

# Standalone Previewer

This page provides information on the Standalone Previewer tool.

## Overview

The Standalone Previewer tool is intended as a supplement to Chaos Phoenix, allowing you to preview \*.aur, \*.vdb, \*.f3d and \*.prt cache files without loading them into a DCC application such as 3ds Max or Maya.

The Previewer also has the ability to save a sequence of images for the voxel and GPU preview of an entire cache sequence.

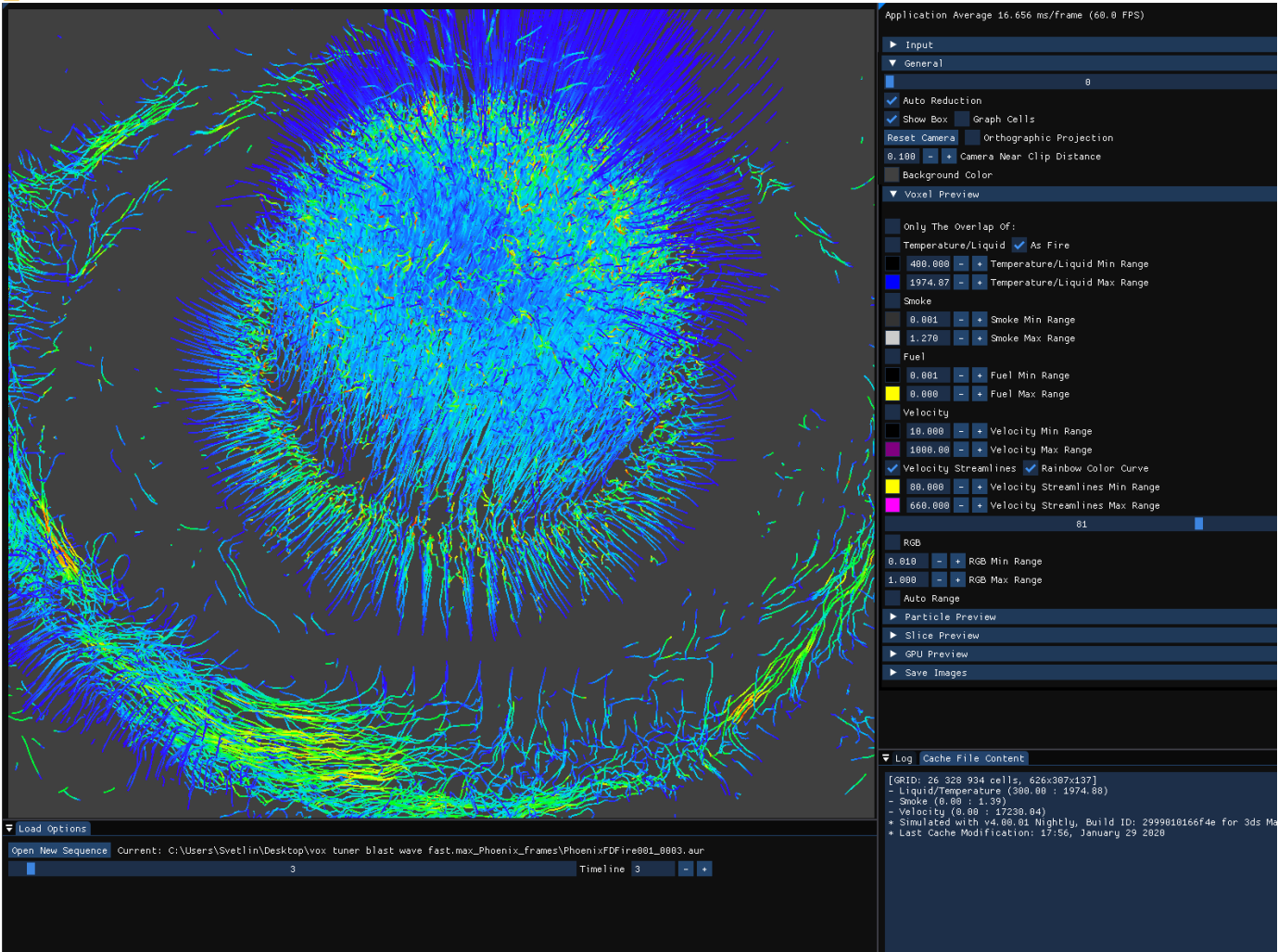
Note that Mesh Preview mode is not supported yet.

