



## Ansys 2025 R1 Increases Collaboration, Expands Cloud and AI Functionality, and Delivers Data-Driven Insights with Powerful Digital Engineering Technology

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Digital engineering-enabling technologies connect parallel workstreams, reducing costly prototyping, facilitating cross-functional collaboration, and accelerating time-to-market

### / Key Highlights

- The [Ansys SimAI™](#) cloud-enabled artificial intelligence solution now allows users to expand the training data to gain further insight during post-processing
- New capabilities in the [Ansys System Architecture Modeler \(SAM\)™](#) include support for SysML v2, enabling more optimized product designs and significant time savings by creating tighter connections across teams while making product requirements accessible and scalable across the engineering organization
- CFD HPC Ultimate is a new product that enables enterprise-level computational fluid dynamics (CFD) capabilities for one job on multiple CPU cores or GPUs — without the need for additional high-performance computing (HPC) licenses

PITTSBURGH, Feb. 4, 2025 /PRNewswire/ -- [Ansys](#) (NASDAQ: ANSS) 2025 R1 features refined digital engineering-enabling technologies that easily integrate with existing infrastructure, minimizing disruption and empowering teams to collaborate on more innovative products. Supercharged by the power of AI, cloud computing, GPUs, and HPC, Ansys R1 enhancements enable faster, collaborative decision-making, broader design exploration, and reduced product design timelines.

"Ansys 2025 R1 offers more integration capabilities than ever, helping teams carve a digital path through the entire lifecycle of a product, with tools and solutions to help expertly manage data pre- and post-development," said Shane Emswiler, senior vice president of products at Ansys. "This release highlights that our solutions can serve as guideposts, helping disconnected teams stay the course and work collaboratively from a single, accessible source of truth. This not only significantly cuts costs, but it also accelerates time-to-market, which helps our customers stay competitive."

As products become more integrated and complex, R&D processes must adapt to meet growing and ever-changing market demands. Ansys meets customers where they are in their digital transformation journey and equips them with tools and solutions to meet evolving market needs.

### Advanced physics solvers

Ensuring product performance begins with understanding the multiphysics involved, from the components to the system. The latest release from Ansys highlights new products and capabilities that deliver fast, high-fidelity, physics-based results, helping teams make informed decisions earlier in the design cycle:

- [Ansys Discovery™](#) 3D simulation software significantly expands thermal modeling with the addition of electrothermal analysis, orthotropic conductivity, and internal fans while maintaining speed and ease of use
- The structural analysis suite features a fully integrated solution for noise, vibration, harshness (NVH), delivering 10x faster frequency response function (FRF) calculator, vibro-acoustics mapping, optimized meshing, and mode contribution analysis
- [Ansys Electronics](#) connects to other Ansys software products, enabling improved meshing that is crucial for 3D integrated circuits, automated workflow capabilities, and boosted simulation performance
- A new Polymer FEM product utilizes high-fidelity models to capture real-world materials behavior, addressing customers' evolving materials simulation requirements

"The Ansys platform offers key advantages for Firefly as we rapidly innovate to support responsive space services," said Brigette Oakes, vice president of engineering at Firefly Aerospace. "CFD is one area where Ansys shines — Fluent accurately models combustion dynamics and complex thermal interactions in our engine designs. Its integration of thermal and structural analysis simplifies workflows, and its user-friendly interface and responsive support team make it a critical tool for a fast-paced company like ours."

### Cloud, HPC, and GPUs

The power of cloud computing, HPC, and GPUs are changing the speed at which modern products are engineered. Accessibility, interoperability, and scalability are the heart of this evolution, empowering customers to go beyond the limits of desktop applications to collaboratively design more innovative products. Ansys R1 highlights advancements to its GPU solvers and adds web-based, on-demand capabilities to a variety of applications:

- The [Ansys Fluent®](#) multi-GPU fluid simulation solver now supports applications with very high total mesh cell counts, such as automotive external aerodynamics. This allows designers to add more parameters to refine accuracy without compromising overall simulation speed
- Ansys CFD HPC Ultimate is a new product that enables enterprise-level CFD capabilities for one job on multiple CPU

cores or GPUs without the need for additional HPC licenses

- New GPU-accelerated simulations in [Ansys Lumerical FDTD™](#) advanced 3D electromagnetic simulation software uses 50% less GPU memory and provides a 20% reduction in meshing time compared to CPUs
- The [Ansys Mechanical™](#) GPU-accelerated direct structural finite element analysis solver is up to 6x faster than alternative solutions and the iterative solver is 6x faster than CPU-only versions
- Ansys Cloud Burst Compute with Discovery empowers designers to solve 1,000 design variations in 10 minutes. Parametric studies in Discovery are accelerated by 100x or more by leveraging NVIDIA GPUs
- The Ansys Cloud Burst Compute capability provides elastic, flexible, on-demand HPC capacity for Ansys Mechanical, Fluent, and [Ansys HFSS™](#) high-frequency electromagnetic simulation software

### Artificial intelligence

Ansys continues to deepen its portfolio with AI-augmented technologies, bringing unparalleled speed, innovation, and accessibility to the computer-aided engineering (CAE) industry. Ansys AI allows teams to use new or previously generated data to analyze designs within minutes, rapidly train their own AI models, speed time-to-market, and reduce costs:

- Ansys has developed an intuitive, interactive tool to streamline data preparation for SimAI modeling
- SimAI now allows users to expand the training data to gain further insight during post-processing, such as honing analysis around a specific component within a larger design
- Ansys Electronics AI+ uses AI-driven techniques to predict resources and runtime for electronics simulations in [Ansys Maxwell®](#) advanced electromagnetic field solver, [Ansys Icepak®](#) electronics cooling simulation software, and HFSS
- Advanced synthetic radar simulation within [Ansys RF Channel Modeler™](#) high-fidelity wireless channel modeling software empowers the digital mission engineering community with a comprehensive training and validation dataset for ground-based AI target identification

"Ansys' industry-leading simulation solutions will help drive Vertiv's business model as we design solutions for the future," said Steve Blackwell, vice president of engineering at Vertiv. "Our mission is to revolutionize the way the world conceptualizes and develops data centers — from cooling and power technologies through implementing AI in the design of the data center itself. With Ansys, we will more quickly meet critical milestones that will help us deliver the most optimal infrastructure to support our customers' AI-based projects with energy-efficient and reliable future-forward designs."

### Connected ecosystem

Cutting-edge R&D involves adopting design methodologies like model-based systems engineering (MBSE) and automation to keep workflows seamless and efficient. Ansys solutions are interoperable and scalable, making it easy to integrate new technologies into existing infrastructure to avoid product design disruption. Included in the Ansys 2025 R1 are enhancements that focus on MBSE capabilities and data management to make the digital transition easier:

- [Ansys ModelCenter®](#) MBSE software and SAM deliver upgraded support for SysML v2, allowing more optimized product designs and significant time savings by creating tighter connections across teams while making product requirements accessible and scalable across the engineering organization
- ModelCenter now has improved MBSE connectivity for greater compatibility, including an enhanced Capella connector and deeper integration with Ansys SAM for intuitive search, save, and modification
- [Ansys Minerva®](#) simulation process and data management software generic connector improvements help reduce the time and cost of implementation by standardizing how external data is brought into Minerva, allowing users to verify and resolve any conflicts before uploading. The connector also helps improve engineer productivity with new asynchronous job launch capabilities

Additional R1 announcements include:

- [Ansys optiSLang®](#) process integration and design optimization software includes enhancements across interfaces, distributed computing, and more advanced algorithms, adding flexibility and performance to the design workflow
- [Ansys Granta Materials Intelligence \(MI\)®](#) product collection's integrations with CAE, computer-aided design, and product lifecycle management software now feature a unified user experience between the Granta end-user interface and the integration interfaces
- Task-based performance improvements made to the fault tolerant meshing and watertight meshing workflows in Fluent improve meshing speeds
- Ansys PowerX™, a new tool for power field-effect transistor (FET) and power management integrated circuit (PMIC) analysis, simulation, and optimization

[Click here to learn more about Ansys 2025 R1.](#)

### / About Ansys

Our Mission: Powering Innovation that Drives Human Advancement™

When visionary companies need to know how their world-changing ideas will perform, they close the gap between design and reality with Ansys

simulation. For more than 50 years, Ansys software has enabled innovators across industries to push boundaries by using the predictive power of simulation. From sustainable transportation to advanced semiconductors, from satellite systems to life-saving medical devices, the next great leaps in human advancement will be powered by Ansys.

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