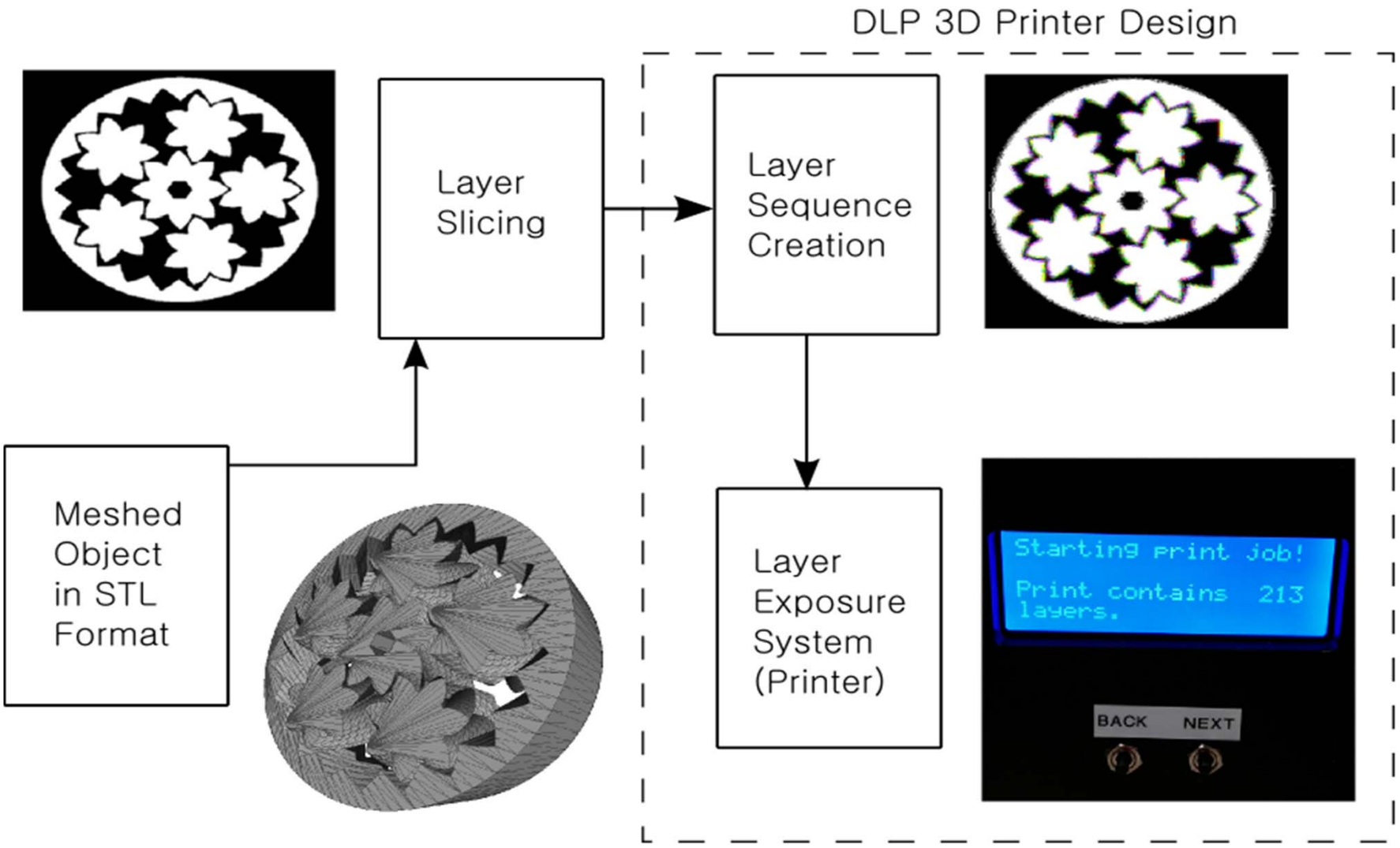
TIDA-00293 DLP 3D Printer

DLP-based 3D printing process flow



Get a cool model to print

- Download a meshed model to print from www.thingiverse.com
  - Make sure the model is in .STL format
  - Record, or remember, the file path for the .STL file

Download the required software

- Freesteel Z-level slicer
- ImageMagick Q8

Optional software

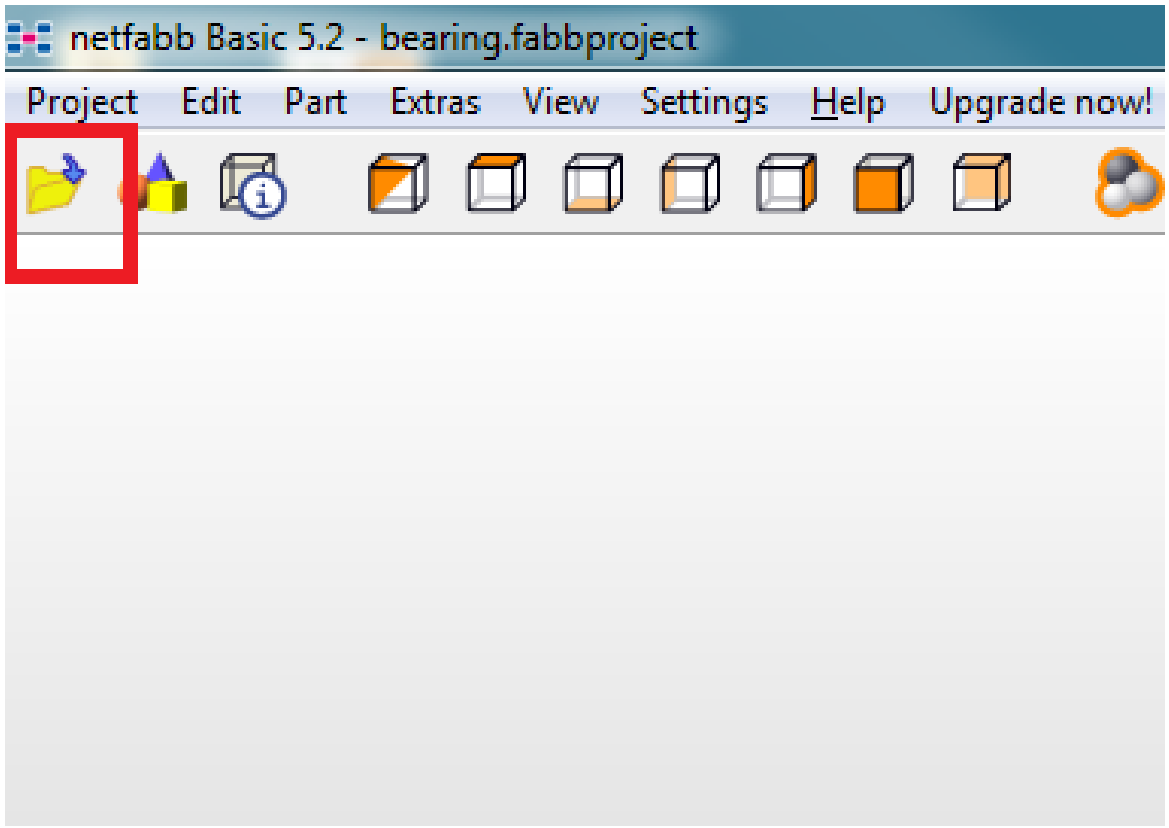
- MeshLab
  - Download it from this website: https://sourceforge.net/projects/meshlab/files/meshlab/MeshLab%20v1.3.3/
  - MeshLab lets users manipulate and change meshes
  - Use it to combine two meshes together into a single mesh

