5.10.00

Official release

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With Chaos Phoenix 5.10 we added V-Ray IPR CPU support for Simulators.

Now it is also possible to apply 3ds Max modifiers over the Simulator and deform the viewport preview and the rendering of Fire/Smoke, and this will also affect Particle Shaders that render the Simulator's particles. Supported modifiers are currently the Bend, Skew, Taper, Twist, Melt, or Stretch and we are looking forward to expand this list.

Now that smoke already had Absorption color and Phase Function for realistic scattering, we ported these controls to the Fog mode of the Particle Shader, so particles such as Mist can have much more interesting shading.
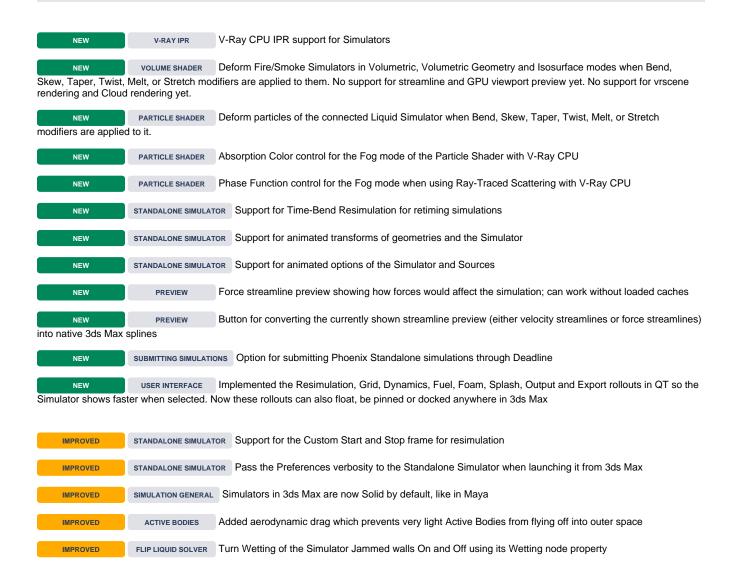
We upgraded our preview of forces that would act on the simulation with a new Force Streamline preview.

Both the Force Streamlines and the Velocity Streamlines can now be converted to native 3ds Max splines and rendered.

The Standalone Simulator now supports animated parameters and transforms of the Simulator and geometries, and also now it can do Resimulation and Time-Bend Resimulation.

We ported many of the Simulator rollouts to QT, so now the Simulator options show up faster when selected. The new rollouts can also pop out of the modify panel, and you can pin them or dock them anywhere in 3ds Max.

As always, we fixed many bugs and also sped up the simulation and rendering - this time some scenes render 30% faster than previous versions.

NEW	**V-RAY IPR**	V-Ray CPU IPR support for Simulators
NEW	**VOLUME SHADER**	Deform Fire/Smoke Simulators in Volumetric, Volumetric Geometry and Isosurface modes when Bend, Skew, Taper, Twist, Melt, or Stretch modifiers are applied to them. No support for streamline and GPU viewport preview yet. No support for vrscene rendering and Cloud rendering yet.
NEW	**PARTICLE SHADER**	Deform particles of the connected Liquid Simulator when Bend, Skew, Taper, Twist, Melt, or Stretch modifiers are applied to it.
NEW	**PARTICLE SHADER**	Absorption Color control for the Fog mode of the Particle Shader with V-Ray CPU
NEW	**PARTICLE SHADER**	Phase Function control for the Fog mode when using Ray-Traced Scattering with V-Ray CPU
NEW	**STANDALONE SIMULATOR**	Support for Time-Bend Resimulation for retiming simulations
NEW	**STANDALONE SIMULATOR**	Support for animated transforms of geometries and the Simulator
NEW	**STANDALONE SIMULATOR**	Support for animated options of the Simulator and Sources
NEW	**PREVIEW**	Force streamline preview showing how forces would affect the simulation; can work without loaded caches
NEW	**PREVIEW**	Button for converting the currently shown streamline preview (either velocity streamlines or force streamlines) into native 3ds Max splines
NEW	**SUBMITTING SIMULATIONS**	Option for submitting Phoenix Standalone simulations through Deadline
NEW	**USER INTERFACE**	Implemented the Resimulation, Grid, Dynamics, Fuel, Foam, Splash, Output and Export rollouts in QT so the Simulator shows faster when selected. Now these rollouts can also float, be pinned or docked anywhere in 3ds Max
IMPROVED	**STANDALONE SIMULATOR**	Support for the Custom Start and Stop frame for resimulation
IMPROVED	**STANDALONE SIMULATOR**	Pass the Preferences verbosity to the Standalone Simulator when launching it from 3ds Max
IMPROVED	**SIMULATION GENERAL**	Simulators in 3ds Max are now Solid by default, like in Maya
IMPROVED	**ACTIVE BODIES**	Added aerodynamic drag which prevents very light Active Bodies from flying off into outer space
IMPROVED	**FLIP LIQUID SOLVER**	Turn Wetting of the Simulator Jammed walls On and Off using its Wetting node property

