaaS – compute, storage, and networking capabilities at both connected and disconnected locations – in a customer's datacenter or at the edge. With a globally consistent cloud consumption model, customers can truly benefit from cloud economics, standardized deployment methodologies and user experience at a location of their choice.

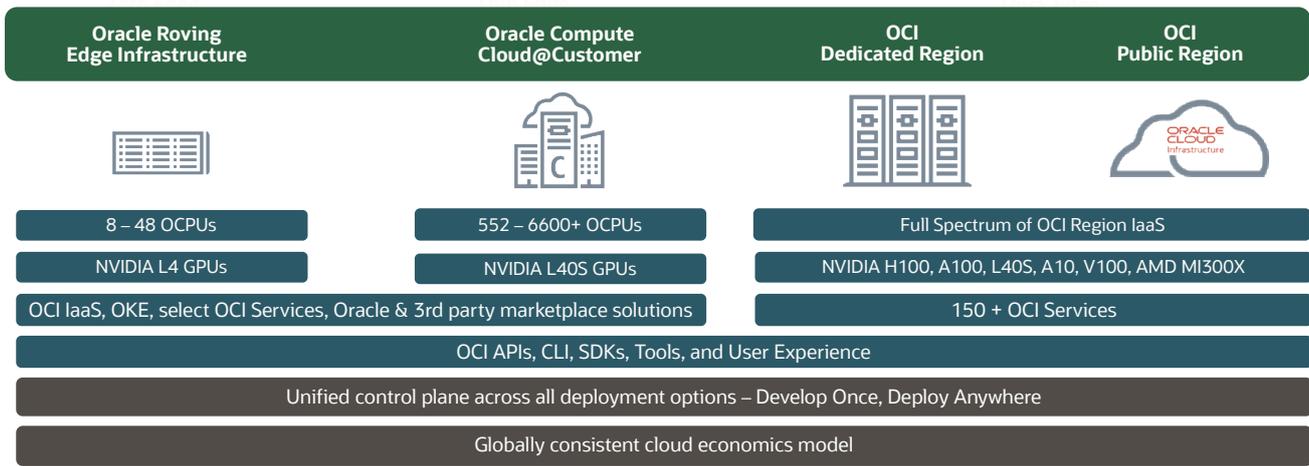
Oracle Cloud Infrastructure at the edge for Retail

OCI's portfolio of edge solutions offers customers the flexibility to scale from single node with [Oracle Roving Edge Device](#) to rack scale deployments with [Oracle Compute Cloud@Customer](#).

Initially created for a Joint Warfighter Cloud Capability (JWCC) requirement and meticulously designed to meet the tactical demands of the US Department of Defense (DOD), Oracle Roving Edge Device (RED) capabilities have now been extended to serve commercial use cases.

[Oracle Roving Edge Device](#) extends OCI's IaaS capabilities and platform services with unmatched processing power, reliable connectivity, and top-tier security at the network edge – even in disconnected or offline environments. RED is ideal for retailers looking to consolidate in-store workloads spanning inventory management, PoS, analytics, security and AI applications while addressing data residency and latency requirements.

For retailers looking for larger footprints in warehouses and distribution centers, [Oracle Compute Cloud@Customer](#) - Oracle's fully managed, rack-scale infrastructure, lets customers use OCI compute on-premises to run application tiers in a simple subscription-based model. With Oracle's IaaS services deployed at the edge, businesses can manage operations remotely while ensuring optimal performance, reliability, and security.

