



Addenbrooke's Trust

Citrix Application Delivery
for Healthcare

“ We can ensure our patient records are secure, while providing remote access to staff more cost-efficiently.”

Dr Geoffrey D Smith
Deputy Technical Manager
(IT), Addenbrooke's Trust

Key benefits

- On-demand access to clinical information to improve healthcare decision making
- Strong security for confidential patient information and compliance with NHS Connecting for Health regulations
- Home access to improve work/life balance for staff
- Centralised management for greater control and efficiency

Addenbrooke's Trust improves care and staff work/life balance with remote access

Addenbrooke's Trust, part of Cambridge University Hospitals National Health Service (NHS) Foundation Trust, serves approximately half a million people who live in Cambridge, United Kingdom (UK). With about 6,500 staff, Addenbrooke's hospital provides a wide range of clinical and non-clinical services. The trust is the teaching hospital for the University of Cambridge, a provider of specialist services and a centre for international research.

The Challenge: Flexible access to critical patient information to improve care

Addenbrooke's 400 consultants, specialists and doctors need to make potentially life-saving decisions, no matter the time of day or night. Under the previous system, doctors could receive phone calls during the night, requiring them to travel many miles to the hospital to consult test results and make a diagnosis. To accelerate delivery of patient care while easing the burden on clinicians, the trust wanted to give doctors real-time access to patient records and test results — including X-rays — anytime, anywhere.

Furthermore, all healthcare providers in the UK must meet best practice guidelines that are stipulated by National Health Service (NHS) Connecting for Health when providing access to patient records through electronic means. These guidelines demand two-factor strong authentication — such as domain authentication and smart cards — to confirm the identity of users who access the network externally.

Dr Geoffrey D Smith, deputy technical manager (IT), explained: “The challenge was to provide flexible working conditions for our doctors in a way that would continue to safeguard patient information and meet NHS best practice guidelines.”

Citrix Access Gateway and Citrix Presentation Server for employee mobility

The trust had already successfully piloted a Citrix solution in a project called Secure Hospital Access from the University Network (SHAUN). Around 100 university employees hold honorary consultant NHS contracts and need access to patient data held on the trust's network. Previously, the only approved way for university staff to access this data was to use a costly and inconvenient secure dial-up link. The trust's IT department chose to work with **ISC Networks**, a Platinum Citrix® Solution Advisor, to implement a solution based on Citrix Presentation Server™ with Secure Gateway functionality,

Networking environment

- Citrix Presentation Server™ running on two HP DL360 Dual Processor servers
- Citrix Access Gateway™
- Microsoft® Windows Server® 2003 and Windows® 2000 Server
- Secure Computing SafeWord for Citrix and RSA SecurID tokens
- Any connection type for home users, from ADSL to ISDN dial up
- Home PCs and desktops from vendors using a variety of operating systems

interfacing software, and two-factor authentication provided via RSA SecurID tokens. This solution enabled the trust to provide secure access between its servers and the university's workstations.

To this day, SHAUN is one of the first projects to link the trust network with the university training hospital environment within NHS guidelines and rules, and is still the only published exemplar on how to do this.

A decision was made to increase the scale of this network under a new project called Secure Hospital Access from Multiple User Sites (SHAMUS). "The goal was to enable our doctors and specialists to work from home or on the road, and provide hospital staff with the same seamless access that university staff already enjoyed," says Dr Smith.

ISC Networks recommended the trust upgrade to the latest version of Citrix Presentation Server and deploy Citrix Access Gateway™, a universal SSL VPN appliance. Addenbrooke's implemented two Citrix Presentation Servers, sitting on two HP DL360 dual processor servers that run either Microsoft® Windows Server® 2003 or Windows® 2000 Server operating system and Active Directory® in native mode. These servers publish five essential clinical applications across a Web interface to remote users. These applications include PACS digital X-ray software, Meditech for pathology results, HISS patient administration system (hosted off site) and Web Order Comms to order clinical tests. Citrix Presentation Server also delivers Microsoft® Outlook® for e-mail and calendaring capabilities.

Citrix Access Gateway provides a secure, single point of access for all remote users. Secure Computing's SafeWord for Citrix is currently being rolled out to replace SecurID tokens as they expire.

Secure and flexible access to confidential records

All trusts are legally obligated to do all they can to ensure patient confidentiality. The Citrix solution provides peace of mind for Addenbrooke's, helping the trust meet the guidelines set by NHS Connecting for Health. Access Gateway enables secure, remote access to centrally hosted patient records using SSL encryption over the network. Citrix Presentation Server enables the trust's IT staff to centrally control access through policies, ensuring that employees receive access only to the information they are allowed.

Dr Smith said: "The security of patient data is sacrosanct and access must be strictly guarded. When coupled with SafeWord for Citrix, Access Gateway provides a resilient, cost-effective authentication mechanism. The users can access the Citrix environment, view patient records and make notes. Patient records are hosted on our servers and Citrix Presentation Server publishes our core applications that access this data. No data can be downloaded or saved on the user's device."

Flexible access supports better work/life balance

By enabling doctors to gain access to patient records from home or on the road, the SHAMUS solution assists the trust in retaining its highly trained medical staff.

"Addenbrooke's Trust has a proactive policy to help our people address the work/life balance. The Citrix solution allows doctors who are at home to access clinical data, make diagnoses and provide faster input to a patient's care. These users can log on to their home desktop machines and access all their normal applications installed there as if they were sitting at their desks," said Dr Smith.

“Recently, one of our senior administrators in the neo-natal intensive care unit was quarantined at home for two weeks to minimise the risk of spreading infection after her child had come into contact with chicken pox. Because we introduced the Citrix solution, she was able to access the information systems she needed from her home PC.”

Ease of support for IT

The trust's IT personnel have also benefited from this solution. “We have a small IT department, with 22 IT people supporting a trust with 6,500 employees. Using Citrix technology, the IT team can efficiently access, monitor and repair the network and clinical systems from work or at home, which allows on-call staff to respond quicker if interventions are required. The result is a great access experience for users, greater efficiency and better quality of life for our lean IT staff,” said Dr Smith.

Applications delivered

- Meditech pathology results software
- HISS patient administration system for demographics and appointment
- Web OCS clinical tests scheduling application
- PACS digital medical software, such as X-rays
- OIT UK's EMR for creation and retrieval of digital medical records
- Microsoft® Exchange Server 2003

About the Citrix Solution

Citrix Presentation Server™ is the de facto standard for delivering Windows applications at the lowest cost—to any user, anywhere. It offers both application virtualization and application streaming delivery methods to enable the best access experience for any user, with any device, working over any network. Citrix Access Gateway™ is the only SSL VPN to securely deliver any application with policy-based SmartAccess control. Users will have easy-to-use secure access to all of the enterprise applications and data they need to be productive and IT can cost effectively extend access to applications while maintaining security through SmartAccess application-level policies.

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