Case Study

BovenIJ Hospital future-proofs IT infrastructure with Huawei 10G Campus Network Solution

Huawei 10GE Campus Network provides a highly-scalable, easy to manage, and ultra-fast network to fit BovenIJ's technical and Green IT requirements.

Background

BovenIJ hospital is a mid-sized healthcare facility in the northern part of Amsterdam. The hospital provides a variety of medical services to Amsterdam and the surrounding community, ranging from acute emergency care, surgery, obstetrics and birth services, to the provisioning of basic healthcare, while always using modern and reliable diagnostic technology and equipment. A primary goal of BovenIJ is to "be a hospital of friendly character with open lines of communications and easy accessibility for all."

The hospital has approximately 1,300 employees working from 650 Windows desktops, plus numerous 'computers on wheels' and other mobile devices used to provide patient care and monitoring. The previous network consisted of mostly 3COM switches and routers. Numerous critical medical machines are connected to the network, including operating room equipment, patient monitoring systems, and imaging systems. The hospital has two data centers on-site, consisting of x86 servers and redundant data storage. All patient records are kept on-site, and in the future will be connected to the national EPD (Electronic Patient Dossier), in accordance with Dutch Ministry of Health regulations.

Key challenges

By the beginning of this decade, the previous 3COM network at BovenIJ had begun to show significant signs of age and serious gaps in reliability. For example, in February of 2011, the network failed for a single day, leaving patient records and digital communication unavailable. BovenIJ and its partners were not able to pinpoint the exact reason for the network outage.

"The technical specs, the throughput, the backplane, the power redundancy….in all the technical requirements of BovenIJ, Huawei was the best. And not to forget, our trust in the system integrator TenICT. They were very open and skillful and created a strong feeling of confidence in the project."

Richard van Leeuwen, Coordinator of ICT Infrastructure, BovenIJ Ziekenhuis

Customer
BovenIJ Hospital

Industry
Hospital/ Healthcare provider
Solution
2x Huawei S6700 switches for core layer
2x Huawei S5700 switches for aggregation layer
eSight Network Management Software

Business Needs
- A simple, redundant and completely reliable campus network that will meet the critical requirements of a modern hospital setting
- A high-speed network that is easily upgradable from 1G to 10G, that is easily managed as the hospital moves to a wireless environment, and that can provide superior performance for the next 8-10 years.

Results
- BovenIJ has a completely modern 10G core network in place which will meet the needs of users (patients, administrators, and healthcare professionals) for the foreseeable future.
- The network is scalable and flexible with adequate capacity to provide for existing and future high-bandwidth applications.
- Power consumption has been reduced via Huawei's Green Energy Solutions, and data center space has been reduced by 70%.

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![HUAWEI logo]

During the same period, the hospital was facing increasing demands for network bandwidth, from both internal and external sources. For example, the transmission of ever-larger digital patient files and the growing number of connected devices was causing severe network congestion, while the age of the network made increasing the scale and capacity impossible. Also, the local Amsterdam metropolitan-area healthcare WAN network is being upgraded from 1G to 10G. As a result, all area hospitals are required to upgrade their own networks.

Finally, the ICT management team at BovenIJ, like their colleagues throughout the world, must anticipate the future requirements that new applications and services will make to their network. In other words, the network installed today must be able to accommodate the new technologies and requirements that the medical community will require in the next decade.

"We planning for at least an 8 or 10 year window with this network. We must be ready to accommodate new services and applications in the future, such as voice or video on the network. We must be ready for possible growth of the hospital. Huawei's campus 10G network provides us with future-proofing, as it can meet our capacity, performance and availability requirements for years to come"

Richard van Leeuwen, Coordinator of ICT Infrastructure, BovenIJ Ziekenhuis

Solution

Following intensive research and discussion with other ICT colleagues, BovenIJ outlined the following basic requirements for their network upgrade:

- Reliability, high-performance and high-availability: A network that will deliver the highest level of uptime.

- Bandwidth and scalability: A network with adequate capacity to accommodate high-bandwidth applications, and one that can be easily upgraded from 1G to 10G.

- Simplicity and ease of management: Simple design, simple deployment and efficient management/monitoring.

- Energy saving and green design: A network with lower power consumption and a minimal physical footprint.

Based on the nature of a medical environment, the most important factor was network reliability. According to Mr. van Leeuwen,

"…reliability is our number one requirement. Network speed is not #1 and neither is cost. When someone is on the table in the operating room and the doctors cannot view the medical images or patient data, then we have a big problem. The network must be running, and running without errors or outages."

The BovenIJ hospital evaluated a variety of systems integrators and equipment vendors in an attempt to find one that would meet all their requirements. Their evaluation resulted in an RFP short-list that included three locally respected systems integrators, partnered with three well-known global Enterprise technology brands (including Huawei).

