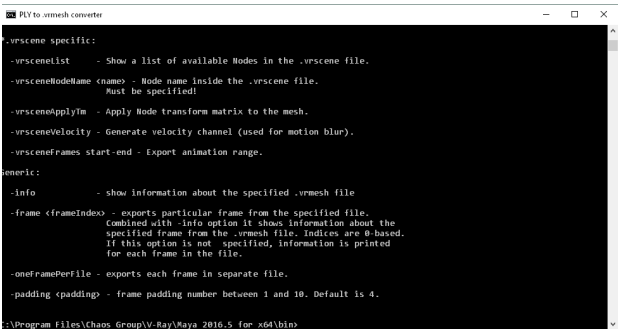


# OBJ GEO PLY to .vrmesh converter

This page describes the ply2vrmesh command-line utility.

## Overview

The ply2vrmesh command-line utility can convert *.ply*, *.obj*, *.bin*, *.geo*, *.bgeo*, *.hclassic*, *.bhclassic*, *.abc* and *.vrscene* files to *.vrmesh* files for rendering with V-Ray through [V-Ray Proxy Objects](#).



## UI Paths

Windows	C:\Program Files\Maxon Cinema 4D Rnn\plugins\V-Ray\tools
macOS	Applications/Maxon Cinema 4D Rnn/plugins/V-Ray/tools

## Usage

Using the following command, converts the given *.ply* or *.obj* file and writes it to the given *.vrmesh* file. Note that you must specify the file extension; it is not added automatically.

```
> ply2vrmesh <inputFile> <outputFile> [options]
```

## Arguments

- inputFile** – Specifies the *.ply*, *.obj*, *.bin*, *.geo* (*.hclassic*) or *.bgeo* (*.bhclassic*), *.abc*, *.prt* or *.vrscene* input file name. The string may include wildcards.
- outputFile** – Specifies *.vrmesh* file output name (extension must be specified). This string may not include wildcards. If this is not specified, then the output is a file with the same name but with the *.vrmesh* extension. If multiple input files are specified and *<outputFile>* is missing, then each input file will be written to a separate *.vrmesh* file. If multiple input files are specified and *<outputFile>* is also specified, all input files are sorted in lexical order and concatenated into one animated *.vrmesh* file.

## Options

- verboseLevel** – An integer value to determine the verbosity of the output. (0 - no output; 1 - errors only; 2 - errors and warnings; 3 - errors, warnings, and informational messages; 4 - all output). The default is 3.
- append** – Appends the information as a new frame to the *.vrmesh* file.
- smoothNormals** – Generates smooth vertex normals. Only valid for *.obj* and *.geo* files; always enabled for *.bin* files.
- smoothAngle** – A floating point number that specifies the angle (in degrees) used to distinguish if the normals should be smoothed or not. If present, it automatically enables the **-smoothNormals** flag.

**-flipNormals** – Reverses the face/vertex normals. Only valid for *.obj*, *.geo*, *.bin*, and *.abc* files.

**-flipVertexNormals** – Reverses the vertex normals. Only valid for *.obj*, *.geo*, *.bin* and *.abc* files.

**-flipFaceNormals** – Reverses the face normals. Only valid for *.obj*, *.geo*, *.bin*, and *.abc* files.

**-flipYZ** – Swap y/z axes. Needed for some programs, i.e., Poser, ZBrush. Valid for *.ply*, *.obj*, *.geo*, and *.bin* files.

**-flipYPosZ** – Same as **-flipYZ** but does not reverse the sign of the z coordinate.

**-flipXPosZ** – Same as **-flipYPosZ** but swaps x/z axes.

**-mapChannel <chanIndex>** – Stores the UVW coordinates to the specified mapping channel (default is 1). Only valid for *.obj* and *.geo* files. When exporting a mesh that will be used in Maya, currently, this must be set to 0, or the textures on the mesh will not render properly.

**-disableColorSetPacking** – Only valid for *.geo* and *.bgeo* files; disables the packing of float1 and float2 attributes in vertex color sets.

**-materialIDs** – Only valid for *.geo* and *.bgeo* files; assigns material IDs based on the primitive groups in the file.

**-materialIDs\_splitGroups** – Only valid for *.geo* and *.bgeo* files; assigns material IDs based on the primitive groups. These groups are split into different voxels/meshes and appear in visibility lists.

**-sortMaterialIDs** – Only valid for *.geo* and *.bgeo* files; sorts the list of material IDs by the group name. Otherwise, they are in the same order as they appear in the *.geo*/*.bgeo* file.

