

# Cloning the gesture server with Clonezilla

## Requirements

- 8GB+ USB drive (and one extra for creating an automatic recovery stick)
  - Create two FAT partitions: a 256MB one (for Clonezilla) and a bigger one (rest of the space, used for saving images)
- Clonezilla (64-bit) .ISO image: <http://clonezilla.org/downloads/download.php?branch=alternative>
- Use Tuxboot: <http://tuxboot.org/>
  - Write the Clonezilla image to first (256MB partition)

## Cloning overview

After requirements are met, a bootable stick for cloning has been produced. This stick can be used to boot a Clonezilla live environment for creating disk images.

Note that when writing an image to a new disk, the destination disk must be the same size as the source disk or bigger! This means that if you clone a 60GB disk, the compressed image may fit on a USB stick, but the image cannot be restored to a 40GB disk. The size can be minimised by resizing the source partitions' filesystems and the partitions themselves before creating the image, if possible.

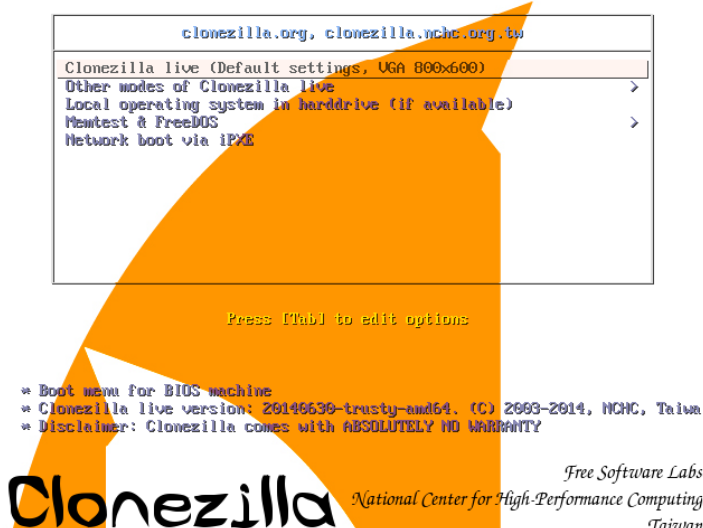
During cloning process, following operations are performed:

- Save a Clonezilla disk image of the hard disk to the second (bigger) partition on the USB stick
- After image is finished, rerun Clonezilla (using option "rerun2" in the menu)
- Save a recovery ISO of the disk image to the second partition on the stick.

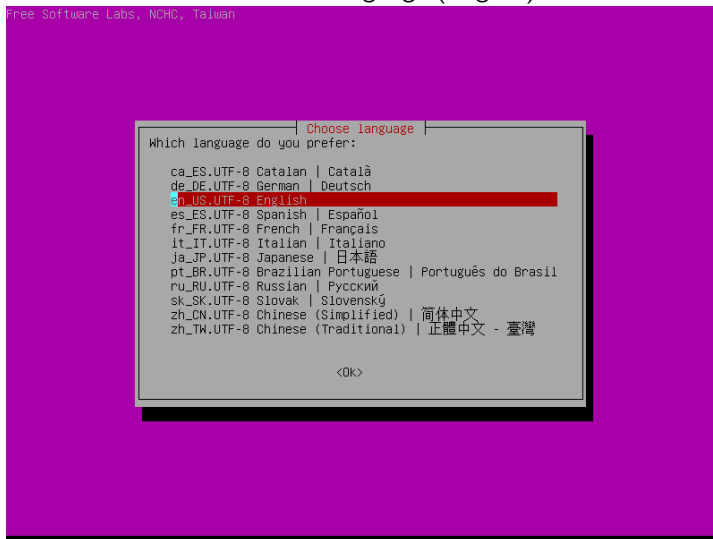
This should result in an image directory and an .ISO image file being created on the USB stick. The .ISO image can again be written to another USB stick with Tuxboot to install the imaged system automatically onto a hard disk.

## Cloning step-by-step

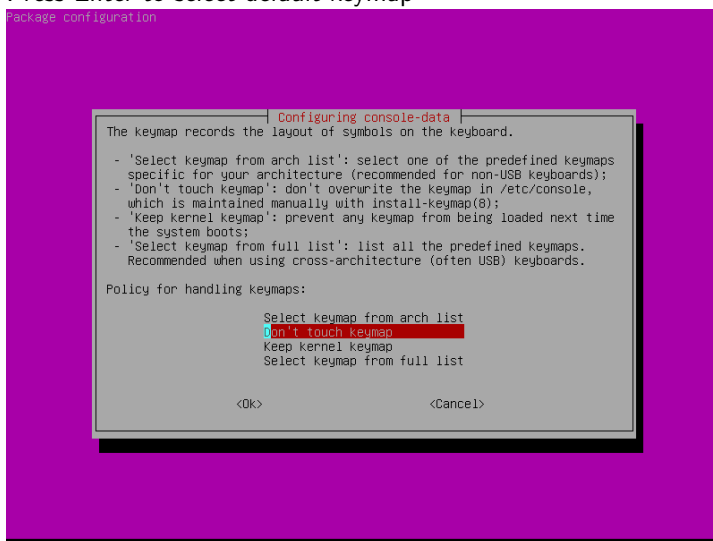
1. Boot NUC with the USB stick and press Enter in the boot loader to start with default settings