- Netfabb
  - Download Netfabb basic here: http://www.netfabb.com/downloadcenter.php?basic=1
  - Check the overall height of objects by opening them in Netfabb

Opening meshes in Netfabb

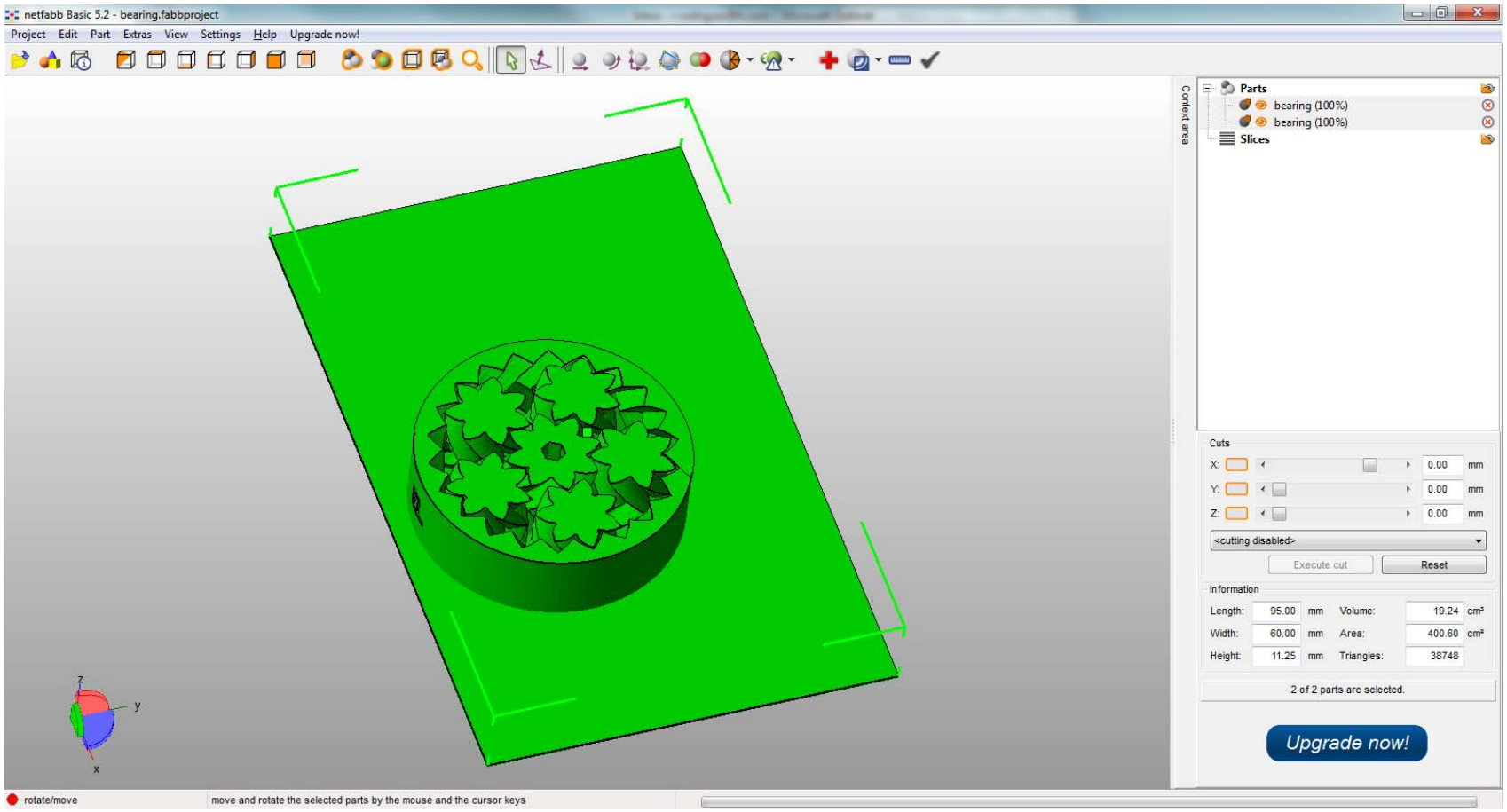
- After installing Netfabb, run the program

