

SpikeSorter has been successfully tested using the Wine environment (<https://www.winehq.org/>) in Ubuntu 14.04 and 16.04. Aside from the wine memory limitation discussed below, SpikeSorter performs similarly as in Windows with minor text formatting issues that appear to be specifically related to the Wine environment. For assistance with Linux installations and to report bugs, contact cat@alumni.ubc.ca or swindale@mail.ubc.ca.

The default Wine installation limits memory use to 32GB of RAM via a default VIRTUAL_HEAP_SIZE variable provided at compilation time. To enable SpikeSorter to load larger files Wine must be re-compiled from source with a larger VIRTUAL_HEAP_SIZE value. After doing this, files up to 130GB in size can be successfully loaded and sorted in Ubuntu 16.0.

The steps for Wine installation are:

1. Download Wine from <https://www.winehq.org/>.
2. Unzip the file, cd into the directory.
3. Modify the following file: "dlls/ntdll/virtual.c" and update the following line:

```
#define VIRTUAL_HEAP_SIZE (sizeof(void*)*1024*1024*X)
```

by replacing "X" with your available RAM/32GB. So, you have 64GB available on your PC, you can set "X" = 2

4. Return to main directory and compile Wine in the standard way while enabling win64bit applications:

- ./configure --with-png --enable-win64
- make depend
- make -j 8 (8 is the number of cores available for compilation)
- sudo make install

5. Run SpikeSorter by using the newly compiled 64 bit version, not the native Wine program that is provided by Wine to Linux. For example, for Wine 1.9.15, you can find the 64-bit win installation in your installation directory as follows (replace INSTALL_DIR and SPIKESORT_DIR with your appropriate directories).

INSTALL_DIR/wine-1.9.15/wine64 SPIKESORT_DIR/SpikeSorter.exe

Catalin Mitelut, January, 2017