

Coreform IGA for Abaqus 2026.10

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Coreform IGA for Abaqus 2026.10 brings local refinement into the Abaqus/CAE interface, adds a beta visualization-output workflow, and improves beta MPI execution for supported jobs. These notes cover changes since the 2026.9 release.

Note

Alpha and **Beta** describe the support levels in [Current capabilities and limitations](#). Check the [Capabilities matrix](#) for the scope and verification status of a particular workflow.

1 Abaqus/CAE application

1.1 Local refinement in the GUI

You can now create and manage local refinements in the Mesh module without writing a script. Attach a refinement to an immersed IGA mesh, choose a refinement level, and select a named CAD geometry set, a sphere or spherical shell, or a box as its region. The Refinement Manager supports editing, renaming, copying, suppressing, and deleting refinements.

Preview a region while editing it, or display refinement lines on the mesh preview in the viewport. The mesh preview is an approximation of the generated mesh; run the Coreform IGA Mesh stage to obtain the actual discretization. Local refinement remains an **Alpha** capability.

1.2 Mesh preview controls

The Mesh Manager now provides viewport previews of the background mesh and its boundary approximation before mesh generation. Display controls let you inspect the mesh and refinement regions while working in a part or assembly.

1.3 Improved GUI performance

Module switching and mesh and probe editing are more responsive in large projects. Viewport caching reuses unchanged geometry and mesh display data to reduce repeated calculations and drawing work.

2 Analysis and Abaqus interoperability

2.1 Improved output (Beta)

The new output workflow creates a conforming visualization mesh for `<job-name>_iga.odb`, giving continuous interior contours and field values evaluated at output-node locations. It also reduces output database size in tested models. This changes visualization output, not the underlying analysis.

This workflow is **Beta** and off by default. To enable it for a GUI job, select **Use new output (Beta)** on the Job Manager's General tab. For command-line meshing, pass `--output-mesh` to `coreform_iga_mesh`, for example `coreform_iga_mesh model.cf --output-mesh`. The GUI setting passes the option to both the Mesh and Abaqus interoperability stages; a mesh built with the command-line option records the output mesh for the subsequent interoperability stage.

2.2 MPI execution (Beta)

Multi-process Abaqus/Standard execution is available at the **Beta** level for supported Coreform IGA workflows. The runtime now discovers which IGA elements belong to each solver rank and loads their analysis data accordingly. This release also improves MPI initialization for heat transfer and contact models.

In the Job Manager's **Parallelization** tab, set the Abaqus CPU count and select **MPI** as the Abaqus mode. The IGA mesh-generation CPU count is configured separately. Check the intended model and procedure with a single-process reference run when evaluating this beta workflow.