

5.00.00

Official release

Date – 26 May, 2022

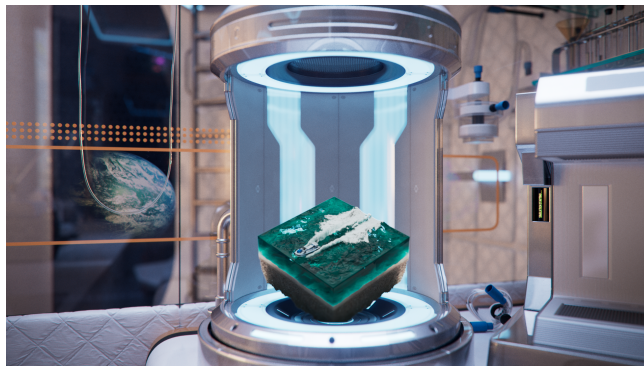
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More control over Active Bodies

Create procedural animations for Active Bodies with a directable [Thrustor Force](#).

Restrict Active Bodies to move or rotate along a selected horizontal or vertical axis using the [Axis Lock](#).

Extra control over how Active Bodies interact with your scene — choose whether they should emit, attract, and retain fluids, and much more.



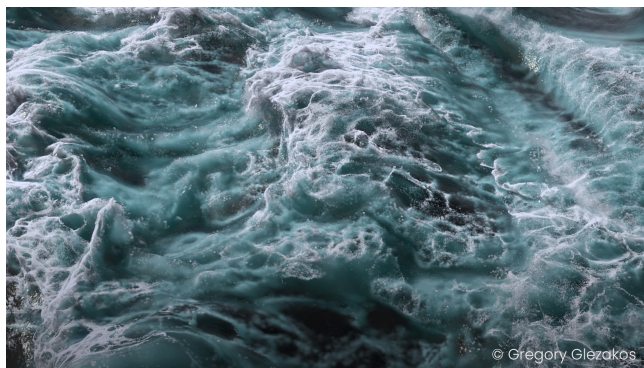
New and enhanced presets

Create realistic effects quickly and easily with new and enhanced presets.



Realistic Foam Patterns

Create more realistic foam, faster. Easily add variety to the size and look of your [patterns](#).



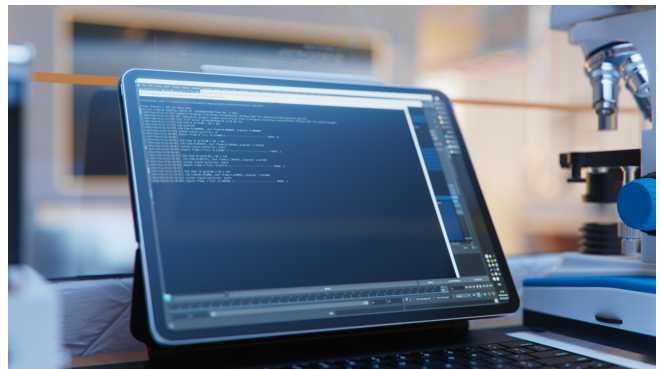
Voxel Shader

Shade fire and smoke simulations, and meshes in a single simulator using the [Voxel Shader](#) — giving you more time to be creative.



Standalone Simulations

Speed up your simulations with the initial implementation of the [Phoenix Standalone Simulator](#) and easily debug your scenes through the Phoenix simscene Node Editor.



macOS support

Phoenix for Maya now runs on macOS.

Combined changelog since Phoenix 4.41:

- | | | |
|------------|--------------------------|---|
| NEW | FLIP SOLVER | New 'Size Variation' and 'Stringy' options for the Foam Pattern shapes, allowing for more diverse and interesting patterns |
| NEW | FLIP SOLVER | Multithreaded the routine where moving obstacles push the FLIP particles |
| NEW | FIRE/SMOKE SOLVER | 'Burn Smoke RGB' color option for coloring the smoke created by fuel burning |
| NEW | ACTIVE BODIES | Pick Active Bodies as emitters in Sources, as attractors in Body Force, in 'Distance To' fields in Tuner Expressions, as Birth Volumes and Render Cutters |
| NEW | ACTIVE BODIES | New Thruster node for the Active Bodies, allowing you to propel an active body in a certain direction, which can also be attached to the body so it changes direction as the body rotates |
| NEW | ACTIVE BODIES | New Axis Constraint node for the Active Bodies, allowing you to block the movement of the active body in a certain direction, or to also stop the active body from rotating around a certain axis |
| NEW | ACTIVE BODIES | New option in the Active Body Solver to use the Simulator's jammed walls as obstacles for Active Bodies |

