

# Enhanced Wireless Network; Improved Connections for Mobile Medical Devices: Nurse Carts, Laptops, Tablets, Wireless Infusion Pumps



## Weeks Medical Center

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### KEY HIGHLIGHTS

#### Challenge

- Fast, reliable wireless network needed for nurse's carts, laptops, and tablets
- Frequent uploads of drug information to wireless infusion pumps
- Existing system couldn't handle increased demand

#### Technology

- ARUBA MMC-3400 Wireless Multi-Service Mobility controller
- ARUBA OS
- 55 access nodes
- "Follow me" connectivity allows seamless connections as users move
- "Identity-based security" provides uniform access decisions

#### Results

- Improved coverage and access times
- Simplified management of network
- Better handling of spikes in demand

## Weeks Medical Center

Weeks Medical Center is a full-service hospital serving northern of New Hampshire. The 25-bed hospital located in Lancaster provides surgical and intensive care, outpatient services, and an emergency department. There are also three satellite physician practices in Lancaster, Groveton, and Whitefield, NH. The Center handles approximately 73,000 patient visits per year for a core catchment area of 13,000 patients.

### Customer Challenge

Weeks Medical uses many mobile devices, including nurse's carts, laptops, and tablets. The hospital also uses many wireless infusion pumps. Each of these "Smart Pumps" metes out drugs to patients through an intravenous connection. The hospital maintains a central library of drug information and when a manufacturer makes a change to the drug information, it must be replicated out to all of the pumps. "The wireless system really has to work correctly," said Darrell Bodnar, Manager of Information Systems. "These are critical components."

Because Weeks Medical's existing 32-node wireless system was more than five years old, it was struggling to handle increased demand. The hospital needed better coverage and access to newer technology.

### Technology Solution

Weeks Medical hired a third party provider to conduct a wireless survey and GreenPages used that information to install a new wireless system built around an Aruba MMC-3400 Wireless Multi-Service Mobility controller. The Aruba unit and the Aruba OS supervise the hardware functions of the wireless system, including handling IP addresses and cycling the antenna power on the each of the nodes. "Follow-me connectivity" provides seamless changes in the connections as users move around the wireless environment. "Identity-based security" makes access decisions based on the user, not the port being accessed, so security is enforced uniformly across the wireless system, regardless of the access method or location.

Once the new system was installed, the hospital staff found they weren't getting the kind of improved performance they expected. The hospital contacted GreenPages, and GreenPages got in touch with the other vendors. A survey was reperfomed. After an analysis, it was confirmed that the original survey had underestimated the number of access points, and the system actually required 20 additional nodes. And at \$500 each, that added up to an unforeseen significant expense.

Based on that information, and using predictions of future requirements, GreenPages designed and implemented a new VMware system and added



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two new HP ProLiant DL380 servers to be used as hosts. Two existing ESXi servers were also upgraded. Improved storage for the system was provided by a Dell EqualLogic PS6000E iSCSI SAN.

The software side of the virtualization project was based on the vSphere Enterprise virtualization platform. vCenter Server provided centralized control, showing the status and configuration of clusters, hosts, and virtual machines. Quest vFoglight allowed Bodnar to monitor physical storage capacity on the system, and vOptimizer allowed optimization of the available storage. vRanger was included to provide backup across the entire vSphere environment.

### **Successful Result**

"Sometimes things happen. We understand that," Bodnar said. "It's how you handle those situations that makes the difference. GreenPages could have argued and fought about this, but they didn't do that. They just said, 'We'll stand by our word and we'll deliver a finished product.'" As a result, new wireless nodes were added at no additional cost to Weeks Hospital.

Today Bodnar reports that the improved system is working correctly, with good coverage and access times. Currently the system has 55 nodes and the hospital typically has 5 to 6 devices connecting to a single node—a level of traffic that doesn't overwhelm the system. In fact, the system is robust enough to handle some unusual spikes in demand. "Once we tested the system with 45 pumps all running on the same node at the same time," Bodnar said. "The system was slower but it handled the load."

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