

TEN TECH LLC Runs High-Fidelity CFD Models On Rescale's Cloud

Background

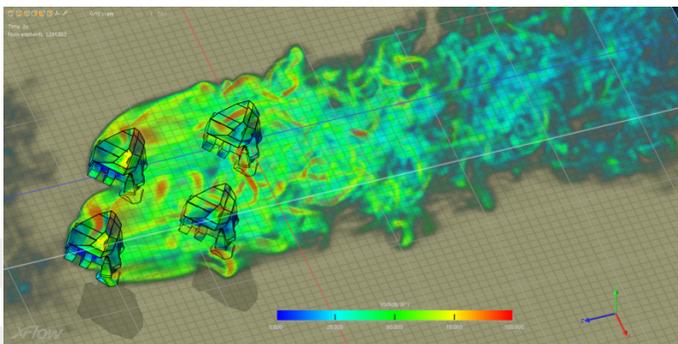
TEN TECH LLC is a company making waves in the sector of mechanical engineering analyses. As an ITAR certified company, TEN TECH LLC frequently services the highly confidential and secure sector of military and government organizations. Using Rescale's industry-leading security environment, TEN TECH LLC utilizes the instant scalability and reliability of Rescale's cloud platform to run analyses.

Customer Challenge

When the need arises for TEN TECH LLC engineers to run models for their military and defense contractors, they require a flexible yet highly secure platform. National and international clients and deadlines mean that they need access to dozens of computer cores with the capability to handle large CFD and FEA simulations.

A public model TEN TECH LLC recently ran was an analysis studying the effects of hurricane-force winds on large telescope arrays, including stress, deflection, and aeroelasticity. With their local server used for other projects, TEN TECH LLC needed an immediate solution capable of handling their compute-intensive project quickly.

TEN TECH LLC used Rescale's cloud simulation platform to run a transient fluid-structure interaction analysis using XFlow. TEN TECH LLC used on-demand XFlow software licenses to run 32 cores HPC+ hardware on Rescale's platform.



Fluid-structure interaction model of large telescope array using XFlow

Benefits / Results Achieved

Using Rescale, TEN TECH LLC:

- **Instantly accessed over 1TB SSD disk storage** using a high performance hardware configuration
- Used **on-demand XFlow software licenses** to achieve the desired software setup
- Achieved a **runtime reduction of over 90%** compared to running on internal hardware
- **Ran higher-fidelity models** to gain invaluable design insights and understanding

Simulation Solution

Using Rescale, TEN TECH LLC is able to set up highly complex and confidential models using on-demand software and custom hardware configurations:

- Latest high performance computing hardware provides crucial runtime gains
- Securely access ITAR-compliant cloud HPC platform for military and defense simulations
- On-demand hardware provides financial flexibility regardless of project or simulation size
- Run simulations in parallel without exhausting internal hardware and software resources
- End-to-end data encryption and private, isolated clusters ensure the highest level of job security

Summary

TEN TECH LLC used Rescale's simulation-optimized cloud platform to execute XFlow analyses. The quick simulation outcome yielded results showing that the large telescope array could sustain high wind loads and that vortex shedding was not a concern. TEN TECH LLC achieved significant cost and time savings while gaining valuable design insights.

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Thanks to Rescale's HPC cloud platform, we are now able to run very complex multi-physics analysis with unprecedented high fidelity models. What takes several hours on Rescale's cluster would take a week on our workgroup analysis server.

-William Villers, TEN TECH LLC Director of Engineering

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Rescale

Rescale offers a software platform and hardware infrastructure for companies to perform scientific and engineering simulation. Rescale's mission is to provide a highly powerful simulation platform that empowers the world's engineers and scientists to develop the most innovative products and perform groundbreaking research and development.

For more information:

www.rescale.com



Next Limit

With a mission of delivering state-of-the-art Computational Fluid Dynamics (CFD) Solutions by using new paradigms that break the limitations of traditional methodologies, Next Limit Dynamics promotes a culture of Innovation and Customer Value to drive the technology to new levels. Next Limit Dynamics' heritage dates back to 2008, when the earliest of XFlow's predecessor code started to be developed financed by European Innovation and Research and Development Funds. Today, the professional and CFD highly-passionate XFlow team includes talented leaders, competent PhDs and MScs to offer a strong value proposition and a close and long-term relationship by aligning the development strategy to the customers' needs.

For more information:

www.xflowcf.com



TEN TEN LLC

TEN TECH LLC is an ITAR-Registered, Certified Minority-Owned, Woman-Owned Small Business (SBA 8(m)) headquartered in Los Angeles, CA with operations in Billerica, MA, providing Mechanical Design, Analysis and Test services with emphasis on Aerospace & Defense, Hi-Tech Electronics and Renewable Energy applications.

For more information:

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