

SDWORX

Wireless network offers mobile employees flexibility in the office



“THE RELIABILITY OF CISCO’S TECHNOLOGY PLAYED AN IMPORTANT PART IN OUR CHOICE OF THE INSTALLATION FOR OUR COMPUTER NETWORK TWO YEARS AGO. WE ARE PLEASED WITH IT AND SO WE HAVE ALSO CHOSEN CISCO EQUIPMENT FOR THE WIRELESS NETWORK. YOU KNOW THAT IT WILL EASILY FIT IN WITH THE EXISTING INFRASTRUCTURE. THIS SAVES A LOT OF HEADACHES – AND SO TIME AND MONEY – DURING THE INSTALLATION AND MAINTENANCE. YOU’RE WORKING AFTER ALL WITHIN A FAMILIAR FRAMEWORK.”

Ir. Johnny Slos, coordinator of decentralised informatics at SDWORX

SDWORX supports the employment of staff. Its activities go beyond the traditional administration of salaries, even though the administration of the wages of hundreds of thousands of Belgians is its most important task. SDWORX also provides for outsourcing to human resources departments and offers all types of tools for and advice on personnel management and social juridical legislation in the broadest sense of the word.

SDWORX is active throughout Belgium and has over 1,000 staff members. The head office is located in Antwerp. Around 400 staff members are based there, spread over four buildings at the Brouwersvliet. The head office also serves as the computer centre for all the Belgian offices of SDWORX. A disaster centre was housed in one of the other buildings. When something goes wrong, the redundant equipment there takes over from the installation in the data centre. The four offices and a fifth building in the street, where the two sister companies of SDWORX are based, are connected through a fibreglass network.

FLEXIBILITY FOR LAPTOP USERS

The entire network of SDWORX is built with equipment from Cisco. Because quite a few staff members in Antwerp need mobility and flexibility, SDWORX wants to extend its infrastructure with a wireless network (wireless local area network or WLAN). A pilot project was set up in two of the four buildings with twenty WLAN users: the members of the network system group of the ICT department and a number of other laptop users from different departments with diverse functions. The test subjects were not tested on their IT knowledge. To obtain a good spread of users over the different floors, only the location of their work environment was taken into consideration. Twenty Aironet 350 access points were installed in total, around two for each floor. All test subjects received an Aironet 350 wireless network card that they could slot into their laptops. The IT department is very pleased with the system, as are most of the other users.

EXECUTIVE SUMMARY

Background

SDWORX supports companies in the employment of staff. Besides the traditional administration of salaries, SDWORX also provides outsourcing for human resources departments and offers advice on personnel management and social juridical legislation. SDWORX is active throughout Belgium and has over 1,000 staff members. The head office is located in Antwerp. Around 400 staff members are based there, spread over four buildings at the Brouwersvliet.

Challenge

Because quite a few staff members in Antwerp need mobility and flexibility, SDWORX wanted to extend its infrastructure with a wireless network.

Solution

A pilot project was set up in two of the four buildings at the Brouwersvliet, involving 20 users. In total, 20 Cisco Aironet base stations were provisionally installed. All test subjects received a Cisco 350 wireless network card that they could slot into their portable computers.

Results

Now that the pilot project is finished and the evaluation has been positive, more and more mobile users will use a wireless network connection. In the future, it will be possible to equip new offices with wireless networks straightaway.

Johnny Slos, coordinator of decentralised informatics at SDWORX, says: “The aim is not so much to get everyone in Antwerp to work wirelessly in the long term. After all, we have invested in cabling. But more people will receive a WLAN card. Currently we are offering laptop users the chance to have easy access to the company network everywhere. So staff members who are often on the road can easily start working when they are in the office. Moving from workplace or



office is no longer a problem. In the future, we will consider implementing a wireless network straightaway in new offices. This would allow you to install the infrastructure more quickly and everyone could take advantage of the flexibility that such a system offers.”

An eye on security

A large part of the investment went on a Cisco Secure Access Control Server (ACS). “You need this server to work wirelessly in a secure way because it controls access to the network,” explains Johnny Slos. “The software on the Cisco ACS supports RADIUS, a protocol that checks usernames and passwords and manages the dynamic encryption. To make the data sent across the wireless network indecipherable, the server provides a separate encryption key for each user, which moreover changes automatically about every quarter of an hour.”