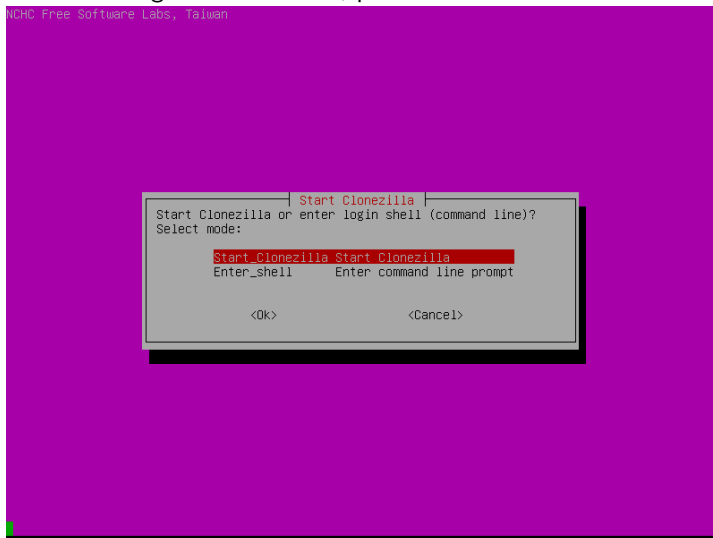
## 2. Press Enter to select default language (English)



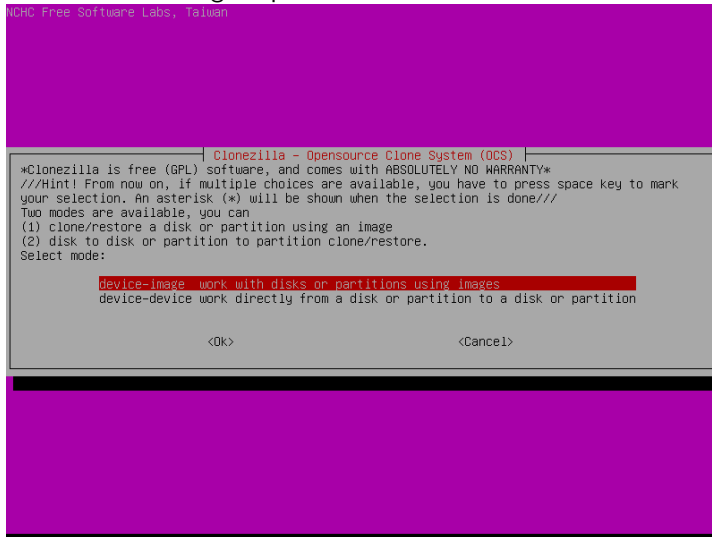
## 3. Press Enter to select default keymap



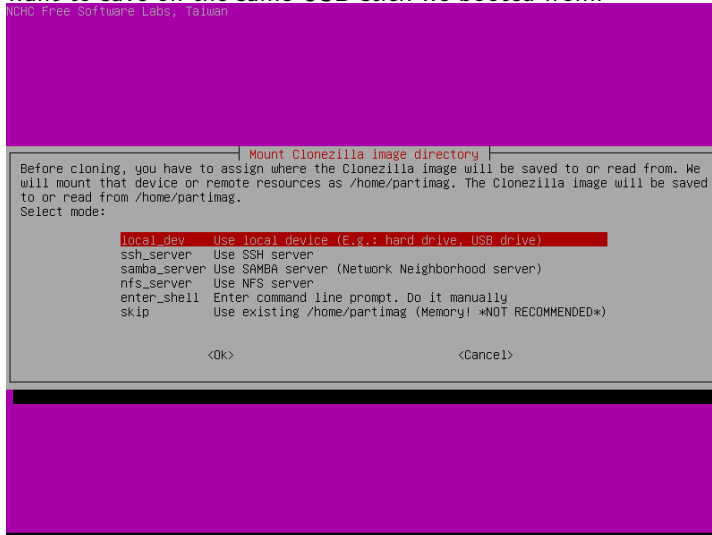
## 4. After reaching the main menu, press Enter to select "Start Clonezilla" (we will come back here again)



