ARUBA networks

CASE STUDY

Healthcare

Southampton University Hospitals NHS Trust Prescribes Aruba Networks for Mobility

Southampton University Hospitals NHS Trust (SUHT) is one of the United Kingdom's most successful healthcare organisations, providing hospital services to some 500,000 people living in Southampton and South West Hampshire and specialist services, such as neurosciences, cardiac services and children's intensive care, to more than 3 million people in central southern England and the Channel Islands.

The main hospital of the trust is the Southampton General Hospital, whose 7,500 staff treat more than 115,000 in-patients and day patients, including around 40,000 emergency admissions and deal with some 85,000 cases in the Emergency department each year.

In the same way that the hospital looks to provide exemplary medical care to the South of England, it expects exemplary performance from its 802.11 wireless network—the secure mobile infrastructure that allows its medical staff to be more productive during their working day and more accurate in their record keeping.

THE NEED FOR MOBILITY

In 2006, Southampton University Hospitals NHS Trust identified a clinical requirement to speed diagnosis, improve treatment and reduce the risk of administrative errors. They determined that this could best be addressed by implementing a 'data entry at the point of diagnosis' program. In order to facilitate the program, it was decided to deploy a wireless LAN solution throughout the hospital.

By allowing a consultant to make data entry directly to a central database while with a patient, Electronic Patient Records can be updated immediately instead of waiting for support staff to type up the notes at a later time. Furthermore, direct data entry reduces the risk of transcription errors, and hence addressed the needs of the hospital to improve patient care and, ultimately, limit liability.

SUHT also believed that a wireless LAN for use by the trusted employees within the hospital would, once implemented, also act as a basis for future development such as asset tagging, Voice-over-IP communications systems, and wireless communication into sterile areas.

EXISTING SOLUTION LIMITATIONS

SUHT had an existing infrastructure of wired Ethernet, and initially tried to deploy a solution using fifty "thick" Access Points (AP). Unfortunately, having individually configured and deployed the APs, a manufacturing fault meant that many of the units did not function correctly and consequently had to be removed. An alternative OEM solution was offered by the vendor. However,

Southampton NHS
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Requirements:

- Secure, scalable 802.11 mobility infrastructure
- Support for mobile data applications including EPR and PACS
- Centralised management
- Fit in with existing infrastructure without requiring any changes to a stable, working wired infrastructure

Solution:

- Two Aruba MMC-6000 Multi-service Mobility Ccontrollers
- Approximately 500 Aruba AP-61 Access Points
- ArubaOS Policy Enforcement Firewall and Wireless Intrusion Protection

Benefits:

- Seamless wireless experience for healthcare staff
- Secure "out of the box"
- Centrally managed mobility provides unified view of AP operation, load, attached devices; speeds troubleshooting
- Thin APs streamline and simplify deployment
- Advanced security detects and shuts down rogue APs, blacklists rogue users

during the deployment of the OEM solution, it was determined that neither the management capabilities nor the Layer 3 (IP) implementation suited the needs of the hospital. As a result, the deployment was cancelled.

SUHT turned to Aruba Networks, one of the original solutions to be shortlisted, with plans to deploy two Aruba 6000 Mobility Controllers, and initially, 26 AP-61 "thin" access points.

"When we received the controllers, we opened the manual and within a week started deploying it. It's a good, reasonably intuitive system to use," said Ryan Hewitt, senior network and security analyst at Southampton University Hospitals NHS Trust.

SECURITY AND EASE OF MANAGEMENT—KEYS TO SUCCESS

It was clear to SUHT from the first deployment that Aruba takes a different approach to wireless networking than the other vendors with which they'd had experience. "Aruba product is secure from the moment you take it out of the box," said Hewitt, in describing how it fits directly into a network infrastructure and automatically secures the wireless space. Aruba's solution is able to identify rogue APs and defend against Man in the Middle attacks immediately, and encrypts all data from the client through to the controller. This is important in healthcare to ensure that CfH (Connecting for Health) guidelines are adhered to, and Patient Identifiable Data is protected.

With only a few dedicated members of IT staff supporting the whole hospital, it was very important that the system could be centrally managed, and that it fit in with the existing infrastructure without requiring upgrades to existing networking equipment. "The good thing is that we can configure it, deploy it, and leave it," said Hewitt.

Additionally, because the Aruba Networks product complies with EN60601, there was no concern over the use of wireless systems in the hospital environment (unlike cellular telephones). As a result the Aruba APs could be deployed throughout the hospital, even in the most sensitive areas.

Initially, the Aruba solution was deployed to provide wireless transmission of high-resolution images from a Picture Archiving and Communications System (PACS)—a system that effectively replaces wet film (x-ray images)—into the ENT, Neurology and Main Operating Theatres. The operating theatres were particularly well-suited to a wireless deployment. Breaching the theatre to allow cabled access is a significant concern to hospitals, whereas a WLAN deployment allows a sterile environment to be maintained.

The implementation in the OR was soon followed by an extension of the wireless network into the health records department, a separate data centre storing more than 1 million patient records.

EXPANDING THE APPLICATIONS

Today, just 18 months after the initial installation, the wireless network is approaching 500 deployed access points and has allowed SUHT to deploy several other key applications. Mobile devices have access to PACS, and 'data entry at the point of diagnosis' has also been implemented. COWs (Computers on Wheels) use the wireless network to enable nursing staff and doctors to access patient records as they interact with the patient.

"We've seen a really positive response from the care staff, and from the patients," continued Hewitt. "Entering data at the point of diagnosis helps to mitigate the risk of transcription errors, allows treatment to start quicker with the ultimate aim of reducing the total length of time patients spend in hospital."

With mobile data successfully deployed and used extensively, SUHT has recently started deploying the Vocera Voice over Wi-Fi hands-free communication system

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Organization Overview:

Southampton General Hospital is part of Southampton University Hospitals NHS Trust; one of the UK's most successful healthcare organisations. The Trust provides local hospital services to some 500,000 people living in Southampton and South West Hampshire; and specialist services such as neurosciences, cardiac services and children's intensive care to more than 3 million people in central southern England and the Channel Islands.

It is also a major centre for teaching and research in association with the University of Southampton and partners including the Medical Research Council, Wellcome Trust and Cancer Research Campaign.

Southampton General Hospital has more than 8,000 wired data points of which 6,000 are active with approximately 6,500 members of staff using 3,500 PCs, and more than 500 laptops.

"The good thing is that we can configure it, deploy it, and leave it. It does what I expect it to; it provides a seamless environment for our people to work in."

Ryan Hewitt

Senior Network and Security Analyst
Southampton University
Hospitals NHS Trust

in the Emergency Department, West Wing, and East Wing—both 6 floor, 17 ward buildings—with full campus wide deployment by mid 2008. Running over the Aruba WLAN, it is used by senior nursing staff, Doctors and porters to improve communications in this time sensitive environment.

"Ultimately Vocera is just another application running on the wireless LAN, but because all of the applications run over a common infrastructure, the few dedicated members of IT staff at the hospital are now able to manage the entire mobile environment," concluded Hewitt.

In the future SUHT will be looking to deploy location based services such as Radio Frequency Identification Devices to track equipment through the hospital.

Ultimately a wireless solution should offer the ease of deployment and security that puts a busy senior IT manager such as Ryan Hewitt's mind at rest, and allows him to concentrate on more important things. "It does what I expect it to; it provides a seamless environment for our people to work in. All in all a good bit of kit to work with," said Hewitt.

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