

"Never Underestimate Wireless"

Real-Time Product Tracking at Johnsonville Sausage



Using Cisco Aironet® 350 Series technology, Johnsonville Sausage, LLC installed a wireless local area network (WLAN) in one of its Wisconsin warehouses, improving the tracking, location, and movement of its products.

Johnsonville Sausage is one of the nation's largest producers of sausage, bratwurst, and other meat products. The warehouse includes a staging area, a production area, shipping coolers, and deep-freeze coolers. Meat is sent from the assembly line on conveyors to the deep-freeze area.

"All in all, there's an extraordinary amount of storage space. As product moved throughout the warehouse, tracking became less manageable. We wanted a solution that was both durable and mobile," said Bob Meyers, Network Systems Engineer/Coach for Johnsonville Sausage.

Access Points Transmit Data from Scanners

TSR Solutions, a Germantown, Wisconsin Cisco reseller, developed a two-part solution. First, TSR configured and tested hand-held wireless data-collection scanners, manufactured by Intermec Technologies, to be used by forklift drivers. "The data-collection devices have

displays like a Web interface, so forklift drivers can easily access them to locate a particular pallet. And when they drop a pallet off, they simply scan the pallet, which wirelessly inputs location information into the inventory system. The data is then sent to an NT server running integration software, which directs this real-time data to an AS/400 ERP system. From a real-time logistics standpoint, it gives Johnsonville total flexibility for managing all these pallets," said Tim Radtke, President of TSR Solutions.

Next, TSR installed 14 Cisco Aironet 350 Series Access Points to carry signals from the scanners to the Windows NT server throughout the warehouse complex. The Cisco Aironet 350 Series, based on direct-sequence-spread spectrum technology and operating in the 2.4 GHz band, provides an Ethernet-like data rate of up to 11 megabits per second (Mbps). Access points are IEEE 802.11b compliant and Wi-Fi certified for interoperability by the Wireless Ethernet Compatibility Alliance.

"I believe this represents the first marriage of Intermec and Cisco Aironet technology, certainly the first time for this purpose," said Meyers. "It's an excellent example of multivendor interoperability."

"We had no doubt that the Cisco Aironet wireless system would be equally efficient, and the results bear us out. My credo now is, 'Never underestimate the reliability and power of wireless!'"

—Bob Meyers,
Engineer/Coach,
Network Systems



Inline Power Feature

Cisco Aironet 350 Series Access Points feature inline power capability, permitting remote power along an Ethernet cable. The power can be provided by a Cisco technology-powered switch, a powered patch panel or a small, inline device called a power injector.

“It meant we didn’t have to run electrical power to the boxes, so we put in Cisco 3924-PWR powered switches and ran the Ethernet cable back to a warm room,” Radtke said. “This enabled us to power all the switches through the Ethernet at a significant cost savings to Johnsonville Sausage.”

As a special precaution in this unusually cold, moist environment, TSR encased the access points in moisture-proof metal enclosures, drilled holes in the sides of the enclosures, and installed external antennas.

Benefits of Wireless System

Functionality was in no way diminished by these measures, according to Meyers. “The forklift drivers have been giving the entire system high marks, particularly in comparison to our previous setup,” he said. “They were constantly getting interference that they couldn’t pinpoint when using CAT-5 cable. Now drivers get their information clearly and reliably all the time. The speed is always there and the signals are fast. It is much easier to find things and move product throughout the facility.”

The most significant benefit Johnsonville Sausage has realized from wireless is real-time inventory transactions. Wireless technology has enabled them to evolve from batch scanning of inventory transactions to RF scanning and real-time inventory movements.

“Now we do online allocation of customer orders and create bills of lading directly from the handheld scanners. This reduces the manual entry of allocating orders and the potential for human error when entering the data,” Meyers said.

Adapter Cards for Warehouse PCs

Johnsonville Sausage also uses wireless technology to attach PCs on the plant floor to the network. Floor personnel can use them to check real-time inventory status—a vast improvement over a system that updated data just twice daily. “Computers on the floor now are seen as valuable tools for information that make people’s jobs easier and help reduce errors,” said Meyers.

Initially the PCs would not communicate with their network due to interference problems on the CAT-5 cable. After installing wireless Cisco Aironet 350 Series PCI Client Adapters and an antenna in each of the PCs, dependable connectivity was secured.

Like the access points, Cisco Aironet 350 Series Client Adapters operate in the 2.4 GHz band, provide an Ethernet-like data rate of up to 11 Mbps and are IEEE 802.11b compliant and Wi-Fi certified.

Expanding the Wireless Network

After the success of its initial investment in the Cisco Aironet 350 Series, Johnsonville Sausage is expanding its wireless system, including more PCs and access points as well as three Cisco Aironet 350 Series Wireless Bridges. Wireless bridges are built to withstand widely varying temperatures and are ideal for harsh climates. They are designed to provide high-speed, long-range connectivity for Ethernet-wired devices and support data rates up to 11 Mbps.

Cisco Aironet 350 Series technology was selected for the Johnsonville Sausage operation because of the positive experiences the company has had with other Cisco products. “Everything we have is Cisco—hubs, routers, the firewall—and it’s always worked well,” said Meyers. “We had no doubt that the Cisco Aironet wireless system would be equally efficient, and the results bear us out. My credo now is, ‘Never underestimate the reliability and power of wireless.’”



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