- Click the Open button



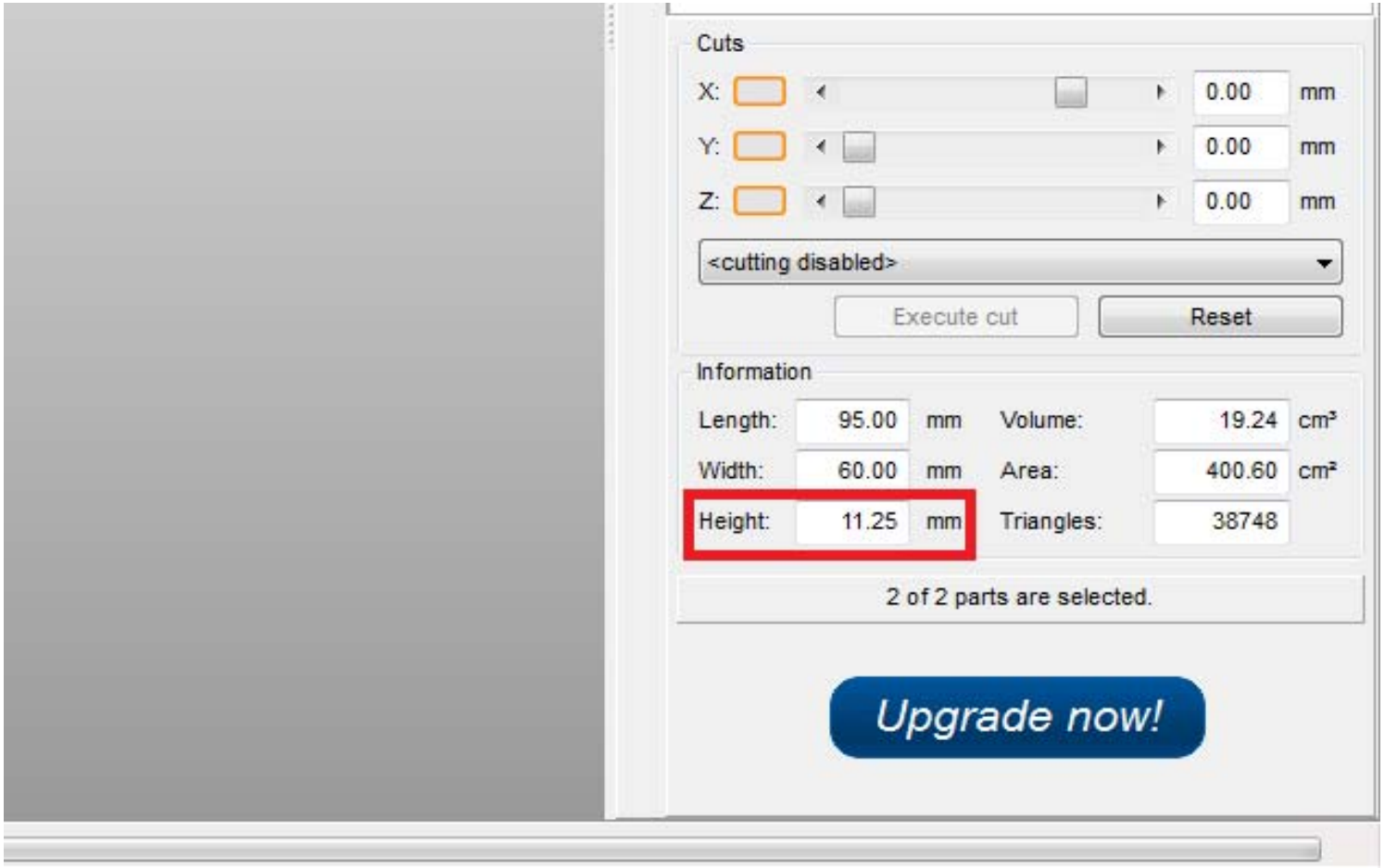
Opening meshes in Netfabb (con't)

- Browse to the downloaded model and open it



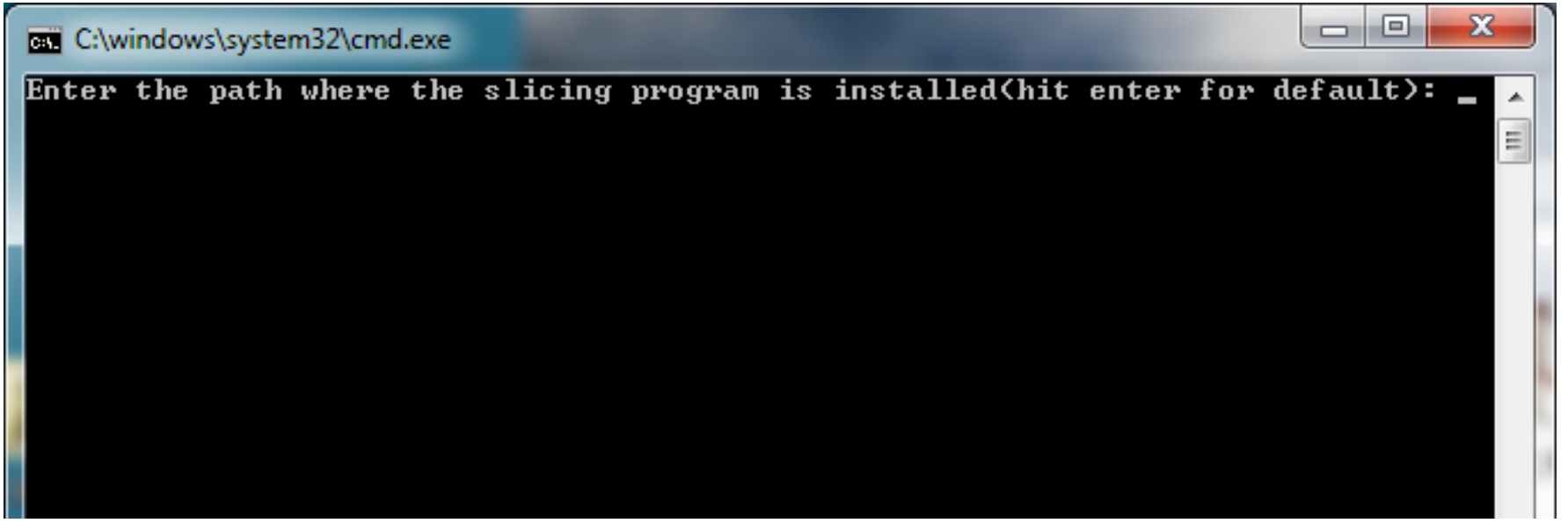
A piece of information needed from Netfabb

- With the mesh selected, record the height in the lower right hand corner
  - The units don't matter at this point