For information on utilizing the command line interface of the tool visit Standalone Previewer CLI.  
The Standalone Previewer requires a Phoenix FD GUI license.

Default Path:

C:\Program Files\Chaos Group\Phoenix FD\3ds Max 20xx for x64\bin\phoenix\_previewer.exe

Phoenix Previewer



## Parameters

## Load Options

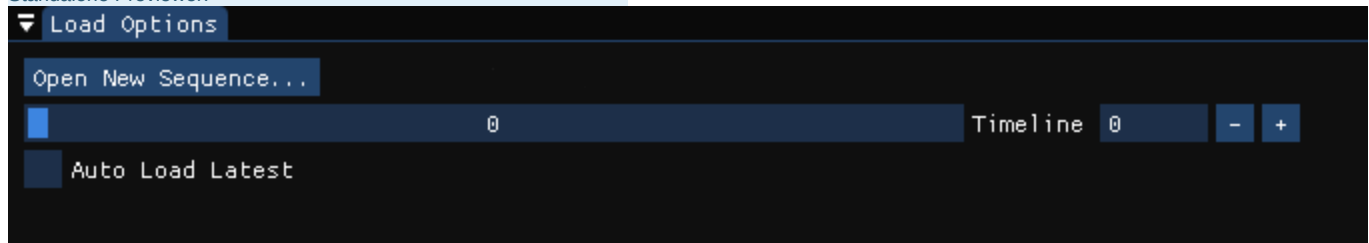
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**Open New Sequence** – Loads a new cache file or sequence of files for preview.

**Timeline** – Changes the current frame of the cached sequence.

**Auto Load Latest** – Monitors the storage for newly appearing sequence files. When enabled, the Standalone Previewer tries to load a frame for the provided mask each 200ms.

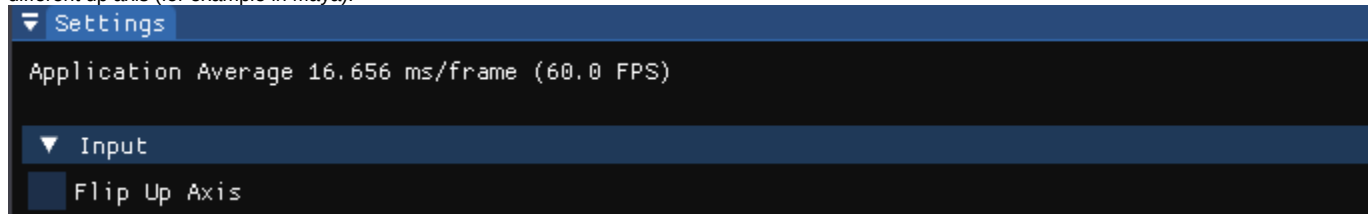
The Standalone Previewer allows copying the full path to the loaded cache or just the file name by right-clicking over the cache path. The drag-and-drop option can be used to load caches in the Phoenix Standalone Previewer.



## Input

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**Flip Up Axis** – When enabled, flips the Y and Z axis of the cache's transformation. This is useful when the cache was created with a different up axis (for example in Maya).



## General

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**Detail Reduction** – Decreases the grid and particle detail in the preview. A value of 0 means no reduction. Increase this value if the interface starts to lag due to the simulation being very large.

**Auto Reduction** – Enables automatic adjustment of the **Detail Reduction** parameter to improve display performance. The preview detail will be reduced up to a point where the preview will display fast without blocking the interface. Note that the detail will only decrease automatically, but will not increase. This option works only for the Voxel and Particle previews.

