Laying Foundations for Digital Hospital Vision

Customer Case Study

Kingston Hospital NHS Foundation Trust mobilizes 200 clinicians and seeks to boost prescribing accuracy using a Cisco Smart Solution

EXECUTIVE SUMMARY

Customer Name: Kingston Hospital NHS Foundation Trust

Industry: Healthcare

Location: United Kingdom

Number of Employees: 3700

Challenge

- Increase operational efficiency and patient care
- Support flexible working and mobile computing at bedside

Solution

- Cisco Smart Solution enabling 200 tablets used by clinicians
- Cisco Identity Services Engine for context-aware security
- Cisco Prime for unified management

Results

- Improved efficiency through increased access to health applications
- Anticipated reduction in drug prescription and administration errors
- Network future-compatible to deliver other hospital innovations such as RFID system to protect hospital assets

Challenge

A growing number of healthcare organizations are seeking to reduce administrative burdens and as far as possible eliminate manual processes through digital hospital transformation programs. Such a vision is becoming a reality for Kingston Hospital NHS Foundation Trust. One of the largest single-site district general hospitals in London with over 3700 staff and the city's second biggest maternity unit, it also provides accident and emergency and a full range of diagnostic and treatment services to a catchment of 320,000 people.

The original LAN infrastructure, installed in 2002, was due for a refresh. Alongside, the hospital wanted a wireless network supporting mobile devices to further its aims of digitizing paper records and using IT solutions to streamline and extend healthcare to the bedside.

"The hospital's strategy is to use IT to improve patient care, which depends on effective wireless networking," says John Osbourn, network services manager at Kingston Hospital NHS Foundation Trust. "A major objective is to enable mobile computing at the bedside so medical teams won't need to rely on paper notes when walking around wards."

Solution

When Kingston issued a tender, it received over 50 responses, and a careful selection process led to the choice of a Cisco® Smart Solution delivered by Cisco Gold partner Telindus. "We believe that Cisco technology is more advanced and stable than the competition," says Mark Seager, director of ICT Solutions, an IT consultancy contracted by Kingston Hospital NHS Foundation Trust.

Two Cisco Catalyst® 6506 Series Switches are at the core of the Kingston LAN, with Catalyst 3500 and 3750 Series Switches for distribution and Catalyst 3700 Series Switches at the edge, many of which have Power over Ethernet (PoE) functionality. The edge switches are dual-homed back to the distribution switches, which are in turn dual-homed back to the core switches for added redundancy.

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John Osbourn
Network Services Manager
Kingston Hospital

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The wireless network consists of Cisco Aironet® 3500 Series Access Points with Cisco CleanAir® technology, of which 659 are distributed among all buildings on the campus. A Cisco Wireless Service Module 2 controller is situated in each of two cores, while a Cisco Mobility Services Engine protects against wireless threats and radio frequency interference.

Cisco Identity Services Engine (ISE) is a critical security element of the solution, providing powerful new capabilities that support the consistent enforcement of context-based policies, with complete visibility across wired, wireless, and VPN domains. Other features include:

- Integrated authentication, authorising, and accounting, along with profiling, posture, and guest services
- Device identification using probes, embedded device sensors, endpoint scanning, and device feed service
- Greater visibility and control of endpoints, and simplified wireless access through self-service registration

The addition of Cisco Prime™ Network Control System (NCS) simplifies real time network and service management and provides the hospital with complete visibility into endpoint connectivity for any device, anywhere, and at any time.

Results

The wireless network will play a key role in helping Kingston replace paper records with digitized clinical documentation at the bedside (the hospital uses the Cerner Millennium electronic medical records suite) to improve efficiency. "We now have one solution and one management console for wireless and LAN," says Osbourn. "And that means we can move towards a virtual hospital where medical staff are more mobile, productive, and effective."

The hospital is deploying over 200 tablets so clinicians can access and input information when on the move. Much will be done using those tablets including reviewing patient records, updating observations, and ordering tests/medication, while pharmacists will use wireless computers and workstations on wheels to deliver and manage drugs at the bedside.

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As well as helping increase staff productivity, Kingston anticipates other operational benefits from leveraging its new wireless platform. Cisco Access Points will give the hospital the required triangulation to implement a planned real time locating system using RFID (radio frequency identification). This capability will help manage and protect assets by pinpointing their location to within three meters. "Using Cisco wireless increases efficiency and should also deliver savings on operational costs," Osbourn says.

Cisco ISE is also contributing towards return on investment. "ISE reduces the management burden and increases levels of security when dealing with Apple, Android and Microsoft end points," says Osbourn. "We need to know that we are allowing trustable devices to connect to our network and also that end users are properly authenticated. ISE means the network is future proof, enabling us to provide guest access and implement a safe mobile device policy."

For More Information

To learn more about Cisco architectures and solutions featured in this case study, please go to:

www.cisco.com/go/borderless
www.cisco.com/go/byod
www.cisco.com/go/ise
www.cisco.com/go/cleanair
www.cisco.com/go/prime

Product List

Cisco BYOD Smart Solution

- Cisco Aironet 3500 Series Wireless Access Points with CleanAir technology
- Cisco Mobility Services Engine
- Cisco Identity Services Engine (ISE)
- Cisco Prime Network Control System

Routing and Switching

- Cisco Catalyst 3500, 3700, and 6500 Series Switches with Wireless Service Module 2

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