Success Story

Zyxel Nebula Solution Takes Logistics Company's Network in South Holland to New Heights

INDUSTRY Logistics

CUSTOMER Willems Transport

COUNTRY The Netherlands

SOLUTION Zyxel Nebula Solution

Overview

Challenges

- Provide high-speed WiFi across the entire distribution center with a surface area of 28,000 square meters, great height of 13 meters, and 3-storey office building
- Ensure the WiFi network to be available and accessible 24/7 for stable logistics operations
- Install and manage the WiFi network in an easier way

Solution

- Zyxel Nebula Solution

Results

- Seamless, high-speed network connectivity from anywhere over large areas in the distribution center
- Reliable high-quality WiFi service that ensures uninterrupted phone calls and 24/7 operations
- High-performance telephony system deployed in a more efficient and cost-effective way
- Easier and more efficient remote network management

"We notice that everything now works much more efficiently than before. Our employees are happy with all the communication options and can handle the systems adeptly. We are very satisfied and hope to be able to work together with KaPé Automatisering. and Zyxel Networks again on new projects in the future."

Lucien Willems
Owner, Willems Transport

![Zyxel Networks logo]

Background

Willems Transport represents a typical logistics customer for KaPé Automatisering. The customer takes care of the transport and storage of a manufacturer of dairy and pharmaceutical products. Milk powder and medical products are stored in the newly built large hall of no less than 28,000 square meters. A fresh IT solution for the communication system needed to be installed in this distribution center, so that all forklift truck employees could do their work unhindered, no matter where they were in the hall. The warehouse was designed for a large Dutch dairy cooperative that wanted to further centralize its storage.

The IT supplier KaPé Automatisering. was responsible for the system installation. The Venray-based company offers IT

solutions for their customers in the healthcare, construction and logistics sectors in the Netherlands and Germany. Bastian Bergner, Project Manager at KaPé Automatisering. indicated, "Communication is very important in such a large distribution center. Each pallet must be registered with the location, so that the registration system always knows where each pallet and product is located. Because of the interaction, the forklift truck driver knows where it should be and what it should pick up. In addition, you can't just walk back and forth to ask for something from a colleague, the hall is too big for that. Therefore, we needed a good communication system."

Challenges

In order to guarantee optimal network connectivity, they laid fiber optics up to the door. However, there was a challenge inside the hall, as it has a surface area of 28,000 square meters and a great height of 13 meters. In addition, there was a 3-storey office building inside it. Bergner explains, "The height of the hall was not an easy factor to deal with. In order to keep track of what goes in and out of products in the distribution center, forklift trucks need to be able to scan product codes or pallets with a wireless scanning device. This requires a WiFi

network that reaches every corner of the hall. In addition, the network in the hall had to be available 24/7, because the logistics sector runs nearly all day and night. The network must, therefore, function in the hall all the time and everywhere with no downtime. Because of the height, the access points also had to be placed very high on the ceiling. KaPé discussed with Zyxel Networks how we could best bridge the 13 meters to the ground without losing coverage."

Solutions and Benefits

KaPé again opted for Zyxel switches and routers as they had already delivered projects with good results by partnering with Zyxel Networks, a leading provider of secure, AI and cloud-powered enterprise and home solutions. KaPé Automatisering. has been a reseller of Zyxel Networks since 2014 and was awarded Zyxel Gold Partner status this year.

Bergner said, "The Zyxel's products have a good price-quality ratio. Moreover, Zyxel Networks provides quality service. The lines of communication are short and there's always someone from Zyxel ready to help you with an effective solution if something needs attention."

Together with Zyxel Networks, KaPé made the planning for the new network including WiFi for Willems Transport. Due to the large surface area of the hall, it was not possible to connect all access points centrally. Therefore, the server room, 4 patch cabinets in the hall were needed to connect all transmitters properly. To prevent a network failure, a high availability setup with the **ZyWALL ATP800 ATP Firewalls** was created. To prevent a bottleneck in the internal network traffic, Zyxel XGS1930 series GbE Smart Managed PoE

Switches were deployed between the patch cabinets and the server room. This allowed KaPé to connect the switches with redundant 10Gbit fiber optic uplinks.

In January, KaPé received the products from Zyxel and the entire project was delivered and operational in April. Bergner said, "Zyxel delivered the switches, routers and access points on time, but the fiber optic uplink was only installed three weeks after completion of the new hall. That was a bit of a challenge, but we were able to meet this challenge with a 4G emergency line on Zyxel ATP800 firewall. This emergency line is still there as a backup in case the fiber optic connection fails. This way you can work safely at all times. Nevertheless, the communication system was up and running within stipulated time."

A total of 85 **WAC6303D-S 802.11ac Wave 2 Dual-Radio Unified Pro Access Points** featuring smart antenna and Multi-User MIMO (Multiple Input, Multiple Output) technology were installed in the hall. The smart antenna technology allows the signal to be directed to specific receiving equipment, instead of having the signal spread in all directions from a transmitter, as would normally be the case. The APs make it possible to support simultaneous communication of hundreds of connected devices where normally this is limited. Besides, they provide more benefits like faster and more reliable connectivity. The solution enables good WiFi coverage throughout the hall. " Our solution has worked out very well. Thanks to Zyxel's products, the forklift truck driver can always have good reception when using smartphones and scanners."