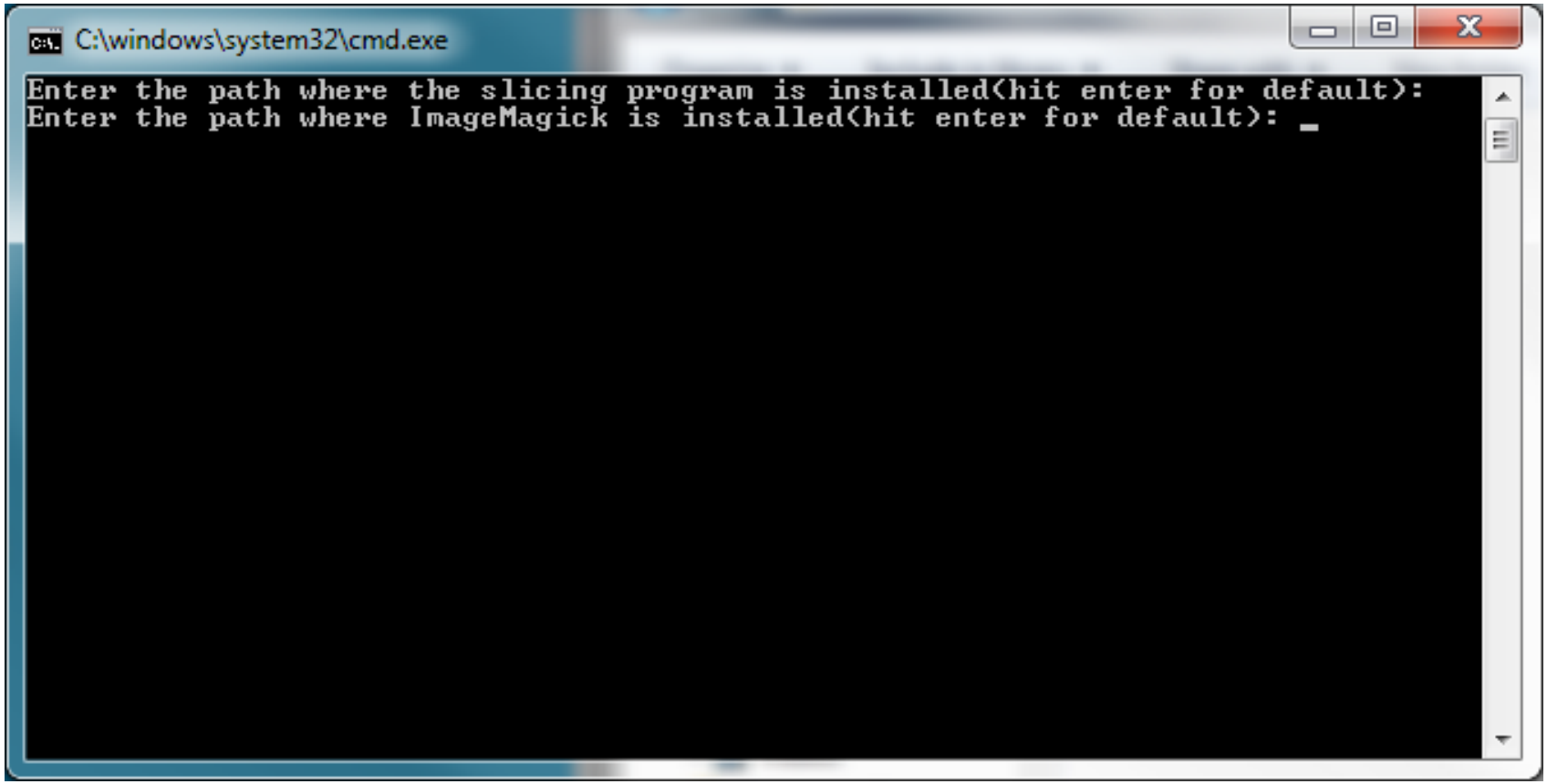
Ready to slice!

- With Freesteel Z-level slicer and ImageMagick installed
- The first prompt asks for the path to Freesteel.
  - If Freesteel is installed in the default location, just hit the enter key.
  - Otherwise, enter the path where slice.exe exists.