**Show Box** – When enabled, displays the bounding box of the cache file in the Viewport.

**Graph Cells** – When enabled and **Show Box** is enabled, displays a lattice with the cell sizes on the sides of the cache's box.

**Reset Camera** – Resets the position of the Viewport camera to default.

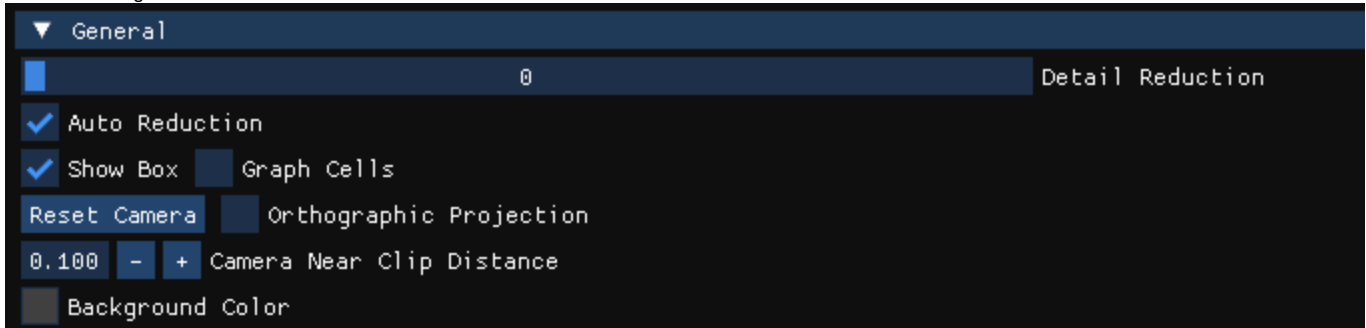
Camera Controls:

- Left Mouse Click + Drag for Camera Rotation.
- Middle Mouse Click + Drag for Camera Pan.
- Mouse Wheel for Camera Zoom.
- Hold Left Alt + Left Mouse Click + Drag for Smoother Zoom.

**Orthographic Projection** - When enabled, the Preview is in Orthographic Mode. If this option is disabled, the Preview is in Perspective Mode.

**Camera Near Clip Distance** – When the camera goes inside the cache box, it might skip some of the GPU Preview information at the moment it crosses the grid border, so in this case you can reduce this option.

**Background Color** – Allows you to change the color of the Viewport window's background.



## Voxel Preview

The default preview mode that displays the individual content of each cell. All enabled channels are drawn if their content is between the corresponding thresholds.

**Only The Overlap Of** – When enabled, all channels in a cell must meet the selected threshold conditions to visualize the cell.

**Temperature** – Enables the representation of the temperature.

**As fire** – When enabled, the natural color of a hot black body is used for coloring the temperature. Otherwise, the color ramp is used.

**Smoke** – Enables the representation of the smoke.

**Fuel** – Enables the representation of the fuel.

**Velocity** – Enables the representation of the velocity.

**Velocity Streamlines** – Traces the velocity field of the cache files to generate a streamline preview.

**Rainbow Color Curve** – Represents the Velocity Streamlines in rainbow colors, where red is the fastest, green is medium speed and blue is the slowest.

**Streamlines Length** – Signifies the maximum length of each streamline in the preview. Adjusting the value will provide you with a guide/preview of the velocity field's motion. The Line's length is measured in voxels and at the lowest setting, the Streamlines will be no larger than a voxel.

**Viscosity** - Enables the representation of the viscosity channel.

**RGB** – Enables the representation of the RGB channel.

**Auto Range** – When enabled, automatically adjusts the preview ranges of visible channels for the current frame so that important data is always visible and the preview is always quick.

