CASE STUDY

INTEGRATED ARUBA SOLUTION SUPPORTS OVER 100 HEALTHCARE APPLICATIONS, AND ESTABLISHES PLATFORM FOR INNOVATION

NEMOCNICE JIHLAVA

Jihlava Hospital is a 706-bed hospital in the Vysočina Region of the Czech Republic. It treats more than 330,000 outpatients each year; its surgeons perform 8,000 operations.

Technology underpins every aspect of the hospital's smooth running, from IP telephones to HD CCTV, heating and ventilation to parking passes.

"The availability of the network is critical," says David Zažímal, Head of ICT department, Jihlava Hospital. "Without network availability, the hospital is paralysed. We place great emphasis on 'easy mobility'."

ENSURING CONSISTENT NETWORK PERFORMANCE

Visibility and effective network control are critical, continues Zažímal. "Surgery, ambulances, the ER department, laboratories... all these depend on the seamless connectivity. They all want high availability, performance and applications that are responsive. If there is a problem, I need to be aware of it – ideally, be ahead of it."
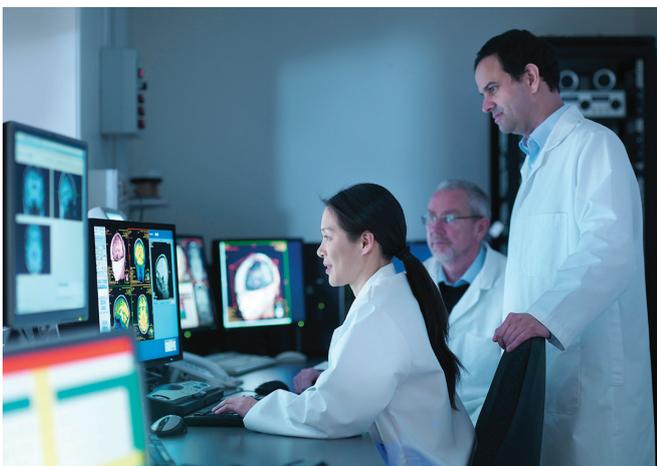
The importance of awareness is exacerbated by imminent arrival of European-wide General Data Protection Regulation (GDPR). The legislation, to be in place by May 2018, is intended to protect the personal data of EU citizens; with Jihlava

REQUIREMENTS
- Improve network performance, with focus on consistency and simplified access
- Establish platform to support healthcare applications and operational excellence
- Establish a secure network platform capable of supporting IoT and driving service improvements

SOLUTION
- 802.11ac Aruba Instant access points
- Aruba 2530 campus access switches
- Aruba 5406 switches in the aggregation layer
- HPE 5510 switches for Internet & metropolitan network access
- HPE 5930 switches in the campus core
- Aruba AppRF
- ClearPass Policy Manager for Guest Access and NAC
- AirWave Network Management

BENEFITS
- Simplifies network access for patients, staff and IoT, with single-pane visibility across entire estate
- Supports more than 100 healthcare applications, and establishes platform for continued innovation
- Ensures protection of patient data, helping meet national and EU regulations

> " With Aruba we're now able to see exactly who and what is connecting to the network. It's exactly the visibility we needed, and vital in helping us meet our goal of creating a truly paperless environment. "
>
> **DAVID ZAŽÍMAL**
> HEAD OF ICT DEPARTMENT, JIHLAVA HOSPITAL

gathering a huge amount of highly-personal data. Being on top of this issue is of vital importance to Zažímal.

The previous network had grown unfit for purpose. The hospital was prone to power cuts, and Zažímal says his team lacked the technical expertise (and time) to reboot the system: "There were too many obsolete elements, and the problem was made worse by having limited monitoring."

The focus was on finding a solution capable of delivering consistent performance, that was simple to manage, and was backed with the support of a trusted vendor. "We appreciate

being able to tap into a high level of technical expertise," says Zažímal.

