

ENHANCE ENGINEERING PRODUCTIVITY THROUGH CAE INNOVATION

Achieve new levels of profit and performance with Ansys applications

Manufacturers face key challenges that are increasing the demand for CAE innovation.

- Lost efficiency within the product design cycle
- Limited resolution size, complexity, or number of simulation models that can run at once
- Long turnaround times for complex simulations
- Lost engineering productivity due to hardware constraints and underutilization of legacy equipment
- Critical need to scale simulations to an HPC cluster
- Lack of IT and/or expertise to expand use of CAE solutions

In partnership with Ansys, HPE and AMD are transforming product development.

Manufacturing companies worldwide are adopting CAE solutions. As CAE becomes even more critical to the entire supply chain and product lifecycle, robust HPE clusters powered by world-leading AMD processors deliver faster applications that help reduce costs, improve quality, and dramatically speed time to market. These powerful capabilities can help manufacturers solve their most complex problems and accelerate innovation now and in the future.

EMPOWER A NEW AGE OF MANUFACTURING

Manufacturers face rising challenges to remain competitive in an industry that is changing constantly. Companies diversify and improve their products and services to reach a global population of consumers. This floods the market with offerings at competitive prices.

To succeed, manufacturers must run more cost-effective operations, easily scale their resources to meet escalating demands, identify additional revenue streams, and leverage vast amounts of data to make better business decisions. To realize these immense goals, manufacturers rely on powerful tools and applications to optimize how they bring products to market.

BREAKTHROUGH SIMULATION TECHNOLOGY

Advancements in computer-aided engineering (CAE) have transformed manufacturing with a cutting-edge approach to analysis and simulation. CAE eliminates the need to build multiple prototypes prior to launching a product, replacing expensive and time-consuming physical models with computer-generated models that unlock innovation. These technologies drive improvements in many manufacturing industries—including automotive, aerospace, medical devices, semiconductors, chemical production, and energy.

CAE streamlines collaboration throughout the supply chain, enabling engineering and design teams to rapidly communicate and speed up testing stages of development for new and existing products. These capabilities also help increase product quality and safety while mitigating the risks and expenses associated with product failure.

Using CAE software, manufacturers can dedicate valuable resources to designs that have the best potential for market success.

Ansys is a leading provider of CAE applications, offering a rich solver and application portfolio to support the entire product development process. Ansys software contains sophisticated numeric modeling tools and robust solvers to deliver fast and accurate insights for nearly every engineering application. Coupled with an AMD-powered HPE cluster, the result is a high-value CAE solution that enables engineering and design teams to create virtual prototypes of products and systems, eliminating the need to make costly workflow trade-offs. Simulations include mechanical, electronic, and embedded software components to test all possible physical conditions that exist in the real world.

The benefits of CAE for manufacturing are limitless, but only with the right technology. Many companies fail to realize the full potential of these game-changing applications due to limited capacity to support large and diverse workloads. CAE simulation, design, and testing leverage vast amounts of data, which puts enormous stress on underlying IT infrastructure. Legacy technology is a major obstacle for manufacturers that want to expand their CAE capabilities.

Manufacturers need a high-performance computing (HPC) infrastructure that can keep pace with business needs. The ideal environment will deliver extreme speed and scalability to manage complex simulation models for the full range of Ansys CAE applications. Companies that invest in innovation today will have the ability to accelerate product delivery and maintain a competitive edge.

ADOPT HIGH-VALUE CAE SOLUTIONS

Hewlett Packard Enterprise (HPE) and AMD are empowering a new age of manufacturing with [next-generation simulation technology](#). HPE is a leader at the [cutting-edge of HPC](#), introducing performance-ready systems that are expertly engineered to facilitate CAE workloads. These robust solutions integrate compute, networking, software, storage, advisory services, and financial options—delivered on-premises, in a hybrid environment, or as a service through [HPE GreenLake for HPC](#). In collaboration with AMD, the [HPE-Ansys solution for CAE](#) allows manufacturers to scale up their HPC infrastructures easily to accommodate their most demanding and time-sensitive workloads.

