ANSYS Discovery Live

Instantaneous Simulation

Instantly see 3-D results enabled by a simplified physics setup and revolutionary solver technology powered by native parallel GPU processing.
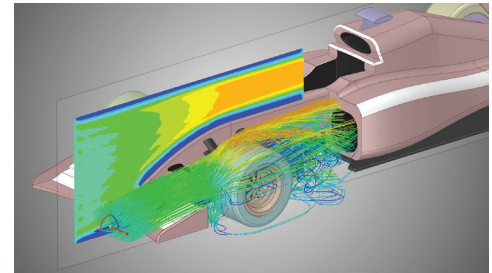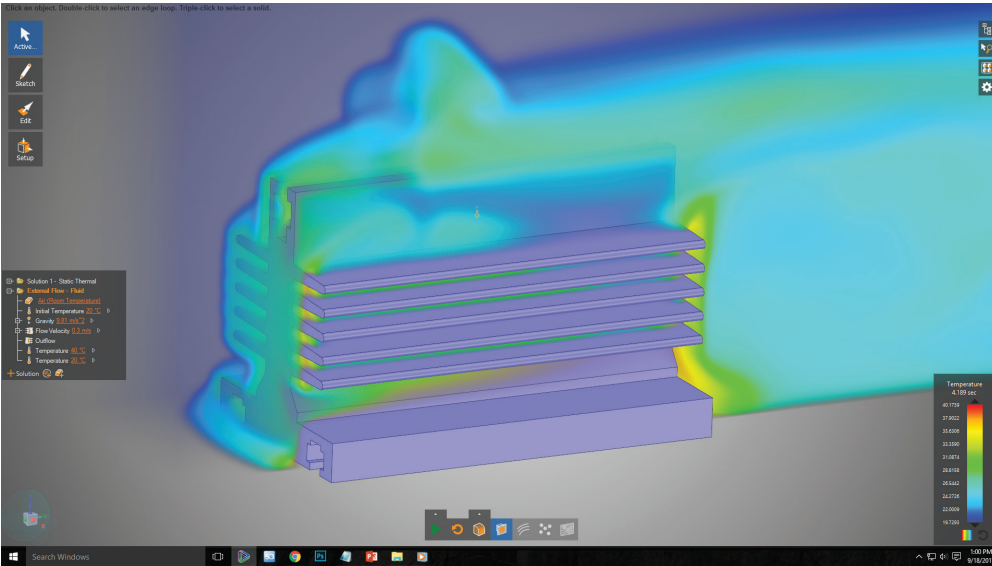
Interactive Experience

Simulation results change live as you change physics types or inputs, make geometry edits or alter display characteristics. This is a paradigm shift in the way simulation is used for 3-D design.

Experiment Quickly and Gain Intuition

Observe results, gain insights and monitor trends. Use charts and calculations to measure output values of interest, track the impact of any change and rapidly explore design options.

Available for trail and purchase, ansys.com/discovery

Combining fluids and thermal simulations with geometry changes provides instant details of velocity and thermal flow characteristics.

Discovery Live is the first real-time 3-D simulation environment that enables you to interact intuitively and quickly with geometry, physics and results while the simulation is running.

"When I first saw Discovery Live I was very intrigued. I believe it could be a game changer, and greatly help in democratization of modeling and simulation. It has the potential for our specialists and designers to do "what if" studies much, much faster and easier."

— **Bob Tickel**
    Director of Structural & Dynamic
    Analysis, Corporate R&T,
    Cummins

"Designers, scientists and engineers around the world rely on ANSYS to accurately predict their final products and projects. ANSYS' Discovery Live unleashes the power of NVIDIA GPUs and CUDA parallel computing to make possible the first-ever real-time design environment with simultaneous visualization and simulation. We're committed to working with ANSYS to advance breakthroughs in the way new products are designed and created."

— **Bob Pette**
    Vice President of Professional Visualization
    Nvidia

Example Capabilities

Structural

- Interactively understand and improve part or small assembly strength and stiffness.
- Optimize weight through immediate visualization of stress distribution and rapid geometry modifications.
- Easily and quickly explore multiple loading scenarios.

