AUTODESK® MAYA®

INTRODUCING MAYA 2020.4

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Maya 2020.4 marks a major milestone for visual programming in Bifrost for Maya. With a focus on bringing richer, procedural workflows to more areas of the pipeline, Maya 2020.4 adds

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powerful scattering, instancing, volumetrics, and FX capabilities to Bifrost. This update also integrates the latest version of Arnold, bringing you a faster, more creatively engaging rendering experience, as well as improvements to the Motion Library and Substance plugins.

A NEW CHAPTER FOR BIFROST

With Maya 2020.4, Bifrost is now more deeply integrated within Maya. Crucial usability improvements make the visual programming environment easier to navigate, and powerful scattering, instancing, volumetrics, and FX capabilities bring proceduralism to more areas of the creative pipeline.

INSTANTLY TERMINATE COMPUTATION

You can now hit the ESC key to instantly terminate computation. Previously, any computation in Bifrost that took more than a few seconds to complete required you to wait for it to finish. This update is useful for FX artists who want to escape out of slow running simulations or other non-FX related graphs.

MAYA CURVE SUPPORT

Maya curves can now be dragged and dropped directly into Bifrost graphs, where they are converted into Bifrost strands. Strands compounds and nodes can then be used to build curve-based assets and tools, opening the door for you to use Maya curves to guide procedural generation of roads, fences, and the placement and orientation of object scattering. This feature also makes it possible to build compounds that accept Maya curves acting as guide-hairs and use Bifrost to generate interpolated hairs for Alembic caching or direct rendering.

GRAPH SHAPE NODES

Bifrost graphs can now be represented as either DG nodes or DAG nodes called bifrostGraphShapes, that are visible in the outliner. The DAG node combines a Bifrost graph with a Maya shape node and is the new default for Bifrost graphs in Maya. DG nodes have been modified to be invisible in the outliner, mirroring the existing Maya convention.

FIELDS SYSTEM

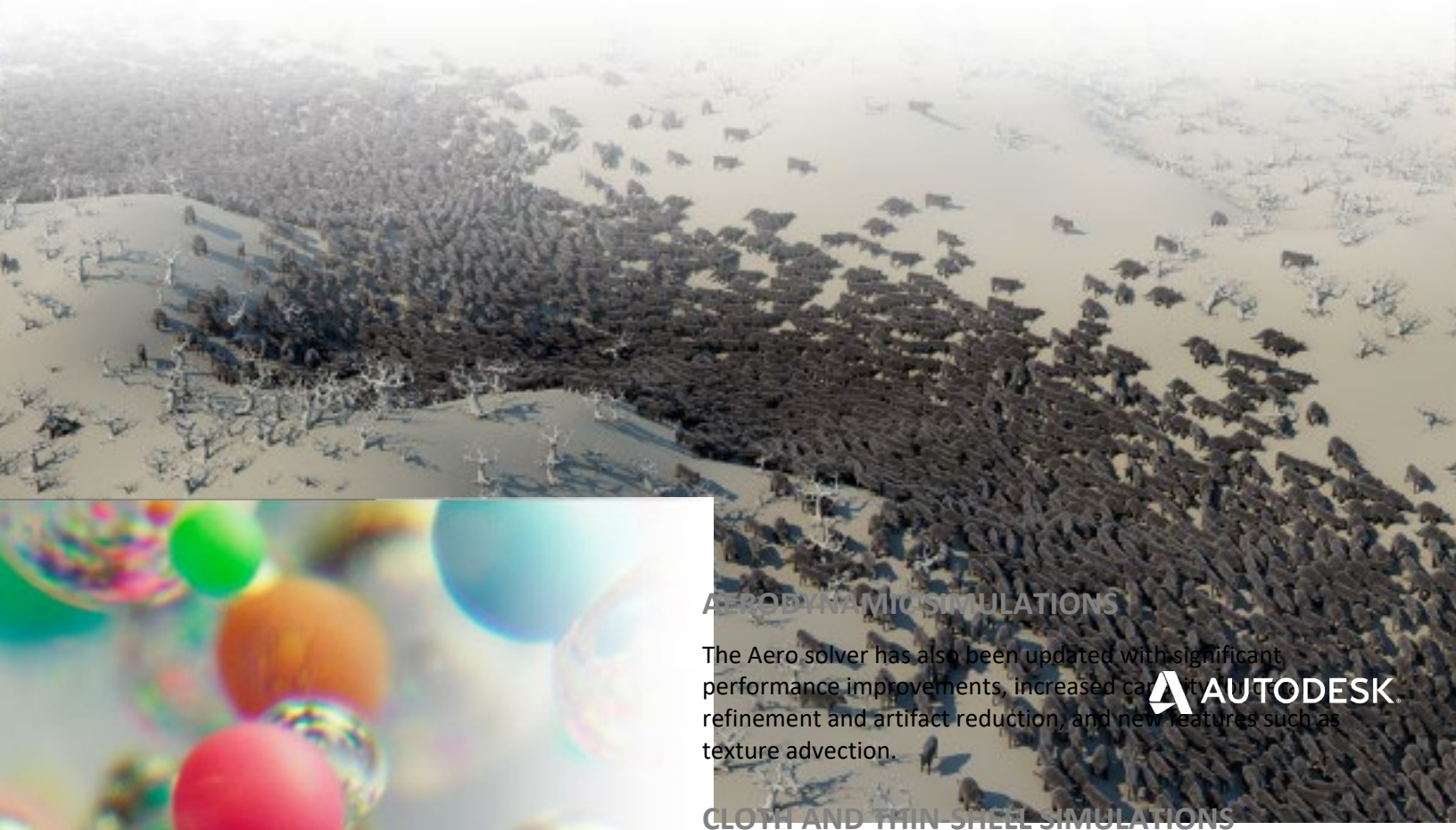
This update also introduces user-defined, implicit 3D scalar and vector fields. Unlike discrete volume types such as the Bifrost adaptive volume or OpenVDB where field data is stored in memory, these new fields provide infinite resolution with low memory overhead. The fields system provides nodes that allow you to define custom vector and scalar fields to act as dynamics influences on particles, cloth, or aerodynamic simulations – without having to go inside FX compounds to edit them. These fields are also useful in non-FX workflows such as controlling scattering positions and orientations, mesh deformation, or creating implicit surfaces.