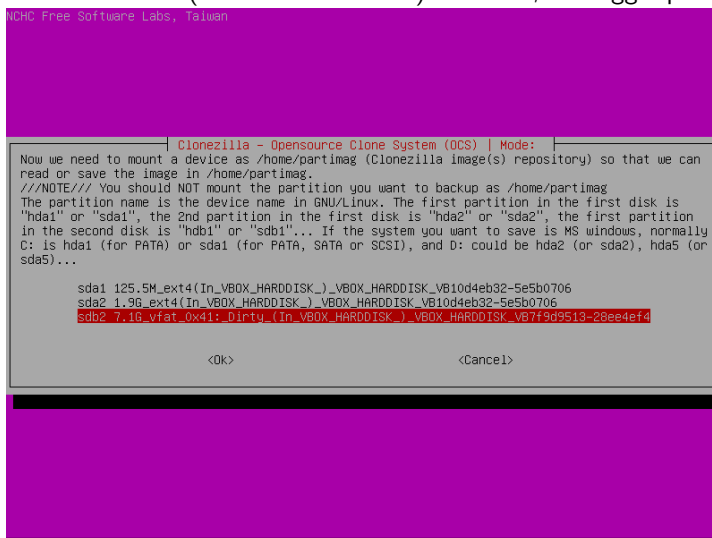
## 5. Select “device-image” operation



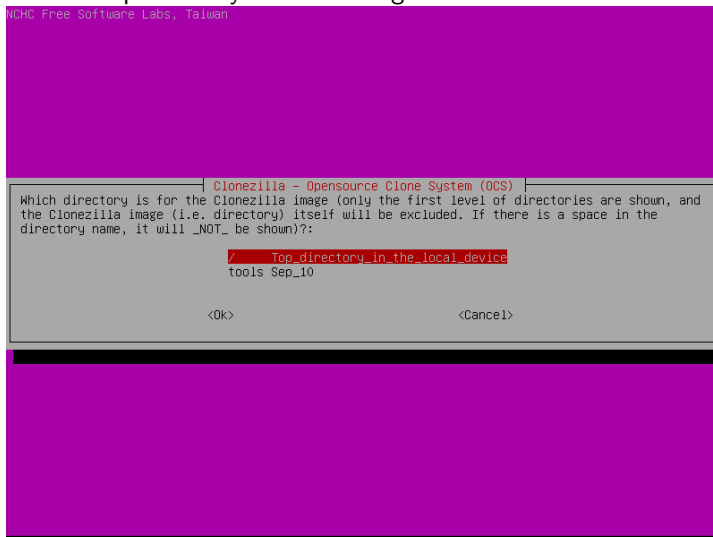
## 6. Choose “Use local device” for the image directory. There are other options but these instructions assume we want to save on the same USB stick we booted from.



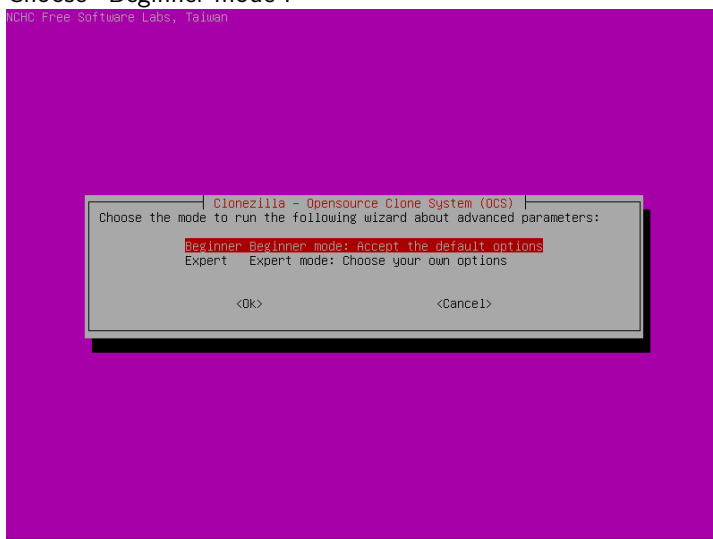
## 7. Select the other (bigger) partition on the USB stick. In this case the “NUC” hard disk (actually a virtual machine disk) is the 2GB one that has two partitions, sda1 and sda2. The Clonezilla stick is sdb, with partitions sdb1 we booted from (hidden in this menu) and sdb2, the bigger partition we want to save the image to. Pick sdb2.



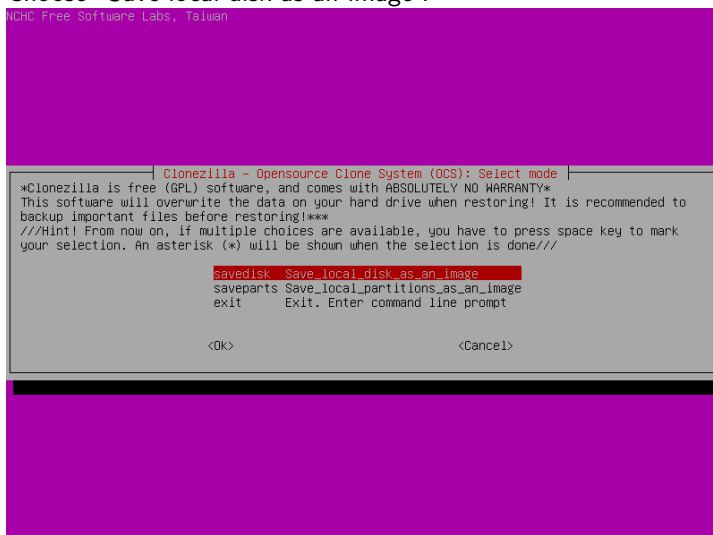
8. Select “Top directory” to save images to the root of the stick.



