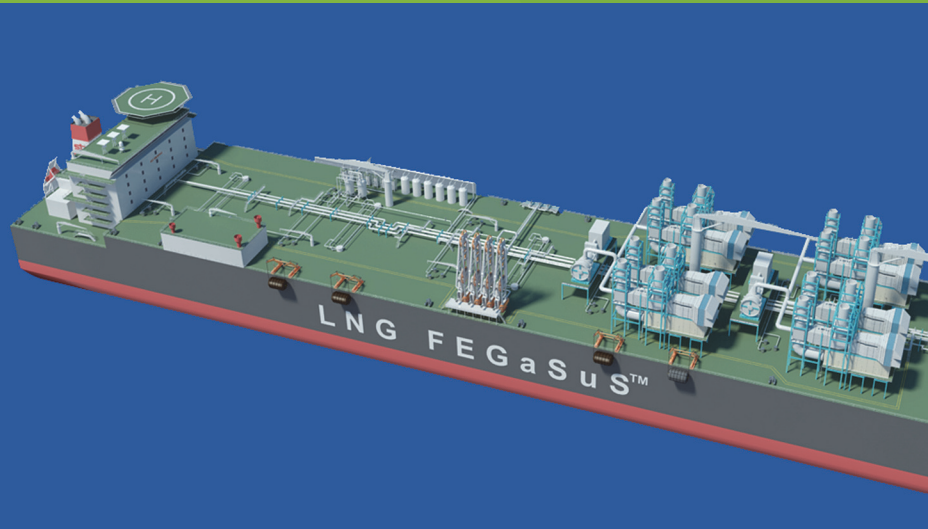# EMPOWERING WORLD-CLASS MARINE DESIGNERS

Daewoo Shipbuilding & Marine Engineering Co., Ltd. rolled out a next-generation design collaboration system to 500 users and is already planning for future expansion.

nVIDIA

Daewoo Shipbuilding & Marine Engineering Co., Ltd. rolled out a next-generation design collaboration system to 500 users and is already planning for future expansion.

Since its establishment in 1973, Daewoo Shipbuilding & Marine Engineering Co., Ltd. (DSME) has been building ships, offshore plants, drill ships, Floating Production Storage & Offloading (FPSO) units, submarines, and destroyers. DSME is aiming to become the best shipbuilding and marine engineering company in both Korea and around the world. The company is therefore upgrading to the latest shipbuilding technology and developing its skills in advanced offshore platform building and large-scale plant project management, all with the goal of delivering top-quality civilian and military products.

CHALLENGE

The existing design collaboration server relied on NVIDIA Quadro 6000 GPUs. This solution efficiently handled the 2D design models used by DSME; however, part of the overall modernization and quality effort included migrating to 3D design models using Aveva Marine. The switch from 2D to 3D overloaded the design collaboration server, causing noticeable performance delays and other system issues when users tried to work with the 3D data.

After researching their options, DSME decided to test a virtual desktop infrastructure (VDI) using NVIDIA® GRID™ K2. A rigorous testing program took place from June to December of 2013. This testing program included verifying compatibility with Aveva Marine, performance tests with multiple concurrent users, graphics resolution, and frame rate. The goal of this extensive testing was to determine the best way to implement the new design collaboration system.

