3.00.01

Official release

Date – Sept. 15, 2016

New Features

PhoenixFD

- Implemented simulation and render presets
- Implemented Phoenix FD Toolbar for 3ds Max with quick simulation Start/Stop controls and quick creation of nodes
- Added various Quick Setup presets to the Phoenix FD Toolbar for automatic creation of Simulators and Sources around an emitter
- Support for 3ds Max 2017
- Splitted the PHXSimulator into separate LiquidSim and FireSmokeSim objects
- New Simulation licenses to be run without GUI in Backburner/Deadline/3dsmaxcmd mode

Simulation

- FLIP Liquid solver
- New vorticity confinement algorithm that adds high detail and improves the rolling of smoke and fire
- PCG conservation that improves the behavior of smoke and fire
- Follow Path force
- Body Attraction and Morphing forces
- Wave Force that transfers the effect of the PhoenixFDOceanTex onto the simulation
- Direct Initial fill up option for objects
- Re-timing by Time Bend resimulation for fire/smoke
- Direct re-timing and re-meshing of FLIP liquids
- Dedicated Mist particles
- Discharge Modifiers for advanced control of sources
- Controls for burning fuel depletion and smoke production
- Allowed per object wetting
- Simulation interaction with particle shapes
- Scene scale multiplier per simulator

Rendering

- Implemented Foam Shader particle count multiplier
- Render option to control the strength of volumetric shadows
- Added shadow strength and point size options to the point shader
- Added a separate control for the step of shadow rays
- Ability to pop out and enlarge curves and color gradients
- Support for matte objects
- Added a displacement mode suitable for rendertime advection
- Added a gamma correction control for Phoenix simulators only
- Implemented a Procedural Foam Texture for the ocean surface
- Support for the PRTReader in V-Ray RT
- Enabled pure Volumetric rendering for V-Ray RT
- Particle age render element

Preview

- GPU preview directly in the viewport
- Support more than one light in the GPU preview

I/O

- Export particles and meshes with Exocortex Crate from the simulators and the PRTReader
- Support for 3ds Max's built-in Alembic export
- Allowed passing custom names for the OpenVDB/Field3D channels
- Implement 32bit export of the RGB channel to aur caches

Modified Features

PhoenixFD

- Open the right-click properties on a group of objects simultaneously
- Changed the viewport representation of the Phoenix objects to wireframe icons
- Changed the location of the sample scenes to 3ds Max's 'scenes' directory

Simulation

- Upres and add detail to a sim without changing the shape using the Resimulation
- Allowed resimulation with both Wavelet and RGB
- Ability to decrease resolution with resimulation
- Direct cascade connection between Liquid simulators
- Push the foam with moving geometry
- Foam surface lock control
- Allowed the PHXSource Noise to affect Brush and Inject modes
- Support for NURBS shape obstacles, which are non-solid by default
- Multiplier for the "Wind from movement" option

Rendering

- Optimized fire/smoke rendering in Volumetric mode
- Optimized the Linear and Spherical samplers
- Probabilistic volumetric rendering mode for Fire/Smoke and particles
- Ability to select multiple particle groups in the Foam Shader
- Foam Shader light cache speedup option
- Optimized the Foam Shader's Point mode
- Export the Foam Shader to vrscenes
- Added a new Fire Opacity Mode in which the fire has its own opacity curve
- Cutter support in Mesh mode rendering
- Support for motion blurred render Cutter and Glass geometry
- Motion blur clipping by the Cutter geometry for non-Mesh modes
- Allowed gradual transition between the default Black Body Fire model and an artistic model using the 'Physically Based' option
- Display the channel data range in the curve and color gradient render controls
- Limited the volumetric render curves between 0 and 1
- Curve and color gradient markers can be moved across their neighbors
- Allowed adding and removing or markers of the render curves/gradients by MAXScript
- Gradient controls now display the colors with gamma correction
- Using grid-based self-shadowing, create less lights for the scene than for the grid
- The ocean subdivisions affect the mesh in cap mode too
- Dome camera support for the ocean surface
- Implemented velocity based fade out for the ocean displacement
- Ability to create ocean from Houdini OpenVDB caches
- Smoothing option for the input cache that can be used to remove grid artifacts
- Improved and optimized the motion blur for volumetrics
- V-Ray RT GPU animation rendering of PhoenixFD meshes
- Added option to export Phoenix as a VRayVolumeGrid in vrscenes
- The Fire emissive lights produce specular lighting
- Display warnings if using motion blur without particle velocity or PA size multiplier without Age
- Added more info to particle blending errors

Preview

- Automatic preview detail reduction
- Automatic channel ranges for the viewport grid preview
- Create default lights for the GPU preview if there are none
- Show the RGB channel in the GPU preview
- Improve the velocity voxel preview
- Preview particles colored by the velocity
- Allowed changing of the mesh preview color
- Create low res viewport mesh preview in ocean mode
- Channel data interval information in the cache info
- Cache info describing which version of PhoenixFD was used during simulation
- Display the fully resolved input/output/resim paths with frame numbers
- Display a status text in the viewport while a simulation is running
- Show the actual grid bounding box even if the cache content is not loaded

