SOLIDWORKS

3DEXPERIENCE

# SOLIDWORKS® SIMULATION ROLE MATRIX

*This information applies to the SOLIDWORKS Simulation portfolio on the **3D**EXPERIENCE® platform.*

| KEY CAPABILITIES | SOLIDWORKS Simulation Designer | SOLIDWORKS Simulation Engineer | SOLIDWORKS Simulation Analyst |
|---|---|---|---|
| **ABAQUS FEA ANALYSIS TYPES** | | | |
| **Linear Analysis**<br>Perform linear static structural, thermal (steady-state), frequency, and buckling analysis. Also perform transient modal and harmonic linear dynamic studies. | ● | ● | ● |
| **Nonlinear Static Analysis**<br>Perform nonlinear static, structural, transient thermal, and viscoelastic/creep behavior studies. | | ● | ● |
| **Advanced Nonlinear Analysis**<br>Follow a guided panel for intuitive step-by-step simulation workflows. | | | ● |
| **Durability Analysis**<br>Run realistic fatigue studies using events from elastic or elastic-plastic structural analysis and multiple load events. | | | ● |
| **HIGH PERFORMANCE COMPUTING (CLOUD)** | | | |
| **Abaqus Solvers**<br>Apply industry-leading Abaqus solvers for robust, fast, and reliable structural simulations. | ● | ● | ● |
| **Flexible Computing**<br>Leverage embedded compute to run simulations on your local computer or on cloud, removing hardware barriers. | ● | ● | ● |
| **High Performance Computing (HPC)***<br>Go beyond embedded compute to quickly solve large and/or complex simulations with credits or tokens. | ● | ● | ● |
| **INTEGRATION AND USABILITY** | | | |
| **User Assistant**<br>Accelerate simulation setup while minimizing errors, with the intuitive workflow panel to guide you. | ● | ● | ● |
| **SOLIDWORKS Design Associativity**<br>Seamlessly access SOLIDWORKS CAD parameters for what-if studies. | ● | ● | ● |

| KEY CAPABILITIES | SOLIDWORKS Simulation Designer | SOLIDWORKS Simulation Engineer | SOLIDWORKS Simulation Analyst |
|---|---|---|---|
| **INTEGRATION AND USABILITY** | | | |
| **Design Exploration**<br>Optimize 3D design by driving SOLIDWORKS Design parameters. | ● | ● | ● |
| **E-learning**<br>Get up to speed quickly and improve your skills with extensive library of learning modules. | ● | ● | ● |
| **INTERACTIONS AND CONNECTIONS** | | | |
| **General Contact**<br>Automatically set up robust component contact. | ● | ● | ● |
| **Contact Pair Detection**<br>Automatically detect and create surface contact pairs. | ● | ● | ● |
| **Connections**<br>Join multiple components in assembly with virtual fasteners, bolts, welds, etc. | ● | ● | ● |
| **FEA MESHING** | | | |
| **Automatic Meshing**<br>Get robust default solid meshing for nonexperts. | ● | ● | ● |
| **Rule-Based Meshing**<br>Accelerate creation of high-quality meshes with rules to capture small features (holes, fillets). | | ● | ● |
| **Mesh Tools**<br>Apply solid, shell, and beam meshes with comprehensive range of element types for wide set of industrial applications. | ● | ● | ● |
| **Geometry Preperation**<br>Prepare your geometry for meshing using common idealization techniques within your simulation tool, ensuring your design and manufacturing BOMs aren't compromised. | | | ● |
| **MATERIALS** | | | |
| **Extensive Materials Library**<br>Apply standard materials or define custom linear, nonlinear, and fatigue materials. | ● | ● | ● |
| **Material Calibration**<br>Generate custom material properties based on physical tests. | | | ● |
| **RESULTS EXPLORATION** | | | |
| **Simulation-Driven Design Decisions**<br>Visualize simulation results in 3D to explore product performance and quality. Extract product KPIs to make value-driven, informed design decisions. Visualize 3D in context of assembly. Generate reports. | ● | ● | ● |
| **Results Post-Processing Tools**<br>Generate reports, contour/vector/isosurface plots. Create X-Y plots (field, history), path plots, view cuts. Track results with sensors. | ● | ● | ● |
| **Lightweight Results Review**<br>Review and share simulation results in real time in cloud. Compare design performance KPIs across many simulations. | ● | ● | ● |

| KEY CAPABILITIES | SOLIDWORKS Simulation Designer | SOLIDWORKS Simulation Engineer | SOLIDWORKS Simulation Analyst |
|---|---|---|---|
| **COLLABORATION AND DATA MANAGEMENT** | | | |
| **Share and Review Results**<br>Visualize simulation results in AR/VR across CAVE, HMD, Desktop Wall, and Immersive Wall environments for more realistic review and decision-making. | ● | ● | ● |
| **Engineering Collaboration**<br>Collaborate in real time, exchange ideas, and manage tasks across disciplines in the cloud. | ● | ● | ● |
| **Data Access and Management**<br>Manage and access latest product design information from single, centralized, secure location in the cloud. | ● | ● | ● |

* To access HPC, you need to purchase additional credits or tokens.

## Dassault Systèmes is a catalyst for human progress. Since 1981, the company has pioneered virtual worlds to improve real life for consumers, patients and citizens.

Through the **3D**EXPERIENCE agentic platform, AI-powered, science-based virtual twins help 390,000 customers of all sizes, in all industries, collaborate, imagine and create sustainable innovations that drive meaningful impact.

For more information, visit: **www.3ds.com**

3DEXPERIENCE®

**Europe/Middle East/Africa**
Dassault Systèmes
10, rue Marcel Dassault
CS 40501
78946 Vélizy-Villacoublay Cedex
France

**Asia-Pacific**
Dassault Systèmes
17F, Foxconn Building,
No. 1366, Lujiazui Ring Road
Pilot Free Trade Zone, Shanghai 200120
China

**Americas**
Dassault Systèmes
175 Wyman Street
Waltham, Massachusetts
02451-1223
USA

Virtual Worlds for Real Life

DASSAULT SYSTEMES

©2026 Dassault Systèmes. All rights reserved. **3DEXPERIENCE**, the 3DS logo, the Compass icon, IFWE, 3DEXCITE, 3DVIA, BIOVIA, CATIA, CENTRIC PLM, DELMIA, ENOVIA, GEOVIA, MEDIDATA, NETVIBES, OUTSCALE, SIMULIA and SOLIDWORKS are commercial trademarks or registered trademarks of Dassault Systèmes, a European company (Societas Europaea) incorporated under French law, and registered with the Versailles trade and companies registry under number 322 306 440, or its subsidiaries in the United States and/or other countries. All other trademarks are owned by their respective owners. Use of any Dassault Systèmes or its subsidiaries' trademarks is subject to their express written approval.