The winning solution was proposed by TenICT in cooperation with Huawei's Amsterdam Enterprise team. Huawei and TenICT were the only vendors able to provide the required reliability, scalability and performance in a cost-effective package, according to BovenIJ's ICT management team:

"Every requirement and nice-to-have criteria in the RFP were met by Huawei and TenICT. No concessions, no compromises. A very good proposal, good listeners, and good eye for details".

The campus network deployed by TenICT consists of 2 Huawei S6700-48-EI switches at the core layer, and 2 Huawei S5700-52C-EI at the aggregation layer. As of September, 2012, the access layer are older 3COM units, but BovenIJ expects to replace these with Huawei equipment in early 2013 to create a 10G campus network powered completely by Huawei switches.

BovenIJ also demanded simplified network management and a monitoring system that could manage both the new vendor's equipment (in this case Huawei) and legacy equipment from other vendors. This requirement was met by Huawei's eSight Network Management Software which allows the hospital to manage both the Huawei switches the legacy 3COM equipment. As BovenIJ replaces its legacy equipment with more modern wired/wireless Huawei access switches, eSight will provide even more advanced features and network management functionalities.

End-User Benefits

The BovenIJ hospital realized a large number of benefits by upgrading to the Huawei 10G Campus Solution, and will continue to enjoy new benefits over the life-time of the network. The primary benefit is that BovenIJ now has an extremely reliable network that has not experienced

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any significant downtime since its installation. A number of factors go into this reliability, including fully redundant component design, and "long-distance stacking" which allows for placement of a two distinct switches in two separate data centers to create a single logical and redundant switch. In the event one of the switches encounters a fault, the second switch can operate the network normally. The patients and staff at BovenIJ place their trust in the network. This trust is taken very seriously by Huawei and TenICT, who together realize the importance of a healthcare/hospital network in life-saving activities.

Another key benefit of the Huawei 10G Campus Solution is its scalability and flexibility. With the new network in place, the BovenIJ hospital can quickly scale from a 1G to a 10G environment, ready to accommodate new services such as telemedicine on the network, voice over IP, and video over IP. Mr. van Leeuwen explains:

"We choose Huawei because they made it very easy to migrate from a 1G to 10G network, this was one of their strongest points. Our requirements for migration were very specific and strict, and Huawei was the most flexible, and ultimately the only vendor, able to meet them"

BovenIJ is also benefiting from a decrease in power costs, as the Huawei switches are up to 50% more power efficient than those offered by other vendors. In addition to these significant OPEX savings, Huawei offered major CAPEX cost savings. According to BovenIJ, the total cost for the Huawei/TenICT offer was 40% less than the next-closest competitor.

"Finally a carrier class, non-blocking 10G infrastructure at an Enterprise price." Plus, with the energy saving we accomplish in five years, BovenIJ can install WiFi access points for the complete campus"

Martijn van Deursen, Director Network Management, TenICT

Furthermore, the Huawei switches take up a fraction of the space of the previous switches (from 20U to 2U of rack-space in the data center, a 90% reduction). These smaller switches will allow the hospital to use the free data center space for new projects, or to lease this excess capacity to possible technical joint ventures with other Dutch hospitals.

Future Development

The success of the Huawei 10G Campus implementation means that BovenIJ hospital is confident that its network is now "future-proof" and that will be able to accommodate the network and business/patient care requirements of the hospital well into the future:

"More uptime means more business continuity and means better services for the patients and staff at the hospital. Furthermore, there will be no hold-ups when new and innovative technologies are introduced. The hardware will not be a bottleneck. The throughput and bandwidth will be there."

BovenIJ soon will go ahead with the final phase of the project: installation of the Huawei-provided access layer which will provide improved wired and wireless connectivity. In the long-term, the hospital will consider Huawei's VDI solution, in an ongoing effort to modernize and deliver superior healthcare services to the residents of Amsterdam.

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About Huawei Enterprise Business Group

Huawei Enterprise Business Group ("Huawei Enterprise") is one of the three business groups of Huawei, a leading global information and communications technology (ICT) solutions provider. Leveraging Huawei's strong R&D capabilities and comprehensive technical expertise, Huawei Enterprise provides a wide range of highly efficient customer-centric ICT solutions and services to global vertical industry and enterprise customers across government and public sector, finance, transportation, electric power, energy, commercial businesses, and ISPs. Huawei Enterprise's innovative and leading solutions cover network infrastructure, unified communications and collaboration (UC&C), cloud computing & data center, enterprise information security, and industry application solutions.

For more information, please visit: www.enterprise.huawei.com

About TenICT

TenICT provides independent and customized services for systems and environments that are required for the proper functioning of your business. The consultants of TenICT specialized in management of complex systems and the technology of the underlying products. They also have much experience with other companies and projects, gained with the technical design of management environments and the implementation of complex infrastructures, in-house, off-shore and on-demand.

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