CHIYODA PROVIDES FLEXIBLE, HIGH-PERFORMANCE VIRTUAL WORKSTATIONS USING NVIDIA QUADRO vDWS

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Chiyoda maximizes efficiency by streamlining IT deployment for engineers around the world.

ABOUT CHIYODA

IMAGE COURTESY OF QATARGAS OPERATING COMPANY LIMITED

FOUR REASONS FOR QUADRO vDWS

> Reduced setup time for 3D workstations from one to two weeks to several days

> Delivered workstation-like performance of graphics-intensive 3D modeling applications

> Provided engineers with mobile access to corporate resources when they're on the go

> Simplified IT support for remote sites and reduced IT workload

Chiyoda Corporation is an integrated engineering firm that specializes in global engineering, procurement, and construction (EPC) projects. Since its founding in 1948, it has worked for numerous industries, including oil and gas, life sciences, utilities, and pharmaceuticals. In pursuit of "harmony between energy and the environment," the firm is a global leader that aims to contribute to society's sustainable development through the use of "collective wisdom and cutting edge technology."

SUMMARY

> Chiyoda Corporation specializes in global engineering, procurement and construction (EPC) projects mainly for the oil and gas industry.

> The company needed to streamline IT deployment for overseas engineers to ramp up projects quickly and reduce IT costs.

> Chiyoda deployed virtual workstations powered by NVIDIA® Quadro® Virtual Data Center Workstation (Quadro vDWS) to deliver high-performance 3D modeling applications.

> The IT team can now provide engineers with access to applications in one to two days, so engineers can get to work on day 1.

CUSTOMER PROFILE

	Company	**Industry**	**Location**	**Founded**	**Size**	**Website**
CHIYODA CORPORATION	Chiyoda Corporation	Oil and Gas EPC	Yokohama, Japan	1948	6,176 employees	www.chiyodacorp.com/en/

SOFTWARE

Hypervisor: VMware vSphere on VMware Horizon

Graphics Acceleration: NVIDIA Quadro vDWS

HARDWARE

Server: HPE SimpliVity 380 Gen10

GPU: NVIDIA Tesla® P40

CHALLENGE

With oil prices rising, there's been a spike in global demand for new oil and gas facilities. As one of the world's leading EPC firms, Chiyoda has been on the frontlines competing to win these highly challenging projects. "After a long market slump, our competitors are now all rushing to submit bids for new projects. Competition is much more intense today than it has been in the past," said Ichiro Ota, senior manager of IT.

In this environment, maximizing efficiency and keeping costs low are key priorities. For Chiyoda to successfully win bids, they must provide the highest quality engineering and meet delivery schedules with lower costs. "Those are critical factors for EPC clients," said Ota. To achieve these goals, engineering work is executed with Chiyoda's global engineering subsidiary office.

However, it proved challenging to provide global staff with access to company resources and IT support. Engineers and designers use 3D modeling software such as Smart 3D and Plant Design Management System (PDMS). While very user friendly with feature-rich capabilities, this software also requires high-performance computing resources to handle the 3D graphics. Setting up the distributed database and 3D workstations at local sites and providing IT support from the company's Yokohama headquarters was labor intensive and complicated.

It also cost Chiyoda valuable time. "In the EPC business, it's essential to ramp up and down very quickly to avoid cost overruns. Some of our projects have budgets in excess of $1 billion. Scheduling engineering staff and giving them access to IT and corporate resources is a top priority. Otherwise, there's a risk of missing important deadlines. That's when project costs rise," said Ota. Aiming to streamline IT and empower global engineers to get to work

quickly, Chiyoda's IT team needed to identify a flexible, powerful, and scalable IT solution that could be procured for minimal investment.

SOLUTION

Recognizing the benefits of virtualization, several years ago, the company deployed virtualized applications for knowledge workers at its headquarters. At that time, the IT team was eager to roll out a virtual desktop infrastructure (VDI) solution for its overseas engineers. However, VDI that could deliver graphics-intensive software wasn't available.

The situation changed several years later when NVIDIA's virtual GPU technology was released. "Chiyoda values technological innovation. As soon as we learned about NVIDIA, our IT team had a discussion about deploying VDI for our engineers and designers in India and the Philippines," said Ota. "Virtualizing 3D modeling software would enable them to remotely collaborate on projects in real time." In 2017, the company evaluated a pilot VDI environment via a proof of concept.

In the spring of 2018, Chiyoda's IT team spent several months building their VDI environment. "We started building our VDI servers in February and were finished by March of this year. Surprisingly, the entire project only took two months to complete," said Daisuke Ishino, assistant manager of IT Management in Chiyoda's Corporate Information and Communications Technology (ICT) Section. To ensure easy maintenance, they opted for hyperconverged infrastructure, purchasing three HPE SimpliVity 380 Gen10 servers and installing one NVIDIA Tesla P40 card per server with NVIDIA Quadro vDWS software. Two servers would handle the daily workload of 48 users with a 1 GB profile each; the third server acted as a backup. Estimated costs for this setup were a few hundred dollars per user per month over the next five years.

Between April and June 2018, Japan- and overseas-based users tested the performance of Smart 3D on VDI with NVIDIA Tesla P40 GPUs and Quadro vDWS. "The results with NVIDIA virtual GPUs were excellent. Testers commented that VDI performance was superior to 3D workstations," said Ishino. "VDI without GPUs was unacceptable for 3D modeling. We simply couldn't deliver the performance that engineers require. NVIDIA changed everything by making VDI possible. Today, users are very satisfied. They're surprised with how well it works."

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>
> Daisuke Ishino
> Assistant Manager
> IT Management
> Department, Corporate
> ICT Section
> Chiyoda Corporation

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

www.nvidia.com

RESULTS

Both Chiyoda's IT team and engineers have experienced a big improvement in their daily work lives. Thanks to VDI powered by NVIDIA virtual GPUs, the IT team can focus on other projects because it isn't spending time sourcing and setting up new physical workstations. As soon as a project starts, the team gives engineers and designers exactly what they need from day 1. "In the past, it took us one to two weeks to set up a new workstation. Purchasing a new one took even longer. Today, it only takes a day or two to get overseas engineers up and running on a virtual workstation," said Ishino.

Engineers and designers are impressed with the performance. "NVIDIA virtual GPUs ensure graphics performance is excellent. Users are incredibly satisfied with our new VDI deployment. One user said to me, 'This VDI workstation's graphics performance is awesome! It's like I'm driving the VDI version of a luxury car, like a Porsche or a Ferrari,'" said Ishino. They're also pleased to be able to work offsite, accessing plans anytime, anywhere.

The IT team is positive that its high-performance VDI environment is future-proof. "Every year, technology gets exponentially better. With so much innovation, our customers and users have increasingly higher expectations for how IT performs. After deploying VDI with NVIDIA virtual GPUs, our VDI environment drastically improved. We are now certain we will be able to meet our customer's IT needs now and in the future. Moving forward, we plan on using NVIDIA virtual GPU technology to enhance our business," said Ishino.

Staying at the cutting edge ensures Chiyoda can compete on a global scale. "In order for Chiyoda to stay competitive, it's important to keep our systems performing at their peak. Our plans include building additional VDI servers and creating a mixed on-premise and cloud environment," said Ishino. "Chiyoda plans for 100 virtual workstations this year. Ultimately, our goal is to move to 100 percent virtual workstations. We are certain that NVIDIA virtual GPU technology will be a significant part of our future IT infrastructure. NVIDIA enhances our business by ensuring our IT stays flexible, scalable, and high performing."