

NVIDIA vGPUs speed up virtualized design apps and improve remote workforce productivity.

Customer Profile

- > **Organization:** Shipbuilder
- > **Industry:** Public Sector
- > **Applications:** Dassault Systemes CATIA 3DEXPERIENCE, Autodesk AutoCAD

Solution

SOFTWARE

- > **Hypervisor:** VMware Horizon on vSphere ESXi
- > **Graphics Acceleration:** NVIDIA Quadro® Virtual Data Center Workstation (Quadro vDWS)

HARDWARE

- > **Server:** Dell EMC VxRail
- > **GPU:** NVIDIA Quadro RTX™ 8000

ENGINEERING SHIPS WITH NVIDIA QUADRO vDWS

Overview

This company is a major supplier for the U.S. Department of Defense and one of North America's largest shipbuilders. Its engineers design top secret military ships, making security a high priority. While upgrading the data center, the company's IT team opted to deploy NVIDIA GPU-accelerated virtual workstations to protect data while enabling engineers at offsite locations to use 3D design applications.

Challenges

Safeguarding intellectual property (IP) is essential when working on product designs for either commercial companies or the U.S. military.

Historically, this company has stored its data in a master database to keep its IP secure. When working on projects, engineers connect to the database using a client server environment and then download data onto their physical workstations. The drawback is that downloading datasets can be very slow—it can take upwards of an hour to transfer large models. There's also a security risk if a laptop is lost or stolen.

Virtual desktop infrastructure (VDI) solves this challenge by securing IP in the data center and virtualizing applications. However, this typically won't work for users of graphics intensive engineering applications like CATIA 3DEXPERIENCE and Autodesk AutoCAD. VDI introduces latency and performance problems, which significantly slow down user productivity.

With engineers increasingly working from home, the IT team needed to upgrade its VDI to run graphics-intensive applications in order to improve user productivity and keep projects on schedule and within budget.

NVIDIA supports the live migration of GPU-accelerated virtual machines, ensuring high system availability. IT teams can perform workload leveling, infrastructure resilience, and server software upgrades 24/7 without end-user disruption or data loss.



Solution

The IT team installed two NVIDIA RTX 8000 GPUs in each Dell EMC VxRail server. NVIDIA Quadro vDWS software installed at the virtualization layer was configured to meet the needs of:

- Engineers working on high performance virtual workstations, each assigned an 8GB profile on NVIDIA Quadro vDWS. This solution meets the requirements of graphics-intensive engineering apps, like CATIA 3D EXPERIENCE and AutoCAD with higher-resolution, multi-monitor support. Today, users of this deployment connect to two 4K monitors, but the solution supports up to two 8K monitors. This setup accommodates 12 engineers per server with 6 per RTX 8000 GPU.

Key NVIDIA Benefits

- **Increased mobility.** With NVIDIA vGPUs, graphics intensive 3D applications can be run on any device, and engineers always experience workstation-like performance, while working from anywhere - whether at home, on the road, or in the office.
- **Better productivity and security.** With data and compute power both located in the data center, large models and datasets can be opened in two to three minutes instead of an hour. And data is protected from breaches and theft.
- **Minimal downtime.** NVIDIA supports the live migration of GPU-accelerated virtual machines, ensuring high system availability. IT teams can perform workload leveling, infrastructure resilience, and server software upgrades 24/7 without end-user disruption or data loss.

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