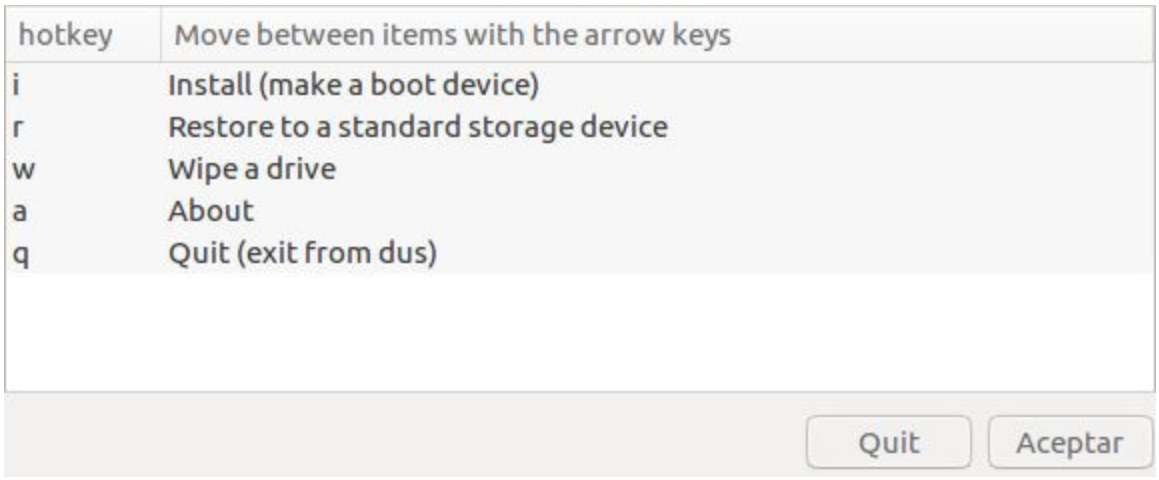
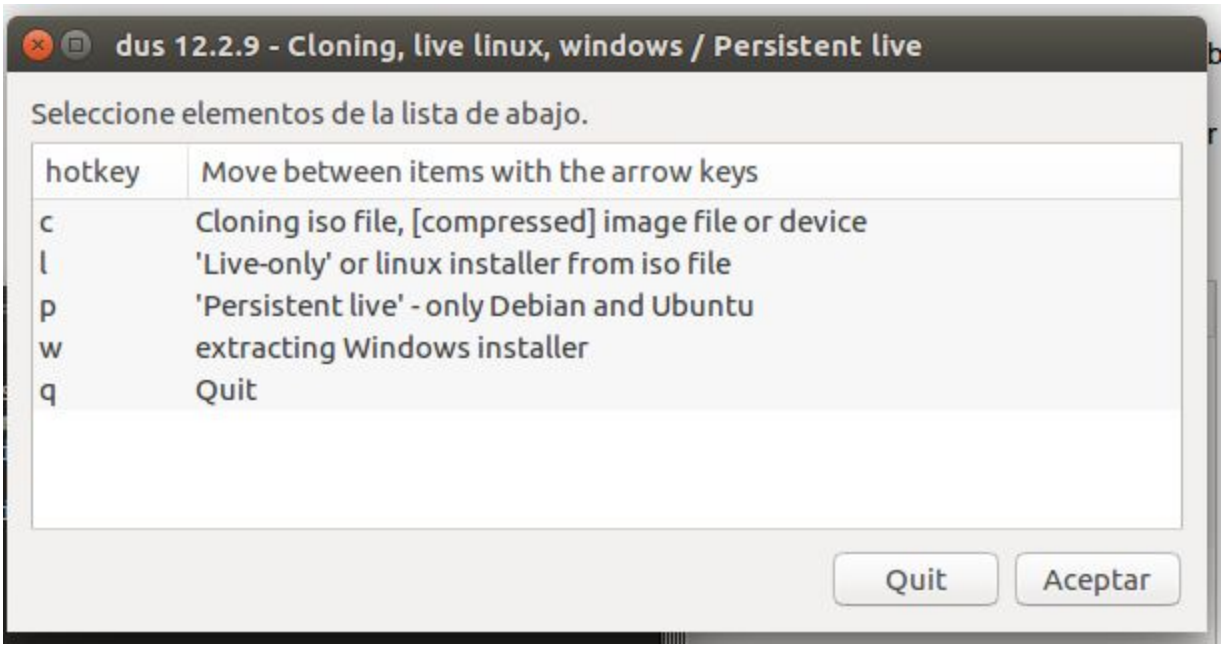
Persistent Live USB Sticks.

The sticks used during the Symposium on Molecular Interactions in Chemistry and Biology 2017 were prepared according to the following procedure:

1. In a computer running Ubuntu, download a Linux 16.04 image file and install the mkusb software: "`sudo apt-get install mkusb`". This software facilitates the creation of a persistent live USB stick.
2. From the terminal, write `mkusb` to start the program and select the option "d", in order to start the "dus" version. You can also find it in the Unity Dash.
3. Now, type your Linux password and press Enter, to give control to mkusb.
4. The first option to accept is to create a boot device (i):



5. Next option is "Persistent Live". In this way the actions exerted and apps installed on the operative system inside the USB stick will "persist".



6. Select the iso image of Ubuntu, to create the operating system inside the stick.
7. Select the target device (the USB stick), selecting the correct label (sdc, for example).
8. Select the partition settings: we used MSDOS Partition Table (Default).
9. Select space for persistence: We used a 95% (not possible to use 100%) of the available space for persistence. This is the space dedicated to store our operative system and future Linux software and data. The remaining 5% is kept for normal storage device functions.
10. Check everything is ok (ISO image file and target device). Click GO to proceed.
11. Wait and then press Enter when done.

Replication of Live USB Sticks.

After the above process is complete, the USB stick can be used to run a Live Ubuntu session on a computer. Software installed and data stored in those sessions will remain inside the device and will be available in subsequent sessions.

Once the operating system has been prepared in the desired way, the state of this system can be cloned in a Linux computer using the program dd:

1. First, copy or “clone” the system inside the USB stick to a file inside a computer running Linux.

“`sudo dd if=/dev/sdb of=path/to/my/cloned/file bs=4096 conv=noerror`”

This command takes the image inside our USB stick as inflow (if) and copy it to a file in our hard drive (outflow, of).

2. Once the cloning process is finished, disconnect the original USB stick. Now you can connect empty USB sticks to every USB input in your computer.

3. To every empty stick, the computer gives a label (/dev/sdb, /dev/sdc, etc). Now you can open a terminal and write:

4. "`sudo dd if=path/to/my/cloned/file of=/dev/sdb bs=4096 conv=noerror`",
   to replicate the original stick in an empty stick. The process can take a long time, (45 minutes in our case).

5. While the first process is running, open a second terminal and type:
   "`sudo dd if=path/to/my/cloned/file of=/dev/sdc bs=4096 conv=noerror`".
   This command will replicate the system to the second empty stick (sdc).

6. Using the same command with each stick label, you can simultaneously replicate the system in as many sticks as USB inputs you have.

Sources:

1) http://phillw.net/isos/linux-tools/mkusb/mkUSB-quick-start-manual.pdf
2) Thanks to Daniel Benavides for advice regarding the efficient use of dd.