

1 Setting up the new domain

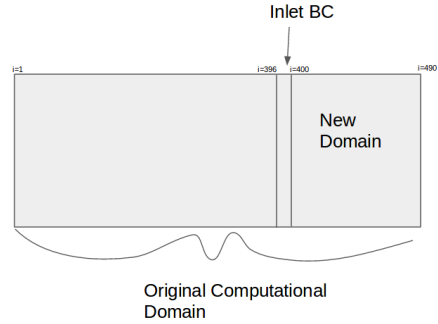


Figure 1: Grid Cut

1.1 Making the inlet file

```

1 iCut_Grid(0/1) iCut_Flow (0/1) inlet(0/1) iFluent(0/1)
2 0 1 0 0
3 iGrdHDFS_rd iFlowHDFS_rd #{Format for input (grid,solution) file}
4 1 1
5 iGrdHDFS_wt iFlowHDFS_wt #{Format for output (grid,solution) file}
6 1 1
7 #####
8 imaxo jmaxo kmaxo nvar
9 490 1 295 6
10 ibe iend jbe jend kbe kend
11 396 399 1 1 1 295
12 #####
13 iskip iskip_idx
14 1 10
15 jskip jskip_idx
16 1 10
17 kskip kskip_idx
18 1 10
19 ##### File Info #####
20 gridname_rd
21 ../InitGridFlow/grid.h5
22 flowname_rd
23 ../InitGridFlow/flowdata_00015000.h5
24

```

Figure 2: Example Input File for making inlet

iCut_Grid should be set to 0, while iCut_flow should be set to 1.

The rd and wt tags should be set to values based on your input file types and desired output file type.

The maxo variables should be the last index of each direction of your input file
ibe and iend should be set to the 4 indexes before the desired zone for the new computational domain

The File Info section should contain the file location for your input files, it is recommended that they be located in a different location otherwise the files will be overwritten.

The CutGridFlow program should then be run and the output, flowdata_00000000.h5, file should be renamed to inlet.h5

1.2 Making the inletgrid file

```

1 iCut_Grid(0/1) iCut_Flow (0/1) inlet(0/1) iFluent(0/1)
2 1 0 0 0
3 iGrdHDF5_rd iFlowHDF5_rd #(Format for input (grid,solution) file)
4 1 1
5 iGrdHDF5_wt iFlowHDF5_wt #(Format for output (grid,solution) file)
6 1 1
7 #####
8 imaxo jmaxo kmaxo nvar
9 490 1 295 6
10 ibe iend jbe jend kbe kend
11 394 399 1 1 1 295
12 #####
13 iskip iskip_idx
14 1 10
15 jskip jskip_idx
16 1 10
17 kskip kskip_idx
18 1 10
19 ##### File Info #####
20 gridname_rd
21 ../InitGridFlow/grid.h5
22 flowname_rd
23 ../InitGridFlow/flowdata_00015000.h5
~

```

Figure 3: Example Input File for making inletgrid

iCut_Grid should be set to 1, while iCut_flow should be set to 0 now. ibe and iend should be set to the 6 indexes before the desired zone for the new computational domain. This will mean ibe is 2 less than when making the inlet file. The CutGridFlow program should then be run and the output, grid.h5, file should be renamed to inletgrid.h5

1.3 Making the new Flowdata and Grid files

```

1 iCut_Grid(0/1) iCut_Flow (0/1) inlet(0/1) iFluent(0/1)
2 1 1 0 0
3 iGrdHDF5_rd iFlowHDF5_rd #(Format for input (grid,solution) file)
4 1 1
5 iGrdHDF5_wt iFlowHDF5_wt #(Format for output (grid,solution) file)
6 1 1
7 #####
8 imaxo jmaxo kmaxo nvar
9 490 1 295 6
10 ibe iend jbe jend kbe kend
11 400 490 1 1 1 295
12 #####
13 iskip iskip_idx
14 1 10
15 jskip jskip_idx
16 1 10
17 kskip kskip_idx
18 1 10
19 ##### File Info #####
20 gridname_rd
21 ../InitGridFlow/grid.h5
22 flowname_rd
23 ../InitGridFlow/flowdata_00015000.h5
~

```

Figure 4: Example Input File for making new computational domain

Both iCut tags should be set to 1 now. The ibe and iend should be set to the area from the input files to be used for the

new computational domain.

The program should now be run, if you are not using a `flowdata_000000000.h5` file for input you will need to rename the output to match your input afterwards.

2 Using the new domain

Setting up the DNS code will be the same as for other cases with the exception of one of the boundary conditions. The `inletbc` should be set to 1 and the `inletdatatype` should be set to 2. This will require that the `inlet` and `inletgrid` files will need to be accessible from the same folder as the `deck3d.inp` file.

Remember to change `RunParams` as needed, reindex the sponge zones and turn off the inlet sponge