SCATTER PACK

This update introduces the first version of higher-level scattering and instancing compounds, including a blue noise scattering node and integration with the new fields system.

VOLUME IMPROVEMENTS

Volume tools have been updated to support fully adaptive conversions between meshes and volumes. New tools have also been added for merging adaptive volumes and converting between fields and volumes.



AERODYNAMIC SIMULATIONS

The Aero solver has also been updated with significant performance improvements, increased caching options, refinement and artifact reduction, and new features such as texture advection.

CLOTH AND THIN-SHELL SIMULATIONS

The Material Point Method (MPM) solver for cloth and thin-shells has been updated to produce more accurate collisions and self-collisions

RENDERING IN MAYA

Arnold 6.1 is included with Maya 2020.4, bringing you powerful new rendering features and improvements including post-processing nodes for creating exposure, color correction, and vignetting effects and support for nestled dielectrics. Arnold GPU also continues to get faster and more robust with each release.

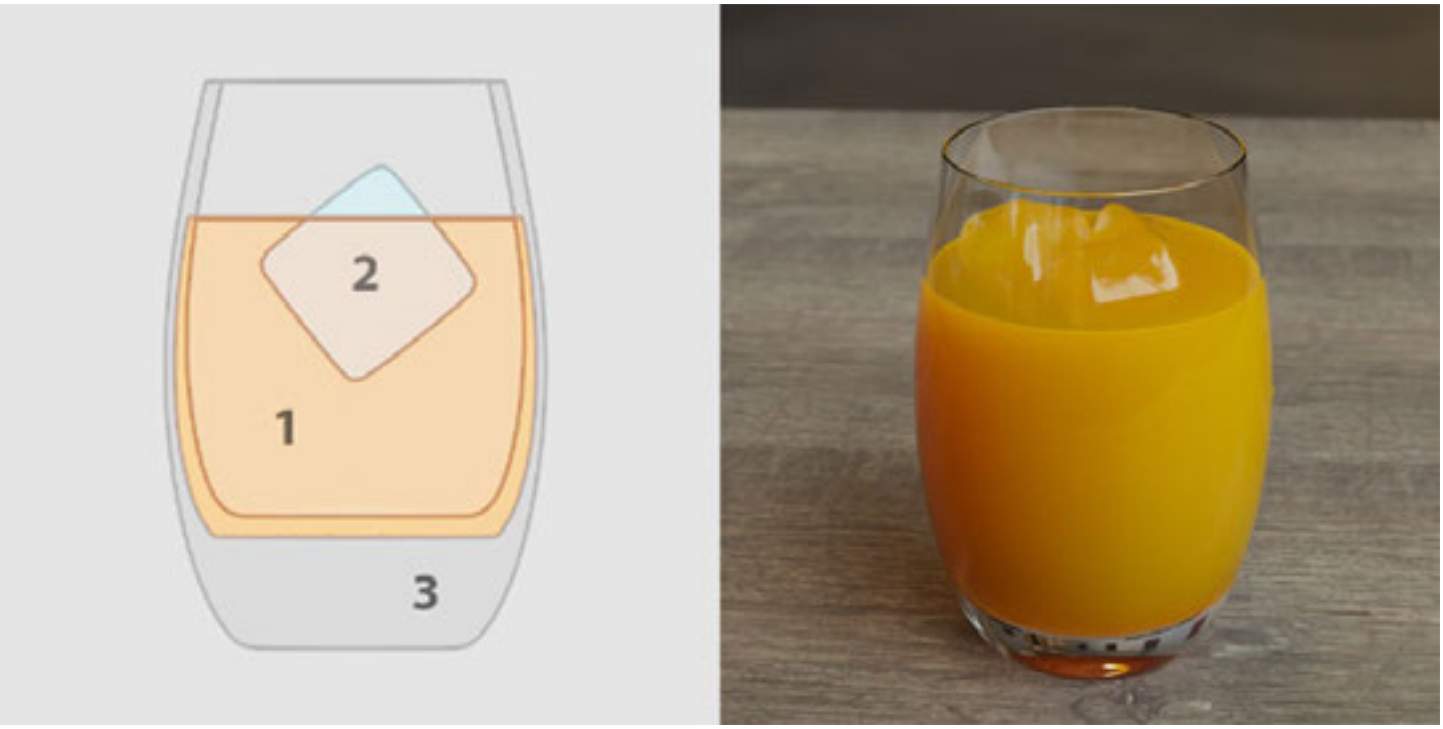
NEW POST-PROCESSING NODES

New post-processing nodes have been added to allow chaining of pixel effects before reaching the output driver, so you can get your render looking just right. New imagers in this release, include:

- *Exposure*: Specify additional exposure compensation.
- *Color Correction*: Adjust saturation, contrast, gamma, gain and offset for the whole luminance range, or just shadows, midtones, or highlights.
- *Lens Effects*: Apply optical lens effects like vignetting.
