

Increase the ROI of your Engineering Simulation Workloads with High-Performance Infrastructure

Article

Business leaders consistently challenge their engineers to make smarter, more complex, and higher-quality products while reducing costs, increasing productivity, and shortening time-to-market. Engineering Simulation – Computer-Aided Engineering (CAE) and Electronic Design Automation (EDA) applications – are used to design and examine products in a virtual, low-risk environment, minimizing the need for expensive, laborious tests on physical prototypes. This virtual prototyping enables engineers to proactively identify potential issues and optimize designs for best performance and cost.

Increasing Compute Demands

Historically, manufacturers primarily used workstations for many engineering simulations. However, as engineering simulation adoption grew, models and data sets got larger, more complex, and interdisciplinary to reflect real-life scenarios, and workstations struggled to deliver timely results. As a result, manufacturing engineers were severely constrained on the number, size, and complexity of simulation models they could run on even the most powerful workstations. This inefficiency hurt the manufacturer's productivity, innovation, competitiveness, and time-to-market for new products.

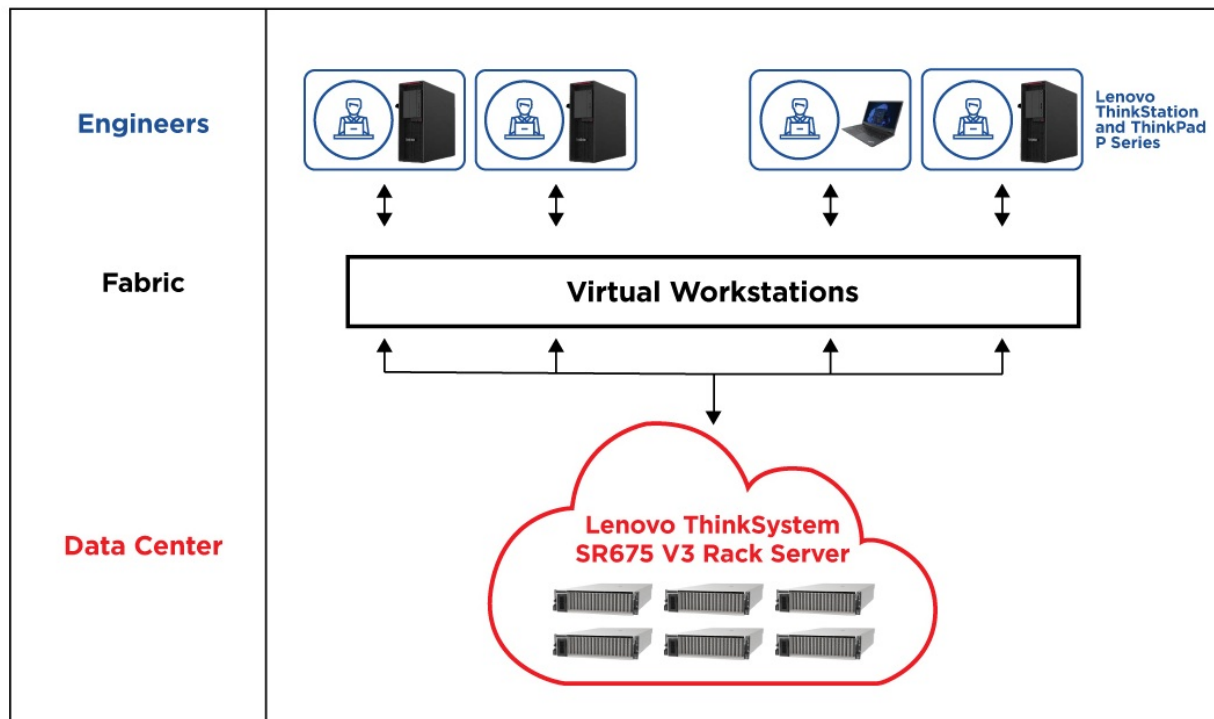


Figure 1. High-Performance Infrastructure for Engineering Simulation

Over the last decade, the typical engineering environment has evolved into a heterogeneous ecosystem (Figure 1) that includes individual workstations, mobile devices, edge servers, high-performance clusters, and cloud-based resources to overcome these workstation limitations and address other new requirements, like enabling remote work scenarios because of COVID-19.

The Benefits of a High-Performance Infrastructure

With its technology partnership with AMD, Lenovo provides this flexible, end-to-end, high-performance infrastructure (Figure 2) which can increase a manufacturer's ROI from Engineering Simulation with:

- **Accelerated Results:** Lenovo systems, powered by AMD EPYC™ processors, deliver faster time-to-results for CAE/EDA tasks, enabling faster time to production.
- **Enhanced Model Handling:** These systems can manage larger and more complex simulation models, improving simulation accuracy and detail.
- **Better Engineering Collaboration:** Distributed engineering teams can have the right information available to the right person at the right time, something hard to do with isolated, individual workstations.
- **Energy Efficiency:** Leveraging the energy efficiency of AMD EPYC™ processors, Lenovo servers are designed to help reduce power consumption and operational costs.
- **Reliability and Cost Savings:** Lenovo and AMD have developed close relationships with the leading CAE/CFD ISVs, ensuring a fast time to problem resolution, delivering high reliability, availability, and serviceability while minimizing downtime, and helping lower the total cost of ownership.
- **Flexible Infrastructure and Integration:** Lenovo offers a flexible, pay-as-you-go model with TruScale and seamless integration with immersive manufacturing solutions, optimizing cost management and facilitating better product development throughout the lifecycle.

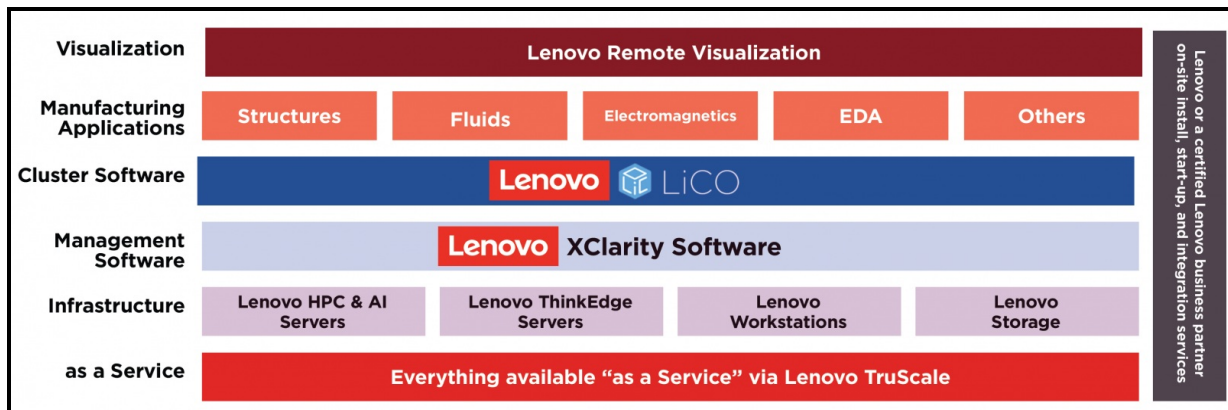


Figure 2. Lenovo's End-to-End High-Performance Infrastructure for Engineering Simulation

Read the whitepaper

To learn more about increasing the ROI from your Engineering Simulation environment, download the new Lenovo whitepaper, "Raising the Bar for High-Performance Manufacturing Solutions", available from:

<https://www.lenovo.com/us/en/servers-storage/alliance/amd-hpc/>

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