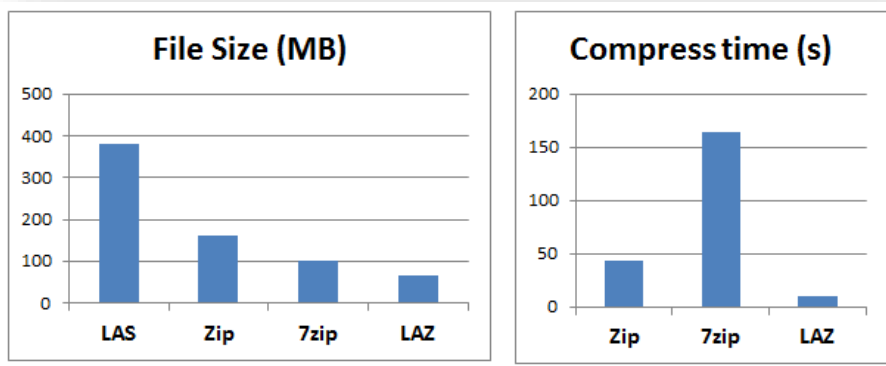


Working with Lidar data in the LAZ format

The LAZ format or "[LASzip](#)" format is a special type of compression just for lidar data. It was created by [rapidlasso](#) and released as open source. The LAZ format can typically provide over 80% compression. Since the LAZ format is designed specifically for lidar data it will give much better compression and speed than general purpose file compression such as Zip or 7zip. Here are some sample compression rates for a typical [lidar file from GeoNB](#):

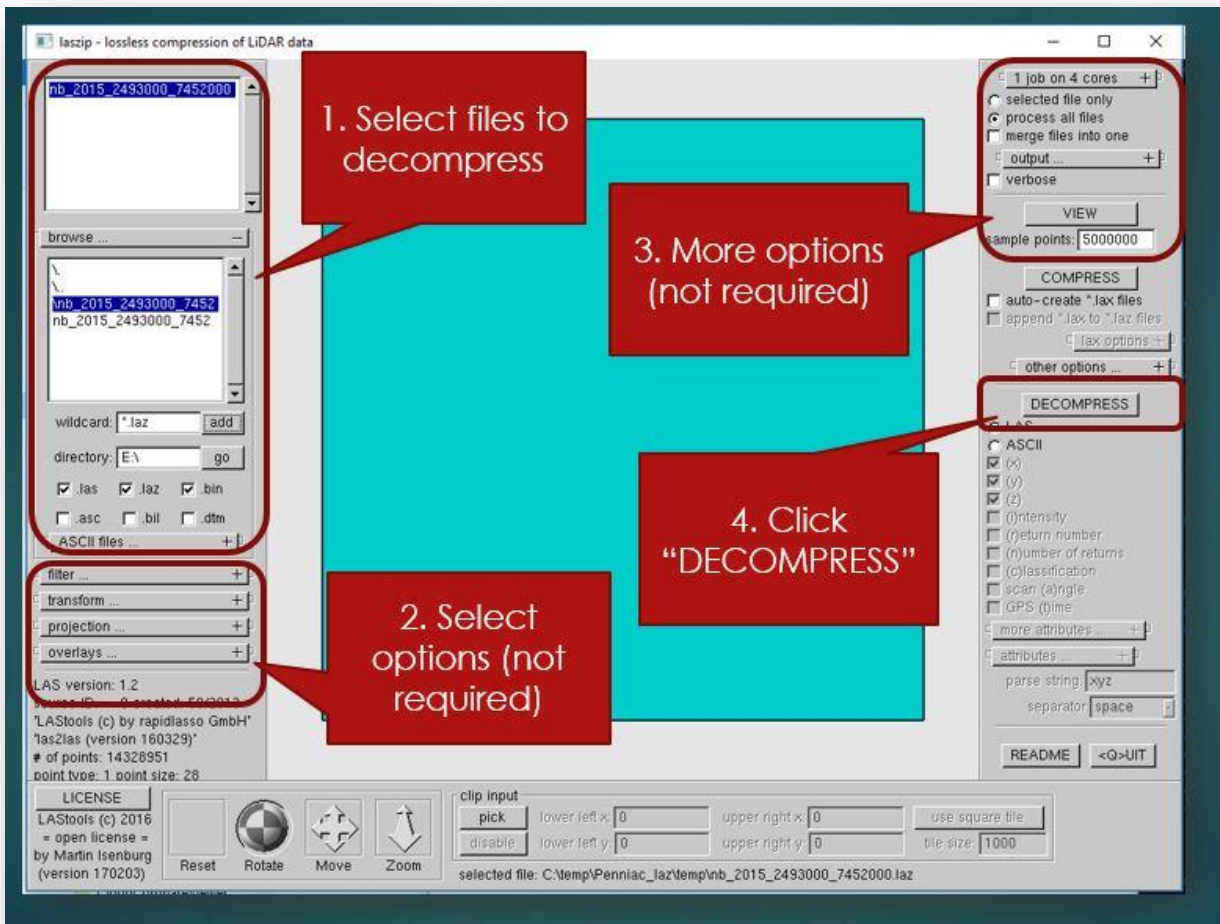
Format	Size (MB)	Compression	Decompress time (seconds)	Compress time (seconds)
LAS	382	0%	N/A	N/A
Zip	162	58%	10	43
7Zip	102	73%	14	164
LAZ	65.2	83%	13	10



All three compression formats had similar decompression times but LAZ provides the best compression and the best compression time. These advantages make it obvious why agencies all over the world like [GeoNB](#) are choosing LASzip to compress lidar data.

