

# 4.30.00

Official release

Date – 23 September, 2020

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With Phoenix FD 4.30 we added force tuning to Voxel and Particle Tuners. This allows forces to affect particles or voxels with certain channels, inside or outside geometries, or according to textures, effectively allowing you to mask forces and gain precise control over how, when and where forces affect the simulation.

We sped up our particle preview and added the ability to preview the Rendering Displacement of the particles in the viewport.

Rendering of fire/smoke with the Use Probabilistic Shading option is now much faster with V-Ray 5. Both fire/smoke simulations, as well as large FLIP liquid simulations are also sped up.

We did some more changes to simulations, allowing for more control and quicker iterations, and we also improved our Standalone Preview and Cache Converter tools, so be sure to check them out!

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NEW	PARTICLE TUNER	Choose forces to affect the particles when the Tuner condition passes. This allows forces to affect particles with certain channels, inside or outside geometries or according to textures
NEW	VOXEL TUNER	Choose forces to affect the voxels when the Tuner condition passes, same as the Particle Tuner
NEW	PREVIEW	Displace the particle preview in the viewport when Rendering Displacement is enabled
NEW	CACHE I/O	Cacheless Simulation option for speeding up large simulations. It keeps in memory only the last simulated frame and GPU Preview images or per-frame renders can be saved
IMPROVED	FLIP SOLVER	Now Liquid particles can stick to WetMaps without the need for the Liquid to have viscosity. The strength of the sticky effect now depends only on the Sticky Liquid value and the WetMap viscosity
IMPROVED	FLIP SOLVER	Delete Liquid particles when a Source's Inject Power is negative
IMPROVED	FLIP SOLVER	Change the Motion Velocity, Viscosity or RGB of existing Liquid particles with a Source in Volume Brush mode with disabled Emit Liquid
IMPROVED	FLIP SOLVER	Reduced the peak memory usage of the FLIP liquid simulations
IMPROVED	GRID SOLVER	Sped up the Multi-Pass Transport method with up to 20%
IMPROVED	VOLUME SHADER	Sped up rendering of volumes when Use Probabilistic Shading is enabled
IMPROVED	PARTICLE SHADER	Color Map for the Particle Shader using V-Ray 5 GPU
IMPROVED	PREVIEW	Multithreaded gathering of Particle Preview data
IMPROVED	GPU PREVIEW	Show multiple Simulators in the classic GPU Preview, instead of only the selected one
IMPROVED	CACHE I/O	Sped up grid channel compression when saving AUR from the simulation or cache_converter tool
IMPROVED	STANDALONE PREVIEW	New layout where all panels can be docked, reordered or detached from the main window
IMPROVED	STANDALONE PREVIEW	Added information about the currently loaded path and the date of the cache's last modification
IMPROVED	CACHE CONVERTER	Convert all caches in a folder without specifying frame range
IMPROVED	CACHE CONVERTER	Convert VDB to AUR caches
IMPROVED	CACHE CONVERTER	Added a -storageQuality optional argument, useful when writing AUR caches
IMPROVED	CACHE CONVERTER	Stop the conversion and show a meaningful error message if the Cache Converter can't find its openvdbio.dll
IMPROVED	USER INTERFACE	Stop the simulation with the ESC key or SHIFT + ESC combination

FIXED	FLIP SOLVER	Newborn Splash particles kept splitting and creating more Splashes underwater
FIXED	FLIP SOLVER	WetMap's viscosity was ignored by the Sticky Liquids effect when interacting with variable viscosity Liquid particles
FIXED	FLIP SOLVER	Sticky Liquid's strength did not scale Linearly
FIXED	FLIP SOLVER	Foam's Half Life deleted different amount of particles when simulating on different number of threads
FIXED	FLIP SOLVER	Liquid particles got deleted on contact with animated obstacles having only rotation
FIXED	FLIP SOLVER	A fast moving simulator with Fillup For Ocean had particles created outside the grid, which are then not deleted
FIXED	GRID SOLVER	Crash on Load & Start with Drag particles with RGB
FIXED	SOURCES	Different amount of Source Particles (Drag/Foam/Splash) was born each new simulation or on different number of simulation threads
FIXED	SOURCES	Sources were emitting up to 50% slower in very high resolution scenes, since Phoenix FD 4.20
FIXED	VOLUME SHADER	Crash when rendering AUR files over 2.1 billion voxels with Linear Sampler
FIXED	V-RAY IPR	Random crash in IPR when changing any properties of a Particle Shader
FIXED	MESHER	Setting Motion Blur Multiplier for Mesh modes did not affect the inertial velocity of a moving container
FIXED	OCEAN MESHER	Crash after previewing the ocean mesh in the viewport, deleting the caches, and enabling Pure Ocean
FIXED	OCEAN MESHER	Underwater Goggles did not render correctly with Motion Blur
FIXED	OCEAN MESHER	Ocean Mesh mode with any 3ds Max modifiers did not render on V-Ray GPU
FIXED	PREVIEW	Multithreaded gathering of Particle Preview data
FIXED	CACHE I/O	Size of particles simulated to OpenVDB were in voxels instead of units
FIXED	CACHE I/O	Restoring from VDB causes missing FLIP particles, wrong Initial Fillup, and wrong results with rotating simulators
FIXED	CACHE I/O	Could not save AUR caches where a single grid channel was over 3.05 GB. AUR files saved after the fix can not be opened with older Phoenix versions
FIXED	CACHE I/O	Could not read huge particle systems from AUR cache files (with hundreds of millions of particles). New AUR files will not be readable by older Phoenix versions.
FIXED	CACHE I/O	Rare crash while blending frames including particles with velocity data
FIXED	CACHE I/O	Rarely caches were loaded with missing horizontal voxel slices, which affected the previews, and rendering of fire/smoke and meshes
FIXED	3DS MAX INTEGRATION	Phoenix Textures could not be created in the Material Editor or the 3ds Max Map Browser when Arnold was set as current renderer
FIXED	STANDALONE PREVIEW	After pressing Cancel in the Browse dialog window, the saving path was erased
FIXED	VRSCENES	3D texture maps with Object XYZ mapping rendered with wrong scale with V-Ray Standalone on CPU
FIXED	USER INTERFACE	Animating any Phoenix curves or color gradients (in Discharge Modifiers, Volumetric Settings and Particle Texture) did not update them when scrolling the timeline