NEW	ACTIVE BODIES	Added an 'Affect by Foam' option to the Active Body Solver that controls how strongly the Foam pushes the Active Bodies - by default it is off
NEW	ACTIVE BODIES	Use Cosmos assets as Active Bodies (latest V-Ray 5 is needed)
NEW	VOXEL SHADER	New separate Voxel Shader node, allowing shading of both fire/smoke and meshes from the loaded data of the same Simulator without having to duplicate the Simulator
NEW	PARTICLE SHADER	Option to flatten particles near the Liquid Simulator's borders in Ocean Mesh mode, like the vertices of the ocean do
NEW	PRT I/O	PRT cache import straight into the Simulator and the Standalone Preview, without the need for a PRT Reader node. This also allows retiming of PRT sequences
NEW	STANDALONE SIMULATOR	New "phoenixfd" command-line executable that simulates .simscene files exported from 3ds Max, similar to V-Ray Standalone. It simulates up to 40% faster than inside 3ds Max or Maya. Currently it only supports Simulator and Source nodes, as well as Phoenix node properties. Still to be added are: Foam/Splash options, support for animated options and animated geometries, resimulation, textures
NEW	STANDALONE SIMULATOR	Phoenix FD menu option to Export, Simulate and simultaneously launch the Standalone Preview application to observe the simulation result
NEW	STANDALONE SIMULATOR	Added a Phoenix Node Viewer application for exploring the node graph of .simscene files. Dragging and dropping would also display .vrscene files
NEW	STANDALONE PREVIEW	Mesh Preview, including wireframe mode, customizable via the command line
NEW	STANDALONE PREVIEW	Viscosity Voxel Preview
NEW	GPU PREVIEW	Smoke Opacity modulated or replaced by textures will show in the viewport GPU Preview
NEW	CACHE CONVERTER	Reduce or increase grid resolution with the cache_converter tool
NEW	TOOLBAR	Simulation Restore button in the Phoenix toolbar
NEW	PRESETS	New 'Jet Engine' and 'Stormy Sea' quick setup toolbar presets
NEW	PRESETS	New 'Ice Cubes' and 'Speedboat' quick setup toolbar presets
NEW	PHOENIX	macOS support and notarized Phoenix app bundle
NEW	PHOENIX	Support for Maya 2023
NEW	PHOENIX	Windows 11 support for NUMA machines. Windows Vista is no longer supported after this change and the minimum supported version is Windows 7
IMPROVED	FIRE/SMOKE SOLVER	Sped up fire/smoke simulations with up to 20%
IMPROVED	FIRE/SMOKE SOLVER	Multi-threaded the Adaptive Grid of fire/smoke simulations when Preallocation is On
IMPROVED	FIRE/SMOKE SOLVER	Repeatedly increase the resolution using resimulation that overwrites the same cache sequence
IMPROVED	FLIP SOLVER	FLIP resimulation now writes caches to new "_resim" files instead of overwriting the old ones
IMPROVED	FLIP SOLVER	Sped up and improved thread balance of liquid simulations with moving obstacles
IMPROVED	FLIP SOLVER	Improved Foam 'B2B Interaction' and Splash 'Liquid-Like' that don't shoot particles away and can now be used even with Ocean setups
IMPROVED	FLIP SOLVER	Allowed values below 1 for the 'Mist Amount' option and excluded it from affecting how fast Splash particles are deleted
IMPROVED	FLIP SOLVER	Made the default Foam 'Half Life' 10 like in 3ds Max
IMPROVED	FLIP SOLVER	Ocean Simulations with Adaptive Grid can now expand upwards without the ocean level changing
IMPROVED	SIMULATION	Sped up simulations with enabled Motion Inertia that don't actually move