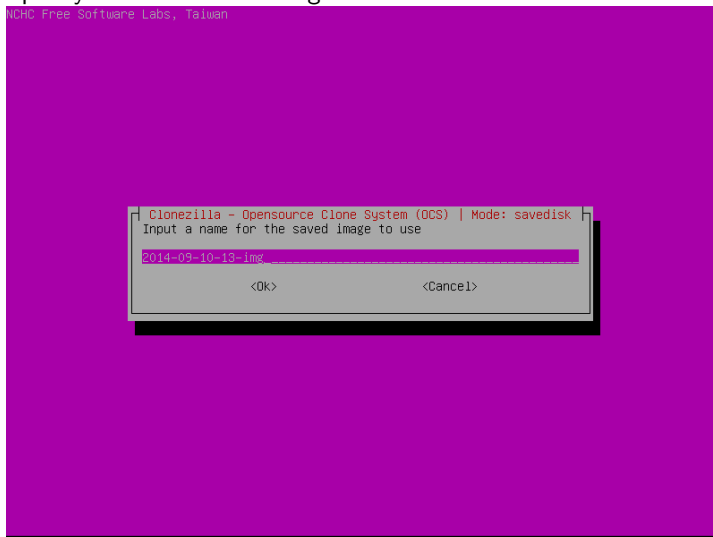
9. Choose “Beginner mode”.



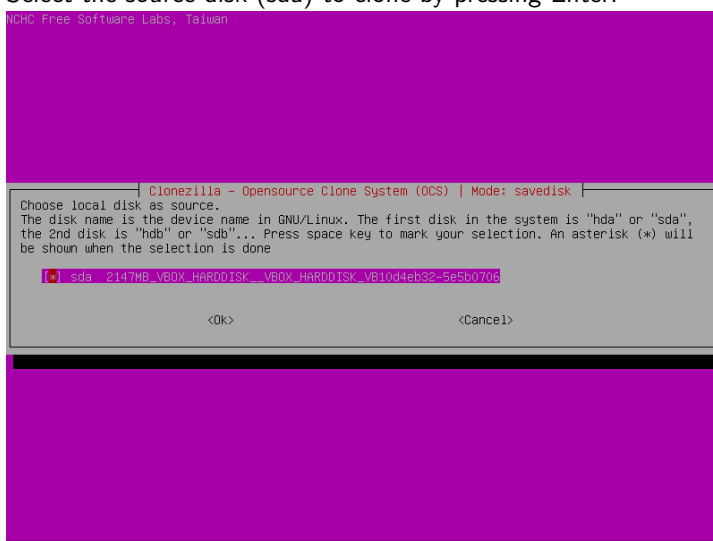
10. Choose “Save local disk as an image”.



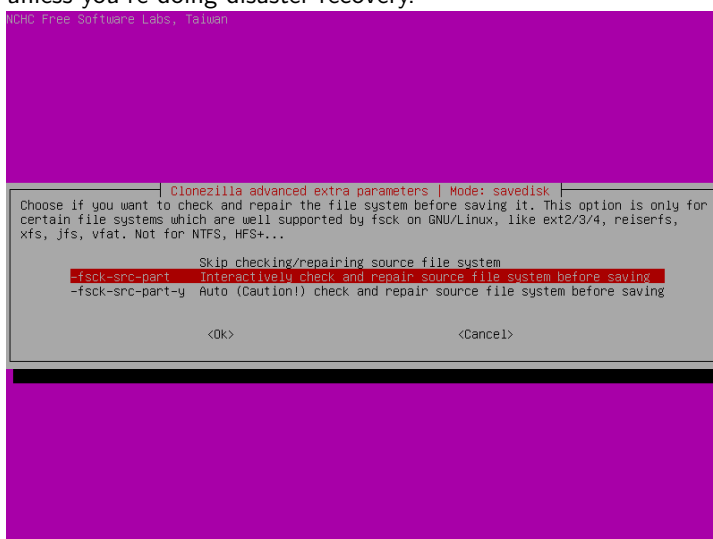
11. Specify a name for the image or use the default.



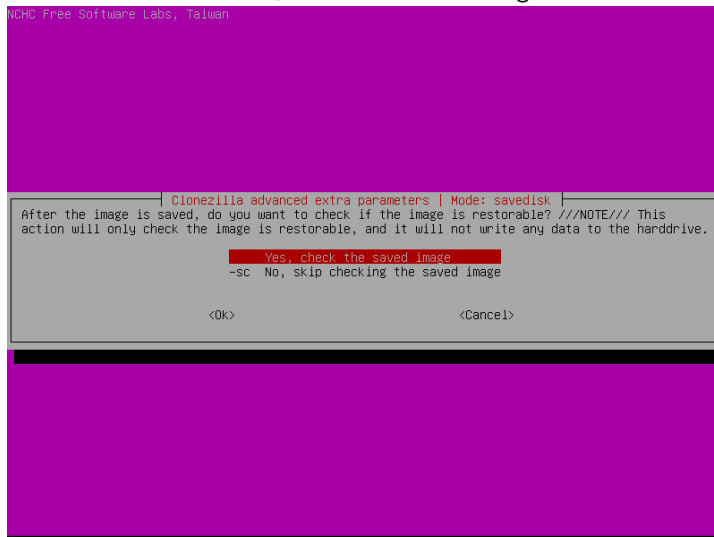
12. Select the source disk (sda) to clone by pressing Enter.



