



How Cloud-Driven Network Solutions Meets the Rising Demand of Ecommerce, Distribution, and Supply Chain

Introduction

Retail is a dynamic, constantly evolving industry. While ecommerce has played an increasingly central role in recent years, its influence has risen significantly with recent events. Consumers have flocked to the internet to order goods ranging from clothing to groceries to electronics at an unprecedented rate, dramatically elevating demand and technology requirements among retailers – namely when it comes to logistics and distribution. Now more than ever, consumers expect a real-time understanding of product availability, the ability to easily track purchased items from point A to point B, and an efficient delivery time. Retail's distribution centers and warehouses are under pressure to meet these requirements. To do so, a cloud-driven network solution is necessary, to securely enable the systems, users, devices and applications to connect and maintain retail's critical distribution operations.

Required Capabilities

As the industry evolves and the demand of distribution and fulfillment centers increases, so too does the need for 24x7x365 wired and wireless connectivity. Logistics and distribution centers in the retail industry simply cannot afford downtime; successful shipping and delivery depend on it. Further, distribution centers must be able to determine inventory, predict supply and demand, and maintain healthy capacity during times of heavy demands in a constantly changing, dynamic global marketplace.

Retail's logistics and distribution environments must deploy an IT network solution that delivers:

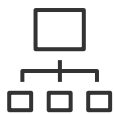
- Wi-Fi 6 connectivity for all users, devices, IoT
- Cloud-based centralized management
- Analytics via AI and machine learning
- Fabric-based converged wired infrastructure
- End-to-end security and protection

Critical Technology Challenges and Core Competencies

The retail industry faces unprecedented technology challenges when it comes to distribution and the supply chain. Implementing the right platforms, has never been more critical.



Supply Chain
Visibility



Capacity
Management



Supporting and Scaling for
Future Demand



Keeping Pace with Digital
Transformation

Supply Chain Visibility



When it comes to digital transformation in retail, particularly in distribution and the supply chain, having the visibility into on-hand merchandise and establishing a link between data centers and distribution centers is a major challenge. With more shoppers turning to ecommerce for to purchase goods, leveraging strategic, interconnected digital platforms to stay on top of supply and demand is central to a retail business.

Capacity Management



Capacity management and readiness are a significant undertaking. This includes the operational capacity to support influxes of shipments going in and out of distribution centers; it also includes the network capacity (and coverage) to keep manufacturing devices and users connected at all times – even as assets move and the conditions in the environment change – to prevent any disruptions in service. Today, there's more product coming through supply and distribution channels than ever anticipated, especially during peak seasons. Often, networks simply aren't prepared for the capacity of shipments, hampering efficiency.

Supporting and Scaling for Future Demand



Scaling for future demands as volume increases on a daily basis is another obstacle. Demand has skyrocketed to unprecedented levels, making scalability markedly challenging to solve. For retailers and their distribution centers, this could mean scaling out to seamlessly bring new business sites online, scaling best practices across the business from one part of the organization into another, and scaling out through interconnections with internal and external platforms and ecosystems. All of these go-forward challenges and goals require a flexible, adaptable, open platform. In the same vein, reliability of transportation in moving product from one place to another is a critical function. Manual intervention and resulting downtime costs the retail industry millions of dollars.

Keeping Pace with Digital Transformation



Keeping pace with evolving technology and being able to support it is no easy feat. Businesses must balance the task of maintaining uptime with pursuing forward-thinking digital transformation initiatives to keep them on the cutting edge. These tasks include enabling a high-performance digital workplace, scaling physical work through the Internet of Things (IoT), building a network of API-driven interconnected ecosystems, and generating even more efficiencies by leveraging automation and predictive analytics via machine learning and AI.

Network Solutions for the Growing Importance of Ecommerce, Distribution, and the Supply Chain in Retail

Extreme's cloud-driven IT networking solutions equip retail's distribution and fulfillment centers with the necessary tools to overcome their immediate challenges and build a powerful asset for future innovation. Extreme does this through end-to-end wired/wireless connectivity, cloud-based centralized management, AI-driven analytics, fabric-based switching infrastructure, and robust security.



Wi-Fi 6
Connectivity



Cloud-Based
Centralized Management



Analytics via AI and
Machine Learning



Fabric-Based
Infrastructure



End-to-End
Security

Wi-Fi 6 Connectivity for Dynamic and Harsh Environments



Robust Wi-Fi connectivity for all users, devices, applications and IoT assets - optimized for dynamic and harsh environments with constantly changing RF conditions, without a disruption or drop-in service. Wi-Fi infrastructure to provide the coverage and capacity needs to securely support new and legacy devices across all warehouse and distribution environments. Distributed control plane in which wireless APs actively manage available bandwidth, provide seamless roaming, distribute client load, and adapt to unpredictable RF conditions.

Cloud-Based Centralized Management



End-to-end wired and wireless management from a single pane of glass enabled by robust, scalable cloud-based infrastructure. Delivers comprehensive visibility and control for all users, devices, and IoT/IloT assets across distributed, cross-functional retail, distribution, and fulfillment sites. Ability to track movement and location of critical business assets and clients. Seamless role-based network onboarding, authentication, and segmentation ensures appropriate network access and automates IT operations. Open-API platform to support and enable an interconnected digital ecosystem.

Analytics via AI and Machine Learning



Business and network analytics powered by artificial intelligence and machine learning provides valuable insights across all environments and connected devices/clients/things from centralized platform. Provides superior performance, troubleshooting, and remediation for continuous service delivery and availability to prevent operational disruptions and improve efficiency. Easy to digest reporting views for both real-time and historical network usage/health. Industry-leading data durability equips IT teams with unlimited data access for lifetime of subscription.

Fabric-Based Infrastructure



Scalable, resilient, flexible network infrastructure to support a converged network for production/distribution, back office, and physical security networks. Consistent and inherently secure architecture offers true isolation between different logical network environments offering protection and isolation for critical control systems. Accelerate time to service for the digital technology an organization requires, including high performance IP video for quality control - without the complexity of legacy protocols such as PIM.

End-to-End Security



Robust wired and wireless network security to keep the business' data, employees, and connected assets protected across all supporting sites. Cloud-driven network infrastructure provides seamless authentication/onboarding for all new/legacy devices, granular configuration of identity-based network/application access, intelligent monitoring of internal/external threats, and actionable analytics driven by AI/machine learning. Backed by ISO 27001 cloud security certification.

Conclusion

With recent events impacting industries around the world and the shift in how consumers purchase goods, retail's distribution and fulfillment centers have never been more important to the business. These environments will continue to face challenges from an operational, digital,

and IT standpoint as they adapt to changing demand. With Extreme's cloud-driven network solutions, retail organizations have a high-performing, reliable, resilient, secure platform to meet critical needs and advance forward-thinking initiatives. [Learn more.](#)