- *White Balance*: Correct your image's white balance with reference illuminants, custom colors, or a blackbody temperature.
- *Tonemap*: Artistically modify your image's tone mapping using a filmic or a modified Reinhard curve.

NESTED DIELECTRICS

We've added nestled dielectrics, a new priority system for overlapping transparent objects. By allowing artists to assign priorities to models, this new feature gives scenes more physically accurate reflections and refraction of rays. This allows for more realistic renders of scenes such as glass containers with liquid contents and bubbles or ice cubes.



GPU IMPROVEMENTS

The GPU renderer can now partially load textures which means bigger savings on both memory consumption and rendering time. In a typical scene, the amount of memory needed for textures is now up to 5x smaller. Also new in this release is initial support for light linking, added support for light AOV groups, and improved OSL JIT compilation performance.

MOTION LIBRARY IN MAYA

This release also brings several updates to the native Motion Library plugin, including enhanced character previews with new orbit and zoom functions and a smoother initialization experience.

SUBSTANCE PLUGIN UPDATE

An updated Substance plugin includes Substance Engine 8.0.3 compatibility, Standard Surface support, and improved interoperability with Maya and other Substance programs.

LEARN MORE

- Check out our **Maya Timeline** for a look back at how far Maya has come since 2016.
- Visit the **Bifrost hub** for the latest graphs and compounds, tutorials, and forum discussions.
- Visit the **Maya learning channel** for the latest how to's.
- Learn how artists and studios around the world are using Maya today on **AREA**.