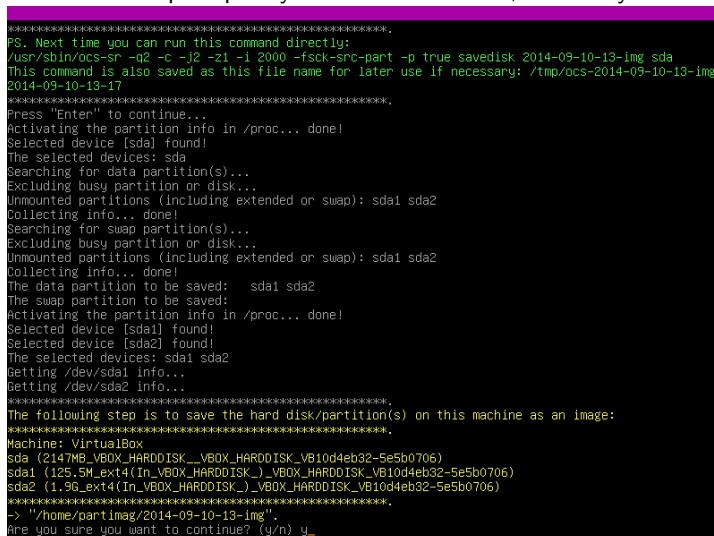
13. Select "Interactively check and repair source file system before saving" to make sure the file system is alright, unless you're doing disaster recovery.



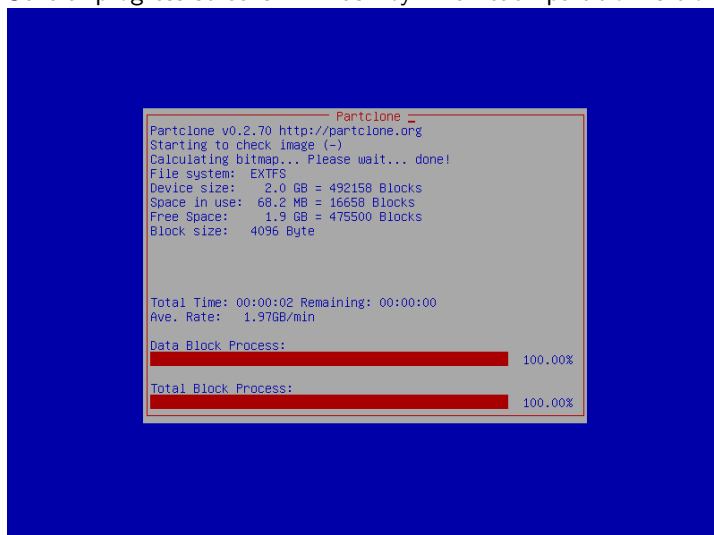
14. Choose the default “Yes, check the saved image” to check the image (quickly) after it’s created.



15. Clonzilla will prompt if you wish to continue, answer 'y'.



16. Several progress screens will flash by when each partition is cloned and checked.



17. When creating the image has finished, press Enter to return to the menu.

```
Checked successfully.
The image of this partition is restorable: sda2
*****
All the images of partition or LV devices in this image were checked and they are restorable: 2014-0
9-10-13-1mg
Summary of image checking:
*****
Partition table file for disk was found: sda
MBR file for this disk was found: sda
The image of this partition is restorable: sda1
The image of this partition is restorable: sda2
All the images of partition or LV devices in this image were checked and they are restorable: 2014-0
9-10-13-1mg
*****
Checking if udevd rules have to be restored...
'/lib/udev/rules.d/85-lvm2.rules.d/85-lvm2.rules' -> '/lib/udev/rules.d/85-lvm2.rules'
Running 'udevadm control --reload-rules' to reload udevd rules...
This program is not started by Clonezilla server, so skip notifying it the job is done.
Finished!
Now syncing - flush filesystem buffers...

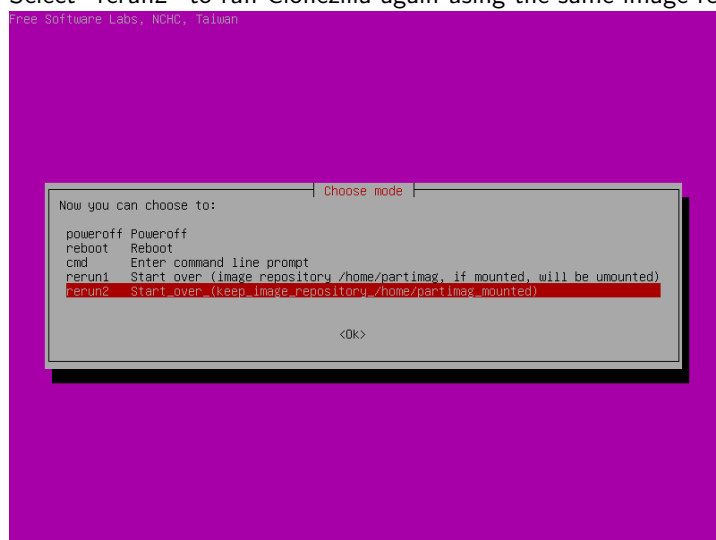
Ending /usr/sbin/ocs-sr at 2014-09-10 13:19:25 UTC...
*****
If you want to use Clonezilla again:
(1) Stay in this console (console 1), enter command line prompt
(2) Run command "exit" or "logout"
*****
When everything is done, remember to use 'poweroff', 'reboot' or follow the menu to do a normal powe
roff/reboot procedure. Otherwise if the boot media you are using is a writable device (such as USB f
lash drive), and it's mounted, poweroff/reboot in abnormal procedure might make it FAIL to boot next
time!
*****
Press "Enter" to continue..._
```

