

# Caligari trueSpace Geometry Import Converter

This is a highly accurate geometry import converter that reads in Caligari trueSpace .cob and .scn binary scene files (v3.0 or earlier). This is a load and render converter that imports and translates all aspects of the scene file so that little or no modifications must be done in the target rendering program to produce equivalent results to that created by the trueSpace renderer.

The following are some of the features of this converter:

- All geometry is read in including the local axes and all material assignments.
- Holes within polygons are also properly converted into NuGraf compatible meshed polygons with holes.
- All (u,v) texture coordinates are read in and stored along with the meshed polygon data.
- All three polygon faceting modes are properly handled: faceted, autofacet and smooth. This allows proper smoothing of the data as per the Caligari trueSpace smoothing conventions.
- The original scene hierarchy is completely recreated, including all groupings and their related transformations.
- The directional, point and spot light sources are properly imported as well as the light color and shadow mapping parameters.

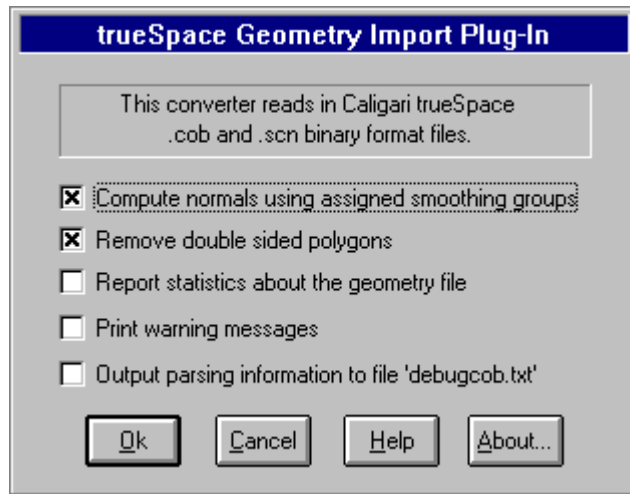
In addition, this converter reads in *every* material attribute and accurately translates the shading parameters to equivalent NuGraf shading parameters. The NuGraf renderer will be able to render any trueSpace file with little or no modification with results that are almost exactly the same as within trueSpace. The following describes some of the shading parameter translations:

- Flat, smooth and metal shading modes are translated properly.
- The metal shading mode properly takes into account the edge transparency dropoff.
- The shininess parameter is properly decoded into three NuGraf shading parameters of diffuse, specular and ray-traced shininess. This decoding is quite important to properly recreate trueSpace scenes.
- Cubic and spherical environment map are translated into equivalent NuGraf environment map types.
- Texture maps are properly translated, as well as the image filename, the u/v scaling factors and the u/v offset values.
- Likewise, the bump map textures and all of its related parameters are properly translated.

## Converter Limitations

- trueSpace binary scene files do not include U/V tangent vectors which are typically required by other rendering programs in order to perform bump mapping. Thus, even though the bump mapping parameters are properly translated, no bump mapping will appear in the target rendering program because of this lack of U/V tangent vectors. To circumvent this problem you will have to apply the U/V tangent vectors in the target rendering program (typically by assigning a texture projection to the object(s) in question).
- At this time the only aspect of the file that has not been translated into equivalent NuGraf renderer parameters are the three trueSpace procedural texture mapping functions: granite, marble and wood. These are highly specific to the trueSpace renderer.
- All texture filenames are stripped of their pathnames and unrecognized image file types are translated to TIFF file types. For example, if the trueSpace image filename is c:\truespace\image.txr then it will be translated to image.tif.
- This converter does not read in the ASCII version of Caligari trueSpace files since they are not at all common.

## Dialog Box Options



### Compute Normals using Assigned Smoothing Angles

If this checkbox is check-marked (the default) then vertex normals will automatically be computed based on the smoothing information associated with each object in the trueSpace file. This smoothing operation will allow the imported objects to appear smooth when rendered. If this checkbox is un-checked then no smoothing will be performed resulting in objects which appear to be flat shaded when rendered.

### Remove Double Sided Polygons

When trueSpace adds a single flat polygon to a scene it actually adds two duplicated polygons that are exactly the same except that the two polygons face in opposite directions. These doubled sided polygons cause problems with many rendering programs so this option, when enabled, allows double sided polygons to be deleted from the scene. It is enabled by default.

### Report Statistics About the Geometry File

If this checkbox is check-marked then parsing statistics will be displayed in the message window after the trueSpace file has been imported.

### Print Warning Messages

If this checkbox is check-marked then warning messages from the trueSpace file parser will be printed out to the message window.

### Output Parsing Information to File debugcob.txt

If this checkbox is check-marked then the contents of the trueSpace binary file will be verbosely described and output to the file **debugcob.txt**.