IMPROVED	SIMULATION	Allowed rendering with V-Ray GPU while the CPU simulation is running in both IPR and production modes. With V-Ray CPU, the simulation is paused during rendering
IMPROVED	ACTIVE BODIES	New model for calculating buoyancy of Active Bodies, allowing better interaction with the Wave Force in large scale ocean vessel setups
IMPROVED	ACTIVE BODIES	'Collider Type' option in the Node Properties, allowing choice between fast or precise collision options
IMPROVED	VOLUME SHADER	Reduced the required V-Ray GPU memory when rendering fire/smoke volumes
IMPROVED	VOLUME SHADER	Sped up render start with thousands of simulator copies
IMPROVED	PARTICLE SHADER	Fall back to Bubble mode when rendering with V-Ray GPU in Point mode
IMPROVED	ANIMATION	Sped up 2x frame blending with Time Bend controls
IMPROVED	CACHE I/O	Updated OpenVDB from version 5 to version 8.1
IMPROVED	CACHE I/O	Sparsify VDBs exported by the Phoenix simulation or the Cache Converter so now they are generally smaller
IMPROVED	CACHE I/O	Recognize by default Velocity(x), Velocity(y) and Velocity(z) channels from VDBs from thinkingParticles
IMPROVED	CACHE I/O	Show the sizes on storage of the different data chunks in AUR files in the Standalone Preview and Cache Converter
IMPROVED	STANDALONE PREVIEW	The Phoenix installer now associates the Phoenix Previewer as default program for opening AUR, VDB, F3D and PRT files
IMPROVED	STANDALONE PREVIEW	Drag & drop AUR, VDB, F3D and PRT caches in the Phoenix Previewer
IMPROVED	STANDALONE PREVIEW	'Auto Load Latest' option that monitors the storage for newly appearing sequence files
IMPROVED	STANDALONE PREVIEW	Right click menu over the loaded cache directory for copying the full path or just the file name
IMPROVED	LOGGING	'Log Verbosity' option in the Phoenix Preferences that has these levels: Debug, Info, Important, Warnings and Errors. Low res simulations can be 10% faster in 'Important' compared to 'Debug'
IMPROVED	PRESETS	Faster and better looking Fire quick setup toolbar preset
IMPROVED	PRESETS	Increased the brightness of the Cold Smoke quick setup toolbar preset
IMPROVED	PRESETS	Increased the height and tweaked the colors of the Candle quick setup toolbar preset
IMPROVED	PRESETS	Use just one Particle Shader for all emitters in the Ink in Water quick setup toolbar preset, and shade using the new 'Color From Particle RGB Channel' option
IMPROVED	PRESETS	Improved the simulation and rendering of the Ocean toolbar quick setup preset and made it more like the Ship example scene
IMPROVED	PARTICLE TEXTURE	Allowed selecting channels that are not available in the entire cache sequence in the Color From Particle Channel box
IMPROVED	PLAIN FORCE	Affect Temperature, Smoke and Fuel separately by turning off the new 'Affect All Fire/Smoke Channels' option
IMPROVED	MAYA INTEGRATION	Create a set if it does not exist when opening the Sets Editor from the Particle Shader, Particle Texture, Source and Simulator Interaction
IMPROVED	USER INTERFACE	Renamed the 'Droplet Breakup' option to 'Droplet Formation' in order to be more clear what the option does
IMPROVED	USER INTERFACE	Renamed the 'B2B Interaction' option to 'Foam Volume' in order to be more clear what the option does
IMPROVED	USER INTERFACE	Show a warning saying that Foam on Hit Resimulation requires Splashes to be resimulated
IMPROVED	INSTALLATION	The installer no longer places vray_phoenix, field3dio_phx, openvdbio_phx and distance_measurer_phx in V-Ray's plugins directory; Instead it appends the VRAY_FOR_MAYAXXXX_PLUGINS environment variable