The stick now contains a directory that holds the disk image and metadata. This procedure alone is sufficient to restore an image to a disk using Clonezilla's restore function. In the main menu you can select to power off the computer, but if you wish to have an automatic installer, stay in the menu and read the next section.

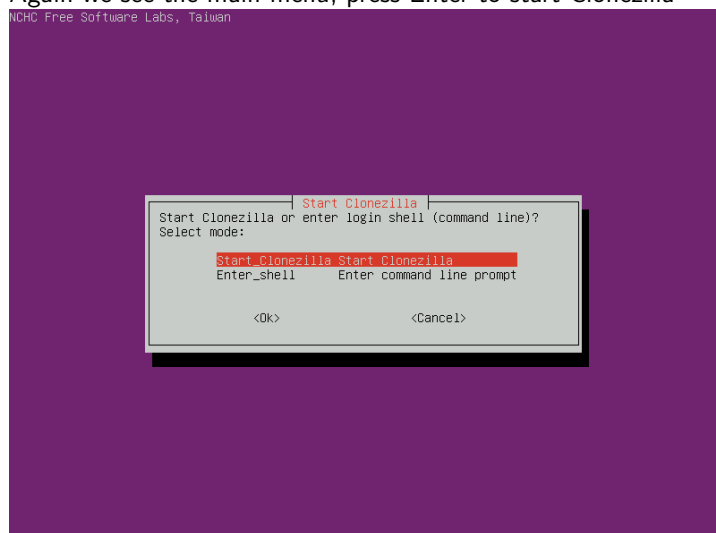
## Creating an automatic installer stick

If you wish to create a bootable stick that automatically writes an image to the first hard disk, stay in the menu after you have created the disk image.

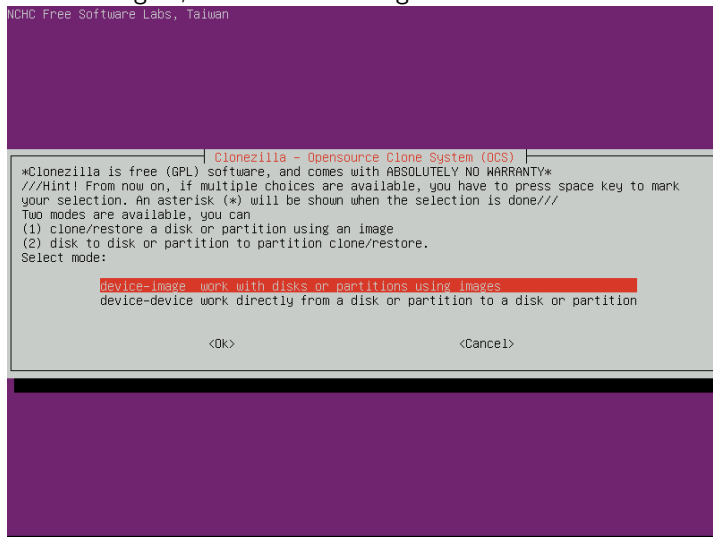
1. Select "rerun2" to run Clonezilla again using the same image repository (the big partition on the USB stick)



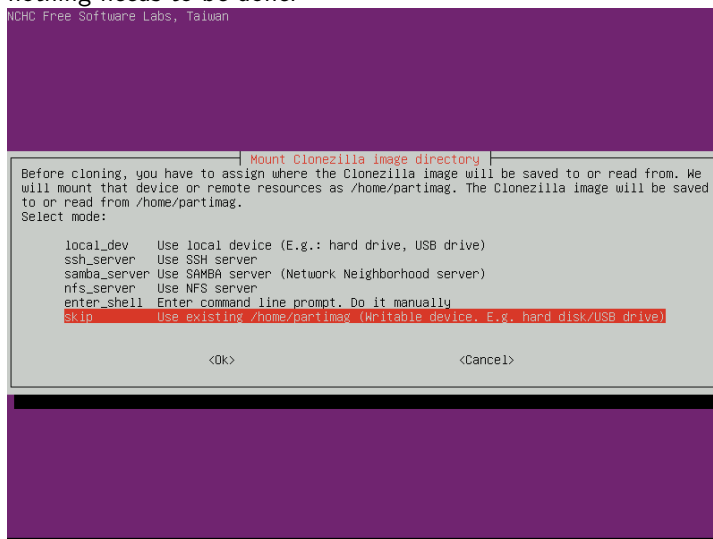
2. Again we see the main menu, press Enter to start Clonezilla



