

CUSTOMER SUCCESS STORY | GRIMME

GRIMME IMPROVES WORKFLOWS AND REDUCES COSTS BY MORE THAN 40% WITH NVIDIA VIRTUAL GPU



Cost efficiencies inspire expanded rollout of virtualized workstations and desktops.

ABOUT GRIMME



GRIMME is a world leader in the design and manufacture of sophisticated machinery for the farming industry, specializing in machinery for potatoes and other root crops. It produces 150 machine models to handle all aspects of the farming cycle, from planting, cultivation, and harvesting to cleaning, storage, and loading. A major factor in GRIMME's success has been its recent global sales expansion. Today, its machinery is sold in 120 countries through a network of subsidiaries and national dealers based in key markets, including China, Great Britain, India, Russia, and the United States.

FIVE REASONS FOR NVIDIA VIRTUAL GPU

- > Workstation-like performance for CAD applications that can be accessed from anywhere
- > Over 40 percent cost savings for an environment that delivers a better user experience
- > Fast deployment of thin clients to new users
- > Improved performance for Windows 10 and modern productivity applications
- > Easy upgrades and maintenance

SUMMARY

- > GRIMME is a global leader in the development and manufacture of sophisticated equipment for root crop farming.
- > To reduce costs, the company replaced CAD workstations with thin clients powered by NVIDIA virtual GPU technology.
- > Realizing significant cost savings of more than 40 percent, GRIMME decided to roll out a virtualized environment powered by NVIDIA GPUs to its entire staff.
- > Today, engineers, mechanics, and staff all have anytime-anywhere access to 3D graphics and modern productivity applications.

CUSTOMER PROFILE



Company	Industry	Location	Founded	Size	Website
GRIMME	Manufacturing	Damme, Germany	1861	2,200 employees	www.grimme.com



SOFTWARE

Hypervisor: Citrix XenApp/
XenDesktop on XenServer

Graphics Acceleration:
NVIDIA GRID® Virtual PC
(GRID vPC), NVIDIA GRID
Virtual Apps (GRID vApps),
NVIDIA® Quadro® Virtual Data
Center Workstation (Quadro
vDWS)

HARDWARE

Server: Dell PowerEdge R730
and R740

GPU: NVIDIA Tesla® M10,
NVIDIA Tesla M60, NVIDIA
Tesla P4

CHALLENGE

In recent years, GRIMME has undergone tremendous growth, fueled by its ability to consistently create award-winning designs for farming equipment. The development process begins with mechanical engineers using PTC CoCreate direct modeling software to draft designs for new equipment or modify existing plans. On completion, CAD files are exported. At that point, production mechanics use a graphics-rich CAD viewer to review drawings, zooming into details to ensure every piece of equipment is manufactured to spec.

To improve this process, in 2012, the IT department deployed a new Microsoft AX application. However, after deployment, users discovered that the application ran slowly if they weren't physically close to the data. "To fix this, we published the application in a VDI environment. By using thin clients, our branch offices could access the application without experiencing poor performance," said Jan Hendrik, IT architect at GRIMME. From there, GRIMME's virtual desktop infrastructure (VDI) project began expanding to branch offices. "Every time we had something to fix, like outdated equipment or software in offices abroad, our VDI project got bigger."

Several years later, in 2016, the company wanted to train its CAD users on new Siemens PLM NX software. The IT department had a decision to make. One of the training requirements was that 40–50 people needed to participate simultaneously. This meant IT needed to choose between buying or renting new physical desktops or creating an entirely new training environment with virtual desktops powered by NVIDIA virtual GPU technology. "After we did the cost calculations, we discovered the most economical approach was to deploy virtual training stations with NVIDIA virtual GPUs. Plus, after training was over, we could reuse the thin clients," said Jan Hendrik.

“In addition to being quite economical compared to physical workstations, another reason we chose VDI with NVIDIA virtual GPU technology was because it offered considerably more flexibility.”

Jan Hendrik
IT Architect
GRIMME

SOLUTION

Before fully investing in the idea, however, GRIMME bought one server and did some testing. “The initial experiences were quite good. That gave us confidence to buy a second server and deploy virtual desktops with NVIDIA virtual GPU technology for training. We knew that performance during training would be the real test. Would it work for users when everyone was on the system simultaneously? Or would we have major issues?” said Jan Hendrik.

After their training was a success, GRIMME began work on revamping its VDI environment. Said Jan Hendrik, “Planning was quite complicated because there were so many variables. We needed to calculate how many users we could get on each server, how much memory they needed, and what virtual GPU profile size would be best. We also strategized how to make the system redundant—whether we needed two or three data centers—because that would impact costs.” In the end, IT opted for three data centers to reduce its total number of servers and keep costs low.