Before you decompress an LAZ file please consider what you can do with an LAZ file. Many software programs can directly read the LAZ format without the need to decompress the data. The LASzip website maintains a [list of software that supports the LAZ format](#).

The LASzip program does not use an installer - just download LASzip and save it to a folder on your hard drive. LASzip has a GUI which I find very clunky but some may find it helpful:



I find using LASzip at the command line to be much simpler and faster:

```
laszip -i *.laz
```

The example above will decompress all LAZ files in the current directory and create LAS files. The [LASzip README file](#) contains many examples of how to use all the options of the LASzip command. One example that I find really useful is:

```
laszip -i *.laz -keep_class 2 8
```

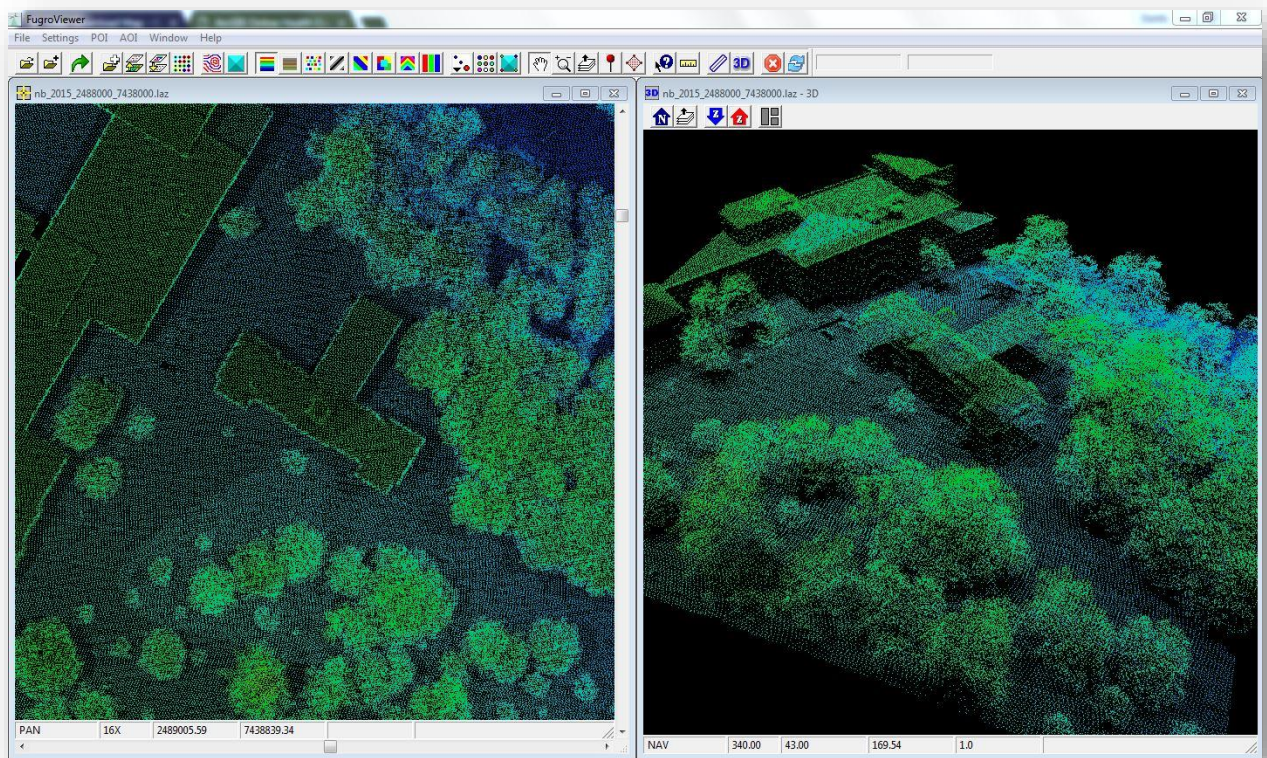
This example will only extract the points that are classified as ground hits (class 2 and 8). This is very useful if you plan to build a "bare earth" DEM and it reduces the size of the output LAS file. A final example to create a CSV file:

```
laszip -i lidar.laz -keep_class 2 8 -o xyz.txt -oparse xyzctinr -osep comma
```

If you have questions please consult the [LASzip README file](#) or have a look at the [LAStools Google Group](#). To learn more about LASzip compression you can watch this video from the from the ELMF

2011 conference. If you need additional tools to analyze lidar data I recommend [LAStools by rapidlasso](#). LAStools is a combination of open source and closed source tools.

If you simply need to view a lidar point cloud I recommend the freeware program "[Fugroviewer](#)" (Fugroviewer supports the LAZ format). The Fugroviewer GUI has a nice balance between functionality and simplicity as shown in the image below. You can find [tutorial videos for Fugroviewer on YouTube](#):



Head Hall and the Lady Beaverbrook Residence on UNB's Fredericton campus