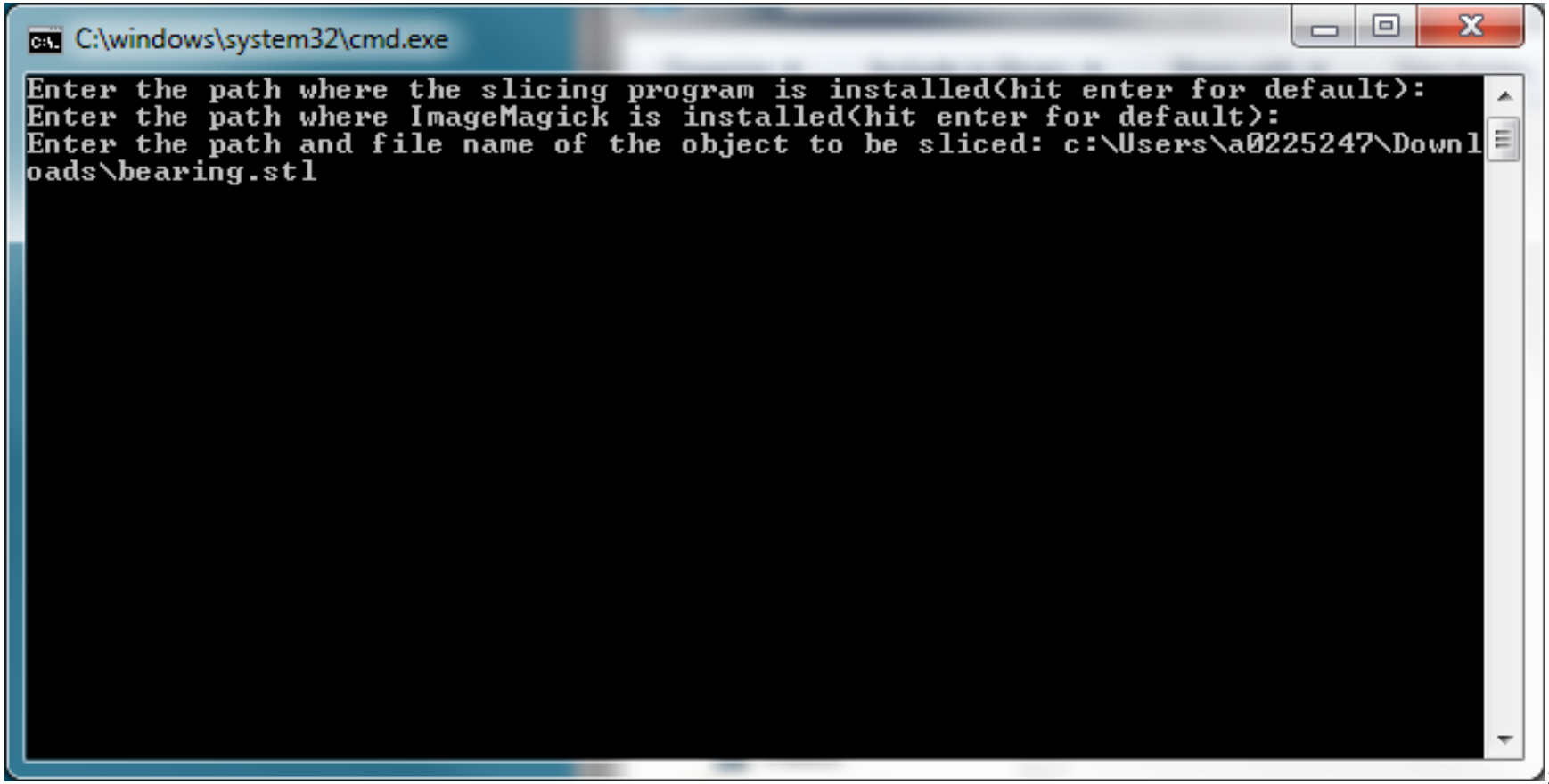
Path to ImageMagick

- Enter the path to the ImageMagick utility
  - If ImageMagick version 6.8.9 was installed in the default location, hit enter to accept the default path



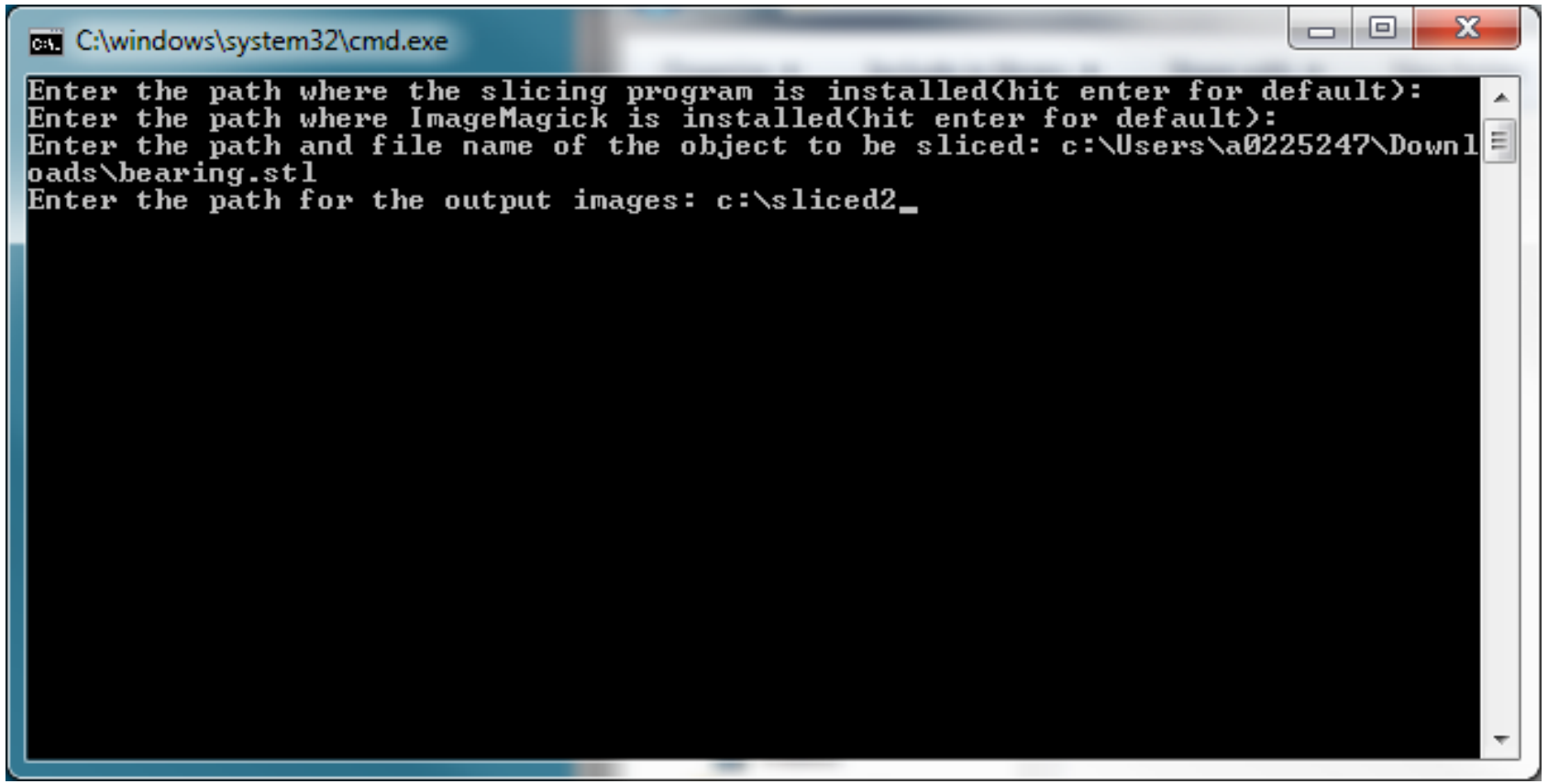
Path to the downloaded model

- Now enter the path and file name for the downloaded model
  - Use the tab button to autocomplete directory and file names



