

Input Properties

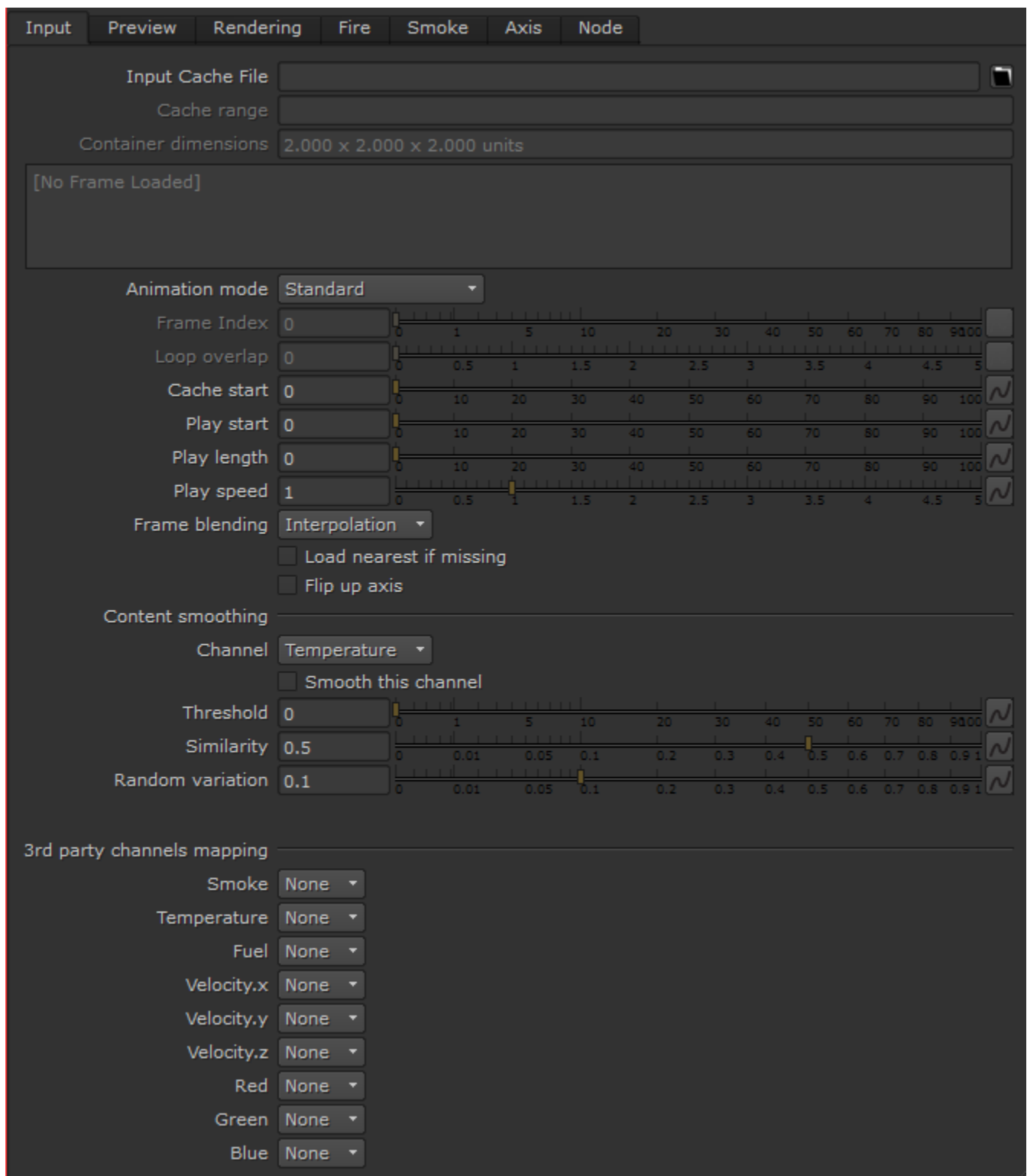
This page provides information on the Volumetric Grid's Input tab.

Overview

The Input properties are part of the [Volumetric Grid Parameters](#) and is located on the Input tab. It has controls for multiple frame input, timing of frames, and blending/smoothing of frames for the [VRayVolumeGrid](#).

