SIMULIA | DesignSight Structure (DSR)

Enables up-front realistic simulation of product assemblies under structural loading conditions

DesignSight Structure

Overview

Designers can now perform quick design validations as they create their designs, resulting in time and cost savings and better designs. SIMULIA's DesignSight products provide powerful yet accessible simulation capabilities seamlessly integrated into a CAD environment on the **3D**EXPERIENCE Platform.

DesignSight Structure enables designers to simulate the real-world structural behavior of product assemblies. DesignSight Structure leverages proven Abaqus multiphysics technology to simulate the realistic behavior of products under a variety of mechanical loading conditions. By enabling realistic simulation earlier in the design cycle, DesignSight spurs product innovation, reduces time to market, and ensures product competitiveness.

Features and Benefits

- Simulate realistic behavior under structural loading conditions
- Stress simulation on individual parts and assemblies
- Study the interaction between parts in an assembly
- Leverage proven Abaqus technology
- High performance on multi-core workstations
- Runs on remote HPC clusters when Abaqus tokens are available
- Automatically generates the right mesh with adaptive refinement
- High-performance results postprocessing
- Based on the new **3D**EXPERIENCE lifelike user experience
- Provide guidance at all times to help the user understand what to do next
- Natural extension of the design experience
- Advanced simulation technology with an easy-to-use interface

DesignSight Structure Highlights

Fosters creativity through up-front simulation

DesignSight is a natural extension of the design experience, enabling users to study their design's behavior and to explore different design options. DesignSight is designed to be easy to use, while including the functionality required to simulate the complexities of real-world behavior.

Enables occasional users of simulation to simulate their models under realistic loading conditions

The user experience greatly reduces the need to understand simulation technology. Advanced simulation technology is used automatically, while the options presented to the user are intuitive and explained in the language of product designers. For example, nonlinear simulation is performed automatically so that the user does not need to choose between linear and nonlinear options. Another example is that the finite element mesh is created and adaptively refined automatically to ensure high-quality results for each simulation. Users receive continuous guidance regarding where they are in the simulation process and what they need to do next, so that they are never lost.

Provides a 3D lifelike user experience

The DesignSight interface allows the user to interact directly with the 3D model with minimal reliance on icons and dialog boxes. The experience is intuitive because all interactions are similar to those of the physical world.

## Manages simulations automatically

DesignSight leverages the 3DEXPERIENCE platform to manage the lifecycle and to ensure all product data, including part, product assembly, and all simulation data, are synchronized and traceable.

## Provides high-quality results using the latest Abaqus multiphysics technology

Uses proven Abaqus multiphysics capability to provide reliable results backed by more than 35 years of continuous development and industrial use. Advanced users of simulation have long considered Abaqus multiphysics a premier tool to help solve some of the most vexing design and engineering problems. DesignSight makes this state-of-the-art technology more accessible than ever before.

Enables rapid turnaround time of large models using high-performance computing resources to permit more design iterations

DesignSight includes cutting-edge computation technology to utilize the power of modern multi-core workstations to obtain simulation results quickly. Users with access to a compute cluster and Abaqus tokens can seamlessly run the simulation on the cluster and use 128 cores or more for extremely rapid turnaround times of large models.
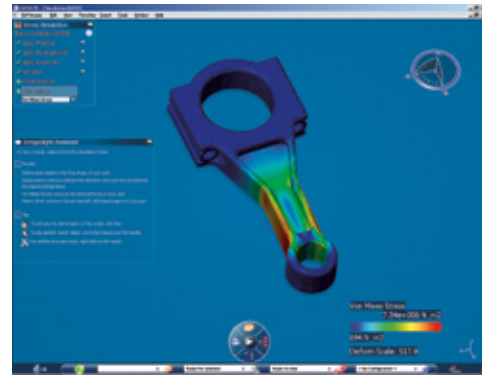
DesignSight enables the designer to quickly evaluate the stress in a part and validate the design.
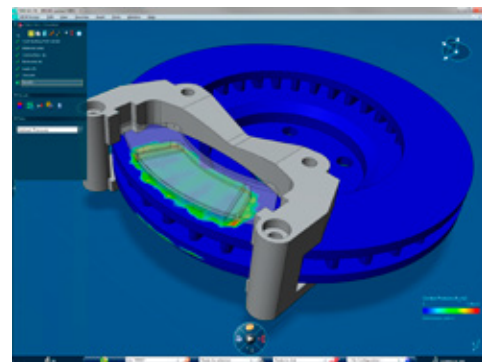
DesignSight Structure can model contact in an assembly to help you understand how loads are transferred between parts. Setting up a simulation model to include contact is as easy as turning contact on throughout the model.
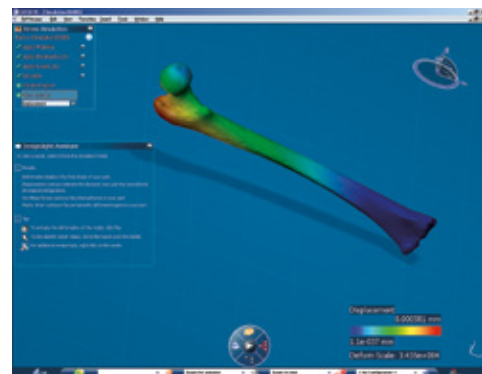
DesignSight provides unique, embedded help tools that guide users through the steps to define a simulation. The Stress Simulation panel and the DesignSight Assistant are always available to ensure that the necessary tasks are clear.

DSR-0113