



CASE STUDY /

Ansys and Fujitsu Partner to Accelerate Simulation Speed for Chiyoda Using Ansys HPC Pack Licensing and Cloud Computing Resources

“Chiyoda was challenged to complete very large simulations, within short time frames, to meet customer needs. With an overtaxed IT infrastructure, we needed a flexible approach that would provide extra computing capacity on an ongoing basis. Ansys recommended that Chiyoda partner with Fujitsu Ltd. to maximize its Ansys HPC Pack licenses and leverage additional computing capacity. Today, by using 32 parallel cores via Fujitsu’s Technical Computing Cloud, processing speeds are two times faster than if simulations were run in our own IT environment.”

Kyoji Ishikawa

Lead Engineer / Chiyoda Corporation

Around the world, engineering firms are challenged to provide optimal customer service, while keeping staffing, IT resources and other investments low. As simulation grows as a core engineering competency, it can be difficult for consulting firms to accommodate the dramatic shifts in IT demand that occur on a daily basis. Renting additional server space can take up to a week to get this capacity in place which is much too slow for a fast-based business.

/ Company Description

Founded in 1948 in the post-war period to reconstruct Japan, Chiyoda started its engineering business for domestic projects mainly in the petroleum refining, gas processing and petro-chemical fields, and expanded into overseas projects in the 1960s. Today, the company's 6,000 employees provide project and program management, feasibility studies, engineering, procurement, construction, commissioning and other services to customers who are primarily in the hydrocarbon and chemical industries.

/ Challenges

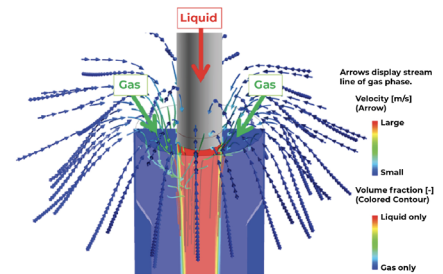
Chiyoda Corporation, a leading Japanese engineering company, relies on Ansys Fluent to attack a variety of engineering challenges for clients in the global energy business. While seeking fast answers for customers, Chiyoda's internal IT resources were too overtaxed to process large, complex simulations quickly. To create a more flexible IT infrastructure — and make the most of Chiyoda's Ansys HPC Pack licenses — Ansys introduced Chiyoda to Fujitsu Ltd., a strategic partner offering cloud computing resources and expertise.

/ Technology Used

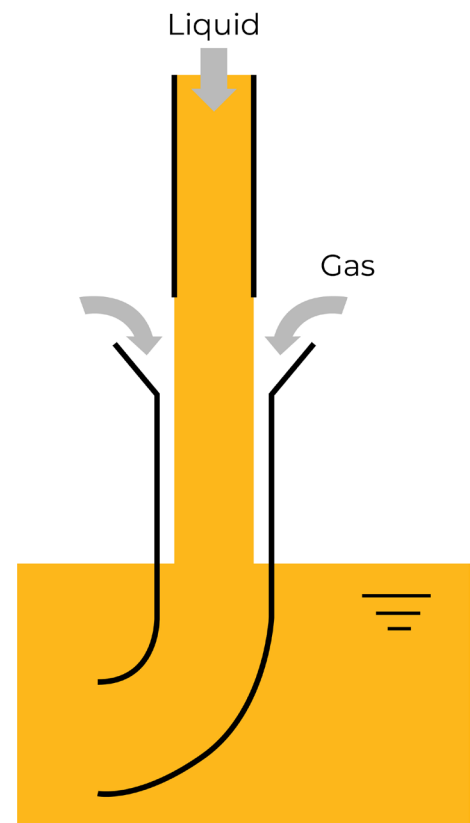
- Ansys® Fluent™
- Ansys CFD-PrePost™
- Ansys HPC Pack™
- Fujitsu Technical Computing Cloud™

/ Engineering Solution

- Deploy Ansys Fluent in a high-performance computing environment using Ansys HPC Pack licensing.
- Run Ansys solutions on Fujitsu's exclusive Technical Computing Cloud.
- Ensure data security and seamless user access by creating a custom, web-based HPC portal devoted solely to Ansys Fluent.



By leveraging Ansys Fluent via Fujitsu's Technical Computing Cloud, Chiyoda's engineers are able to create robust CFD models that show both flow paths and volume fractions for liquid and gas.



Engineers at Chiyoda are challenged to design and run complex simulations that address common customer problems — such as gas entrapment. This means simulating two-phase gas– liquid flows in an energy plant.

/ Benefits

- By using 32 parallel cores, the new configuration has accelerated simulation times by six times when compared to a four-way parallel processing job.
- Typical processing speeds via the Fujitsu Technical Cloud are two times faster than if simulations were run in Chiyoda's own IT environment, allowing results to be delivered to Chiyoda's customers quickly.
- Ansys HPC Pack licenses allow Chiyoda engineers to benefit from scalability. For cases that demand less computing power, Chiyoda uses its Ansys HPC Pack licenses separately, enabling entry-level parallel processing. For computationally demanding projects, Chiyoda combines its Ansys HPC Pack licenses to enable highly scaled parallel processing, using Fujitsu's cloud resources.
- This project was successfully conducted on the UberCloud Experiment collaboration platform which has supported over 150 engineering cloud projects in the past two years.

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