

CFD-VisCART Batch Mode Documentation

To run a batch file, use the following command:

```
CFD-VisCART -b filename
```

The following limitations and specifications are required to execute a CFD-VisCART batch file:

- Any line starting with '#' will be ignored. These can be used for comments.
- Commands and arguments are case-insensitive, except for filename arguments, which are case-sensitive.
- Arguments are order dependent.
- Commands may span multiple lines. The '\' character at the end of a line indicates the command continues on the following line.
- Each partid is associated to any of the geometry coming from one single file.

To use the current version of the batch mode capability, the batch file must be launched from an X-terminal. This limitation may be removed in a future version of CFD-VisCART. (*Note: You can use any X-terminal. Some possible X-terminals would be Exceed or startx, which comes with Cygwin.*)

Filenames:

Spaces in filenames are allowing under the following conditions:

- the filename is quoted using the '"' character: "C:\Program Files\Viscart Models\test.stl"
- spaces are escaped by using the '\' character: C:\Program\ Files\Viscart\ Models\test.stl

Commands:

[] - Required Argument

<> - Optional Argument

Importing Geometry:

The following commands may be used to import geometries for the various file types supported by CFD-VisCART.

```
import_stl [filename] <partid>
import_nastran [filename] [singlepatch: yes no] <partid>
import_fast [filename] [format: binary,unformatted, formatted]
[multidomain: yes, no] [precision: single,double] <partid>
import_sat [filename] [coarseness:1-20] [singlepatch: yes no] <partid>
import_p3d [filename] [format: binary,unformatted, formatted]
[multidomain: yes, no] [blanking: yes, no] [precision: single,double]
<partid>
```

```
import_parasolid [filename] [type: geom, grid] [coarseness:1-20]
[singlepatch: yes no] <partid>
```

Disable Importing:

You may disable importing a file by putting a '!' in front of the import command. This will assure that all keys in your DTF file will stay the same by doing a fake import. (a comment '#' tag won't do that for you)

```
!import_stl [filename ]
!import_nastran [filename]
!import_fast [filename]
!import_sat [filename ]
!import_p3d [filename]
!import_parasolid [filename]
```

Geometry:

The following commands can be used to manipulate the position of the geometry:

```
translate [partid] [deltaX] [deltaY] [deltaZ]
rotateX [partid] [angle]
rotateY [partid] [angle]
rotateZ [partid] [angle]
```

Setting Properties:

The following commands can be used to set the position of the domain marker, the extents of the bounding box, box sources, and surface sources.

```
set_marker_position [X] [Y] [Z]
set_bounding_box [minX] [minY] [minZ] [maxX] [maxY] [maxZ]
define_box_source [minX] [minY] [minZ] [maxX] [maxY] [maxZ] [deltaX]
[deltaY] [deltaZ]
define_surface_source [partid] [tan_size] [normal_size]
```

Stair Step Mesh Generation:

The following commands can be used to generate a stairstep mesh in CFD-VisCART:

```
generate_stairstep_mesh [type: omnitree/octree] [deltaX] [deltaY]
[deltaZ] [layers] [deltaX] [deltaY] [deltaY]
```

or

```
generate_stairstep_mesh [type: omnitree/octree] [deltaX] [deltaY]
[deltaZ] [layers] [normal] [tan]
```

Projected Mesh Generation: (_____ Single Domain Only _____)

The following commands can be used to generate a projected mesh, but is limited to a single domain. Multi-domain projected mesh generation via the batch file may be implemented in future versions of CFD-VisCART.

```
generate_projected_mesh [type: omnitree/octree] [deltaX] [deltaY]
[deltaZ] [factor: 0.01 - 1.0] [layers] [deltaX] [deltaY] [deltaY]
```

or

```
generate_projected_mesh [type: omnitree/octree] [deltaX] [deltaY]
[deltaZ] [factor: 0.01 - 1.0] [layers] [normal] [tan]
```

Projected Mesh Improvement:

The following command can be used to improve the quality of the mesh:

```
improve_mesh [minimum angle] [max_iteration]
```

Save Results:

The following commands can be used to save a DTF file, a decomposed DTF file, or a VGD file from CFD-VisCART.

```
save_dtf [filename]
save_decomposed_dtf [filename] [num_zones] [direction: x,y,z]
save_vgd [filename]
```