Major Healthcare Organization Improves the Health of Its Network

A Case Study in Network Security

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BACKGROUND

North Lincolnshire Primary Care Trust (PCT) and North East Lincolnshire Care Trust Plus (CTP) serve a population of approximately 330,000. The combined organization, Northern Lincolnshire Trust, includes two major hospitals and 58 General Practitioner offices.

Previously, all National Health Service (NHS) organizations, including Northern Lincolnshire Trust, used leased T-1 lines for the exchange of patient data within each Community of Interest (COIN) – which includes hospitals, doctors, ambulance services, and administration sites. As the leased lines

were private, security was not an issue; however cost was. Each site (over 120 in total) had to make use of a fixed link ranging from 100 mbs to 512 kbs circuits.

In a move to reduce costs, the NHS began moving from leased lines to N3, a national DSL-based IP network. With two connections provided for redundancy to nearly 18,000 NHS sites, the N3 network is one of the largest in the world. This change meant confidential patient information was being transported over public and shared Internet connections, and network security became a serious concern.

CHALLENGE

Northern Lincolnshire Trust recognized that it needed a cost-effective network security solution that would secure patient data and provide safe mobile access to employees. These requirements needed to be met without affecting system availability or performance while allowing for the best use of the N3 infrastructure to support access to local and national applications. Also of great importance was compliance with the requirements set out in Connecting for Health, a program that supports the NHS in providing better, safer care, by delivering computer systems that improve how patient information is stored and accessed.

Northern Lincolnshire also wanted a solution that would ease the burden on its IT staff. Easy installation and the ability to manage from a single, central location were necessities. After going through a thorough evaluation and tendering process, Northern Lincolnshire chose a solution comprising WatchGuard unified threat management (UTM) security appliances at every site within the COIN, and the development of a resilient Virtual Private Network (VPN) mesh that included support for mobile devices and the reworking of all Internet Protocol (IP) addresses to eliminate possible duplications.

WATCHGUARD® SOLUTION

WatchGuard devices were chosen because they offered the best in high performance and reliability, as well as the easy installation and management Northern Lincolnshire required. WatchGuard products also meet the stringent technical standards set by Connecting for Health, including certification to Common Criteria Evaluation Assurance Level 4 (EAL4) and IPsec VPN protocols that support secure exchange of packets in the IP layer.

The two major hospitals at Grimsby and Scunthorpe implemented WatchGuard Core™ X1250e UTM appliances, while high-performance WatchGuard Peak™ X6500e appliances were installed at the two main headquarter sites. Over 120 WatchGuard appliances have been installed across the local community, including GP surgeries, clinical, and office sites. Forty additional wireless Edge appliances were deployed to provide employees secure mobile access to data and applications. In addition, all Northern Lincolnshire sites have activated additional security service subscriptions for full UTM functionality, including Gateway Anti-Virus/Intrusion Prevention Service with anti-spyware, spamBlocker, and WebBlocker URL and content filtering.

A complex VPN mesh was created to provide multiple routes of connectivity for over 3,500 users and appliances in the COIN – each one having a unique IP address.

In addition to connecting Northern Lincolnshire staff, WatchGuard appliances allow for restricted secure connections for third-party organizations such as clinical suppliers and information system vendors. Strategic partners, including local councils, also have secure networking through the infrastructure.

BENEFITS

Going mobile

Northern Lincolnshire needed to implement wireless access for its employees. There was a major push for the IT team to support Agile Working and access to clinical and corporate applications from anywhere on the patch. The result is a pioneering solution for flexible and mobile working for the entire workforce.

Darren McKay, Network Manager for Northern Lincolnshire, designed the secure mobile solution using the mobile VPN facilities provided by WatchGuard appliances. Clinicians now have access to patient records at the point of care either using a local Wi-Fi connection or mobile GPRS or 3G links through built-in SIMs and aerials in the Panasonic Toughbooks.

Darren said, "We chose to use the MUVPN solution because of its security and user friendliness, and because it offered true integration to our infrastructure. Secure connections are established before the user logs on, which means these aren't just standalone devices with remote access; these are true, secure extensions of our network."

Northern Lincolnshire has created a totally virtual infrastructure that treats both fixed and wireless devices in the same way. Remote users have the same access to authorized data and applications they would if they were logged into a desktop PC, and the IT team can manage all fixed and mobile devices centrally. RADIUS servers handle all authentication, while WatchGuard appliances create secure encrypted VPN mobile connections to ensure the data is always protected.

Improved Patient Care

Darren went on to say, "The initial pilot schemes have proven extremely successful and have demonstrated the major benefits of mobile working. The ability to access and update clinical records immediately, without having to go back to a PC, improves the speed and delivery of patient care dramatically. More accurate and up-to-date record keeping, better coordination and reporting, along with increased productivity are just some of the other benefits."

WatchGuard UTM appliances are delivering everything Northern Lincolnshire needed in a network security solution – the security of sensitive data has been ensured, costs of patient information exchange have been reduced, 24/7 access to important patient information is readily available, and secure mobile access has helped improve quality of care. The IT team has also profited thanks to the easy installation, centralized administration, and extended network management to mobile devices provided by WatchGuard products. Now, when a new policy needs to be implemented it can be rolled out to all appliances, fixed or mobile, with the touch of a button.

WatchGuard is also able to supply the high performance required to transmit large files such as clinical images. The WatchGuard appliances deliver the same level of performance as the leased lines and also give granular control over bandwidth usage. Performance has been further improved due to the identification and removal of large amounts of spyware that were restricting network resources – another benefit of the powerful UTM capabilities provided by WatchGuard.

WatchGuard Delivers Peace of Mind

Paul Freear, Head of IT Customer Services for Northern Lincolnshire added, "The combination of in-house IT skills within my team, combined with the products supplied by WatchGuard, has provided the biggest benefit for Northern Lincolnshire; we now have a world-leading solution we can trust to deliver reliability, performance, and above all, secure access to sensitive patient information, whether that is from a PC or laptop device."

In healthcare, peace of mind is everything and that is what WatchGuard has provided.

ABOUT WATCHGUARD
Since 1996, WatchGuard Technologies has been building award-winning network security solutions that combine firewall, VPN and security services to protect networks and the businesses they power. These fully extensible threat management (XTM) solutions feature reliable, all-in-one security, scaled and priced to meet the unique security needs of small businesses to medium sized enterprises. Our products are backed by 7000 partners and 450 employees representing WatchGuard in 120 countries. More than a half million signature red WatchGuard security appliances have already been deployed worldwide in industries including healthcare, education, and retail. WatchGuard is a privately owned company, headquartered in Seattle, Washington, with offices throughout North America, Europe, Asia Pacific, and Latin America.