IMPROVED	**FLIP LIQUID SOLVER**	New 'Splash Split' option to control the rate at which a splash particle splits into smaller ones as it flies, creating a trail
IMPROVED	**SOURCES**	Right click 'Reset to Default' option for the Discharge Modifier curves
IMPROVED	**SOURCES**	Sped up, multithreaded and reduced memory usage when emitting from hundreds of thousands particles. Particle Flow and thinkingParticles can't be used from many threads though, so they remain single threaded
IMPROVED	**VOLUME SHADER**	Sped up rendering of grid volumes with up to 25% when Fully Visible Fire or Volume Light Cache was used
IMPROVED	**VOLUME SHADER**	Sped up rendering of grid volumes with up to 10% when the RGB channel was used
IMPROVED	**VOLUME SHADER**	New 'Volume Motion Blur' option allowing to choose between Ray-traced and Grid-based methods - the Grid-based method creates more visible streaks for fast moving fluids
IMPROVED	**VOLUME SHADER**	Allowed manual creation of the Phoenix atmosphere, but no more than one instance
IMPROVED	**VOLUME SHADER**	Render the fire of volumes in the V-Ray 5 and V-Ray 6 beautyLPE
IMPROVED	**OCEAN MESHER**	Made the borders of the Cap Mesh look exactly like the borders of the container in Ocean Mesh mode
IMPROVED	**OCEAN MESHER**	The width of the smooth transition zone between the simulated waves inside the simulator and the displaced waves outside can now be controlled via the new 'Ocean Border Fade %' option
IMPROVED	**MESHER**	New option to control the smoothing of mesh normals: Always, Never, When Displacement is Off
IMPROVED	**PREVIEW**	Slice Preview Width option
IMPROVED	**PREVIEW**	Option to change the particle preview sizes
IMPROVED	**THINKING PARTICLES**	Replaced the old Phoenix diagrams with the modern ones
IMPROVED	**PRESETS**	Used the Phase Function option for the Clouds quick setup toolbar preset
IMPROVED	**PRESETS**	Start the animations of the Quick Setup toolbar presets from the current timeline start frame
IMPROVED	**CACHE I/O**	'Default Cache Directory' option in the Phoenix Preferences dialog
IMPROVED	**CACHE I/O**	Recognize by default the "velocity(x)", "velocity(y)" and "velocity(z)" grid channels and the "particles_velocity" from VDBs from Blender
IMPROVED	**CACHE CONVERTER**	Dragging and dropping caches over cache_converter.exe would convert AUR to VDB and VDB to AUR without the need to use the command line
IMPROVED	**USER INTERFACE**	Button to Pin the Volumetric Options window so it does not close when the Simulator/VoxelShader is deselected
IMPROVED	**USER INTERFACE**	'Add Many' button in the Scene Interaction rollout and the Source, allowing to quickly add a list of nodes
IMPROVED	**USER INTERFACE**	Implemented the user interface of the Ocean and Foam Textures in QT so they shows faster when selected
IMPROVED	**USER INTERFACE**	Zero all Grid Channel Smoothing option defaults in order to get the strongest smoothing
IMPROVED	**USER INTERFACE**	Renamed the Particle Shader 'Flatten At Ocean Borders' to 'Use Ocean Border Fade' to make it clear it is connected to that particular Simulator option
IMPROVED	**USER INTERFACE**	Show a message at render start if Phoenix is incompatible with the currently installed V-Ray
IMPROVED	**SCRIPTING**	New A_ExportSimscene <path> MAXScript function for exporting a simscene from the current scene
IMPROVED	**LOGGING**	Printing to the Phoenix log not only the current simulation frame, but also the total number of frames and the percentage completed
FIXED	**STANDALONE SIMULATOR**	The simscene export, simulation and preview did not support directories with non-ASCII characters
FIXED	**SIMULATION GENERAL**	Crash when simulating with a Simulator and Source having the same name