▼

Voxel Preview

Only The Overlap Of:

✓

Liquid/Temperature

✓

As Fire

400.000

-

+

Liquid/Temperature Min Range

2000.00

-

+

Liquid/Temperature Max Range

✓

Smoke

0.001

-

+

Smoke Min Range

1.001

-

+

Smoke Max Range

✓

Fuel

0.001

-

+

Fuel Min Range

0.000

-

+

Fuel Max Range

Velocity

10.000

-

+

Velocity Min Range

1000.00

-

+

Velocity Max Range

Velocity Streamlines

✓

Rainbow Color Curve

10.000

-

+

Velocity Streamlines Min Range

1000.00

-

+

Velocity Streamlines Max Range

5

Streamlines Length

Viscosity

0.010

-

+

Viscosity Min Range

1.000

-

+

Viscosity Max Range

✓

RGB

0.010

-

+

RGB Min Range

1.000

-

+

RGB Max Range

✓

Auto Range

## Particle Preview

**Enable** – Enables the preview of particles. The controls below affect the visualization of the currently selected particle group.

**Show system** – When enabled, the particle system will be visible in the simulator preview.

**Preview Color** – Specifies the default color of the particles. Moving particles are displayed as a blend between their default color and white, based on the selected **Scale Color By** channel. Note that if the particle system has an RGB channel exported, it will be used in place of the Preview Color.

**Scale Color By** – Specifies the particle channel used for adjusting the particle preview color.

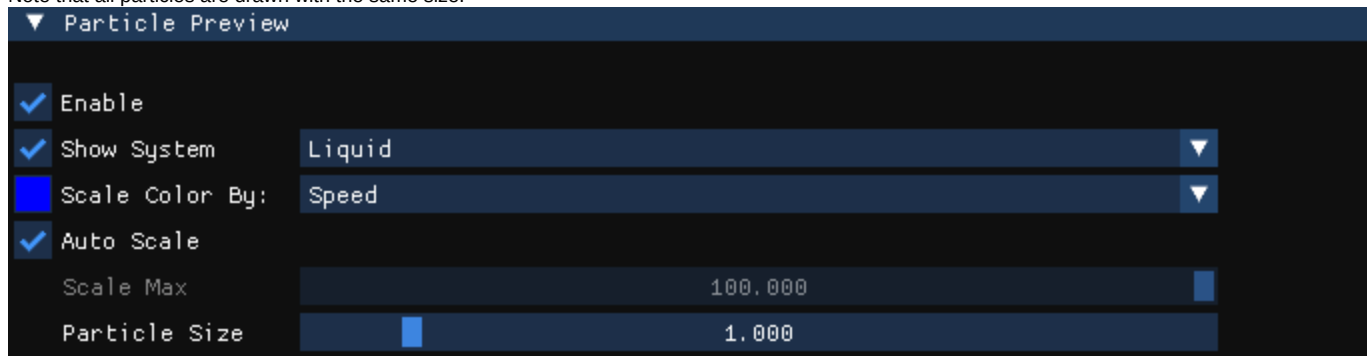
- **No Scaling** – All particles will be the same color - the one specified by **Preview Color**
- **Speed** – The **faster** the particles move, the whiter they will appear. The preview is only affected by the **Scale Max** option if the particle system has the **Velocity** channel export enabled.

- **Size** – The **larger** the particles are, the whiter they will appear. The preview is only affected by the **Scale Max** option if the particle system has the **Size** channel export enabled.
- **Age** – The **older** the particles are, the whiter they will appear. The preview is only affected by the **Scale Max** option if the particle system has the **Age** channel export enabled.
- **Viscosity** – The higher the **viscosity** the particles, the whiter they will appear. The preview is only affected by the **Scale Max** option if the particle system has the **Viscosity** channel export enabled.

**Scale Max** – When **Auto Scale** is disabled, allows you to specify a constant value at which the particle preview color becomes pure white. Particles with a **Scale Color By** channel value higher than the specified **Scale Max** are also pure white. You can also find more info about the usual particle channel maximum values on the [Particle Channel Ranges](#) page.

**Auto Scale** – When enabled, automatically calculates **Scale Max** based on the Min/Max range of the selected **Scale Color By** particle channel, assuming the respective channel export has been enabled in the [Output](#) rollout for the selected particle system.