UI Path: ||Select VRayVolumeGrid|| > **Properties Panel** > **VRayVolumeGrid node** > **Input tab**

Input



Input Cache File – Specifies the cache file name in one of the three volumetric formats that V-RayVolumeGrid supports (OpenVDB, Field3D, PhoenixFD). If the file was specified when the V-RayVolumeGrid object was created, the filename appears here. For a sequence of frames, the file name can contain format specifier to describe a sequence of files. V-RayVolumeGrid supports multiple format specifiers:

<frame0n>, where **n** is an integer specifying the number of digits, and the optional **0** specifies padding with zeroes. For example, if you enter *cache_<frame04>.vdb* as the file name, this will be expanded to *cache_0000.vdb* for frame 0, *cache_0001.vdb* for frame 1, and so on. The same logic is used for V-RayMesh.

symbols will be replaced with the current frame number. Multiple symbols can be used to specify the number of digits in the file name. For example *cache_####.vdb* will be expanded to *cache_001.vdb* for frame 1.

The form **%xd** is a deprecated form that can no longer be entered, but will work with older *.vrscenes* that already use this format. The form will be resolved to the current frame. The **x**, when present, specifies the minimum number of symbols for the frame number. For example, if the current frame is 9:

%d will resolve to "9"
%3d will resolve to "...9"
%03d will resolve to "009"

Cache range – Specifies the frame range of the cache loaded.

Container dimensions – Specifies the dimensions of the cache container.

Animation mode – Used to control how V-RayVolumeGrid will obtain the cache frame that has to be rendered at a given time. Note that the frame is not always an integer. In this case, interpolation is used to construct a temporary grid in RAM.

Standard – The default mode where the input sequence is controlled by an optional **Cache start** offset and **Play speed**.

Direct frame index – A direct frame index can be specified and eventually animated.

Loop – A piece of the sequence is looped. In this mode, the **Cache start** parameter specifies where the beginning of the looped sequence is, the **Length** parameter specifies the length of the loop, and the number of overlapping frames is specified by **Loop overlap**.

Frame Index – Specifies the input frame number in **Direct frame index** mode.

Loop overlap – In **Loop** mode, this value specifies the number of timeline frames after the loop's end that will be blended with the loop's beginning to create a smooth transition.

Cache start – An offset that specifies which cache file from the sequence will be placed on the timeline at the frame specified by the **Play start** parameter.

Play start – A frame offset that specifies the timeline frame that the starting cache will be placed on.

Play length – Specifies the duration in timeline frames. In **Standard** mode, when this parameter is larger than 0, the sequence length is limited to its value. In **Loop** mode, this parameter specifies the loop length.

Play speed – A multiplier for the playback speed. A value of 1 means that each timeline frame corresponds exactly to one cache file index. If the play speed is not exactly 1.0, frames will be blended with the method specified by the **Frame blending** parameter.

Frame blending – Frame blending method. When the **Play speed** value is not 1.0, or if a **Loop overlap** greater than 0 has been specified in **Loop** mode, a timeline frame must be constructed from two cache files by blending between them. There are two different methods for blending between cache files:

Interpolation – Simple linear interpolation suitable for slow simulations.

Velocity – Velocity-based interpolation, which requires a Velocity channel.

Load nearest if missing – When enabled, if there is no cache file at the required frame, the nearest cache is found and loaded. This is useful when working with a simulation that ends with a sequence of static frames (for example, still liquid or freezing fire) because it removes the need to render multiple identical frames after the motion has stopped.

Flip up axis – When enabled, flips the Y and Z axis of the cached transformation. This is useful when the cache was created with a different up axis (for example, in 3ds Max).

Content smoothing

This section controls the smoothing filter that can be applied over the input channels. In order to reduce the smoothing controls, the UI has controls for one channel only, and a combo box that specifies which channel is currently selected in the UI.



Note: Using content smoothing can slow down the user interface. It is recommended that content smoothing be turned off (**Smooth this channel** disabled) during the design process and enabled only for rendering.

Channel – Controls which channel is loaded in the UI. This does not affect the rendering.

Smooth this channel – When enabled, the channel will be filtered.

Threshold – The smoothing filter uses edge detection to determine where it should be applied. This parameter sets the value of the edge detector above which smoothing is applied.

Similarity – The smoothing itself is an average of the content of certain cells. This parameter controls the second filtering criterion. It determines the cells which will be used in the averaging. Only the neighboring cells with similarity above this value are used to calculate the average.

Random variation – Introduces noise in the channel before filtering is applied.

3rd party channel mapping

Different applications use different channels and might have different names for them. When loading f3d/vdb files, VRayVolumeGrid tries to automatically make the conversion to the supported channels. If a channel is not mapped by default, a channel can be manually set from the dropdown menu.

VRayVolumeGrid is based on **Phoenix FD**, and in its core it supports the following channels:

- Smoke**
- Temperature**
- Fuel**
- Velocity.x**
- Velocity.y**
- Velocity.z**
- Red**
- Green**
- Blue**