REMOVED	PHOENIX	Dropped support for Maya 2018
REMOVED	PHOENIX	Dropped CentOS 6 support for V-Ray Next
REMOVED	USER INTERFACE	Hid the 'Backtrace (Classic)' Advection Method from the user interface
FIXED	FLIP SOLVER	Initial Liquid Fill produced wetmap over submerged Solid geometry even when there were no liquid particles nearby
FIXED	FLIP SOLVER	Wetmap didn't fully cover objects submerged in liquid created by a Volume Brush Source
FIXED	FLIP SOLVER	Volume Inject Liquid Sources created more particles in voxels partially overlapped by the emitter or by Solid obstacles
FIXED	FLIP SOLVER	The Variation Large option of the Foam was not working, since Phoenix 4.40
FIXED	FLIP SOLVER	Foam Birth Amount differed from 3ds Max. Now it's in particles per cubic centimeter
FIXED	FLIP SOLVER	The Viscosity Diffusion effect changed drastically between 1 and 0.999
FIXED	FLIP SOLVER	Non-Solid liquid emitters in Surface Force mode with disabled Motion Velocity contributed negative velocity
FIXED	FIRE/SMOKE SOLVER	Adaptive Grid crashed when a fire/smoke simulation expanded over 2.1 billion voxels
FIXED	FIRE/SMOKE SOLVER	Rare crash when resimulating with Adaptive Grid with Preallocation
FIXED	SIMULATION	Rare crash if the simulation interacted with another Simulator
FIXED	SOURCES	Changing the grid resolution affected Volume Inject discharge of liquids (scenes saved with older Phoenix versions might simulate differently after this fix)
FIXED	SOURCES	Volume Inject mode for liquids emitted much less pressure than 3ds Max when units were set to meters
FIXED	SOURCES	Particles used as emitters kept adding velocity when Motion Velocity was Off but there were discharge modifiers in the Source
FIXED	SOURCES	Volume Brush created liquid, foam and splash particles with a gap around submerged objects, compared to Initial Liquid Fill
FIXED	SOURCES	Discharge modifiers in Object space were not correct when the emitter was another Simulator
FIXED	NPARTICLES	The Motion Velocity in the Extra Phoenix Attributes of nParticles used in a Source was ignored
FIXED	ACTIVE BODIES	Liquid resimulation broke Active Bodies simulation
FIXED	ACTIVE BODIES	Moving Active Bodies in Maya killed many FLIP particles, unlike in 3ds Max
FIXED	ACTIVE BODIES	Active Bodies may freeze in scenes with large meter scale
FIXED	ACTIVE BODIES	Restoring a simulation with Active Bodies caused them to jump to the scene origin for a frame
FIXED	ACTIVE BODIES	Sometimes a feedback loop accelerated Active Bodies through the liquid
FIXED	SCENE BODY INTERACTION	Explosive velocities were created when using a static liquid Simulator as a Volume Brush emitter
FIXED	SCENE BODY INTERACTION	Some Out of memory situations when interacting with scene geometries or particles were not handled and lead to a crash
FIXED	SCENE BODY INTERACTION	Geometries with scale of 0% created huge velocities in the simulation
FIXED	VRAY PROXY	Crash on simulation start with some large VRayProxies
FIXED	RENDER ELEMENTS	Buckets in the Shadow, Raw Shadow, GI, Raw GI, Light Select and Lighting render elements of a Simulator with Volume Light Cache
FIXED	RENDER ELEMENTS	Crash when Denoiser was used with a Simulator with the Volumetric ZDepth option set to 'Standard Element'