I/O

- Included the number format and file extension in input and output paths
- *.aur caches use a four-digit zero-padded number for proper file sorting
- Gathered the path controls in a single popup menu
- Embedded render presets for imported cache files - Houdini, FumeFX and Maya Fluids presets added
- Loading of Thinkbox Stoke OpenVDB/Field3D cache files
- Updated the OpenVDB library to version 3.0
- Support for nameless OpenVDB channels
- PRTReader loads the particle orientation
- Display particle groups in the PRT export dialog regardless of the current frame
- Retry and display a message if a simulation cache is not written properly

PhoenixFDGridTex

- Rework the selector on the Phoenix texture to prevent circular reference error
- Added a scalar Speed channel

PhoenixFDParticleTex

- Added an option to disable the Particle Texture when not rendering

AuraSDK

- Samples to read and visualize a cache file

Deprecated Features

PhoenixFD

- Dropped support for Windows XP

Simulation

- Deprecated the Slow Moving advection

Rendering

- Dropped the legacy Fire emissive light placing modes

Bug Fixes

PhoenixFD

- The Phoenix texmaps were in the General instead of the PhoenixFD category
- Crash after selecting the Simulator in the Foam Shader and undo-ing
- Right-click Phoenix menu items may not appear in 3ds Max 2016 or newer
- Atmosphere is created even if no Phoenix objects exist in the scene
- Installation doesn't restart the license server and sometimes fails to remove old servers
- Crash on browsing when the previous path was set to a password protected server
- Crash when doing File->Reset on a paused simulator
- Merging scenes with Phoenix objects does not work properly
- Crash when deleting an X-Ref-ed scene

Simulation

- Non-solid objects emitting particles did not export particle ID and Age channels
- The Patterns Strength parameter throws foam particles high in the air
- The 3ds Max Vortex force produces different results on each run
- Wrong texture mapping of source discharge and channels with volume brush and inject
- Crash when using a texture map with noise as discharge map
- Rotating simulator with adaptive grid produces wrong forces
- The simulation sometimes halts at a random frame
- Deadlock when two 3ds Max instances simulate simultaneously
- Wrong position of the particles when resimulating with increased grid resolution
- Foam and splash can be born through jammed walls or frozen obstacles with PHXSimulator
- Crash when the cell size is set to zero
- Crash with simulation of large wrapped grids
- Sometimes when a new simulation is started, the gravity has wrong direction and magnitude
- The per-object velocity multiplier overrides the source's velocity value, instead of scaling it
- Different behavior between the positive and the negative open walls of the simulator
- Diagonal spike artifacts with Multi-Pass advection at low speed or high SPF
- Burning depletes Fuel faster proportionally to the Steps per frame
- Leaks from geometry container when the wall is less than two cells wide
- VRayDistanceTex does not update with moving geometry
- Crash with geometry from the Power Translator plugin
- Meshes created from spline with extrude modifier are not taken into account by the simulation
- Path Deform animations don't react with the simulator
- Animated scale of rigid bodies is not accounted for in velocity calculations
- The grid fit camera algorithm sometimes allows the simulator to shrink too much

- The adaptive grid expands through walls entirely blocked by frozen objects
- Adaptive grid can super-expand to unreasonable size in case of a short burst of high velocity
- When an adaptive limit is reached, the grid refuses to expand at all instead of expanding up to the limit
- Crash when adaptive grid memory allocation fails
- Adaptive grid can't expand over 2.1 billion voxels
- Hang when additional output channels are selected during adaptive grid simulation with preallocation
- Adaptive grid with jammed walls creates velocity at the walls in fire/smoke mode
- Occasional jittering with wavelet turbulence and adaptive grid
- Wrong bounding box with adaptive grid and "No Smaller than Initial Grid" off
- Crash when simulating with Wavelet and Forward Transfer
- Crash with grid-only resimulation including drag particles with timeout
- A hidden PHXSource continues to emit
- The cascade connection produces gaps when the source is moving
- The Estimated Time Left reported after simulation restore is wrong