Testing for speed, stability and supervision

The search for a solution involved Jihlava Hospital testing several manufacturers. "We needed to do our market research," says Zažímal. "We were looking at speed, stability, supervision and management. Also, as a hospital we're subject to strict regulations on data protection. We wanted a solution that would help us meet our legal commitments to patient data security."

Jihlava Hospital had some experience of HPE networking products, but had never explored the full range of solutions from Aruba. "It was clear Aruba offered the best price/performance ratio, with all the high availability and security features across wired and wireless."

The implemented Aruba Mobile First solution comprises switches in the core, aggregation and access layers, Aruba Instant access points and AirWave Network Management. Guest access and network device authentication are managed by Aruba ClearPass Policy Manager.
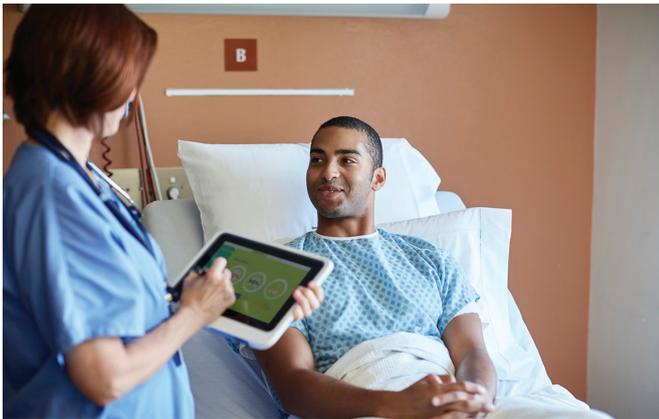
100 critical applications running on the network

With an end-to-end solution from one vendor, where all the pieces fit, Zažímal says the implementation was faster than planned. In the long term he expects to realise cost and support benefits. Already, positive impacts on operations are increasingly apparent.

"Today, we have more than 100 applications running on the network, many of them highly critical," he says. "The entire Hospital Information System depends on the network – from hospitalisation, outpatient care to surgery. We have X-ray machines and MRI scanners on the network, the labs, and a secured management system for blood transfusion and pharmacy."

A PLATFORM FOR APPLICATION INNOVATION

The Aruba solution establishes a platform for further IoT connections (the hospital is piloting a system for tracking wheelchairs), with Aruba ClearPass Policy Manager, central to simplified network access.

"We're now able to see exactly who and what is connecting to the network," says Zažímal. "It's exactly the visibility we needed. The goal is to create a truly paperless environment."

Protecting patient data integrity and delivering efficient care

Zažímal says Jihlava Hospital, from a network perspective, is now more secure and more productive. It is seen as a national leader, and in line with European Union healthcare best practice.

A solid mobility platform is increasingly crucial to the delivery of reliable and efficient care. Increasingly, most sophisticated medical equipment, such as mobile X-ray machines or ultrasound scanners are interconnected with diagnostic tools or management applications through Wi-Fi.

Clinical staff are using mobile tablets in operating theatres for scheduling surgeries and workflow management. They notify all interested medical staff about theatre availability or surgery schedules. All medical staff are sharing the same information and they can avoid communication by phone or email around the hospital. Therefore, there is better use of their time and more focus on patients.

Sometimes during surgery, an urgent need arises for an X-ray scan, while displacing the patient is clearly impossible. The staff will therefore employ a mobile scanner into the operating theatre which is connected to Wi-Fi and sends the images to specialised tablets or to specialised image stations for analysis. X-ray images have high resolution and are very data-intensive. Consequently, a robust and high-performance Wi-Fi network with application prioritisation capabilities becomes a critical part of the Mobile First solution.

"We have a higher throughput and robust solution, due to the high-availability configuration of the new network," he says.

Crucially, he continues, the improved network visibility – and granularity of information, gets the hospital ahead of the issue of GDPR: "We've achieved a higher level of security, visibility, confidentiality and integrity of information transfer. As we continue to gather larger amounts of patient data, the Aruba solution means we can demonstrate this data being managed in the correct manner."

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