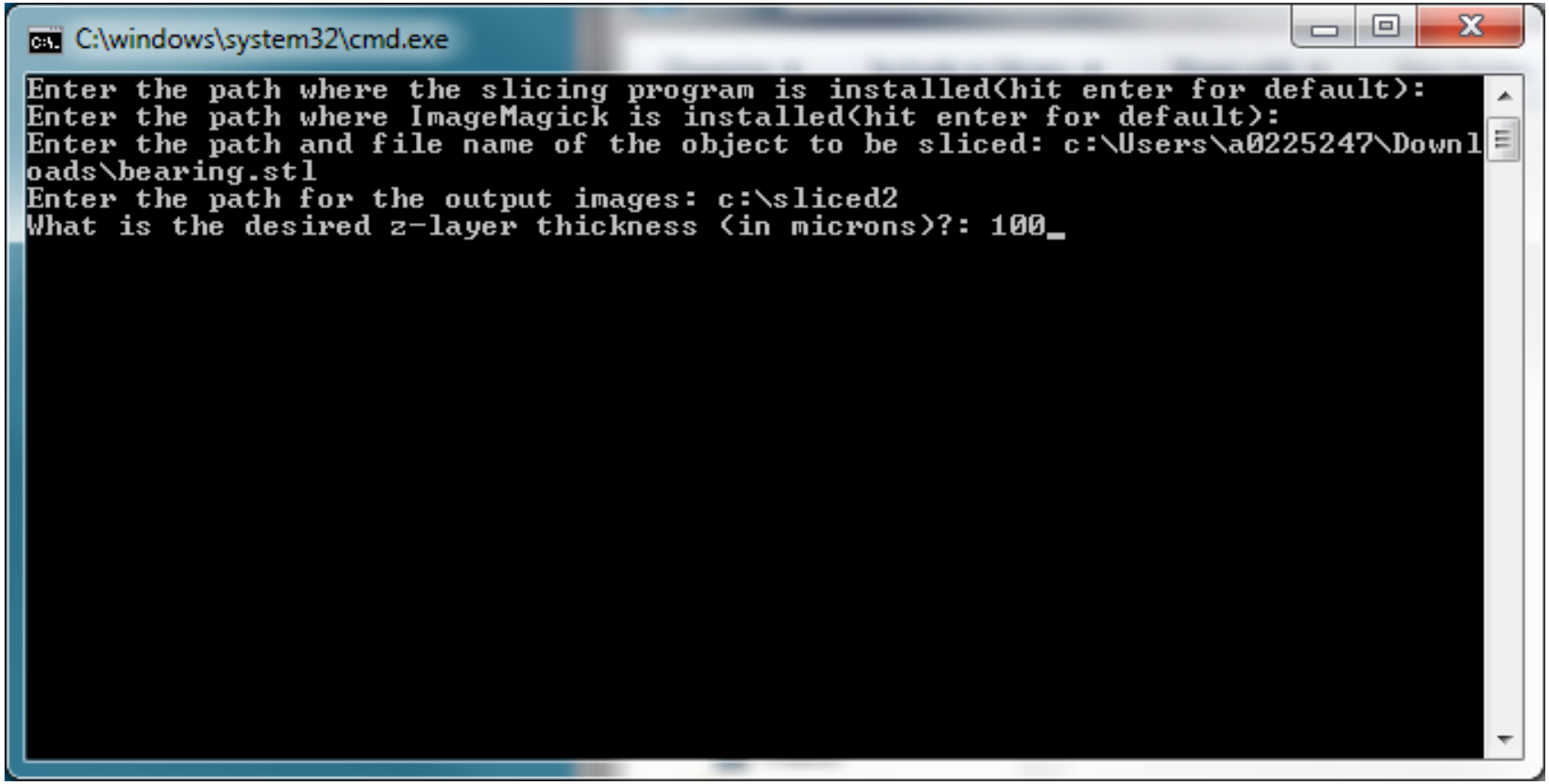
Output path definition

- Enter the directory where the sliced images will be placed
  - The directory should be empty or non-existent
  - Windows will create directories as necessary