**Particle Size** – Sets the size of the particles in the preview window. Note that all particles are drawn with the same size.



## Slice Preview

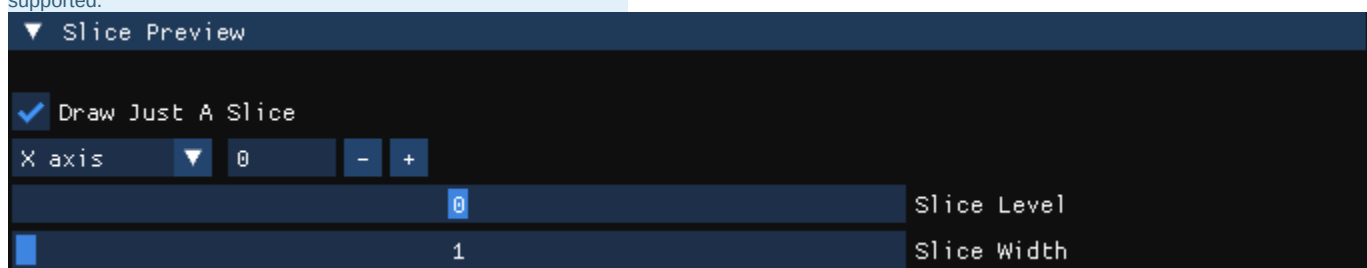
**Draw Just a Slice** – When enabled, only a voxel-thick cross-section of the grid is visible. This works for voxels, particles, and velocity streamlines, but not for the GPU Preview or the Mesh Preview. It allows for a better view of occluded details and can help when previewing very rich data such as velocity fields, or in order to see underwater cavities.

**Along X / Y / Z axis** – Slices the grid along the specified axis.

**Slice Level** – Specifies the offset of the slice from the bottom center of the grid in voxels.

**Slice Width** – Specifies the width of the slice in voxels.

Previewing Particle Displacement from Texture Maps is not currently supported.



## GPU Preview

**Enable** – Enables the GPU shading preview in the viewport.

**Light Inclination** – The GPU Preview is lit by one single directional light. This angle means the height of the directional light above the horizon. 0 degrees places the light right above the container. 90 degrees places the light to the side.

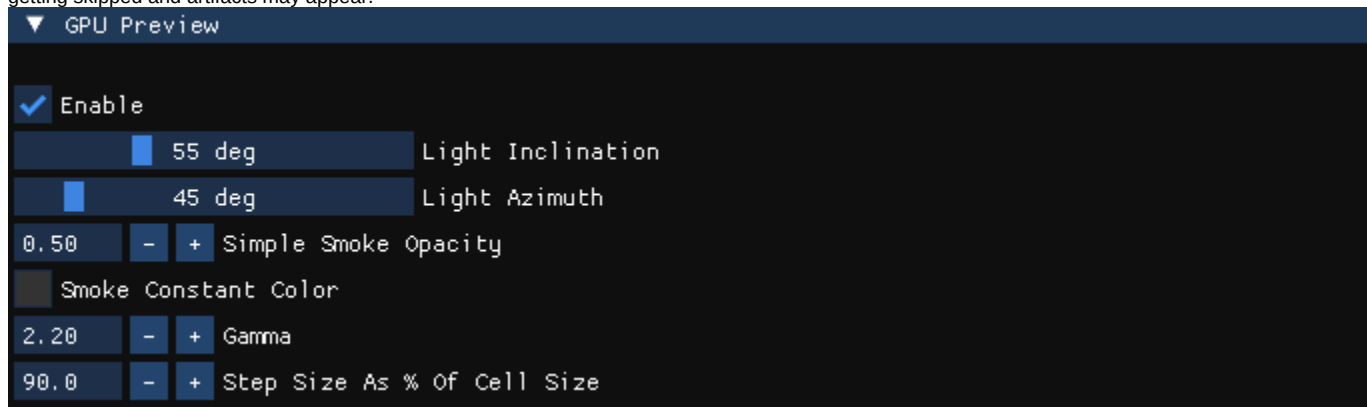
**Light Azimuth** – The GPU Preview is lit by one single directional light. This angle rotates the light horizontally around the container and it can go from 0 to 360 degrees.

