BLACK BOX

CASE STUDY
ENTERPRISE NETWORKING

Connecting Every Scan: A Peak-Ready Warehouse Network

Overview

A global logistics and supply chain services provider operates a distributed network of high-throughput warehouses supporting time-sensitive freight, contract logistics, and fulfilment activities. Within these facilities, handheld scanners, mobile devices, and warehouse applications depend on reliable wireless connectivity to keep goods moving and inventory data current.

During seasonal demand peaks, concurrent device usage increased sharply, placing pressure on the existing wireless environment. The client engaged Black Box to assess network conditions and design a high-density architecture that could maintain consistent performance across operational zones.

Challenges

Warehouse workflows depended on uninterrupted access to scanning, inventory, and real-time applications. When many devices connected simultaneously, congestion and inconsistent coverage led to slower response times and intermittent connectivity.

The environment needed greater capacity, predictable roaming, and resilient wired backhaul without disrupting active operations. The solution also had to scale for future device growth and traffic surges.

AT A GLANCE

CHALLENGES

- Wireless congestion during peak demand
- High device density across warehouse zones
- Inconsistent coverage and roaming performance
- Delays affecting scanning, inventory updates, and warehouse workflows

SOLUTIONS

- RF coverage and capacity site surveys
- High-density Wi-Fi architecture
- Resilient switching and structured cabling
- Design for scalable coverage and roaming

RESULTS

- More stable connectivity during busy periods
- Fewer interruptions to warehouse applications
- Improved coverage consistency and response times
- Scalable foundation for future growth

BENEFITS

- Faster, smoother warehouse workflows
- More dependable scanning and inventory updates
- Greater productivity during demand surges
- Reduced operational disruption
- Future-ready network capacity

Solutions

Black Box conducted detailed site surveys to evaluate RF coverage, interference, client density, channel utilization, and capacity across the warehouse environment. The findings informed a high-density wireless design engineered to support large numbers of handheld scanners, mobile devices, and operational applications with consistent throughput and low latency.

The wireless solution was supported by resilient switching and robust cabling to strengthen backhaul performance, reduce single points of failure, and maintain connectivity across critical operational zones. Black Box aligned the design and implementation approach with active warehouse workflows to help minimise disruption and provide capacity for future expansion.

Results

The upgraded environment delivered more consistent wireless coverage and improved reliability for scanners, mobile devices, and warehouse applications, particularly during periods of increased demand. Teams gained steadier access to real-time inventory data and operational systems, helping reduce connectivity-related delays.

The resilient architecture also provided a more scalable foundation for additional devices and higher traffic volumes. With improved stability, roaming, and response times, the client can support peak-season operations with greater confidence and efficiency.

Why Black Box?

The client selected Black Box for its ability to assess complex RF environments and deliver an integrated wired and wireless solution from design through implementation. Black Box combined site-survey expertise, high-density wireless engineering, resilient infrastructure, and end-to-end project support to create a dependable network aligned with demanding warehouse operations.