

# V-Ray Volume Grid Cache

This page provides information on the V-Ray PhxShaderCache node.

## Overview

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The V-Ray Volume Grid Cache node allows you to load and visualize a simulation cache. It is used with the [V-Ray VolumeGrid Shader](#) node to create a Volumetric Grid. While the V-Ray VolumeGrid Shader node controls the rendering and shading properties of the volumetric cache, this node controls how the volumetric geometry is loaded during rendering. See the [Volumetric Grid](#) page for additional information.

Currently, V-Ray Volume Grid Cache supports [PhoenixFD](#) (.aur) volume format - Phoenix FD<sup>®</sup> native volume format.

## Main

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**Input Cache File** – Specifies the cache file name in the .aur volumetric format that V-Ray supports.

**Reload Cache** – Reloads the cache file.

**Animation Control** – Controls how V-Ray obtains 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.

**Manual** – The default mode. The input sequence can be controlled by **Cache Start** and **Play Speed**.

**Frame Index** – An input frame number can be specified with the **Frame Index** parameter below.

**Loop** – A specific piece of the sequence is looped. The **Cache Start** parameter specifies where the looped sequence starts, **Play Length** specifies the length of the loop, and **Loop Overlap** specifies the number of the end and start frames to overlap to ensure a smooth transition. The end transition frames are taken *after* the end of the sequence specified by **Play Length**. For example if the loop starts at frame 35, has a **Play Length** of 20 and **Loop Overlap** of 5, the transition frames will start at frame 55 and will end at frame 59. This means the sequence must be at least 59 frames long for the loop to work as intended.

**Frame Index** – Used in **Frame Index** mode, specifies the input frame number.

**Loop Overlap** – Used in **Loop** mode, specifies the number of the overlapped frames that ensure a smooth transition. It is recommended that **Loop Overlap** be longer than the average "lifetime" of the simulation elements. For example, if you simulate a waterfall, the "lifetime" is the time over which the water falls freely.

**Cache Start** – An offset that specifies which cache file from the sequence is 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 is placed on.

**Play Length** – In **Manual** 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 playback speed. A value of 1.0 means that the cache files correspond exactly to the frames on the timeline.

**Frame Blending** – Controls how to interpolate between cache files when needed, for example when **Play Speed** is not 1.0 or the rendered frame is not exact.

**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 movement has stopped.

**Flip Up Axis** – When enabled, flips the up axis of the grid. Can be used, for example, when using files imported from 3ds Max.

**Mirror Z Axis** – When enabled, the caches are mirrored along the Z axis.