Stable operations without WiFi calling issues
Initially, there was only a request for the construction of the WiFi network. In the meantime, the distribution center equired to provide mobile telephony service to their employees working in the hall. Willems Transport asked KaPé how they could do it. Bergner suggested WiFi and Voice over IP (VoIP) technologies. With the managed WiFi network in the hall, KaPé and Zyxel Networks could easily make it work.

The large area of the hall requires that there are 85 access points where an employee can be located for WiFi reception. The transition from one transmitter to the other had to be seamless, otherwise telephone calls would be lost for a moment. Bergner said, "Of course, that isn't an option in a business call. That's why we came up with a solution in which the employee is registered at two access points at the same time. This allows the employee to continue his or her phone call without noticing the transition. The communication system works nicely without downtime and prevents data flow interruption. The employees won't lose calls at any time."

With Zyxel's Nebula solution, the company didn't need to install extra transmitters to make internet calls throughout the hall. The VoIP connections are provided via the same Zyxel transmitters, so no extra costs were incurred. It's

possible because on these channels, the network can be divided into more different channels.

They set up a separate virtual network for VoIP telephony which is paramount for the distribution center's operations. Featuring innovative roaming and Quality of Service (QoS) technology, the solution eliminates voice call disruptions. There are currently about 20 mobile phones in use on the network.

Management of the system
Willems Transport works in a Microsoft Azure environment. KaPé connects one-to-one there. In addition, KaPé also serves as the IT manager for Willems Transport and everything is monitored via remote management. Meanwhile, KaPé Automatisering. and Zyxel Networks are now in the aftercare phase. Everything functions well without worrying about either WiFi network or VoIP connections. The forklift truck drivers can scan products and pallets at any height at any time in any corner of the hall; if an employee makes a VoIP call, it doesn't disappear when he moves from one WiFi transmitter to the other.

Lucien Willems, Owner of Willems Transport said, "We notice that everything now works much more efficiently than before. Our employees are happy with all the communication options and can handle the systems adeptly. We are very satisfied and hope to be able to work together with Zyxel Networks and KaPé again on new projects in the future."

Future plan
The completion of the hall has been a great success and as a result, Willems Transport and the dairy manufacturer have now asked KaPé to apply this setup to the other new halls. With the results and the science employed in the hall, Bergner now expects to be able to do the expansion in a cost-effective way. Bergner said, "Because we have done this project, we already know how to set up other halls even more efficiently. For instance, in view of their high transmitting power, fewer transmitters will be needed. That is a big advantage for the dairy manufacturer, Willems Transport and for us. We will also use Zyxel products for future projects."

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Products Used

ZyWALL ATP800 • ATP Firewall

- Machine learning threat intelligence with global sync
- Sandboxing defeats unknown threats
- Hybrid scanning leveling up malware blocking
- High assurance multi-layered protection
- Reporting and analytics on cloud and device
- 1-Year full functional license services

XGS1930-28HP/52HP • 24/48-port GbE Smart Managed PoE Switch with 4 SFP+ Uplink

- Handles the increasing high-bandwidth applications in your office affordably with four built-in 10G SFP+ uplinks
- NebulaFlex gives you the flexibility to switch between stand alone and our license-free Nebula cloud management
- Nebula cloud management allows easy deployment, real-time configurations and effortless access to all your cloud devices anytime
- Easy management and setup with web-based interface and intuitive wizard
- User-friendly design includes one-touch "Restore" button and intuitive PoE usage LED
- Smart fan design offers silent operations in both desktop or rack-mount environment

WAC6303D-S • 802.11ac Wave 2 Dual-Radio Unified Pro Access Point

- NebulaFlex Pro allows users to switch among standalone, on-premises controller managed or intuitive Nebula cloud managed modes as needed
- Excellent wireless coverage and performance with the latest 3x3 Wave 2 802.11ac technology
- Unparalleled high-density performance boosted by Smart antenna, next generation beamforming and MU-MIMO technologies
- Solid state capacitors and advanced heat dissipation ensure high reliability and long life—even in the toughest environments
- Advanced Cellular Coexistence minimizes interference from 3G/4G cellular networks

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Products Used

Nebula Control Center (NCC)

- Responsive web design and intuitive user interface
- Multi-tenant, multi-site view
- First time setup wizard
- Role-based administration privileges
- Real-time and historical monitoring/reporting
- Rich site-wide management tools
- Powerful organization-wide management tools
- Configuration changing alerts
- Misconfigure protection against disconnecting NCC
- Configure login auditing

About Zyxel Networks

Focused on innovation and customer-centricity, Zyxel has been connecting people to the Internet for over 30 years. Our ability to adapt and innovate with networking technology places us at the forefront of creating connectivity for business and home users.
We're building the networks of tomorrow, unlocking potential, and meeting the needs of the modern workplace — powering people at work, life, and play.
Zyxel, Your Networking Ally.