Kempenhorst College is a vocational school that is focused on providing a contemporary education. Technology has become increasingly vital to students who need access to design applications. It is important that students can access applications quickly and from any of the school's virtual workstations. Technology also benefits teachers and staff by allowing them to access the school's network remotely and collaborate with other colleagues at any time. Pure Storage enables the school to access the VDI in seconds and saves the IT team hours of frustration since updates to the VDI are non-disruptive and were reduced from 24 hours down to an average of 30 minutes.

BUSINESS TRANSFORMATION

Anywhere access to CAD 3D work-stations improves education quality.

GEO

Netherlands

INDUSTRY

Education

"I can focus on innovation and new projects instead of spending most of my time on daily administration."

Jan-Henri Grilis, *System Manager*

DUTCH SCHOOL PROVIDES STUDENTS WITH FLEXIBLE ACCESS AND SPEED TO SCHOOL APPLICATIONS WITH PURE STORAGE

Kempenhorst College in Oirschot is a VMBO (Preparatory Mid-Level Vocational Education) school with 150 employees and more than 1100 students. Together with the Heerbeeck College in Best, it is part of the Catholic school community Voortgezet Onderwijs Best-Oirschot (VOBO; Preparatory Education Best-Oirschot) since the schools merged in 2004. Jan-Henri Grilis is a System Manager for the VOBO ICT team since 2006. Together with his colleagues, he provides advice to school management about IT affairs.

IT is becoming increasingly important in education. Where it used to play a largely supportive role in the background, today it is a crucial aspect, at the very core of education. Without consistently available IT resources, providing top quality education has become all but impossible. An additional challenge was the implementation of CAD 3D on VDI, which puts a heavy load on both CPU and Storage.

Obsolete desktops were replaced by 180 thin clients, and the 77 PCs that were good enough for continued use, were reconfigured as thin clients. "In other words, the processing power was transferred to the server area, so that nothing but monitors, keyboards and a mouse remained at the workstations for students," Grilis explained. In addition, the school has more than 130 laptops, used mainly by employees, and 20 tablets, all of which communicate through the wifi network. This results in a total of 450 virtual workstations.

RELIABLE AND AFFORDABLE VDI WITH FLASH STORAGE

Kempenhorst went to the Storage Expo at the Jaarbeurs in Utrecht in 2013 to research storage solutions for their VDI environment. "While we were there, Pure Storage gave us a perfect explanation of how their solution works," said Grilis. "We also watched a live demonstration of the solution, so that we could see how VDI worked in combination with the FlashArray™ from Pure Storage."

The demonstration was the decisive factor, and Kempenhorst College committed to working with VDI. "It is very likely that we would not have transitioned to VDI at all, without the input from Pure Storage," Grilis recalled. "We visited other schools for information, that had been initially enthusiastic about VDI, but with traditional storage systems they soon ran into problems. By using flash storage these problems are solved. In the past, flash was expensive and not yet reliable. With a solution such as

COMPANY:

Kempenhorst College
www.kempenhorst.nl

USE CASE:

- VDI – VMware® Horizon View

CHALLENGES:

- Find a cost-effective and fast storage solution to support VDI.
- Replace obsolete Windows XP environment.
- Reduce costly administration time.
- Eliminate lesson disruption due to infrastructure.
- Virtualize CAD 3D work stations.

IT TRANSFORMATION:

- Achieved more than 80% data reduction through deduplication and compression.
- Radically simplified administration to focus on innovation.
- Reduced electricity and cooling costs by € 10,000 per year.

"Pure Storage is a fully integrated system, which could theoretically support unlimited expansion."

Jan-Henri Grilis, **System Manager**

Pure Storage, those problems no longer occur. The flash solution makes VDI affordable. Previously, a large number of traditional hard drives were necessary in order to allow a VDI solution to function reliably, which made the system expensive."

An alternative approach with individual flash cards for the servers was briefly considered, but introduced many additional "points of failure" and was limited in the areas of expansion, scalability and availability. "It did not come close to the Pure Storage solution. Pure is a fully integrated system, which could theoretically support unlimited expansion."

SIMPLIFIED MANAGEMENT AND HAPPY END-USERS

The VDI environment driven by the FlashArray from Pure Storage has already proved its worth in many areas. Grilis spends very little time on administration. "It is a very stable, reliable environment, lacking bottlenecks. Yesterday we ran a whole series of updates during work hours. This would not have been possible in the past because it taxed the infrastructure too heavily." In addition, Grilis sees clear space savings as far as physical storage is concerned. Through deduplication and compression, data reduction of more than 6:1 (>80% data reduction) is achieved. This means that where Grilis might have needed a half rack filled with hard drives for traditional storage solutions, he now only needs one 6U unit. It also means significant reduction in energy costs for cooling. With the implementation of VDI, Kempenhorst reduced its electricity and cooling costs by € 10,000 per year. Because ventilators are the only moving parts in the equipment, there is a decreased risk of failure.

Client management has become much simpler. It used to take Grilis a full day to create and roll out an image, but now it rarely takes him longer than half an hour. "When I receive an update, I schedule it in and the next day it has been fully implemented. In the past I had to walk through the entire school, switching on computers, logging in, etc. Or I had to interrupt a lesson if a critical error required immediate attention, which was disruptive. But that is no longer necessary, either. I can intervene from a distance, and usually simply and adequately rectify issues that way. I can now focus on innovation and new projects instead of spending most of my time on daily administration."

Because of savings in time, it is much easier for Grilis and his colleagues to proactively monitor the system, so that issues can be avoided.

In the course of the implementation of the VDI environment, it quickly became clear that Pure Storage also provides the ideal solution to house the virtual server infrastructure (VSI), handling mixed workloads with ease. Because of high returns and consistent performance by FlashArray, the VSI environment of the existing spindle-based storage also migrated to FlashArray. This resulted in improed performance by the server environment, and a back-up system that completes its task much faster.

Students and teachers are also very happy with the new infrastructure, according to Grilis. Students are particularly happy with the start-up speed. It used to take three or four minutes, and now it takes less than 30 seconds. Additionally, teachers are delighted that they can work flexible hours from home. "They open their laptops, connect to the VDI environment, and are able to work on the server and share files with each other."

Finally, Grilis gives an example which illustrates how school management also benefits from the new environment. "They use a software program to set up the annual school schedule, which requires a great deal of calculation. It takes a lot of computing, and therefore time. The program provides the option to activate additional workstations; the so-called gladiators. With the resources we have now, these can be very easily virtually provisioned. And the entire process is reduced by weeks."

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