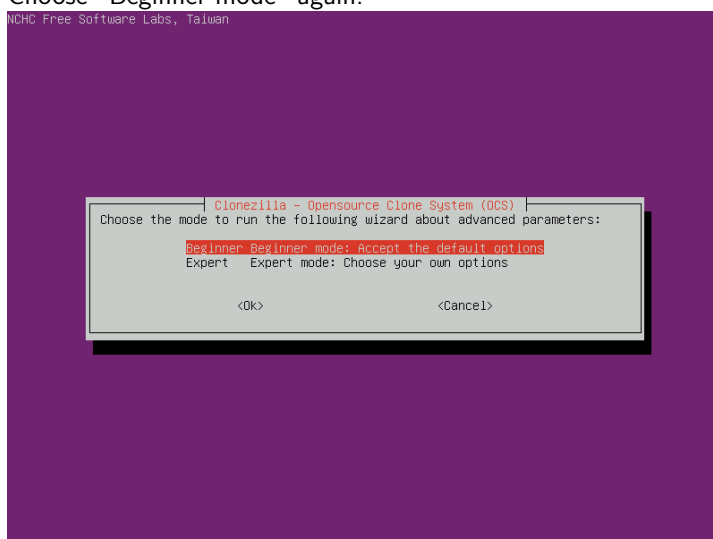
### 3. And once again, select “device-image”



### 4. Select the “skip” option! This means that when we chose “rerun2” the directory is already mounted so nothing needs to be done.

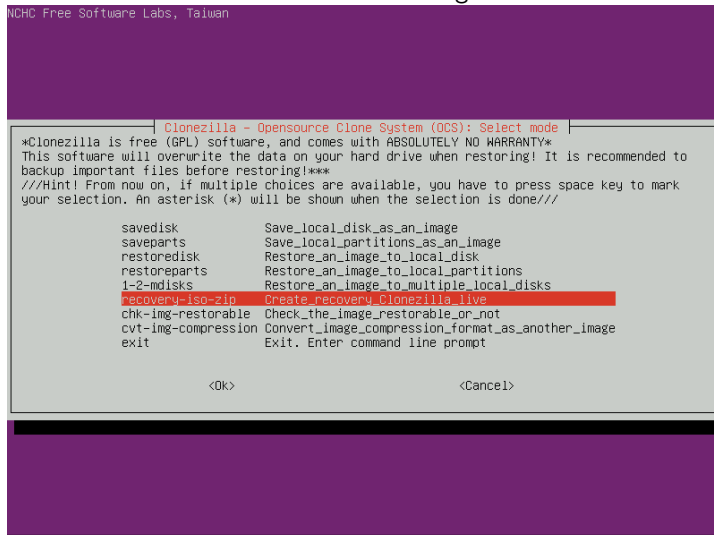


### 5. Choose “Beginner mode” again.

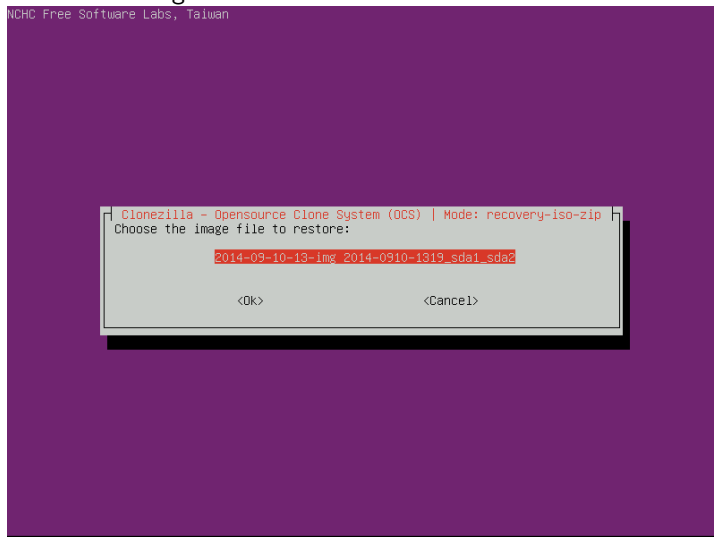




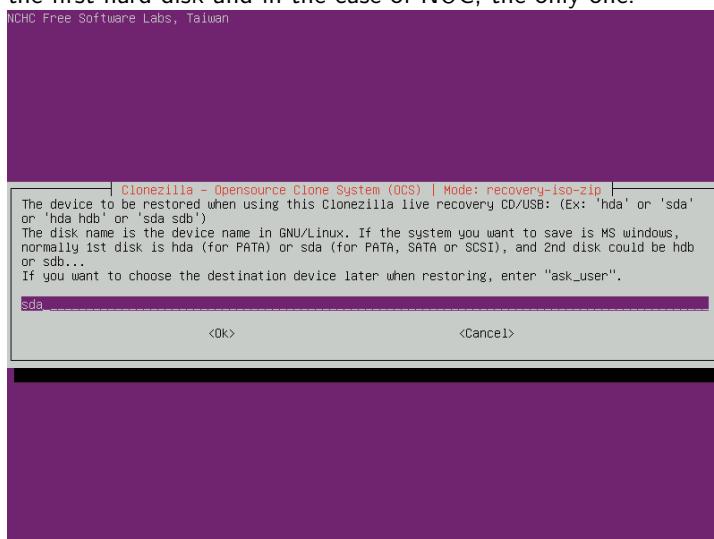
6. Now, select “Create recovery Clonezilla live”. This option was (maybe) not visible before because it will not be shown unless Clonezilla finds image directories in the image repository.



