

Coreform IGA for Abaqus 2026.7

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We are pleased to announce the release of Coreform IGA for Abaqus 2026.7. Building on the 2026.3 release, this release expands Abaqus load and contact workflows, adds instance-aware mesh authoring and multi-cell material support, and introduces richer result and probe output. It also adds replayable journaling for Coreform operations, Linux installation and configuration tools, and evidence-backed documentation of product capabilities and Abaqus keyword support.

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i Note

Capabilities marked **Production**, **Beta**, or **Alpha** below use the support levels defined in [Current capabilities and limitations](#). The [Capabilities matrix](#) provides the detailed scope, applicable versions, limitations, and verification evidence for each capability.

1 Abaqus integration

1.1 Abaqus 2026 Hot Fix 5 support

Coreform IGA 2026.7 supports Abaqus 2026 Hot Fix 5 (HF5), including the corresponding Abaqus/Standard solver, Abaqus/CAE, and CAA API components. Installation-time and

launch-time checks warn when Coreform IGA detects an incompatible Abaqus version or configuration.

For installation requirements, see [Configuring Abaqus to support Coreform IGA for Abaqus](#).

1.2 Keyword-aware input translation

Coreform IGA Interop now uses a keyword-aware translator to preserve native Abaqus model content while translating definitions that target IGA elements. The translator distinguishes IGA, native finite-element, and mixed targets; retains supported native definitions; and reports unsupported combinations instead of silently changing them. The initial reviewed coverage includes distributed loads, general-contact inclusions, solid sections, field and history output, and included input files.

The new [Abaqus keyword support guide](#) documents whether each reviewed keyword and option is passed through, translated, split for a mixed model, or rejected with a diagnostic. The guide and translator are generated from the same support definitions so their behavior remains synchronized.

1.3 Expanded pressure, traction, and gravity loading

Coreform IGA Interop expands distributed-load translation for IGA and mixed IGA—finite-element models. Uniform pressure, pressure specified by total force, uniform surface traction, gravity, body force, and reference-point moments transferred through kinematic couplings have **Production** support and numerical verification. Follower and resultant surface-traction options are available at the **Beta** level because they had workflow coverage but not complete official verification in this release.

Gravity and body force are not supported on Boolean-merged, multi-cell topology in this release. Use tied parts for those load and topology combinations.

1.4 Early general-contact implementation

This release includes a **Beta** implementation of Abaqus/Standard general contact, including **ALL EXTERIOR** contact domains and mixed native finite-element—IGA models. These workflows have integration and regression coverage but did not yet have official numerical verification and were not part of the recommended Production contact workflow at release time. Surface-to-surface contact remains an **Alpha** capability with more restrictive supported combinations.

Consult the [Capabilities matrix](#) before using contact in a production workflow.

2 Meshing and model authoring

2.1 Instance-aware IGA mesh definitions

The Coreform IGA Mesh authoring workflow now respects both dependent and independent Abaqus part instances. Part-level mesh definitions can be reused by dependent instances, while assembly-level definitions can follow the position and orientation of their target instance.

The mesh manager updates previews and stored mesh state as instances are transformed, suppressed, resumed, converted between dependent and independent, or deleted.

Dependent part instances have **Production** support in the release's verified solid-mechanics workflows.

2.2 Hardened multi-cell material and interface workflows

Coreform IGA Interop hardens the initial cellular-material workflow from 2026.3, more reliably preserving cell-based material section assignments from Abaqus/CAE Boolean merges created with retained intersections. This release adds validation and failure diagnostics for multi-cell material-interface translation and corrects cellular-topology handling across more complex models. Coreform IGA Mesh also adds shared interface tessellations between tied parts so both sides of the interface use a consistent discrete surface.

Boolean merge with retained boundaries, cell-based section assignment, multi-cell material interfaces, and surface tie constraints have **Production** support in this release.

3 Results and automation

3.1 IGA result databases and probes

Coreform IGA Interop now writes native IGA field results to `<job-name>_iga_results.sql` and maps supported fields to `<job-name>_iga.odb` for visualization in Abaqus/CAE. Explicit displacement (**U**) and stress (**S**) output requests have **Production** support.

Point and line probes also have **Production** support for sampling result fields at arbitrary physical locations. This release adds a multi-point probe type for sampling several locations associated with one part instance. Probe results can be imported into Abaqus/CAE as XY data for plotting and comparison.

For a complete authoring and postprocessing workflow, see [Stress concentration in a thin plate with a hole](#).

3.2 Replayable Coreform operations

Coreform mesh, probe, and job operations are now recorded alongside native Abaqus commands in Abaqus recovery and journal files. Create, edit, copy, rename, delete, visibility, and instance-reconciliation operations emit replayable commands so a recovered journal reconstructs both the Abaqus model and its Coreform definitions. This makes interactive Coreform IGA model-authoring workflows reproducible and provides a starting point for automation.

4 Installation and documentation

4.1 Linux setup and diagnostics

The Linux packages now include a configuration tool for validating the Abaqus environment, configuring licensing, recording the Abaqus command used by the Coreform IGA launcher,

and optionally creating command-line and desktop-menu shortcuts. The setup tooling reports each prerequisite and configuration action so installation problems can be diagnosed without manually inspecting the Abaqus environment.

For platform-specific procedures, see [Installation and Configuration](#).

4.2 Evidence-backed capability documentation

This release introduces the Coreform IGA for Abaqus User Guide, worked Example Problems, Verification Manual, Abaqus keyword support guide, and searchable Capabilities matrix. Production capability claims in the matrix are tied to current passing verification evidence, while Beta and Alpha labels identify usable or emerging workflows that still need stronger verification or interface stabilization.

See the [Example Problems](#) for end-to-end workflows and the [Verification Manual](#) for numerical comparisons with accepted analytic or Abaqus reference solutions.