



Overview

Customer Name

- Sint-Janscollege Gent (Heiveld Campus)

Customer Industry

Education Sector

Challenge

- One Internet connection, three buildings
- Control Student's behaviour

Solution

- ZyWALL USG 200
- GS-1524
- NWA-3166

Benefits

- No System Abuse
- Continuity of service
- Guaranteed speed of Internet connection
- Future Proof solution

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Success Story

Sint-Janscollege, a school of tomorrow!

Introduction

The Sint-Janscollege is mainly an ASO school (similar to an English grammar school) with a limited range of technical school subjects (Socio-Technical Education in the first two years and Socio-Technical Sciences in the following two years). It endeavours to offer quality education and contribute to a more well rounded level of schooling. A balance is required within the school between transferring knowledge, creating a positive learning attitude, acquiring skills, increasing creativity, exercising self-effectiveness and encouraging helpfulness.

To ensure all these requirements are met the school makes sure that there is an efficient learning environment, a methodical established class approach and a suitable infrastructure.

By offering projects spread over several days, cultural activities, sports days, and company visits being regularly planned it is able to give the students' talents the optimal chance to grow.

The Sint-Janscollege likes to call itself a welcoming school where all the people involved, from students and teachers, to support and admin staff, maintenance staff, grade co-ordinators, management staff and the school's heads form a community in an open, confidential and pleasant atmosphere.

Challenge

One Internet Connection, Three Buildings

The Sint-Janscollege (campus Heiveld) consists of one main building and two annexes. The main building comprises of the ASO part and the administration department. The other two buildings are the sports facilities and labs. The whole site will be equipped with one Internet connection (Telenet), but this network must also be covered by a few clever safety measures.

Challenging Requirements

The students' Internet surfing behaviour must be kept under control, for example. This means that the school's network may only be used for its original purpose of information and education.

The webmaster must be able to see what is happening on his network and who is doing what. Also access of other parties to the Internet must be kept at bay.

In addition, a control system must be available to regulate entry to the sports building and facilities. Restricted access to this area is a must. An additional problem is that the multi-purpose hall is often rented out to third parties, one example being the local basketball team, who uses the facilities regularly.

In case of any accident in the sports building, quick reaction is essential. Therefore an Internet telephone line is needed to enable swift contact to the admin department in case of an emergency.

Another important additional element is the bandwidth of the Internet connection. This needs to be prioritised so that students and the administrative department always have priority.

Solution

The ZyWALL USG 200 plays the main part in this case. It is located on the first floor of the main building. This is not a normal firewall, but a figurative bulletproof barrier just after the Internet modem. So every little package that enters the network is initially subjected to a thorough check before it is sent to the network switches.

Quality at a Competitive Price

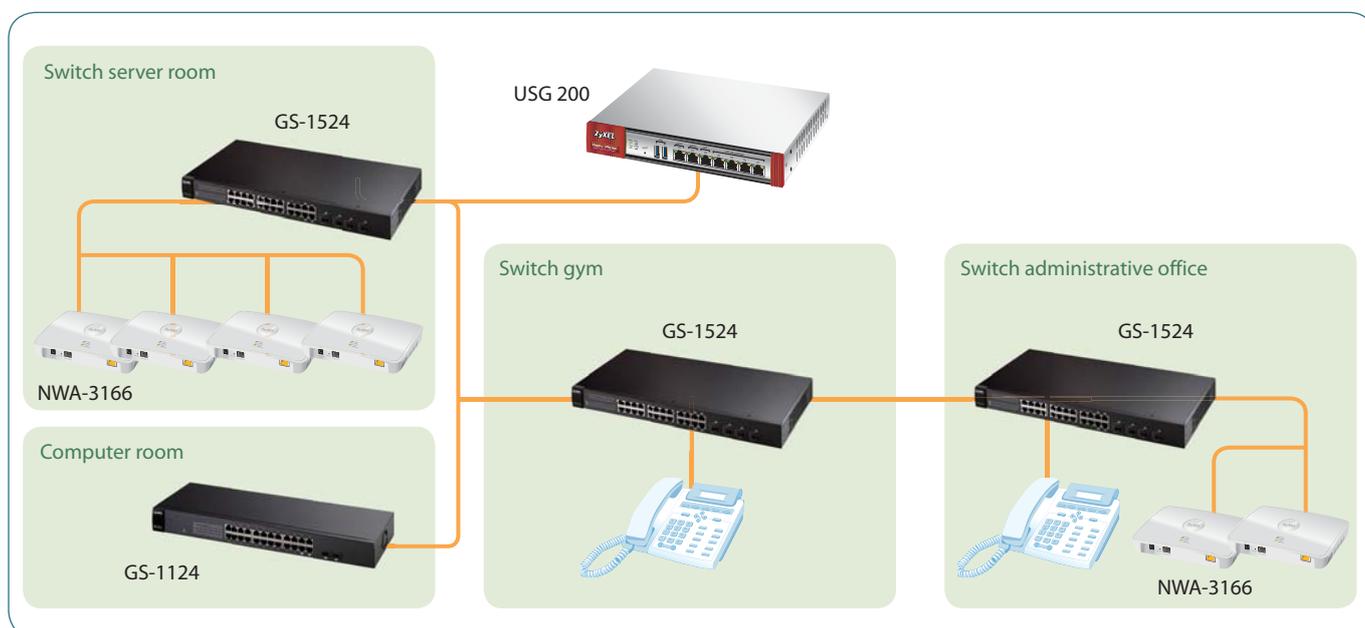
The next requirement consists of two GS-1524 switches, which are financially feasible for the school. Despite its reasonable cost, this model also offers a few very important characteristics including:

- Web-manageable (user friendly interface)
- VLAN support
- Priority to VoIP (so emergency calls have priority to any other network traffic)

All other traffic is distributed over the three buildings from these two switches. In the main building wireless Internet will be offered in the classrooms, internally, through a few NWA-3166 models. This model is not an ordinary access point, but one that is capable of managing other access points. It is also equipped with the fast wireless N-protocol and VLAN support is also present.

