VRayProxy File Formats

This page provides information on the files formats supported by V-Ray Proxy objects.

The .vrmesh File Format

Meshes are exported to a special *.vrmesh* file format. It contains all geometric information for a mesh – vertices and face topology, as well as texture channels, face material IDs, smoothing groups, normals – in short, everything that is needed to render the mesh. In addition, the mesh is pre-processed and subdivided into chunks for easier access. The file also contains a simplified version of the mesh used for preview purposes in the viewport.

It is important to note that the mesh is in a "ready-to-render" state. No further modifications to the mesh are expected. You can't apply modifiers to the mesh, or animate it in any way other than animating the position/orientation of the proxy object. There is no way to recover the original mesh from a *.vrmesh* file. Therefore, if you plan on doing modifications to the mesh, you should keep it in a Cinema 4D file (which may be different from the file that gets rendered in the end).

Alembic Supported Features

The V-Ray Proxy can also load and render Alembic files (*.abc*). Alembic layers are also natively supported with V-Ray Proxy objects.

Here is a list of the supported features.

Geometry types

- Polygonal meshes (including subdivision surfaces)
- Spline curves
- Particles

All geometry types support motion blur. If the mesh/hair topology or particle count are not changing, then precise motion blur is computed. Otherwise, a velocity channel must be provided in the file to describe the motion blur.

Mesh Objects

- Velocity channel - It is always computed for animations with homogeneous topology. Otherwise, it is read from the standard alembic velocity property in units/second. Alternatively, it is in units/frame in a geometry property specified in "velocity_color_set" GeomMeshFile plugin parameter, or in geometry property named “v”, “velocities”, “velocity”, “Velocity”;
- Material IDs - Provided by per face uint32 property named “.materialids” or by alembic face sets. Each face set name, which start with a non-negative integer, assigns this integer as material id. Face set names, which do not start with an integer, receive consecutive material ids;
- Normals - If “compute_normals” is on, then normals are always computed with the given “smooth angle” parameter. Otherwise they are read from the alembic default property for normals. If they are not written, then geometric normals are used;
- UV channels - All vector2 float/double properties in ArbGeomParams that start with “uv” are sorted and listed as UV sets. The default UV set comes first with name “uv”;
- Color channels - All vector3, color3 and color4 properties are represented as three component color channels. All other scalar geometry properties are packed into three component colors.

Spline Objects

- Velocity channel - It is always computed for animations with homogeneous topology. Otherwise, it is read from the standard alembic velocity property in units/seconds;
- Hair width - Either written as standard alembic property expressed as diameter or written as radius in the “.radius” property;
- UV channels - All vector2 float/double properties in ArbGeomParams that start with “uv” are sorted and listed as UV sets. The default UV set comes first with the name “uv”. UVs can be per vertex or per strand.

Particle Objects

- Velocity channel - It is always computed for animations with homogeneous topology. Otherwise, it is read from the standard alembic velocity property in units/seconds;
- Particle width - It is either written as standard alembic property expressed as a diameter or written as a radius in the “.radius” property.

The V-Ray Proxy has some additional parameters related to Alembic files. *See the Alembic Proxy Parameters section of the V-Ray Proxy page for more details*.

Notes

- .vrmesh files exported from Cinema 4D can be rendered outside of Cinema 4D- for example, by the standalone version of V-Ray, or V-Ray for 3ds Max and any other application supported by V-Ray.

- You can convert .ply, .obj, .geo and .bin files to .vrmesh files with the help of the ply2vrmesh converter tool.

Links

- Official Alembic file format home page: http://www.alembic.io/