Making IT Budgets Stretch

Customer Case Study

U.K. hospital unites campus network and data center, improving access to clinical applications and medical information.

EXECUTIVE SUMMARY

Customer Name: Whipps Cross University Hospital

Industry: Healthcare

Location: United Kingdom

Number of Employees: 3400

Challenge

- Creating agile, scalable, and resilient data center infrastructure
- Improving LAN connectivity and speeds
- Providing better environment for staff and patients
- Platform had to meet industry standards in supporting a merger re-organization

Solution

- Collapsed borderless LAN core and data center aggregation built around dual-redundant Cisco Nexus 7000 Series Switches

Results

- Increased availability of services to clinicians and hospital staff
- Simplified IT maintenance, providing significant improvements in productivity
- 2:1 consolidation of switching, combined with power, cooling, and cabling savings

Challenge

Whipps Cross University Hospital National Health Service (NHS) Trust has been caring for the people of East London for over 100 years. It provides a full range of general in-patient, out-patient, and day care services, as well as maternity services and a 24-hour Emergency Department and Urgent Care Center. The Trust has built a strong reputation as a center of excellence in various specialist services, including urology, cardiology, and acute stroke care.

Like other U.K. hospitals, Whipps Cross has been heavily affected by cuts in NHS budgets. Despite a reduction in government funding, the Trust is under constant pressure to improve the quality of patient care. This perpetual challenge of doing more with less is being compounded by fast pace structural change as local Trusts consolidate and merge together.

“IT is a key enabler in this transformational process,” says Phil Scott, Head of ICT Whipps Cross. “The backbone to achieving this is the operation of industry standard network infrastructure and the investment in the Nexus provides the platform to deliver these changes. We wanted to create a healthcare environment that delivers increased operational and IT efficiency.”

These ambitious plans involved a new Urgent Care Centre, a Maternity Wing and refurbishment of an Acute Stroke Unit.

The hospital’s LAN operated at one gigabit-per-second, which slowed application response times and left medical staff with a poor user experience. In addition, the network had been extended beyond the limitations of its original design, in the process creating single points of failure. In the event that connectivity was lost, clinicians would have to walk to another part of the hospital to access key information, such as blood test results and digital x-ray images. As well as addressing these day-to-day challenges, the hospital’s IT team were also wrestling with rising levels of network traffic and a growing estate of servers.

"Key to achieving this was a scalable and resilient core model design that met these criteria, but also management and users' confidence in data center reliability. We believe that the joint working and development program with Cisco has enabled us to achieve the desired benefits."

Phil Scott
Head of ICT
Whipps Cross

"We've been able to develop a faster, much more resilient network using the Cisco Nexus platform. From what I've seen, single points of failure have been eliminated, and we no longer experience downtime. Users enjoy a far better quality of service with 10 Gigabit Ethernet speeds, and the network is much easier to manage. In short, we're completely delighted with the results."

Lydia Stewart
Network Support Officer
Whipps Cross

Solution

Cisco data center architects helped Whipps Cross develop a pioneering network topology. Based on the Cisco® Network Architecture Blueprint (C-NAB), the new design is ideal for hospital IT infrastructures. A first for U.K. public sector hospitals, it features a collapsed borderless LAN core and data center aggregation built around dual redundant Cisco Nexus® 7000 Series Switches.

A three-day technical workshop at the Cisco Bedfont Lakes headquarters gave the hospital's IT team a chance to familiarize themselves with the solution. "The Cisco workshops proved invaluable. We were able to see first-hand how the Nexus 7000 Series Switches could improve productivity, enhance operational resilience, and lower our total cost of ownership. That gave us confidence that we were on the right path," says Lydia Stewart, network support officer for Whipps Cross.

The Trust was also chartering a completely new path for a London hospital. Up to that point, no institution in the capital had implemented Nexus 7000 Series Switches, or introduced Cisco Virtualized Device Context (VDC) technology. Running as a separate logical entity within the switch, VDC maintains its own set of operating processes and allows administrators to successfully partition LAN and data center traffic on the same physical switch.

Easily integrated with the hospital's storage system, the Nexus platform has improved network availability and enabled Whipps Cross to take advantage of advanced Cisco technologies, including:

- Virtual Port Channels (vPC): providing enhanced availability and rapid recovery capabilities in the event of a link failure
- In-Service Software Upgrade (ISSU): allowing IT to perform software upgrades during normal working hours with no service disruption

Results

The Cisco Nexus platform has provided Whipps Cross with a highly available, faster, and more scalable IT infrastructure.

"Establishing a network infrastructure that meets current and future needs from the core to access layers was our principle objective," says Scott. "Key to achieving this was a scalable and resilient core model design that met these criteria, but also management and users' confidence in data center reliability. We believe that the joint working and development program with Cisco has enabled us to achieve the desired benefits."

Under a conventional network design, it would be normal practice to deploy four switches: two in the core and two in the aggregation layers. With the C-NAB design, the hospital is only using two Nexus switches to handle its LAN and data center traffic. This consolidation has enabled the hospital to radically simplify IT management, while also achieving a significant saving in power, cooling, and cabling.

By virtualizing switches at the device level, Whipps Cross can now isolate faults more effectively. Because the VDCs run as separate logical entities, problems affecting one virtual device are not carried over to another on the same switch.

With fewer network elements to manage and no need to negotiate windows for downtime with individual hospital units, the IT team can deploy security patches and software upgrades more quickly.

"We've been able to develop a faster, much more resilient network using the Cisco Nexus platform," says Stewart. "From what I've seen, single points of failure have been eliminated, we are no longer experiencing any downtime. Users enjoy a far better quality of service with 10 Gigabit Ethernet speeds, and the network is much easier to manage. In short, we're completely delighted with the results."

Product List

Switching

- Cisco Nexus platform, comprising Cisco Nexus 7000 Series Switches

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

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