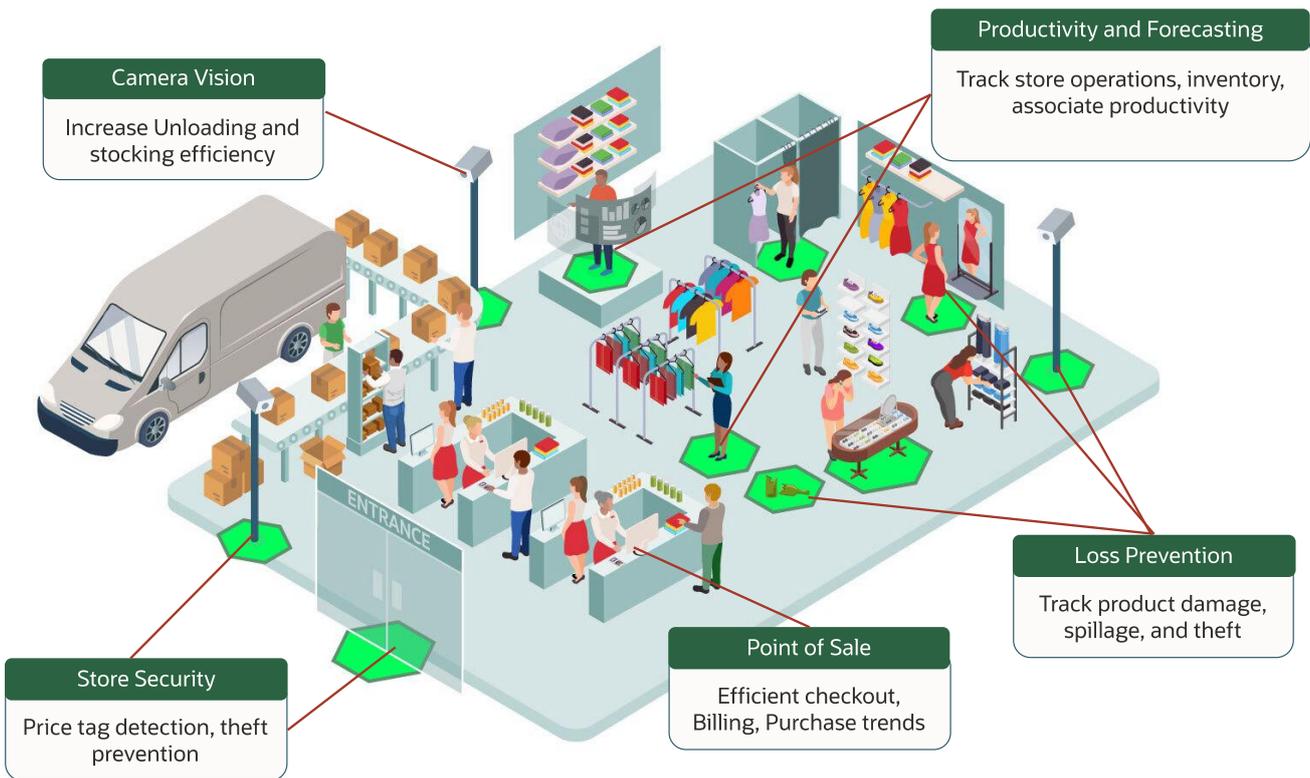


Oracle Cloud Infrastructure from core to edge

Oracle edge solutions minimize retail challenges for distributed deployments

BUSINESS REQUIREMENTS	SOLUTIONS-	BUSINESS VALUE
<p>Business Continuity A lack of centralized oversight and inconsistencies across locations can disrupt operations, compromising continuity and increasing the risk of business interruptions.</p> <p>Agility It can be challenging to scale quickly, adapt to market changes, and seize new growth opportunities due to operational limitations.</p> <p>Operational Efficiency Resource duplication, redundant processes, and higher costs result in inefficiencies, reducing store productivity and eroding overall profitability.</p> <p>Customer Satisfaction Without a unified view of operations, customer experiences can vary significantly across stores, products, and pricing, leading to confusion and frustration.</p> <p>Loss Prevention and Shrinkage Retailers lose over \$110 billion annually to shrinkage, which is driven by factors like shoplifting, vendor fraud, employee theft, and other non-sales-related losses.</p>	<p>Core to Edge Utilize the same OCI IaaS – including compute, storage, and networking capabilities – across both connected and disconnected locations.</p> <p>Scalability Start with single-node deployments with Oracle Roving Edge Device, scale to rack scale footprints with Oracle Compute Cloud@Customer and beyond to the public cloud.</p> <p>Develop Once, Deploy Anywhere Build applications once and deploy them seamlessly across public cloud, on-premises data center or at the edge, all while enjoying consistent cloud economics, simplified management, and full control over data residency and security.</p> <p>Extend to the Edge Bring applications and services to the edge with OCI AI and PaaS services, along with partner solutions and integrations.</p>	<p>Accelerated Deployment With Oracle managed OCI compatible infrastructure, build once and deploy across multiple sites, enabling rapid growth and expansion.</p> <p>Hybrid Solution Eliminates latency concerns and provides business continuity.</p> <p>Retail Innovation Transform the retail store and customer experience enabling use cases for contactless checkouts, frictionless shopping, smart inventory management and loss prevention by deploying AI at the edge with the OCI core to edge portfolio.</p> <p>Cost Savings Cloud consumption model with OCI licensing. Leverage Oracle Investments and Support Rewards</p> <p>Centralized Management Streamline operations, enhance security, and improve monitoring with centralized oversight.</p>