We provide high-performance [HPE Apollo 2000 Gen10 Plus](#) systems powered by [AMD EPYC™ processors](#) combined with Ansys software to drive CAE innovation. The HPE Apollo 2000 Gen10 Plus is a groundbreaking platform that brings the capabilities of supercomputing to

Resources

hpe.com/us/en/compute/hpc/apollo-systems.html

amd.com/en/products/epyc-server

ansys.com/hpc

hpe.com/us/en/services/pointnext.html

hpe.com/us/en/greenlake/high-performance-compute.html

¹“SC20 Virtual Market Update,”
Hyperion Research, Nov 2020

Our solution partner



Make the right purchase decision.
Contact our presales specialists.



Chat



Email



Call



Get updates

data centers of any size. These systems are density-enhanced to create highly efficient and sustainable manufacturing operations. [Built on AMD EPYC CPUs](#), HPE clusters deliver increased performance with greater simplicity, enhanced security, and cost savings.

Joint solutions from HPE and AMD enable manufacturers to run their applications in any type of IT environment, from on-premises to the cloud, to increase data center ROI. With AMD EPYC processors to help optimize performance across the board, manufacturers can manage new deployments and changing workloads quickly and cost-effectively to transform their business outcomes. AMD adds an additional layer of security through [AMD Secure Encrypted Virtualization](#) and [AMD Secure Memory Encryption](#), two breakthrough features of AMD EPYC processors, which allow manufacturers to help secure their data and memory, even while it is in use.

HPE offers manufacturers a complete and modular system software portfolio, which consists of HPE solutions in conjunction with leading edge Ansys applications. This portfolio is validated, integrated, and performance enhanced by HPE with AMD EPYC processors, so manufacturers can select the right mix of HPE offerings and Ansys software to support their CAE efforts from one source—including operating system, cluster management, job schedulers, resource managers, HPC tools, and libraries.

SIMPLIFY YOUR DEPLOYMENT

[HPE Pointnext Services](#) provide advisory and professional services to assist manufacturers as they transform. HPE experts collaborate with you to create a road map for CAE innovation. We work to define your business goals, identify challenges, and select the right solutions to fit your requirements, so you can operate efficiently now and in the future. HPE Pointnext Services are also available to help simplify deployment and even manage your CAE solution, so you can focus on your high-value production goals.

Manufacturers who choose not to deploy on-premises or as part of a hybrid environment can utilize HPE and

AMD solutions as a service through [HPE GreenLake](#). HPE GreenLake offers financing and deployment options with HPC as a service (HPCaaS). HPE and AMD collaborate closely with Ansys to expand the availability of HPC capabilities for CAE using a consumption-based model. HPE GreenLake is a pay-per-use, scalable, point-and-click experience that is managed for you—at the edge, colocations, or in your data center. These services bring the cloud experience to your Ansys applications, data, and workloads with the option to plan for capacity as well as scale up or down on demand. These capabilities automate and accelerate critical processes by harnessing the unmatched agility of the cloud. With HPE GreenLake, you can free up IT and capital with capacity that is easily available to fulfill your engineering needs.

CONCLUSION

The scale and scope of engineering projects are growing at a rapid pace. More than ever, manufacturers need reliable partners with deep HPC and manufacturing expertise to meet evolving business challenges and remain a step ahead of the competition.

As a market leader in HPC and CAE solutions, HPE offers the industry's broadest portfolio of high-performance technologies, comprehensive services, and an outstanding ecosystem of applications to help manufacturers unlock the next generation of CAE.¹ In collaboration with AMD, we enable faster Ansys applications to solve their most complex problems, innovate more effectively, help reduce costs and complexity, and scale to deliver exceptional performance. HPE works to help optimize the full stack of a cluster for CAE, regardless of the CPU, to tackle your greatest design and engineering challenges. Together, we can enhance engineering productivity to speed up time to market and help maximize your ROI.

Let us help you achieve new levels of profit and performance.

LEARN MORE AT

hpe.com/info/hpc-manufacturing-and-engineering

ansys.com/hpe

ansys.com/amd