SOLUTION

Each NVIDIA GRID K2 board is equipped with 2 Kepler-based GPUs and 3,072 NVIDIA CUDA® cores, with 8GB of GDDR5 RAM and a maximum power consumption of 225W. DSME implemented eighteen (18) HP SL250 servers with Intel Xeon processors and one NVIDIA GRID K2 board per server running the Citrix XenServer hypervisor along with
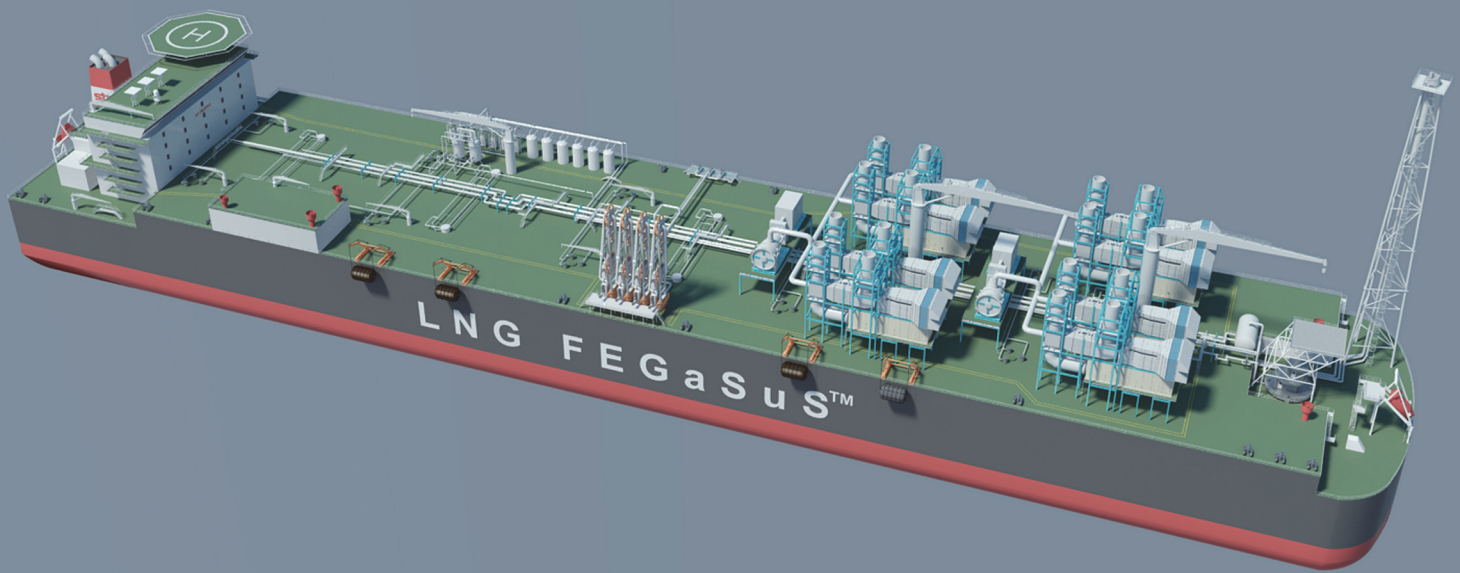
XenDesktop and XenApp to deliver the virtual desktops to individual users.

The number of simultaneous users who could access Aveva Marine with workstation-grade performance instantly doubled from 15 to 30.

The first phase of the VDI rollout consisted of the extensive testing carried out from June to December of 2013. This testing program included a proof-of-concept phase for technical verification and user acceptance testing, after which the NVIDIA GRID K2-based design collaboration system rolled out to 500 users sharing the 18 HP servers.

"At DSME, a total of 3,000 designers—including 2,000 internal designers and 1,000 external vendor designers—collaborate on large tasks," said Yoon Moon-gyeong, Information Technology Manager at DSME. "Because many designers are involved, there is a strong need for them to be able to work as naturally as if they were working with local PCs when it comes to collaborated tasks. Through the implementation of NVIDIA GRID K2, the capacity for 3D CAD simultaneous design users was increased from merely 15 users to a maximum of 30 users."

RESULTS

After implementing the new design collaboration system with NVIDIA GRID K2, users at DSME have become more productive thanks to the increased performance. The ability to access and share centrally-stored data is fostering collaboration while reducing problems associated with version control and security. Improved graphics performance allows users to more quickly view shaded previews and renderings. They can also conduct virtual walkthroughs and inspections of designs in progress. External vendors can log in to review progress, provide input,

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Yoon Moon-gyeong
IT Manager
DSME

Our new GRID K2-based design collaboration system has delivered higher graphics performance with more simultaneous connections than our previous collaboration server. Further, designers working outside of the company can easily and efficiently access and review preliminary designs.

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To learn more about NVIDIA GRID visit
www.nvidia.com/vdi

and collaborate on designs. All of these benefits are contributing to DSME's goal of improving the quality of its products while reducing the total cost of ownership compared to their previous infrastructure.

"At DSME, our new GRID K2-based design collaboration system has delivered higher graphics performance with more simultaneous connections than our previous collaboration server," concluded Moon-gyeong. "This has enabled DSME to perform graphics-related tasks, such as inserting and rotating a model, with the same performance as on a local PC. Further, designers working outside of the company can easily and efficiently access and review preliminary designs."

Implementing the virtual desktop infrastructure (VDI) with NVIDIA GRID K2 also enhanced security, because the drawings and design data generated by each designer through the design collaboration system are now saved to the centralized in-house server. Designers log in to the VDI and access applications and data as needed without any of the security or data integrity concerns inherent with storing data on personal computers or devices.