Use cases for Oracle Edge Solutions:



Point of Sale with Oracle Xstore

[Oracle Retail Xstore Point of Service](#) is a point-of-sale application that provides the capabilities to carry out day-to-day transactions and conduct daily store activities like scanning items, applying price adjustments, tendering, and printing receipts as well as processing returns, and web orders. Oracle Retail Xstore Point-of-Service empowers the store associate to provide an informed and personalized experience that builds strong customer loyalty and was designed to be configurable, composable and extensible to deliver experiences that are consistent with the retail brand. Shopping, purchasing, picking up, or returning, Oracle Retail Xstore Point-of-Service can exchange data with other channels, creating a unified shopping experience, all while expanding the retailer's understanding of the customer's likes and wants. Xstore on Oracle Roving Edge Device helps retailers consolidate their in-store operations on a unified platform.

Loss Prevention

In-store loss prevention and security are critical for retailers, who face shrinkage challenges like shoplifting, fraud, and employee theft. By leveraging real-time AI models on our infrastructure, retailers can monitor live video feeds to detect suspicious behaviors, identify security risks, and send immediate alerts to staff. This setup reduces response times, allowing security teams to act quickly and efficiently. On-premises processing using the Oracle Roving Edge Device with NVIDIA L4 GPUs ensures that sensitive video data remains within the retailer's network, enhancing both data privacy and regulatory compliance, while protecting revenue by preventing losses before they happen.

Inventory and Supply Chain Planning and Optimization

Accurate supply chain and demand forecasting is essential for retailers to manage inventory, reduce stockouts, and meet customer demand. Retailers can run sophisticated AI models that analyze historical sales data, seasonal trends, and external factors to make precise forecasts. By processing this data on-premises, retailers maintain full control over proprietary sales data while ensuring rapid, actionable insights. This allows for optimized stock allocation, reduces waste, and helps ensure that products are available when and where customers need them, enhancing overall supply chain efficiency and customer satisfaction.

Enhanced in-store experience

Automated checkout and queue management help retailers streamline the shopping experience, reduce wait times, and improve customer satisfaction. AI models running on Oracle Roving Edge analyze foot traffic in real-time, dynamically managing checkout lines by predicting peak times and optimizing staff allocation. In high-traffic situations, these systems can alert staff to open more registers or deploy self-checkout options. Retailers can also evaluate AR/VR in-store for an enhanced customer try-on experience. By keeping this data processing on-premises, retailers can respond instantly to store conditions, creating a smoother, more efficient checkout process that minimizes delays and enhances customer loyalty.

Targeted in-store advertising

Targeted in-store advertising allows retailers to deliver personalized messages to customers in real time, based on demographics, behavior, and browsing patterns. Using our solutions, retailers can analyze customer data, behavior, and their patterns, and then instantly display relevant ads or promotions on in-store screens. This on-premises approach ensures that customer data is kept private and secure while driving engagement with timely, personalized marketing messages. Targeted advertising helps capture customer attention, increase basket size, and promote relevant products, ultimately enhancing the overall shopping experience and boosting sales.

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Learn more about OCI's Edge capabilities through our portfolio of solutions – [Oracle Compute Cloud@Customer](#), [Oracle Private Cloud Appliance](#) and [Oracle Roving Edge Device](#), and explore a world of opportunities at the Edge. Reach out to your Oracle account team today.

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