“In addition to being quite economical compared to physical workstations, another reason we chose VDI with NVIDIA virtual GPU technology was because it offered considerably more flexibility. We could use it to group users in our global branch offices into pools according to their performance requirements,” said Jan Hendrik. When planning user groups, IT defined three user pools. Pool #1 was designed for mechanical engineers primarily using CAD, pool #2 was created for production mechanics working on CAD visualization, and pool #3 was used for knowledge workers on office productivity apps.

The first project phase focused on deploying a Citrix XenDesktop environment to CAD users in pools #1 and #2. To serve its approximately 125 concurrent engineers, IT acquired eight Dell R730 servers and added two Tesla M60 GPUs per server. For its eighty production mechanics, they purchased three Dell R740 servers with two Tesla P4 GPUs per server. A Citrix XenApp environment was designed for pool #3, GRIMME’s 400 knowledge workers, whose virtual machines were run on four Dell R730 servers with one Tesla M10 GPU per server. Users in all pools were assigned a 1B profile; however, knowledge workers were sometimes moved to a larger 4B or 8B profile.

Jan Hendrik realized that Windows 7 is not as graphically intensive as Windows 10. In fact, when migrating from Office 2013 to Office 2016, he

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experienced challenges resulting in supporting less users on the same system. “Windows 10, and the applications that get upgraded as part of the new OS, requires more CPU load if no GPU is available. As such, applications like Microsoft Word, YouTube, and modern browsers like Chrome and Firefox run on a CPU-only VDI environment were much slower in performance,” said Jan Hendrik. And the way employees work today add to the increased graphical requirements. Use of multiple monitors, at least two and in some instances even three, is common not only for engineers but also knowledge workers, further taxing the system.

RESULTS

For GRIMME, the impact of graphics-accelerated virtualization is both local and global. One of the biggest effects is on how people work. Some local staff frequently commute between GRIMME’s Damme headquarters and another office five miles away. In the past, they needed a dedicated workstation at each location. It was common for employees to download files and work from home on their mobile workstations and come back to the office the next day and upload their files. Today, all that’s changed. “Now users just have two cheap thin clients. When they travel between offices, they simply log in and reconnect to their previous session and continue working where they left off,” said Jan Hendrik.

High-performance thin clients also mean the company’s IT is now designed for a day when the workforce becomes more mobile and increasingly works remotely. Said Jan Hendrik, “We’re a very classic German company. Most people still work from the office. They don’t really work from home. But in recent years, we’re seeing this starting to change. Thanks to virtualized desktops powered by NVIDIA virtual GPU technology, when staff do work outside the office, they tell us that it’s much easier because the experience is much better than it was before.”

On a global level, outsourcing to consultants is now a streamlined process. “Recently, we had a project where we needed to hire contractors from India to replace screws in some CAD drawings,” said Jan Hendrik. “Our IT team had no trouble giving them access to our system. All we had to do was create user profiles in one of our Citrix pools. Then, they simply logged in and quickly did the replacements.”

It's also a lot less challenging for the IT team to manage global users remotely. "With VDI, old software and machines don't create random issues here and there," said Jan Hendrik. "For example, before VDI, staff in our Russia office were working on a variety of aging PCs with outdated software. When someone had a problem, fixing it from Damme was really complicated. Now everyone is on thin clients and connecting to a central server with all the same software. If a user has a problem, it isn't difficult to pinpoint where it's coming from."

For all staff, high-performance workstations helped improve productivity and collaboration. Mechanical design engineers and production mechanics experienced a dramatic improvement in performance of Siemens NX, CAD, and visualization tools, while office staff enjoy a much better user experience of applications such as Microsoft Office, enterprise resource planning (ERP) applications, Chrome, Firefox, YouTube, and Skype for Business.

The IT team was eager to move forward with graphics-accelerated virtualization because of all of its benefits, including a reduced CPU load. However, management was most interested in cost savings. "Management wasn't interested that we achieve IT standardization or that users could be more mobile. For them, their main concern was saving money. Once we demonstrated that costs were better when we deployed VDI with NVIDIA virtual GPU technology, we were given the green light," said Jan Hendrik. "From reducing infrastructure costs, to lowering operational costs like being able to quickly resolve tickets and assign a perfectly sized virtual desktop and provide access rights immediately to new users, to enabling IT agility with features like GPU live migration that keeps servers healthy and highly available—the benefits of NVIDIA virtual GPU have been tremendous."

With thin clients and NVIDIA virtual GPU solutions, GRIMME was able to reduce overall costs by over 40 percent compared to replacing their infrastructure with new fat clients. Going forward, Jan Hendrik's goal is to have all users migrated over to VDI with NVIDIA virtual GPU technology. Coupled with dramatic cost savings, this will increase the flexibility and productivity GRIMME provides to their employees.

To learn more about NVIDIA virtual GPU solutions visit:
www.nvidia.com/virtualgpu

www.nvidia.com



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