The Internet goes from one GS-1524 switch to the sports building through a fibreglass cable in order to shorten the distance. Apart from Internet access VoIP support will also be very useful. A direct Internet connection is possible in this way through an Internet telephone line between the sports facilities and the admin department for emergency calls.

The labs will also be equipped with Internet through a second GS-1524 switch from the main building.



What Happens if You VLAN?

As there is one physical network coming in from Telenet, it will need to be divided into several invisible networks. This will allow the manager to identify what is allowed and what is not. This highlights once more why this particular equipment was selected with these characteristics.

A first virtual network (or VLAN) will be made available to students and the admin department. They will only be able to use it for information and educational purposes. The network will be secured so that only profiles known to the school will have access, each with their own password and user ID. Anyone who is unknown will not be able to just access this part of the school's network. For guests visiting the school there will be a wireless guest network through a second VLAN. They will have to ask the ICT coordinator for a password so they can connect with for a limited 60 minutes for one session. This avoids any potential misuse.

For the sports building: access into the complex will be managed with badges. The system will use the existing network, but through a separate part (third VLAN). The reason for this is that the badge system only uses the part of the Internet it needs, namely communication between server and badge. There can be no misuse. Access to these facilities can be managed effectively through the badges determining time of access. Renting out facilities such as the local basketball team is easily managed. With this system, the basketball team will not have access to the building whilst sports classes are given to students.

To allow users to perform emergency calls through a VOIP telephone line to the admin department, there will be a fourth VLAN, also separated from all other network traffic.

Whose Bandwidth is it?

The incoming Internet was prioritised in an initial consultation with the school. In this case, it means that the students' and the admin department's network has a higher priority. By doing this, there is a guarantee that the staff will do their work efficiently and students will follow their lessons but may still access the Internet if necessary.



Benefits

Advantages

A lot of advantages can be gained from this set-up. In the first instance, it will be very difficult for people with bad intentions to gain access into the infrastructure itself: the server and network equipment. This also applies to users who could cause damage to the infrastructure unintentionally. A second and important element in this is continuity. It is not hard to imagine the disruption that could be caused for example, if the admin department or the whole school is without Internet for a whole week. By minimising the chance of this happening as much as possible, staff can do their work properly and teachers are able to deliver their lectures more efficiently. The Internet's speed will also be ensured to parties who need it with this solution. Managing the bandwidth will ensure that the student network has priority.

The fourth element often overlooked is the future proofing of the solution. With more and more students with mobile devices such as smart phones, tablets and laptops, there will be a time when students will swap their school bags for these devices completely very soon. The ZyxEL Solution makes this possible already at Sint-Janscollege.



About Educorner

Educorner B.V.B.A, from Sint-Amansberg / Oostakker Belgium, is a solution orientated ICT system integrator since 2005. Their passion, no-nonsense approach and expertise in the field enables them to perfectly place themselves in their customers' and provide thorough advice. Whether it is about installing a network environment, VoIP, or the installation of a complete open learning environment, installing IP surveillance devices or audiovisual installations, their experienced and well-trained team are at your service for any IT-integration project.

The common factor throughout all their services is that anything is possible! Educorner is a company built around, by and for people. They prefer to work together with their customers to take a look at their IT-needs and then propose a custom-made solution.



ZyXEL

Solution
Partner

★
2012

WIRELESS LAN L1

SECURITY FIREWALL L1 & L2

ETHERNET SWITCH L1

Product Used

ZyWALL USG 200 Internet Security Appliance

- ICSA-certified Firewall
- Anti-Virus, IDP en Content Filter licenties beschikbaar
- IPsec, SSL en L2TP VPN
- IM/P2P Management
- Anti-Spam
- User-aware Configuration



GS-1524 24-port Web Managed Switch

- 48 Gbps Non-blocking Switching Fabric
- Auto DoS Attack Prevention & Auto VoIP
- Flexible 4 GbE Uplink Interfaces
- IEEE 802.3ad Static Port Aggregation
- Streamlined Web-based Interface
- IEEE 802.1Q VLAN



NWA-3166 Wireless Access Point

- 3-in-1 Hybrid AP WLAN including AP Controller Mode, Managed AP Mode and Stand-alone AP Mode
- Centralized Management for Up to 24 WLAN Access Points
- Back-up Redundancy Supported to Provide Reliable Connection Service
- Secured Tunnels for Communication between Controller and Managed AP to Prevent Leaking of Configurations
- Enterprise-class Access Point Functionalities with Comprehensive Configuration Interfaces



About ZyXEL Communications

ZyXEL is the world's largest DSL router provider. A specialist in broadband Internet access and comprehensive networking and security solutions, ZyXEL's product portfolio incorporates the WAN, LAN, xDSL, firewall, wireless LAN, VoIP and router technologies. With headquarters located in Taiwan the company offers its products in more than 150 countries on five continents. Founded in 2004, ZyXEL's Czech subsidiary is responsible for the Czech, Slovak and Polish markets. The decision to open the Czech office was a logical move in the company's development, responding to a growing demand for ZyXEL's value added solutions and products.