

# ANSYS Structures in 2019 R3

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## Structures:

Innovations to ANSYS structural solutions in ANSYS 2019 R3 enable you to:

- Study large assembly models with millions of degrees of freedom with ANSYS Motion, an advanced multibody dynamic solver now integrated into ANSYS Mechanical.
- Quickly and accurately predict product failure early in the design stage for electronic hardware at the component, board and system levels with the addition of ANSYS Sherlock.
- Translate electronic computer-aided design (ECAD) models into finite element analysis (FEA) geometries in minutes and build on FEA information to predict time to failure.
- Evaluate multiple design variations to scale by running tens of thousands of design points spread across clusters, networks, and operating systems with distributed compute services (DCS) — a new family of applications to distribute, manage, solve and optimize design challenges on a variety of compute resources.
- Simulate tightly coupled thermal and structural field analysis with two new streamlined workflows in Mechanical. Easily capture the interaction of thermal and structural loads with static and transient simulations.
- Perform inverse analyses with Mechanical. The inverse solver can determine the shape of a model prior to extreme loads and deformation — sometimes referred to as “hot-to-cold” analysis.
- Benefit from 120 additional materials within Mechanical from the ANSYS GRANTA Materials Data for Simulation database, including electromagnetic properties data where appropriate.