STORMSHIELD

EDUCATION

UNIVERSITY OF CERGY-PONTOISE

A RELIABLE SOLUTION FOR **PROVIDING WI-FI COVERAGE**

Interview with Guillaume Rénier, Director of IT and Information Systems

UNIVERSITÉ de Cergy-Pontoise

18,000
STUDENTS

10
SITES &
1 UNIVERSITY LIBRARY

4 000
WORKSTATIONS

Customer needs

Need for a high-performance captive portal to connect up to 8,000 simultaneous users to the university's Wi-Fi network. After several attempts that led to successive failures, the availability of a high-performance and reliable Wi-Fi network was a necessity for the implementation of new teaching methods, especially in other locations.

The university's data protection policy, and in particular the research work of the laboratories, was a major factor in the choice of the security solution.

The situation

Founded in 1991, the University of Cergy-Pontoise has grown steadily and now has more than 18,000 students.

When Guillaume Rénier joined the Information Systems Department, he was tasked with finding a reliable solution for ensuring Wi-Fi coverage on all the University's sites, **since the existing Wi-Fi network was not capable of providing simultaneous connections for thousands of users.** He explains: *"We started by trying to make the solution purchased three years earlier work, based on the principle of load balancing between four servers forming a cluster, but beyond 1,000 simultaneous users, it completely failed. We tested several all-in-one solutions, but none of them could handle a load greater than 1,500 users connected simultaneously. We then decided to build our own solution by trying to rely on French products as much as possible."*

The Stormshield solution

"We carried out two projects at the same time", explains Guillaume Rénier. *"On the one hand, securing Wi-Fi access with Stormshield virtual firewalls; on the other hand, completely overhauling the Wi-Fi infrastructure, including resuming coverage."*

The university worked with several vendors on the Wi-Fi infrastructure, , the core network and the Wi-Fi, DHCP (Dynamic Host Configuration Protocol) and DNS (Domain Name Service) controllers. It entrusted Stormshield with the captive portal and access security. *"We tried **a new fully virtualised solution made up of three Stormshield Network Security (SNS) virtual firewalls**, each with eight virtual CPUs and 32G of RAM, with the goal of keeping everything in a single physical server"*, Guillaume Rénier explains.

*"We are now at an average of 3,000 simultaneous connections and 4,000 peak connections. The system load analysis indicates that we are slightly below half the possible load, which is excellent news. The solution **is scalable and designed to meet the needs** of the university community. All that's needed is to buy an additional virtual firewall, install it, retrieve the configuration, add the licences and everything will work."*

After testing many solutions on the market, Stormshield's captive portal was **the only one that could handle the task and meet the need to connect more than 1,500 users simultaneously**, within the budget allocated to the project. Guillaume Rénier says: *"Stormshield offers French solutions that are **certified Common Criteria EAL4+** and the SNS firmware is **qualified by ANSSI**, which is extremely important for us, since we are required to adhere to the General Security Register."*

Wi-Fi connection in “sharing” mode

The university now offers its guests Wi-Fi service through a dedicated captive portal. Guests log in to the portal and make a request indicating the person from the university with whom they have an appointment. Their host receives this request and provides **one-click Wi-Fi access in “connection sharing” mode.** This allows the university to fully consolidate Wi-Fi services on the Stormshield captive portal, without having to use an additional tool at the same time.

Collaboration

For Guillaume Rénier, the solution is a success. He explains: *“It was a joint effort with Stormshield because we had to fulfil a specific request for which the boxes had not been designed but were giving promising results. So we performed the debugging and the Stormshield developers optimised the code to perform far beyond the capabilities for which an SNS box was originally designed. That's why the solution works so well. I have to say that we always felt that Stormshield listened to us and was attentive to our needs. We made requests for new features that did not exist in version 2 and we found several in version 3.”*

Simultaneous connections

“For the moment, we are at a maximum of 4,500 simultaneous users without any problem and we believe that the solution will hold up well”, Guillaume Rénier says. *“The architecture is **very powerful, even exceeding our expectations**. It is a great reward after two years of work and a big financial investment. We deployed specific 5Ghz networks (AC standard) allowing the high bandwidth required for our auditoriums with capacity of 500 to 800 people”*, he concludes.

French expertise from start to finish

*“Initial results are very encouraging. Everyone told us that it was hard to run a large-scale Wi-Fi service, but with Stormshield, **we found a reliable solution**”*, Guillaume Rénier says. *“The Stormshield logo is integrated into the portal, because it is important for us to communicate that the solution is French and that we have the necessary expertise and talent here. We also provided outreach to students, who were the first to request Wi-Fi for everyone, everywhere in the University. To involve them in the project, we had them design the posters that were displayed at all sites during the official launch.”*

Next up

The next step is the complete resumption of infrastructure security with, as a starting point, the deployment of a Stormshield SN6000 box to secure all user data, especially for research laboratories.

“It was this second project that prompted us to install firewalls at the Wi-Fi level. We will use two firewalls to create the double barrier recommended by ANSSI, with the Stormshield solution as the first barrier. The use of virtual firewalls on our Wi-Fi network even allows us to have a triple barrier. The goal is to protect the Wi-Fi network and prevent a person connected to it from attacking another university network – that is, to put a double barrier between the Wi-Fi and other university networks.”

— Guillaume Rénier
Director of IT and Information Systems

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Stormshield, a wholly-owned subsidiary of Airbus CyberSecurity, offers innovative, end-to-end security solutions for the protection of IT networks (Stormshield Network Security), workstations (Stormshield Endpoint Security) and data (Stormshield Data Security).

www.stormshield.com