Rendering

- Fixed various issues where the Ocean Surface does not fit the rendering or preview
- Ocean gets clipped both in the render and viewport if pixel aspect is set to a value lower than 1.0
- Can't build ocean when the Invert Volume option is on
- Cap mode with Invert Volume on renders as infinite surface
- Wrong normals on the ocean stitching strip at certain camera angles
- Meshing artifacts at the sim border when the ocean level is higher than the simulator
- Broken ocean displacement when the camera is oriented exactly vertically
- Wrong ocean meshing at low camera height
- Ocean mesh is not visible on some frames
- In Mesh render mode, the surface displacement works as if there is an ocean
- Crash on render with enabled displacement but without a map
- Imported ocean caches from Houdini can mesh with holes at the bottom
- An additional colored mesh may show during rendering in mesh mode
- The mesh is still rendered even if not renderable or hidden
- The foam displacement does not match the liquid displacement
- Foam Shader ignored the "Invert Cutter" option
- Foam Shader caustics did not work if GI visibility is off
- Local and distributed foam render buckets differ with Foam Shader size variation
- Fixed multiple issues where random colored bubbles would appear during distributed rendering
- Bubble mode with displacement produces white areas on the foam
- Foam Shader pressure variation causes flickering in animation
- Foam Shader did not read properly the Size and Age channels from Thinkbox Krakatoa's PRTLoader
- No Motion Blur with Foam Shader rendering PRTReader particles from Phoenix FD
- Foam sliding on inclined geometry is hidden by it during the rendering
- The point shader produces different opacity when the image resolution is changed
- The point shader produces very different renders in ortho
- Container in Volumetric Geometry mode is not shaded in Multi Matte Element
- Volumetric Heat Haze rendering mode does not render correctly
- Frame blending does not work properly with adaptive grid
- Loop playback of an adaptive grid cuts out portions of the grid
- Inverted render Cutter cuts all the emissive lights outside it, instead of inside it
- Wrong shading if emissive/diffuse/transparency source is set to 'texture' without actually providing one
- Crash when rendering in mesh mode a simulator that was used as a cascade source for a fire/smoke simulator
- Different buckets in distributed rendering mode with light cache
- Can't exclude a Phoenix atmospheric from a V-Ray or 3ds Max light
- The lighting render elements do not include the grid self-illumination with LC off
- Black grid self-illumination with disabled scattering and very thick smoke
- No grid self-illumination in geometry mode without light cache
- The emissive lights construction is not thread safe
- Emissive lights preprocess runs even when the atmosphere is disabled
- Crash with emissive lights enabled and V-Ray's Hidden Lights option disabled
- Crash while rendering with V-Ray RT if the additional lights are decreased
- Crash when loading a cache while V-Ray RT is running
- Motion blur remains the same length when varying the FPS in V-Ray RT
- Rendering with motion blur and duration=0 will preprocess forever
- Volumetric mode ignores the V-Ray object properties motion blur override samples
- Simulator moving with camera renders with motion blur as if static
- Moving simulator has no motion blur in Volumetric mode and clipped motion blur in Volumetric Geometry mode
- Simulator does not render with motion blur, velocity channel, "play speed" set to 0 and "wind from movement" option turned on
- Artifacts on the wall of the simulator when rendering liquids in "Isosurface" mode.
- Noise on flat iso-surfaces created from textures
- Fix preview and mesh mode for the Surface Texture
- Fog correction produces improper blending with semi-transparent geometry
- Reflected geometry misses Fire lighting in some buckets
- Wrong rendering with V-Ray 3.0, geometry mode and other geometry inside the simulator
- Crash when rendering with Defscanline with foam tint enabled
- Crash with V-Ray Toon, VRayNormals and Volumetric Geometry

Preview

- The preview of OpenVDB caches doesn't always update when changing frames

- The cell preview stops drawing after V-Ray RT is used
- New versions of 3ds Max hang when the GPU preview runs out of memory
- Mesh preview crashes on 3ds Max 2016 and newer with Nitrous DX9
- Crash on enabling mesh preview with a non-existant surface channel
- Negative frames with mesh preview enabled change the preview time
- Cell preview does not update when changing 'Load Nearest if Missing'
- Crash when enabling Shaded with Maps in the viewport for a scene with ocean tex and foam tex

I/O

- Thinkbox Krakatoa always rendered the same frame for Phoenix particles in animation
- Unable to pick Simulator/PRTReader via Thinkbox Stoke as Velocity sources
- Thinkbox Frost isn't working with cache where not all particle types are exported
- Cannot export a sequence via Thinkbox XMesh
- Cannot export PRT files to a UNC network location
- PRT files from Phoenix cannot be loaded via Thinkbox Krakatoa's PFlow birth
- Crash when exporting PRT when manually setting the range past the cache range
- PRTReader does not return the particle ages
- Wrong winding of the faces of a meshed Field3D cache
- OpenVDB levelset caches render with inverted normals and winding
- Can't blend between imported OpenVDB or Field3D files
- The container jitters or has incorrect position with OpenVDB caches from FumeFX
- The Speed channel is not working when rendering a Field3D/OpenVDB cache
- Imported OpenVDB files have wrong orientation in V-Ray RT
- Field3D files from FumeFX using boundless sim or wavelet are not scaled correctly
- Field3D caches over 4GB cannot be loaded
- Aur cache files over 2GB cannot be loaded
- Too many simulated particles break the export compressor and cause a crash on read
- Cannot use UNICODE cache paths
- Can't load negative frame numbers
- Phoenix frames folder is created for each new 3ds Max scene saved

PhoenixFDGridTex

- Crash at the moment a PhoenixFDGridTex is assigned as an input to a composite map

Turbulence

- Crash when creating a Turbulence helper and dragging its size to zero