



University Duisburg-Essen Successfully Blends High-Performance 3D Graphics with Virtual Desktops

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ANDRÉ KREFT
MANAGING DIRECTOR, FACULTY OF BIOLOGY
UNIVERSITY DUISBURG-ESSEN

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Offen im Denken

University Duisburg-Essen is one of the largest and newest universities in Germany and brings a fresh perspective to higher education. Located in the Ruhr metropolitan area, 11 faculty departments emphasize research and teaching, embrace diversity, promote academic potential and genuine educational equality, and think in terms of unlimited possibilities instead of limitations.

AT A GLANCE

Situation

- Higher Education
- Ruhr, Germany
- 6,000+ faculty (Economics, Business Administration, and Biology departments)

Challenges

- Poor performance for graphics-intensive and 3D applications on VMware Horizon View virtual desktops
- Budget restrictions, and the need to protect investments in VDI servers
- Increasing infrastructure complexity, driving up the cost of managing devices and desktops

Solution

- Teradici® PCoIP® Hardware Accelerator and NVIDIA® GRID GPU in each VMware Horizon View VDI server

Results

- **User acceptance of VDI:** Excellent performance, even for 3D graphics, imaging, and video
- **Resource efficiency:** Server compute resources are more available for other tasks; network bandwidth is conserved
- **Cost savings:** Easier-to-manage PCoIP zero clients growing in popularity across campus

“Solving the performance problems has made VDI much more attractive. Faculty and staff are much more open to new possibilities on the desktop.”

DIRK SCHWARZE
HEAD OF THE IT SERVICE CENTER, FACULTY OF ECONOMIC SCIENCES
UNIVERSITY DUISBURG-ESSEN

The University Duisburg-Essen encourages students – and employees – to explore the possibilities. When students wanted to embrace the bring-your-own-device (BYOD) trend, the technology team had to explore the possibilities for supporting student-owned devices on the campus infrastructure. Virtualizing servers and desktops introduced a great deal of flexibility and helped IT manage many of the changes that related to the influx of smart devices. Virtual desktops; however, did not meet all of the use case requirements in the Economics and Biology departments:

- Support for 3D applications
- High performance for fast-changing displays, without overwhelming the VDI servers
- Easy-to-support endpoints for a small IT staff supporting those departments

At a VMware Forum in Germany, the University’s technology team discovered a solution that would cost-effectively improve their VDI platforms and protect their investment in VDI servers.

Back on campus, IT tested the solution: a combination of a GPU and PCoIP Hardware Accelerator technology. With high expectations after the VMware Forum, IT was not disappointed with what they saw within the University’s VDI environment. Even with heavy graphics activity and 3D applications, remote VDI sessions gave users an equivalent experience compared to those workloads executing on a PC.

The successful proof of concept exercise led to the addition of a PCoIP Hardware Accelerator and GPU in each of the VDI servers supporting faculties in the Economics and Biology departments. The combination offloads the servers from graphics and imaging processing, and accelerates the transmissions of pixel streams going over the network to the remote displays associated with the virtual desktop. A broad range of graphics, imaging, and video content can now be processed faster and more rapidly transmitted and displayed on PCoIP zero clients in a bandwidth-efficient manner.

“When IT added the Hardware Accelerator card and GPU to the server, the user experience was amazing,” said André Kreft, managing director, Faculty of Biology, University Duisburg-Essen. “We now have true anywhere access to all of our department applications, and are no longer limited by data center walls or campus boundaries.”

Removing the performance barriers has promoted the adoption of virtual desktops and zero clients. “The access to powerful hardware and software resources has given us a much more flexible infrastructure,” said Dirk Schwarze, Head of the IT Service Center, Faculty of Economic Sciences, University Duisburg-Essen.



“Solving the performance problems has made VDI much more attractive – PCoIP Hardware Accelerator cards plus GPUs give users a very consistent experience. Faculty and staff are now much more open to new possibilities on the desktop. They can see the advantages of removing the traditional OS barriers, and are excited about lower-cost, energy-conserving PCoIP zero clients. The zero clients also lower the University’s operating expenses since they are much easier for us to manage and keep up-to-date.”

With the performance of the servers now accelerated to handle even the most demanding graphics and video requirements, the University’s VDI initiative continues to gain momentum and deliver even more value. To date, they have deployed approximately 120 PCoIP zero clients and are seeing a steady growth in demand for the more efficiently managed desktop devices. The performance boosts from the PCoIP Hardware Accelerators and GPUs also allow more zero clients to be supported with less server hardware, to keep costs lower.

Products used

13 PCoIP Hardware Accelerator Cards

120 PCoIP Zero Clients

“The Teradici PCoIP Hardware Accelerator and NVIDIA GRID GPU have proven to be a successful combination, and have helped us increase our client-server ratios,” said Mr. Schwarze. “When combined with PCoIP Zero Clients, the benefits are even greater due to the administrative cost savings for the workplaces. We expect to see more migration from traditional PCs to zero clients, with the growing acceptance of virtual desktops driving the trend on campus.”

Photos supplied by University Duisburg-Essen