FIXED	**FIRE/SMOKE SOLVER**	Artifacts when using PCG conservation and a Plain Force in some scenes, since Phoenix 5.00
FIXED	**ACTIVE BODIES**	Active Bodies with Original Animation Influence of 1 didn't follow the original geometry precisely
FIXED	**ACTIVE BODIES**	Emission reaction force was not zeroed if the Source had its emission animated to 0
FIXED	**ACTIVE BODIES**	Axis Lock with locked translation still allowed the body to rotate around the world origin
FIXED	**ACTIVE BODIES**	Thruster attached to an Active Body pushed in the wrong direction when the body rotated
FIXED	**ACTIVE BODIES**	When starting an Active body simulation where the scene start frame was different than 0, keyframes were still created at frame 0
FIXED	**FLIP LIQUID SOLVER**	The sizes of the foam bubbles did not affect their Foam Volume interactions, since Phoenix 5.00
FIXED	**FLIP LIQUID SOLVER**	Liquid simulation in Fillup For Ocean mode with Adaptive Grid and Extra Margin kept expanding every frame even if not needed
FIXED	**FLIP LIQUID SOLVER**	Viscosity was applied asymmetrically on thin flowing liquid
FIXED	**FLIP LIQUID SOLVER**	Load & Start of a moving container with Fillup for Ocean created extra particles and wrong velocities
FIXED	**ADAPTIVE GRID**	Moving Fire/Smoke Simulator with Adaptive Grid using the Speed channel expanded constantly
FIXED	**TUNERS**	Crash when Gravity Force was excluded from the simulation, but was used in a Tuner
FIXED	**VOLUME SHADER**	Applying a Modifier to a Simulator in Volumetric mode prevented it from rendering with V-Ray 6 and showed artifacts with V-Ray 5
FIXED	**VOLUME SHADER**	Crash when rendering with Scanline after the scene has been rendered with V-Ray, since Phoenix 5.01
FIXED	**VOLUMETRIC ILLUMINATION**	Crash during V-Ray Light cache generation when Fire Lights were illuminating and OSL material, only when rendering via vrscene
FIXED	**RENDER ELEMENTS**	Particle Shader in 'Render as Geometry' mode did not render in the V-Ray Velocity Render element, since Phoenix 5.01
FIXED	**RENDER ELEMENTS**	Hang when rendering with motion blur a Liquid Simulator with Displacement and a Voxel Shader using the Simulator as a Render Cutter, using a V-Ray Crypotomatte render element
FIXED	**RENDER ELEMENTS**	The V-Ray Render Elements might render black with freshly started 3ds Max and Volume Light Cache enabled
FIXED	**PARTICLE SHADER**	Crash during V-Ray Light cache generation when a Particle Shader in Bubbles mode with Render as Geometry Off intersected a V-Ray Proxy
FIXED	**PARTICLE SHADER**	Fog rendered differently from other modes when using a Color Map in Object XYZ mode in a Particle Shader with connected Liquid Simulator
FIXED	**VRSCENES**	Animation of the Phase Function, Fire Multiplier, Fire Opacity Multiplier, Physically Based, Volume Light Cache Speedup and Surface Level options was ignored during vrscene rendering
FIXED	**OCEAN MESHER**	Horizon artifacts when rendering Ocean Meshes with VRayDome Camera
FIXED	**MESHER**	The Mesh of a Fire/Smoke Simulator had Vertical Fade level erroneously applied to it and it couldn't be turned off
FIXED	**PREVIEW**	The Streamline Velocity preview did not exclude the inertial velocity of a moving container like the old Velocity preview does
FIXED	**PREVIEW**	The Color Scaling of the particle preview did not exclude the inertial velocity of a moving container, so it was always white
FIXED	**PREVIEW**	Voxel Velocity and Streamline Velocity previews showed much less data than they should have with Auto Range and a moving simulator
FIXED	**PATH FOLLOW**	Path Follow stopped working if at least one of its Sub Segments was completely outside of the grid
FIXED	**GRID TEXTURE**	If Render-time Only was ON, changing the channel did not have an effect for the Rescale dialog

FIXED   **CACHE I/O**   Fixed AUR lossless compression crashing when writing very large cache files, containing a grid channel larger than 8GB

FIXED   **PRT READER**   Fixed the URL of the help button

FIXED   **STANDALONE PREVIEW**   Saving images from the Standalone Preview in GUI mode increased the Detail Reduction if Auto Reduction was On