Besides the control by the Cisco ACS, SDWORX also employs security guidelines for usernames and passwords. Anyone who wants to access the wireless network first has to log on. You also need to log on to access the network domain. Johnny Slos: “Thanks to a piece of software both procedures are integrated into one another. In this way the user has to enter everything only once. We employ rules for the type of username and the type and length of the password. Moreover, passwords have to be changed regularly and you cannot choose the same password repeatedly.”

Doubly implemented backbone

The rest of the network at SDWORX has also been built using Cisco equipment. Johnny Slos points out the importance of homogeneity and interoperability within a network. “About two years ago we installed a new local network. First we always do a comparative study of the equipment from different brands. At that stage, the reliability of Cisco’s technology played a key role in our choice. You know that Cisco delivers proven technology. We were pleased with it and in the end we also opted for Cisco’s equipment for the wireless network. After all, the company offers all the possible components for networks and you know that they will easily fit in with your existing infrastructure. That saves a lot of headaches – and so time and money – during the installation and maintenance. For you are working within a familiar framework.”

The switching in the network at the Brouwersvliet is done using Cisco Catalysts from the 6500 and 3500 series. Seven sets from the Catalyst 6500 series were installed in four of the buildings of SDWORX: three in the main building (one as the network backbone and two for distribution), two in the disaster centre (again one as the network backbone and one for distribution) and in addition a distribution switch in each of the remaining buildings. Five Catalyst 3500 switches

take care of the distribution of the data traffic in the buildings of the sister companies. All switches can communicate with both the Catalyst 6500 in the main building and in the disaster centre, which form part of the backbone. In this way the network can continue to function if something goes wrong in either of the two buildings.

End users have a bandwidth of 100 Mbps (megabit per second) and the transfer speed between the servers goes up to 1 Gbps (gigabit per second). The laptops that are connected to the network through the wireless network have available at most a shared 11 Mbps. But that lower transmission speed does not constitute a problem. “During ordinary work, you wouldn’t notice a thing. Only with file transfers to and from the server would you notice that it is slightly slower,” according to Johnny Slos.

Numerous connections with the outside world

The routing of the data traffic to the Internet, the customers and the regional offices runs over Cisco 1600, 2500 and 3600 routers. The head office has two Internet connections from different service providers. The Antwerp office is moreover responsible for the connection with affiliates and also with a number of major customers through rental lines. These are used mainly for the exchange of data, but they also for example allow software applications to be shared. Moreover, the connections with the SDWORX offices in Ghent and Brussels have Quality of Service (QoS). Because of the busy telephone traffic between the three offices, it was decided to use Voice-over-IP (VoIP) and thus run the conversations across the computer network to save costs. The QoS of the network offers a guaranteed capacity for four telephone lines.

Meanwhile, SDWORX is investigating the possibilities of a virtual private network (VPN). A VPN is a private network that uses the Internet infrastructure. It is protected against unauthorised access and the interception of data by means of encryption and other security mechanisms. SDWORX is considering using VPN technology to provide staff members who work from home or who are often on the road secure access to the company network. Moreover, if necessary VPN can also provide a link to customers for whom the costs of a leased line is too high.

People working from home are already using a free 0800 number, which allows them to call into the company network. SDWORX obviously pays for this line and it turns out to be cheaper than providing everyone who occasionally works from home with an ADSL connection. This is only worthwhile when the number of hours of teleworking that require a connection is sufficiently high.

CISCO SYSTEMS



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INTERNET GENERATIONSM

Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters

Cisco Systems Europe
11, Rue Camille Desmoulins
92782 Issy Les Moulineaux
Cedex 9
France
www.cisco.com
Tel: +33 1 58 04 60 00
Fax: +33 1 58 04 61 00

Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters

Cisco Systems Australia, Pty., Ltd
Level 17, 99 Walker Street
North Sydney
NSW 2059 Australia
www.cisco.com
Tel: +61 2 8448 7100
Fax: +61 2 9957 4350

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