FIXED	VOLUME SHADER	Noise with Fire simulation and reflective material with Glossy below 1
FIXED	PARTICLE SHADER	Render artifacts using Probabilistic Shading when mixing two Particle Shaders in Bubbles/Splashes/Cellular mode
FIXED	PARTICLE SHADER	Crash when rendering Particle Shader using Ray-traced Scattering mode and Probabilistic Shading turned on
FIXED	PARTICLE SHADER	Probabilistic volumetrics rendered particles in Point mode incorrectly when combined with Smoke
FIXED	PARTICLE SHADER	Render slowdown on machines with many cores in Bubble/Cellular/Splashes mode between V-Ray Next and V-Ray 5
FIXED	PARTICLE SHADER	Count Multiplier slowed down significantly after Phoenix 4.10
FIXED	PARTICLE SHADER	Count Multiplier above 1 created particles even between distant chunks of particles
FIXED	MESHER	Memory leak when rendering in Mesh mode
FIXED	OCEAN MESHER	Artifacts in the mesh normals over liquid features which render in front of the horizon line, in Ocean or Cap Mesh mode with Horizon Roughness
FIXED	OCEAN MESHER	Line artifacts or loss of detail with Cap Mesh mode and Ocean Mesh mode and low angled camera
FIXED	OCEAN MESHER	Stepping artifacts in Ocean Mesh mode smoothed with Use Liquid Particles when the liquid level was much different than the ocean level
FIXED	V-RAY IPR	All types of Phoenix previews were drawn on top of and occluded V-Ray's Viewport IPR
FIXED	V-RAY IPR	Enabling "Initial Liquid Fill" in the Extra Phoenix Attributes in caused a V-Ray IPR refresh feedback loop
FIXED	V-RAY IPR	Crash when stopping V-Ray IPR rendering of a scene with Ocean Quick Setup preset
FIXED	PROPERTY LISTER	Crash when typing in the Clear Channels field of the Property Lister
FIXED	ANIMATION	Re-timed particles using Time Bend Controls lost their ID channel
FIXED	ANIMATION	Re-timing particles without IDs caused them to disappear in blended frames
FIXED	ANIMATION	Grid previews disappeared when switching to "Velocity" Grid Blend mode after changing the Input Play Speed to <1 while the Grid Blend mode was a different one
FIXED	ANIMATION	Grid simulation with high velocity using Adaptive Grid and Precise Tracing Grid Blend mode appeared chopped apart
FIXED	BODY FORCE	Moving geometries used in a Body Force created wrong velocities with the Internal Damp or Damp Min Vel options since Phoenix 4.30
FIXED	PREVIEW	Particle Preview size did not work for some particle systems in Maya 2022
FIXED	PREVIEW	All Phoenix previews were not updated properly on scrolling the timeline when 'Smooth shade all' and 'Use default material' were both ON in Maya 2022
FIXED	PREVIEW	Viewport got stuck when using a Particle Texture as a Surface Channel for meshing
FIXED	PREVIEW	The 'Only if Selected' preview option did not work for the Velocity Streamlines
FIXED	PREVIEW	The preview did not clear if using Play Length and scrolling the timeline to an empty frame
FIXED	STANDALONE PREVIEW	Cache File Content time did not show leading zeroes before hours and minutes
FIXED	STANDALONE PREVIEW	The vertical scroll in the Log and the Cache File Content windows did not work if the text had too many lines
FIXED	STANDALONE PREVIEW	Rare crash when opening the Particle Preview rollout of the Phoenix Previewer
FIXED	STANDALONE PREVIEW	Saving an image sequence in the Standalone previewer in CLI mode was saving only the first frame
FIXED	STANDALONE PREVIEW	Zooming in very close on large cache files locked the camera

FIXED	GPU PREVIEW	The GPU preview was stretched and skewed with a rotated Simulator in Maya 2022
FIXED	CACHE I/O	Opening a Maya scene with a Simulator created after Phoenix 4.40 and simulating always created a particle TexUVW channel
FIXED	CACHE I/O	Particles created by the simulation sometimes had invalid or repeating IDs
FIXED	CACHE I/O	he grid velocity from the vector "vel" channel of imported VDB caches was not the correct scale
FIXED	CACHE I/O	Grid RGB channel broke when the grid size was above 1 billion voxels
FIXED	CACHE I/O	AUR caches containing Particle Velocity increased in size, since Phoenix 4.40
FIXED	CACHE I/O	Smoothed Velocity channel of VDB caches incorrectly had very large or very small scale
FIXED	PRESETS	The Blood Splatter and Coffee Quick Setup presets used different V-RayMtl and Particle Shader settings than the 3ds Max ones
FIXED	PRESETS	The Honey and Beer Quick Setup presets differed from the 3ds Max ones
FIXED	PRESETS	The Waterfall toolbar Quick Setup preset changed since Phoenix 4.30
FIXED	USER INTERFACE	Container Dimensions in the Simulation rollout were not correct
FIXED	SCRIPTING	The 'phxfd' module could not be imported and Phoenix Python functions could not be called in Maya 2022
FIXED	LOGGING	Simulations which started under 10 million voxels but later expanded, stopped writing to the Phoenix log file, since Phoenix 4.40
FIXED	INSTALLATION	The Phoenix Previewer and Cache Converter did not install with execute permissions on Linux