External fluid flow

- Visualize the path a fluid takes around structures.
- Explore recirculation zones and experiment with changing flow direction.
- Gain early insights into the trends of pressure drop, drag and lift.
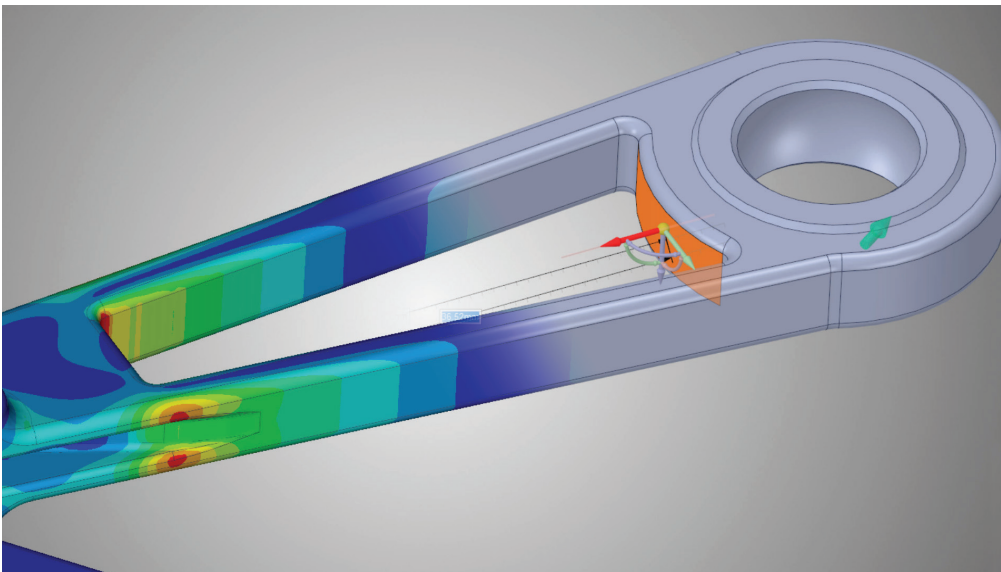
Internal fluid flow

- Observe pressure drop and velocity through pipes and other contained volumes.
- Gather qualitative information for things like flow dispersion thermal mixing.
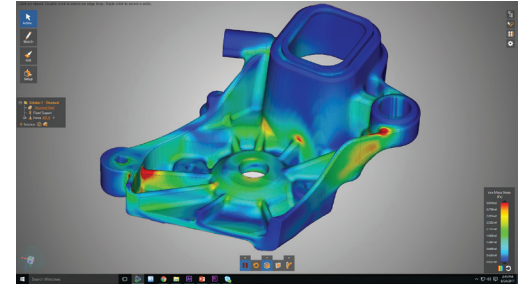
Thermal

- Understand heat dissipation from convection or conduction between small to medium parts and assemblies.

Modal

- Quickly calculate natural frequencies for parts and assemblies to immediately determine if the lowest mode of a design is above a minimum acceptable frequency.
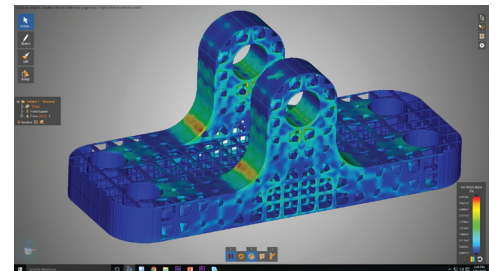

Engineering insights are displayed in seconds, even with the less-than-ideal CAD geometries of complex structural components.

"I see this as a valuable teaching tool as it removes the barrier of having to learn how to use a simulation tool. Educators can focus on teaching the concepts, demonstrating the physics in action and assessing the results. Similarly students can get right to the physics and discover without having to become simulation experts first. This tool will allow true democratization of simulation."

— **Prof. Rajesh Bhaskaran, Ph.D.**
Swanson Director of Engineering Simulation
Cornell University

Instantaneous display of stress distribution, even on complex STL lattice structures

Graphic and numerical updates are immediate when experimenting with design concepts and model changes in Discovery Live.

ANSYS®