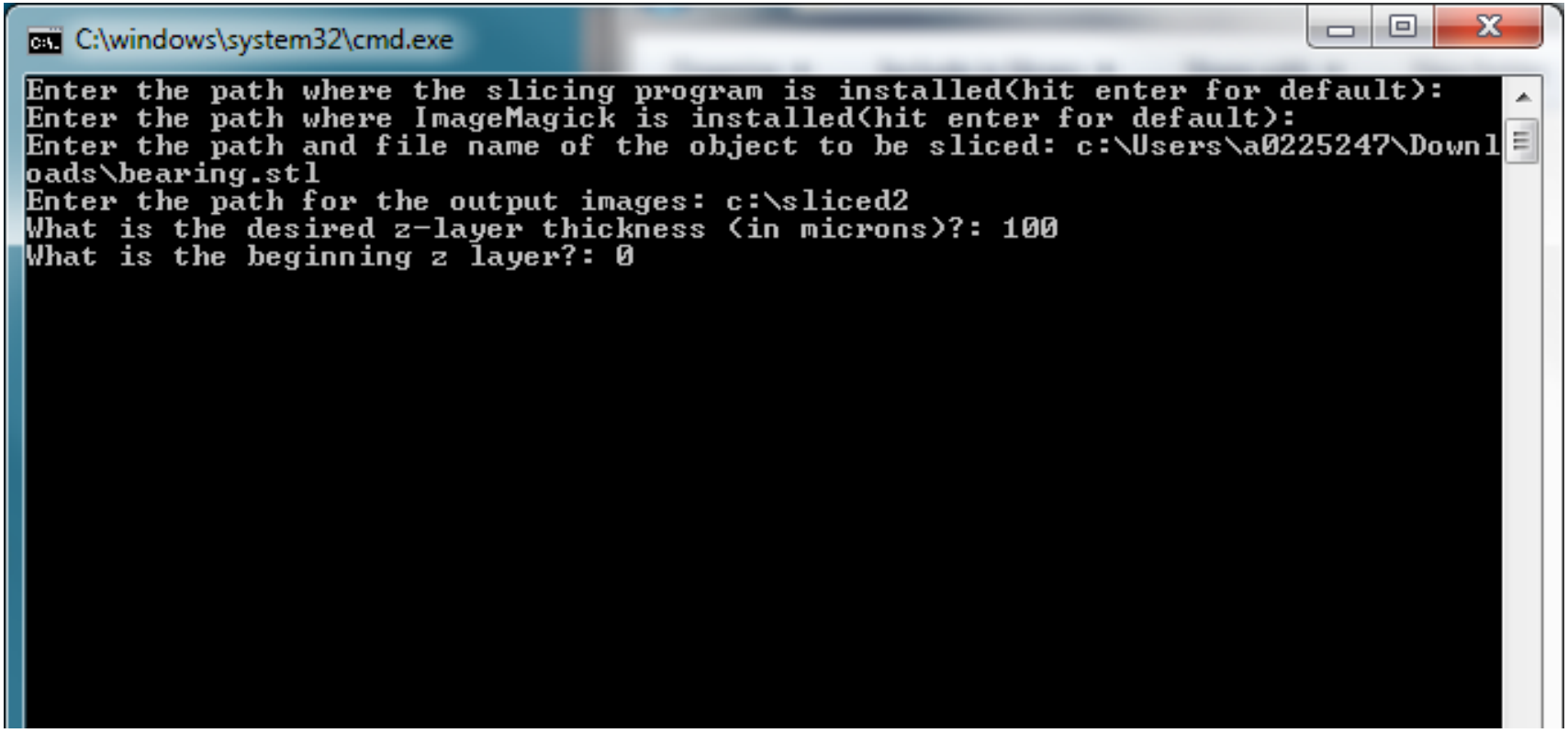
Z-layer thickness

- Enter the desired thickness of the cross-sectional layers
  - Acceptable values are 1 to 999



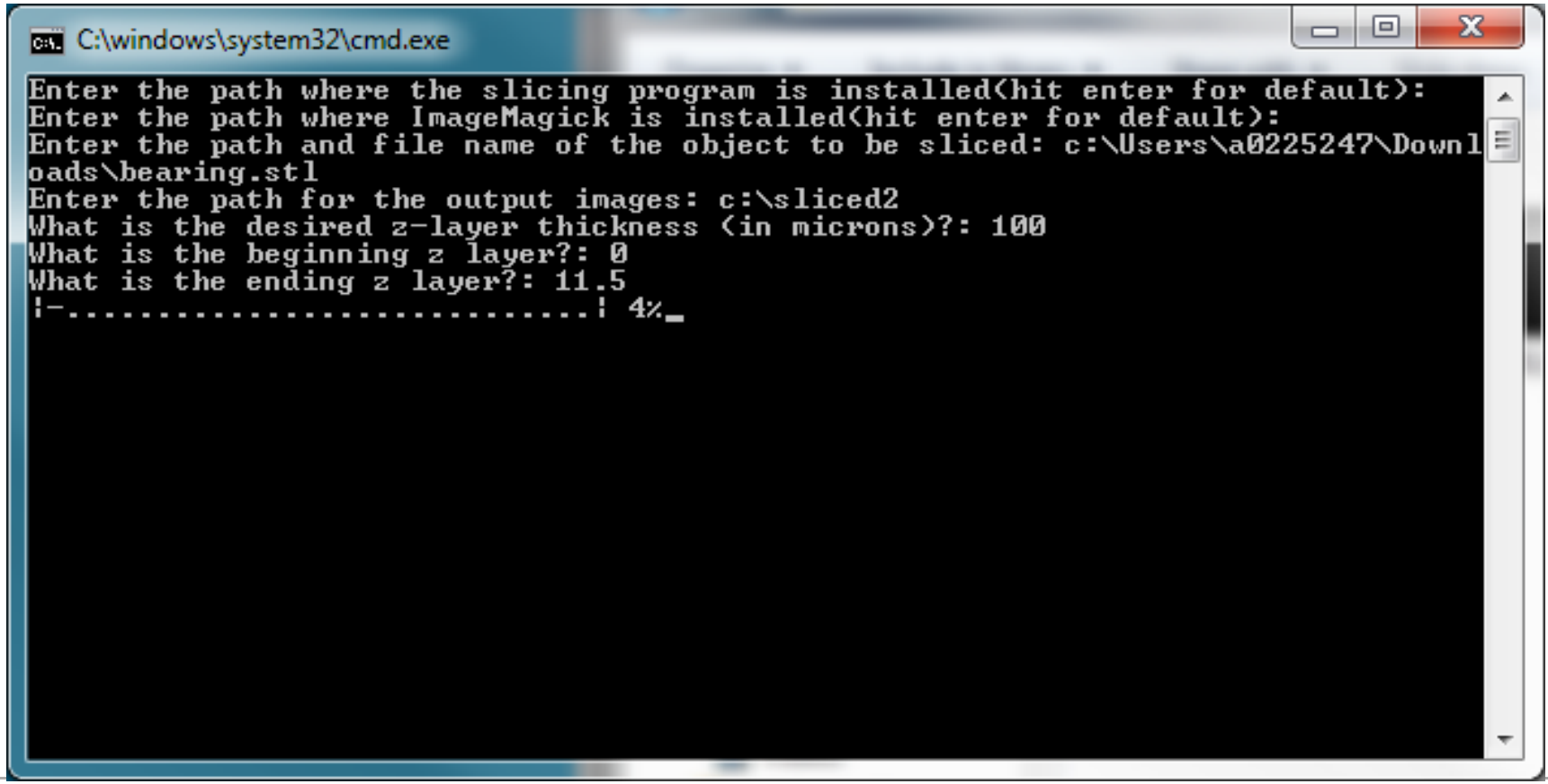
Beginning Z-layer

- Entire the first layer to be sliced
  - Typically this value is 0.
  - There may be times where you desire to start slicing and object from another point.



