

## Ansys with Dell Infrastructure

Tap into the power of HPC to speed  
engineering workloads

### Customer results

100K

data points a second<sup>2</sup>

300

sensors collect data every 90 seconds<sup>2</sup>

Double-digit

performance increase in CFD<sup>2</sup>

Engineers are no strangers to compute-intensive design, modeling and simulation. And as artificial intelligence (AI) becomes more pervasive and converges with HPC, engineers continue to lead the way in the adopting and driving advanced computing technologies. In particular, Ansys is revolutionizing structural and fluid simulation capabilities, helping speed time to market with more innovative and higher-quality products.

Dell Technologies is pushing the boundaries of system performance for engineering workloads with scalable Validated Designs for HPC Digital Manufacturing. These designs include standardized building blocks to simplify and speed configuration of clusters that have been rigorously tested and tuned for computer-aided engineering (CAE). These designs include servers, storage, networking, software and services in preconfigured — yet customizable — configurations to deliver faster deployment, better performance and easier scaling while reducing risk.

To break design and mission boundaries, Ansys gives engineers the power to see how their ideas will perform against millions of variables. Ansys® Fluent® and Ansys CFX® provide fast results for virtually any fluid or multiphysics application, with industry-leading accuracy and robustness across the widest range of applications. At the same time, Ansys® Mechanical™ structural analysis software enables engineers throughout the industry to optimize their product designs and reduce the costs of physical testing.

Dell Technologies engineers tested and optimized the software-hardware stack together in Validated Designs for Ansys, including Ansys Fluent, CFX and Mechanical. These systems are designed and configured specifically for Ansys, to enhance performance for CFD and FEA applications that are critical for virtual product development. Validated Designs for Ansys use a flexible approach to system design, where modular building blocks can be combined to build or scale systems that are optimized specifically for Ansys workloads and use cases.

### Validated designs and performance benchmarking

Validated Designs outline tested, validated configurations, and provide the resulting performance of Ansys Fluent, CFX and Mechanical. They describe the system building blocks and include guidance for sizing and scaling. The solution leverages Dell servers, networking and storage, all available with a single point of contact for support. Workload management and job scheduling can be handled efficiently with Bright Cluster Manager® software from Bright Computing®.

<sup>1</sup> Dell Technologies Case Study, "[Taking Computing to the Edge](#)," July 2021.

<sup>2</sup> Dell Technologies Case Study, "[McLaren Racing Delivers DoubleDigit Performance Improvements](#)," July 2021.

Because the optimum solution configuration depends on the specific mix of applications and types of simulations, there are a variety of options to consider, along with relevant criteria when making these selections. Dell Technologies HPC and AI experts are available to assist you with customizing a solution for your specific needs. And [Dell Technologies Services](#) — ranging from consulting and education to deployment and support — are available when and where you need them. Dell Technologies also offers a broad range of financial options, including flexible consumption models to evolve with you over time.

| Infrastructure servers  | Compute servers  | Storage options  | Networking   | Management software  |
|---|--|--|--|--|
| <ul style="list-style-type: none"><li>PowerEdge R650 or R6515</li></ul> | <ul style="list-style-type: none"><li>PowerEdge R650, R6525, R750, R7525, C6520, C6525</li></ul> | <ul style="list-style-type: none"><li>PowerScale A300 or F600 scale-out NAS</li><li>Validated Design for HPC BeeGFS High Performance, or PixStor Storage</li></ul> | <ul style="list-style-type: none"><li>PowerSwitch N3248TE-ON Ethernet switch</li><li>NVIDIA® QM8790 HDR InfiniBand</li></ul> | <ul style="list-style-type: none"><li>Bright Cluster Manager</li></ul> |

## Resources

- [ansys.com/delltechnologies](https://www.ansys.com/delltechnologies)
- Get the AMD-based [engineering-Validated Design](#)
- Get the Intel-based [engineering-Validated Design](#)
- See engineering results and blogs on the [Dell InfoHub](#)
- Explore the [Dell Technologies HPC & AI Innovation Lab](#).
- Join the Dell Technologies HPC Community at [dellhpc.org](https://dellhpc.org).

## Learn more

[Dell Technologies InfoHub](#)  
[delltechnologies.com/hpc](https://delltechnologies.com/hpc)

## Ansys and Dell Technologies

If you've ever seen a rocket launch, flown on an airplane, driven a car, used a computer, touched a mobile device, crossed a bridge, or put on wearable technology, chances are Ansys software played a critical role in its creation. Ansys is the global leader in engineering simulation. We help the world's most innovative companies deliver radically better products to their customers. By offering the best and broadest portfolio of engineering simulation software, we help them solve the most complex design challenges and engineer products limited only by imagination.

Dell Technologies helps organizations and individuals build their digital future and transform how they work, live and play. The company provides customers with the industry's broadest and most innovative technology and services portfolio for the data era.

