

CASE STUDY

ARUBA PROVIDES COMPREHENSIVE, SECURE WI-FI FOR ADMINISTRATION AND TEACHING AT SCHOOLS IN NORTH RHINE-WESTPHALIA

KRZN SCHULEN ONLINE

Based in Kamp-Lintfort, the 300 staff at the Kommunales Rechenzentrum Niederrhein (KRZN, Lower Rhine Municipal Data Centre) look after more than 12,000 office workstations in the town halls and municipal administrative buildings belonging to its members: the cities of Bottrop and Krefeld and the districts of Cleves, Viersen and Wesel. This makes it one of the ten largest municipal IT service providers in Germany. The association's role includes the development, introduction, maintenance and operation of IT applications, as well as data protection and data security measures.

SCHOOLS NEED COMPREHENSIVE WI-FI INFRASTRUCTURES

Another of the KRZN's tasks is to supply the approximately 450 schools in the region, and their around 200,000 pupils and 8,000 teachers, with IT. Depending on their needs, the schools and education authorities can request a variety of support services, up to and including an on-site admin.

"Schools are calling more and more loudly for comprehensive Wi-Fi infrastructures so that their teachers and pupils can use mobile devices during or when preparing for lessons. Having comprehensive Wi-Fi coverage is essential for mobile learning and the flexible use of media in teaching," says Andreas Zboralski from the KRZN. "Vocational colleges and comprehensives are driving this. But even in primary schools, teachers and students are using smartphones and tablets in lessons – for example to look at nature photos they have taken together in the classroom." The schools also use applications such as email, a teaching and learning portal, the Moodle learning management system and a media database for online and rental media. All of this is provided as a service to the schools by the KRZN.

The KRZN is one of the state's Wi-Fi pioneers. Some ten years ago, it created a technical concept for, and then installed, wireless network environments at two schools in Xanten and Moers as part of a Euregio project. "So, we do have some experience in this area. This, and our technical standards help us to fulfil schools' Wi-Fi needs professionally, individually and quickly."

Consistent technologies for all schools

The KRZN developed its technical standards based on the requirements of teaching staff, technicians and data protection officers. "It was important for us to create a consistent concept and to have a technical provider so that the schools can choose their own individual solutions from a standardised modular system," says Zboralski. The KRZN not only manages things on an organisational level, but also the maintenance and support, purchasing, inventory, financial controlling and interaction with the schools.

REQUIREMENTS

- Secure Wi-Fi access for schools
- Highly performant access points
- Consistent, scalable Wi-Fi
- Support for a BYOD
- Support for specified apps

SOLUTION

- Aruba 802.11ac indoor & outdoor access points
- Aruba AirWave for network management
- Aruba ClearPass Policy Manager for network access management

OUTCOMES

- Central, efficient administration of the Wi-Fi environment from the data centre
- Performant, stable operation of the Wi-Fi infrastructure in schools
- Options for mobile learning and flexible use of media in lessons
- Solution can be expanded easily
- Fully compliant with current data protection laws

“ We chose Aruba because the solution runs in our own data centre. For data protection reasons, a cloud-based solution was out of the question for us. The Aruba AirWave management software gives us a scalable yet economical management solution we can use in-house at the data centre. ”

ANDREAS ZBORALSKI
KOMMUNALES RECHENZENTRUM NIEDERRHEIN (KRZN)

Teachers wanted the solution to support certain apps and devices, including their own and students' private devices. They also wanted internet access to be secure with authentication required to join the network. And they wanted options for logging access. "It was also important for the Wi-Fi access points to be highly available throughout the entire school building, in staffrooms, classrooms, the hall, so that a large number of devices could be on the network simultaneously," continues Zboralski. "We needed plenty of bandwidth."

Good administration options, no cloud solutions

"From a technical point of view, and from our perspective as the IT service provider, top of our list of requirements was being able to administer the Wi-Fi infrastructure from our data centre, and for the solution to be easy to manage so as not to overload our support teams," Zboralski continues.