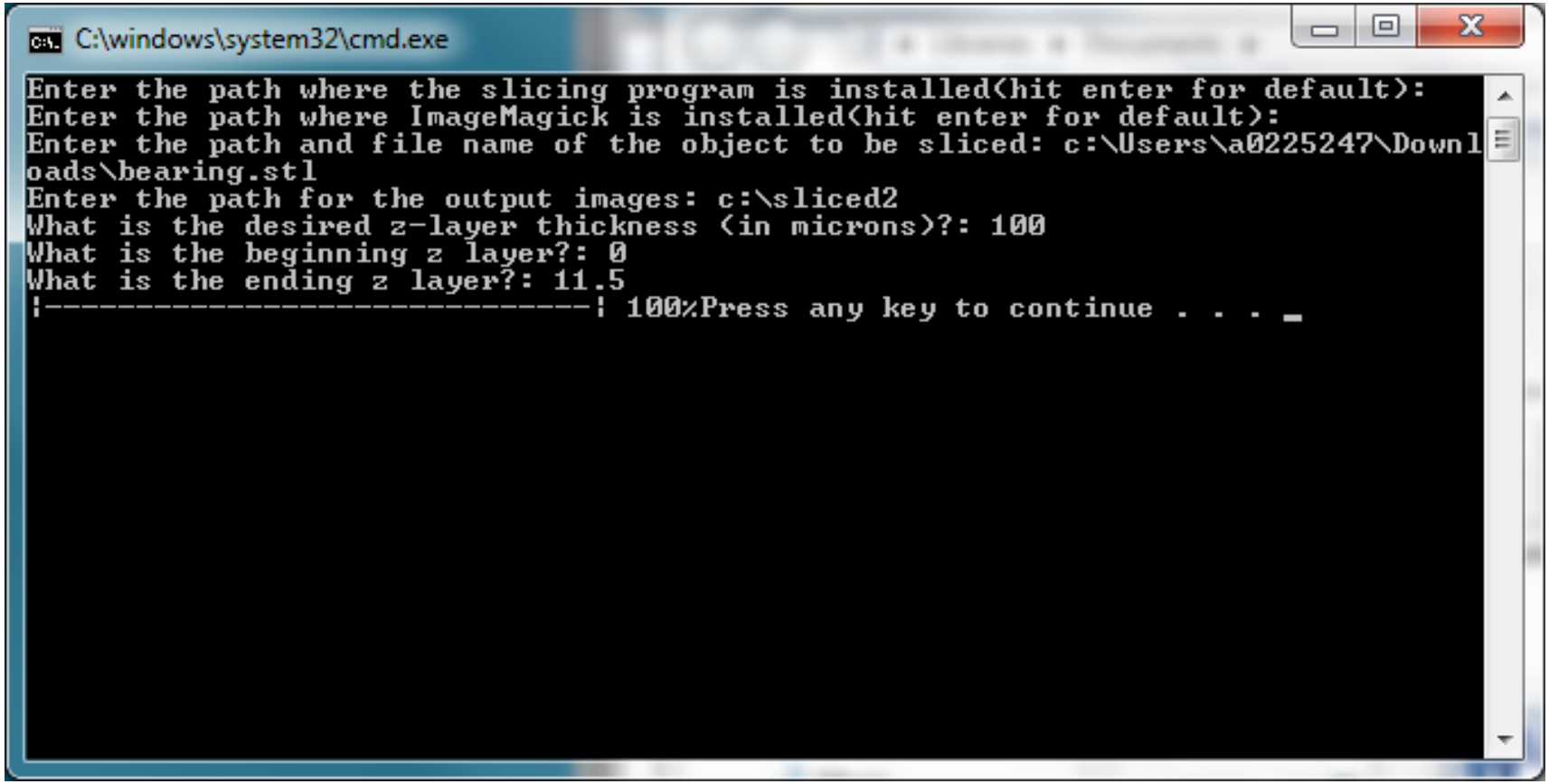
Last Z-layer

- This is the upper limit for the slicer
  - Enter the number recorded earlier, from Netfabb, in order to slice the entire object



Wait patiently….

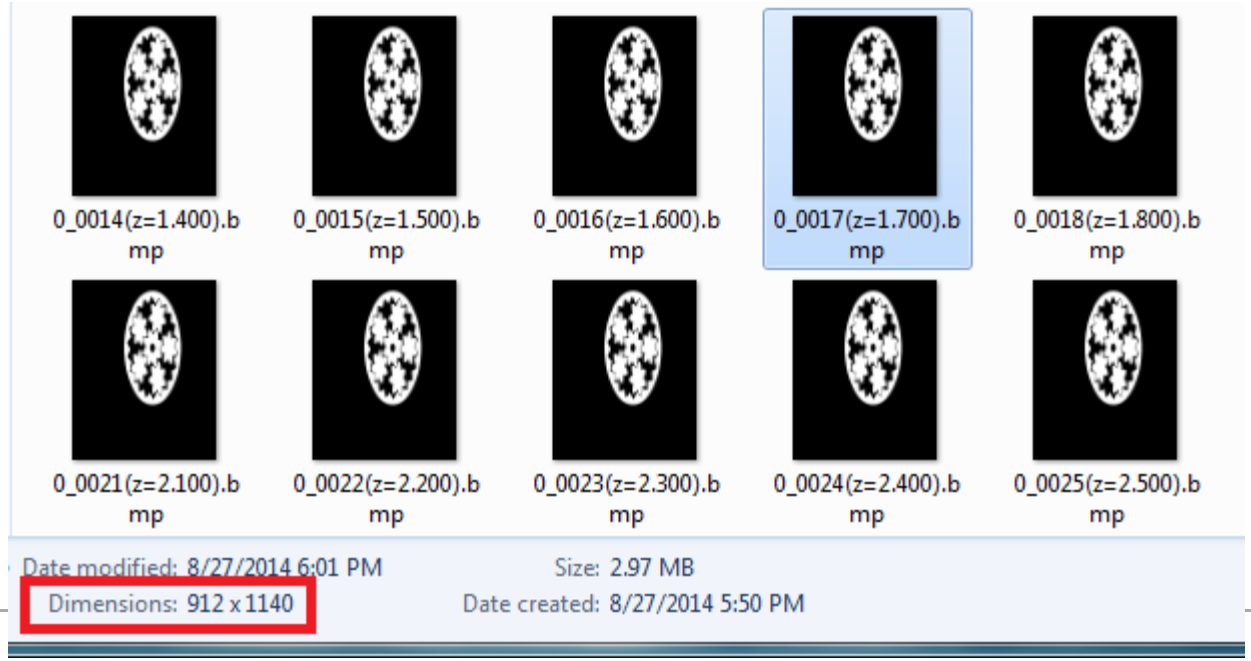
- Wait until the prompt “Press any key to continue . . .” appears
  - Press any key to close the batch script window



Check the output files

- Using file explorer, navigate to the output directory specified in the batch script

- Verify that the images were created and are resized to 912x1140
  - 912x1140 is the native resolution of the DLP4500 DMD
  - The images must be 912x1140 or the GUI will not upload them to the printer



You are now ready to print!

- The output directory is now the input to the DLP 3D Printer GUI!