Karlshamns Kommun is a local municipality in Sweden. It is home to 32,000 citizens; the municipality oversees schools, healthcare, and social services. Karlshamns also has its own farm and energy plant.

“We have to make use of what we have,” says Joakim Fairbanks, IT Strategist, Karlshamns Kommun. “There are just two of us in the IT networking team. We’ve always been interested in automation and simplified operations. Sometimes it can be an advantage to have limited resources as you have to explore all possibilities, and it can be quicker to make a decision.”

PRIORITISING MOBILITY

A plan to issue every schoolchild with a Chromebook led to a rethink on how Karlshamns approached its wired and wireless networks.

The municipality’s wired network was supplied by a rival provider; the schools’ Chromebook project opened the door to Aruba. The process of finding a mobility solution opened Karlshamns’ mind to long-term network management with Aruba.

“Mobility was not just something that could be applied within schools. Mobility is needed across the municipality,” says Fairbanks. “The schools’ project was a game-changer. The Aruba wireless architecture proved to be really effective; users want the same experience whether it’s wired or wireless.”

As an IT networking team of two, if the business asks us for something, we’re in a better position to say ‘yes, we can help’. If we want to add something to the network, or test a new idea, it’s no problem.

JOAKIM FAIRBANKS
IT STRATEGIST, KARLSHAMNS KOMMUN

With mobility now the focus, Karlshamns wanted to unify the management of its wired and wireless networks. Again, the need to secure, simplify and automate and operations was front of mind.

A unified approach to network management

The success of the Aruba wireless network in 15 Karlshamns schools was transformational, says Fairbanks. It cemented a plan to expand wireless connectivity across the municipality.

“It made sense to look at a platform that would allow us to manage both the wired and wireless networks,” he explains.

The Mobile First Aruba architecture involves a stack of eight Aruba 3810 switches for the Core and 250 Aruba 2930F campus
edge switches together with the AirWave network management platform and ClearPass for network access control and policy management. It also includes 1,000 indoor and 30 outdoor access points, managed by three Aruba 7220 mobility controllers and a Master Mobility controller. Karlshamns is now using AOS 8.4, benefiting from the live update automation and zero touch provisioning capabilities it offers. It will see Karlshamns replace over 200 access points and 50 LAN switches from the previous provider.

**Automatically enforcing consistent policy**

Today, no matter how devices connect, Aruba Dynamic Segmentation automatically enforces consistent policies across the wired and wireless networks. This helps keep traffic secure and separate. With zero touch provisioning and the use of AirWave, Karlshamns can quickly set up remote offices with little or no IT support.

“Together, we’re using ClearPass and AirWave to harness AOS 8 features and deliver the required automation,” explains Fairbanks. “Through ClearPass we’re able to apply policies to different endpoints, whether that’s an IoT device or laptop. It allows us to automate deployments of new access points or switches in both the LAN and wireless LAN with minimal effort.”

This consistent management experience, across wired and wireless, has allowed Karlshamns to grow from a few hundred wireless connections to nearer 9,000 within a couple of years.

**A DYNAMIC NETWORK TO SUPPORT INNOVATION**

Fairbanks says the roll-out of Dynamic Segmentation is ongoing. Old switches are being replaced by Aruba 2930F switches: “We haven’t got everything that connects to the network yet. There are hundreds of different things to profile. We’re activating Dynamic Segmentation, site by site.”

This simplicity, and ease of which the network can be managed, means the pace of innovation can accelerate. It is easier for Karlshamns to add new devices or users or test new ideas.

“Almost everything we use nowadays needs an IP address, whether that’s a printer or a school door lock,” says Fairbanks. “With Aruba, we can control these devices remotely. We just give the lock a profile and it’s on the system. We’ve got rid of the manual processes.

“As an IT networking team of two, if the business asks us for something, we’re in a better position to say ‘yes, we can help’. If we want to add something to the network, or test a new idea, it’s no problem.”

**Public Wi-Fi and changing culture**

Karlshamns has also been able to roll-out public Wi-Fi across the municipality, using the same Aruba infrastructure.

“We’re constantly expanding the access,” says Fairbanks. “It’s on a separate VLAN with outgoing traffic going to Sweden’s biggest network carrier. Again, all of this is managed from the ClearPass portal with users able to sign in via email or SMS.”

Such access, along with a generation of Karlshamns schoolchildren who have grown up with Chromebooks, is bound to have long-term implications. “Maybe Karlshamns has been as ‘traditional’ as any other municipality, but we’d hope the network can inspire local business. At least the problem now is not technical, it’s cultural.”

Fairbanks is confident this will change as residents see more examples of the network making a difference to their lives. He is working on a project with the local tourism authority to monitor temperatures of swimming lakes. Temperature updates can then be posted to the tourism authority’s app. There is also a project to monitor refrigeration units in schools and care homes, helping the operation’s teams schedule maintenance.

**Greater network access - with strengthened security**

This dynamism has not come at the expense of security.

“The engagement with Aruba has had a major, positive impact on security,” says Fairbanks. “It is easier to dedicate a specific VLAN to a device or user, with the appropriate firewall.”

With less time spent managing the network, Fairbanks is aiming for network management to take 50% of the time of one person. The focus will be on exploring new applications and new security features.

“We want to know more about what’s happening on the network,” he explains. “AirWave is such a great tool. It’s so easy to use and understand. It’s enabled us to adjust density levels or bandwidth, optimising the user experience without any service interruptions.”