A technical evaluation of various infrastructure providers concluded with a decision in favour of a comprehensive solution from Aruba. The KRZN is using Aruba 200 and 300 series 802.11ac wireless access

points – the latter being even faster and more efficient with Wave 2 technology – and Aruba AirWave for network management.

“We primarily chose Aruba because the solution runs in our own data centre. For data protection reasons, a cloud-based solution was out of the question for us,” says Zboralski.



GOOD EXPERIENCES WITH ARUBA SWITCHES

There were two other factors that played a key role in the KRZN's decision to use Aruba's Wi-Fi infrastructure. Firstly, it already had a framework agreement with Hewlett Packard Enterprise, of which Aruba is part. “For the schools, this has the benefit that they don't have to issue a tender for purchasing access points and software licenses for Aruba AirWave as we can supply the software and hardware quickly for them ourselves,” explains Zboralski.

Secondly, the KRZN already manages around 800 Aruba 2530 and 2900 series switches for its customers. “We have had excellent experiences with Aruba's switches and service so far, and this is continuing with the Wi-Fi infrastructure,” says Zboralski, happily.

The KRZN has already fitted over 20 schools with comprehensive Aruba Wi-Fi infrastructures. Some of them have access points with outdoor antennae so that staff and pupils can use the Wi-Fi on the playing fields and in other outside areas. “The 400+ access points are very stable, we haven't had any failures at all,” says the IT expert. However, the KRZN has had to make a few adjustments at some of the schools. Until the systems were up and running, the team were

not aware that there was not enough bandwidth in places like break areas or the cafeteria when there were too many students and teachers accessing school content via the Wi-Fi. In these cases, the Aruba 200 series access points were quickly and easily replaced with the more powerful 300 series models. “The Aruba solution provides this level of flexibility and scalability,” says Zboralski.

Schools are impressed

According to Zboralski, the feedback from the schools has been overwhelmingly positive. The number of access points normally varies between 20 and 50 depending on the size of the school. But smaller primaries can have far fewer. The KRZN expects that between 3,000 and 4,000 Aruba access points will be needed at its schools in the coming years. The state government of North Rhine-Westphalia is supporting the expansion of the infrastructure and the digital revolution in its schools with its “Gute Schule 2020” funding programme. The KRZN is currently preparing to install Wi-Fi infrastructures in all of the schools in Krefeld and Cleves, a total of more than 80.

Separating networks with different security levels

One standard the KRZN is implementing across the board is separate networks: the administration network for teachers, the teaching network for teachers and students using the education authority's devices and the teaching network for the teachers' and students' private devices as part of a BYOD implementation. “We can implement all of the security and access concepts for this separation very easily with ClearPass,” says Zboralski. This also applies to flexible access to devices or apps. For example, some schools only want to allow tablets with a certain operating system onto the Wi-Fi network, others want to block apps such as YouTube or WhatsApp.

The KRZN is so satisfied with the Aruba Wi-Fi infrastructure that it will soon be implementing it internally for its own purposes.

ClearPass in the running for new web-based work platform

Schools in the association might soon be using another Aruba product. On behalf of the North Rhine-Westphalian government and the region's municipal umbrella organisations, the KRZN and its partners have developed the basic infrastructure for LOGINEO NRW, a platform for the around 6,000 schools in the state. This protected, web-based work platform provides optimal communication, organisation and file management, for example with groupware applications and digital school books. Access is via single-sign-on. Aruba ClearPass could provide secure network access controls for LOGINEO NRW.

ClearPass works with context-dependent policies. It offers transparency, policy control and workflow automation within a single, closed solution. When creating profiles with ClearPass, all devices are classified in order to define intelligent policies that determine access to cabled and wireless networks. The KRZN can grant or refuse user access permissions automatically based on the device type, owner status or the operating system.