**Simple Smoke Opacity** – This value is used as opacity multiplier - the higher it is, the denser the smoke will look.

**Smoke Constant Color** – This color is used for shading of the smoke with the GPU Preview.

**Gamma** – Specifies the gamma for the GPU Preview.

**Step Size as % of Cell Size** – Specifies the ray marching step as a percentage of the cell size. As the GPU Preview traces rays through the simulator, this value controls how often to get information from the grid. If the this value is more than 100, some cells will start getting skipped and artifacts may appear.



## Mesh Preview

**Show Mesh** – Turns the mesh preview on or off.

**Mesh Color** – Allows you to change the color of the mesh.

**Wireframe** – Displays the mesh as wireframes.

**Surface Channel** – Specifies the channel that will define the surface of the generated mesh.

**Liquid/Temperature** - the Liquid/Temperature channel will define the liquid surface. Temperature is typically in the range 0-1 for Liquid simulations and 600-2000 for Fire / Smoke simulations.

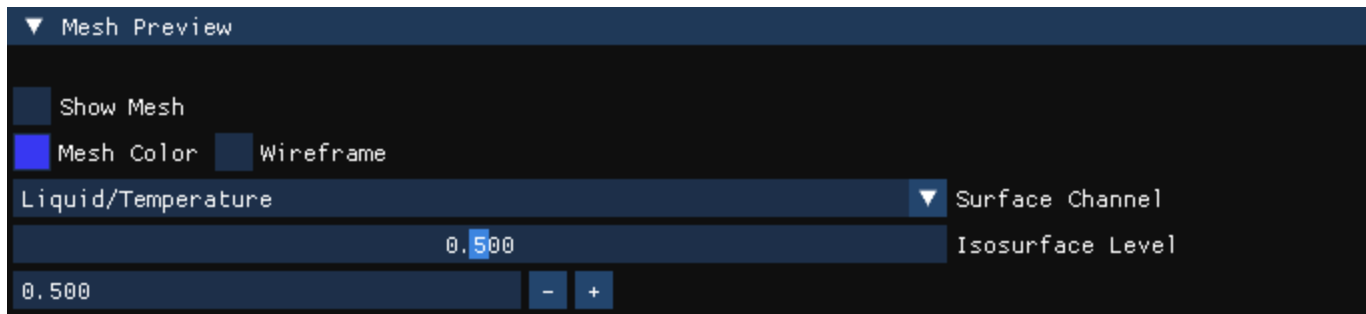
**Smoke** - the Smoke channel will define the liquid surface. Smoke is typically in the range of 0-1 for Fire / Smoke simulations.

**Speed** - the Speed channel will define the liquid surface. Speed channel output has to be enabled for this to work. Speed is calculated as the length of the velocity vector for each voxel.

**Fuel** - the Fuel channel will define the liquid surface. Fuel channel output has to be enabled for this to work.

**Viscosity** - the Viscosity channel will define the liquid surface. Viscosity channel output has to be enabled for this to work.

**Isosurface Level** – Allows you to specify a threshold value for the generation of the geometry surface. Grid cells below this value will be ignored.



## Save Images

**Browse** – Opens a browser window to specify the directory and the name template for the output preview image files.

**Reset Path** – Resets the path to the same directory as the loaded cache files.

**Image Width** – Specifies the image width.

**Image Height** – Specifies the image height.

**Aspect Ratio** – Describes the proportions of the saved image, expressed as the ratio of width to height. It is irrespective of the viewport's resolution.

