Finnish ICT Provider Builds an Ultra-Reliable Infrastructure for the Healthcare Market

Summary

Customer:
Istekki Oy

Industry:
Healthcare

Business Challenge:
Istekki needed to replace two older networks with a new MPLS network across Finland, and also build a new data center infrastructure to deliver extremely high levels of availability and security that could operate 24x7 without outages.

Technology Solution:
- MetaFabric architecture
- MX80, MX240, MX480, and MX960 3D Universal Edge Routers
- QFX5100 Ethernet Switches
- EX4300 Ethernet Switches

Business Results:
Istekki now has a network and data center infrastructure that:
- Ensures its customers' critical medical environments are operational 24x7
- Supports more medical applications and equipment
- Has significantly higher performance and lower latency than the previous network

Istekki is the only company in Finland that provides medical-specific information and communications technology (ICT) applications to the public healthcare sector. Istekki is owned by its customers' municipalities and their strategic partners, so they can control the quality of its services, guarantee sufficient capacity, and control costs. The company employs about 300 professionals across the ICT and medical technology sectors.

As Reijo Kontkanen, director of Istekki, explains, "Finland's healthcare business is changing because ICT and medical technology are converging. Our customers' business is to provide healthcare services and municipal services to citizens; while they are not directly interested in ICT technologies, they do deeply care about highly functioning networks and data center services with extremely high reliability."

Business Challenge

Istekki inherited two different data communication architectures from its main shareholders, and both architectures were reaching the end of their lives. The company needed to upgrade these and create one homogenous, highly reliable, secure, and efficient platform.

"We had two different data center core architectures and it wasn't easy interconnecting them," Kontkanen says. "We lacked routing capacity, had issues with latency, and had very limited VLAN and broadcast domains scale. Management and monitoring were also a challenge. We decided to concentrate our resources on one cutting-edge product set and a single innovative vendor to build a next-generation network."

Istekki wanted to deploy a new MPLS network that would enable the expansion of its managed service offerings across Finland. The new data center would need to meet Tier III classification and be composed of multiple active power and cooling distribution paths, in order to ensure maximum service reliability and security.

Istekki began a comprehensive selection process to choose a vendor that could deliver a reliable and scalable network solution for mission-critical environments.

"We were amazed by the agility and capacity of our new network. We feel that now we have a future-proof platform to build new services on. Juniper may not be the biggest networking vendor in terms of size, but for us it's by far the best."

Reijo Kontkanen, Director, Istekki

Technology Solution

Istekki's goal was to build a carrier-grade, operator-like MPLS network, so it looked for a vendor with a proven track record in this environment. Some of its own networking experts had previous experience working with Juniper Networks solutions and had confidence that Juniper could deliver.

Istekki planned a comprehensive test program, which was executed in Juniper's Proof of Concept (POC) Lab in Amsterdam. "The test program played a significant role in our decision making, because we were able to see the technology in real life and in our own planned configuration, but without cost or risk to us. The visit convinced us of Juniper's ability to fulfill our needs," Kontkanen says.

Juniper Networks' EMEA POC facility provides customers with access to the best technical resources and the latest solutions in a state-of-the-art test environment that enables customers to test various network designs in a risk-free, preproduction environment. The POC Lab includes a comprehensive catalog of Juniper's advanced hardware and software technology, along with third-party components to assist with interoperability testing. It also allows customers to connect remotely or bring their own platforms for integration testing. The lab has 80 racks of equipment and is staffed with dedicated proof of concept engineers, lab technicians, and systems engineers. It is equipped to host up to five different customers simultaneously.

Istekki also had a good long-term relationship with Juniper's Finnish partner, Cygate, a provider of secure network and data center solutions in the Nordic countries. Cygate's professionals helped Istekki in the specification and implementation phases, and they were able to understand and respond to specific Istekki challenges based on their in-depth expertise on critical networks and Juniper products. "We are Juniper's Elite Partner and all the specialists staffing this project were JNCIE certified, so Istekki was very confident in the local support it received from us." says Markus Kuivalainen, director of service providers at Cygate.

After the design and testing phase, Istekki built a new MPLS network between hospitals across Finland, supporting voice, video, data, and medical information systems. The MPLS network was built using Juniper Networks® MX80, MX240, and MX480 3D Universal Edge Routers, along with a simple, open, and smart MetaFabric™ architecture in the new data center using Juniper Networks MX960 3D Universal Edge Routers, Juniper Networks QFX5100 Ethernet Switches in the core, and Juniper Networks EX4300 Ethernet Switches to perform network aggregation. This was the first MetaFabric architecture implementation in Finland, and it dramatically simplified Istekki's network by consolidating it into a single, coherent infrastructure leveraging a common operating system and consistent management capabilities.

These solutions added to an existing installed base of hundreds of Juniper systems already deployed within Istekki that included EX2200, EX3300, and EX4200/EX4300 Ethernet Switches, MX5 and MX10 3D Universal Edge Routers, and WLA Series Wireless LAN Access Points.

"With the excellent support we received from Cygate and from Juniper's local experts, we now have a quite large, geographically dispersed MPLS network which reliably delivers mission-critical software applications to hospitals from our own data centers," Kontkanen says.

"We intend to achieve a larger share of the healthcare market in Finland and this will be possible only with excellent service levels, the highest levels of security, and complete reliability. Juniper is a fundamental part of our strategy, and we look to them for the innovative technology we need to reach our goals."

Reijo Kontkanen, Director, Istekki

Business Results

The new network helps ensure that Istekki's critical medical environment is operational 24x7. It has also enabled Istekki to improve services with more medical applications and advanced technology. For example, Istekki has been able to transfer legacy analog telephone service onto more cost-effective and higher quality VoIP technology. Now it plans to increase the video conferencing capabilities of its network in response to its customers' demands.

Summing up this recent success story, Reijo Kontkanen says, "We were amazed by the agility and capacity of our new network. Our tests continue to show impressive readings of speed and latency across the network, even as we expand our service portfolio. We feel that now we have a future-proof platform to build new services on. Juniper may not be the biggest networking vendor in terms of size, but for us it's by far the best."

Next Steps

Finland currently has 20 small healthcare regions, which will be consolidated into five larger healthcare regions over the next few years. Istekki's goal is to expand from the central Finland healthcare region to 2-3 other regions in the upcoming years, and offer customers across these markets the most reliable, secure, and efficient ICT services at the best price.

Finland also has ongoing healthcare projects to create a national patient database and to provide citizens with more e-services, such as electronic prescriptions. Istekki expects that regional healthcare consolidation and e-services projects will create more business opportunities for their managed services business.

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Istekki plans to simplify network management operations with Junos® Space Network Director, which will provide a single pane of glass management solution for both physical and virtual networking environments.

For More Information

To find out more about Juniper Networks products and solutions, please visit www.juniper.net.

About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at www.juniper.net.

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3520544-001-EN Oct 2015