**-fps <fpsValue>** – A floating-point number that specifies the frames per second at which a *.geo* or *.bin* file is exported so that vertex velocities can be scaled accordingly. The default is 24.0.

**-previewFaces <numFaces>** – Specifies the maximum number of faces in the *.vmesh* preview information. The default is 9973 faces.

**-previewType <type>** – Specifies the method used to generate a preview.

**clustering** – Works very fast but is less accurate.

**edge\_collapse** – Slower, but produces the best results.

**combined** – Fast, produces slightly better results than clustering.

**face\_sampling** – Copies triangles from the original (very fast, but leaves a disconnected mesh).

**-facesPerVoxel <numFaces>** – Specifies the maximum number of faces per voxel in the resulting *.vmesh* file. The default is 10000 faces.

**-previewHairs <numHairs>** – Specifies the maximum number of hairs in the *.vmesh* preview information. The default is 500 hairs.

**-segmentsPerVoxel <numSegments>** – Specifies maximum segments per voxel in the resulting *.vmesh* file. The default is 64000 hairs.

**-hairWidthMultiplier <multiplier>** – Specifies the multiplier to scale hair widths in the resulting *.vmesh* file. The default is 1.0.

**-previewParticles <numParticles>** – Specifies the maximum number of particles in the *.vmesh* preview information. The default is 20000 particles.

**-particlesPerVoxel <numParticles>** – Specifies maximum particles per voxel in the resulting *.vmesh* file. The default is 64000 particles.

**-particleWidthMultiplier <multiplier>** – Specifies the multiplier to scale particles in the resulting *.vmesh* file. The default is 1.0.

**-mergeVoxels** – Merge objects before voxelization to reduce overlapping voxels

**-velocityAttrName <name>** – Specifies the name of the point attribute that should be used to generate the velocity channel. By default, the **v** attribute is used.

**-pointSize** – If specified, turns on point cloud generation and specifies the smallest size of the points. The default is 0.0 (point cloud generation is disabled).

**-velocityOffset <offset>** – Specifies that the starting position should be offset by a fraction of the velocity channel, e.g., -0.25. Only valid for *.geo*, *.bgeo*, and *.bin* files.

**-mergeFiles** – Merges all input files into one *.vmesh* file.

Input files are specified using wildcard.

Output file (with *.vmesh* extension) must be specified.

**-mergeShaders** – When merging files using **-mergeFiles**, this option merges all shaders with the same name into one shader. When merging *.obj* files, the first found *.mtl* file in the directory is parsed to get the ordering of the materials.

## Alembic subdivision specific

**-subdivideAllMeshes** – Subdivides all alembic polygonal meshes, not only subdivision objects.

**-subdivisionLevel** – Alembic subdivision level.

**-subdivideUVs <value>** – Specifies the subdivision of the mapping channels. Value 0 to skip map channel subdivision and 1 to apply it.

**-preserveGeomBorders** – Skips the subdivision for all geometry borders.

**-preserveMapBordersMode <mode>** – Preserves map borders mode.

Mode "none" to subdivide all map borders.  
Mode "internal" to preserve internal borders.  
Mode "all" to preserve all map borders.

## \*.vrscene specific

**-vrsceneList** – Shows a list of available Nodes in the *.vrscene* file.

**-vrsceneNodeName <name>** – Node name inside the *.vrscene* file.

Must be specified!

**-vrsceneApplyTm** – Applies Node transform matrix to the mesh.

**-vrsceneVelocity** – Generates velocity channel (used for motion blur).

**-vrsceneFrames start-end** – Exports animation range.

**-vrsceneWholeScene** – Generates a proxy for all vrscene's geometric objects.

## Generic

**-info** – Shows information about the specified *.vrmesh* file.

**-perObject** – Prints additional information for each object in the file. Requires the **-info** flag.

**-frame <frameIndex>** – Exports a particular frame from the specified file. Combined with **-info** option, it shows information about the specified frame from the *.vrmesh* file. Indices are 0-based. If this option is not specified, information is printed for each frame in the file.

**-oneFramePerFile** – Exports each frame in a separate file.

**-padding <padding>** – Frame padding number between 1 and 10. Default is 4.

These options can also be viewed from the command prompt by running the **ply2vrmesh** program without any parameters to see the description of these options.

## Notes

---

- The converter works with most of the popular *.ply* formats, both ASCII and binary, big-endian, or little-endian.
- In addition to the geometric data (faces and vertices), the converter recognizes some of the most common additional channels such as diffuse surface color. Vertex colors are recognized if they are specified as "red", "green", and "blue" or "diffuse\_red", "diffuse\_green", and "diffuse\_blue" vertex properties.