**Lock Aspect Ratio** – When enabled, the Aspect Ratio can't be changed.

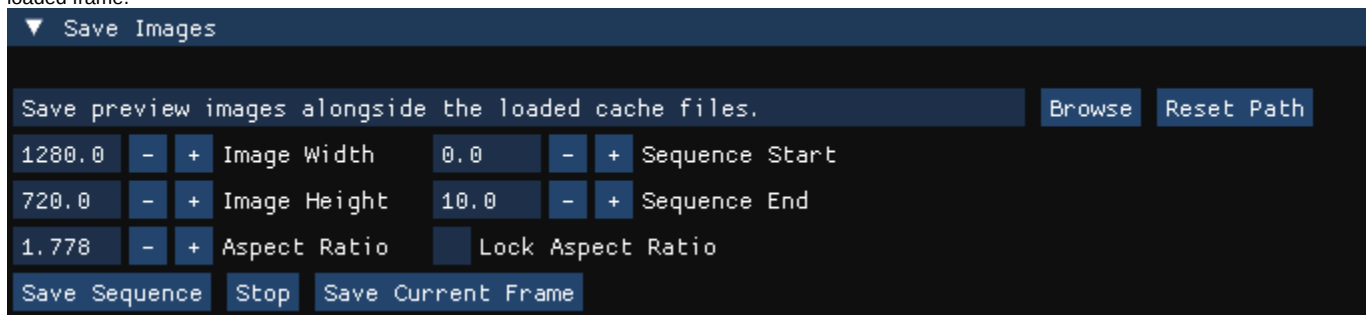
**Sequence Start** – Specifies the first frame that will be used for saving an image.

**Sequence End** – Specifies the last frame that will be used for saving an image.

**Save Sequence** – Saves an image preview for the range of the entire cached sequence.

**Stop** – Stops the saving process.

**Save Current Frame** – Saves an image preview of the currently loaded frame.



## Log

This area displays information about the current status of the Standalone Previewer.

▼ Log Cache File Content

Could not obtain a Phoenix FD 4.30 GUI license! -1: Auth initialization error | -1: Internal error

## Cache File Content

This area displays information about the loaded cache.

▼ Log Cache File Content

```
[GRID: 15 806 808 cells, 366x366x118]
- Liquid/Temperature (0.00 : 1.00)
- Velocity (0.00 : 1387.95)
[PARTICLES: 7 514 773 total]
- Liquid: 6 514 096 (Position_phx, Velocity_phx, ID_phx)
- Foam: 878 538 (Position_phx, Size_phx, Age_phx, ID_phx)
- Splashes: 40 649 (Position_phx, Velocity_phx, Size_phx, ID_phx)
- Mist: 61 926 (Position_phx, Size_phx, ID_phx)
- WetMap: 19 564 (Position_phx, Size_phx, ID_phx)
[CACHE SIZE ON STORAGE]
0.11 MB : Particle System: Mist; Channel: Size_phx
0.08 MB : Particle System: Splashes; Channel: ID_phx
0.11 MB : Particle System: Mist; Channel: ID_phx
0.20 MB : Particle System: Splashes; Channel: Velocity_phx
5.90 MB : Particle System: Liquid; Channel: Velocity_phx
0.06 MB : Particle System: WetMap; Channel: Position_phx
0.23 MB : Particle System: Foam; Channel: Age_phx
0.14 MB : Particle System: Splashes; Channel: Position_phx
0.16 MB : Particle System: Foam; Channel: Size_phx
9.47 MB : Particle System: Liquid; Channel: Position_phx
14.11 MB : Particle System: Liquid; Channel: ID_phx
0.00 MB : Cache Info
0.19 MB : Particle System: Mist; Channel: Position_phx
0.07 MB : Particle System: Splashes; Channel: Size_phx
2.00 MB : Particle System: Foam; Channel: ID_phx
7.62 MB : Grid Data
0.03 MB : Particle System: WetMap; Channel: ID_phx
0.00 MB : Particle System: WetMap; Channel: Size_phx
2.51 MB : Particle System: Foam; Channel: Position_phx

* Simulated with Phoenix 4.41.02 Nightly, Build ID: 2022040731351 for 3ds Max 2023 from Apr  7 2022
* Last Cache Modification: 14:41, April 11 2022
```