

SIMULIAWORKS MATRIX

Role/Capability		Structural Designer	Structural Engineer	Structural Performance Engineer	Structural Mechanics Engineer
Integration Workflow	SOLIDWORKS® Connector Save SOLIDWORKS data on the cloud-based 3DEXPERIENCE® platform directly from SOLIDWORKS	+	+	+	+
	Full Design Associativity Enable efficient what-if scenarios that update your simulation model for any change made with a CAD application connected to the platform	.	.	.	.
User Interface	User Assistant Follow an interactive wizard to set up, run and review results of simulation	.	.	.	.
	Physics Methods Reuse Customize the User Assistant to streamline the setup and solving of complex simulations			.	.
Platform	Data Access and Management Access the latest product design information from a single, centralized, secure location on the cloud	.	.	.	.
	Engineering Collaboration Collaborate in real time, exchange ideas and manage tasks across disciplines on the cloud	.	.	.	.
	Lightweight Results Review Review and share simulation results in real time on the cloud	.	.	.	.
Solver	Abaqus Implicit Solver Solve static problems such as gasket compression and pre-loaded bolts

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Solver	Abaqus Implicit Dynamic Solver Solve quasi-static problems such as snap fits			•	•
	Abaqus Explicit Solver Solve nonlinear dynamic problems such as drop test and impact				•
Scenario	Linear Static Analysis Run linear static, thermal (steady-state), frequency, and linear buckling studies	•	•	•	•
	Linear Dynamic Analysis Run modal transient, and model harmonic studies		•	•	•
	Nonlinear Static Analysis Run nonlinear static, thermal (transient) and visco/creep studies			•	•
	Nonlinear Dynamic Analysis Run nonlinear dynamic, nonlinear buckling, random vibrations, complex frequency, and sub-modeling studies				•
	Sequential Multi-Step Simulations Set-up automatic sequential loading in one simulation			•	•
	Abaqus General Contact Automatically set up component contact			•	•
Model	Connections Set up modeling of multiple components in an assembly	•	•	•	•
	Adaptive Solid Meshing Automatically refine meshes for higher accuracy where needed	•			
	Comprehensive Meshing Capabilities Create high-quality meshes for solids, shells, and beams		•	•	•
	Rule-Based Meshing Set meshing size and specifications (holes, fillets) for automatic high-quality mesh creation		•	•	•
	Geometry Preparation & Simplification Automatically remove undesired geometry (holes, fillets, logos), extract mid-surface, and partition geometry for hex meshing				•

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Materials	Nonlinear Materials Explore a wide range of materials with the following properties: hyper-elasticity, plastic or permanent deformation, creep deformation, viscoelasticity			•	•
	Material Calibration Use test data to calibrate model behavior				•
Results	Basic Post-Processing Tools Generate report, contour/ vector/iso-surface plots	•	•	•	•
	Advanced Post-Processing Tools Create XY plots (field, history), path plots, view cuts		•	•	•
	Material Rendering Create stunning visuals coupling material rendering with simulation results		•	•	•
	High-Performance Visualization Accelerate the visualization of results even on large models		•	•	•
Computation	Local Computing Run simulations on user's local computer	•	•	•	•
	Cloud Computing Run simulations remotely on the cloud	+	+	+	+

• Included

+ Requires an additional role

Our 3DEXPERIENCE® platform powers our brand applications, serving 11 industries, and provides a rich portfolio of industry solution experiences.

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