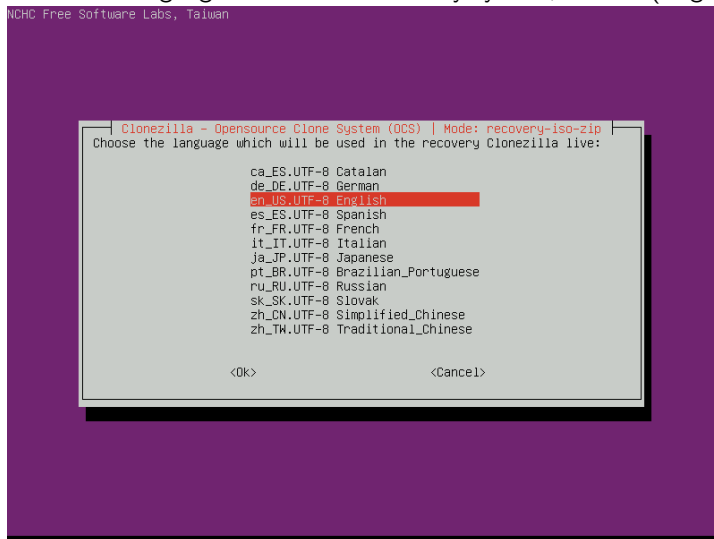
7. Choose an image to use



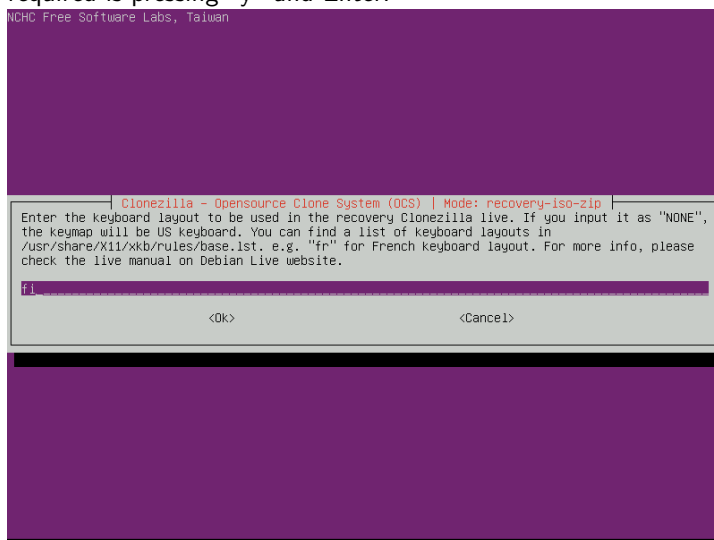
8. Set the destination disk that will be used when the automatic recovery stick is booted. **This means that the disk “sda” will be overwritten with the image and everything on it will be erased!** Typically “sda” is the first hard disk and in the case of NUC, the only one.



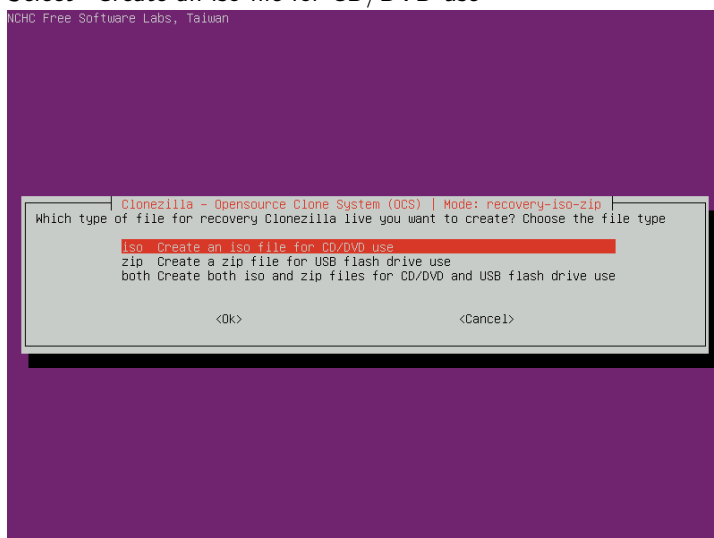
9. Select the language used for the recovery system, default (English) is fine



10. Choose the keymap to use in the recovery system. The default is "NONE", but if you want the Finnish layout for one reason or another, you can enter "fi" here. The keymap doesn't matter much as the only interaction required is pressing "y" and Enter.



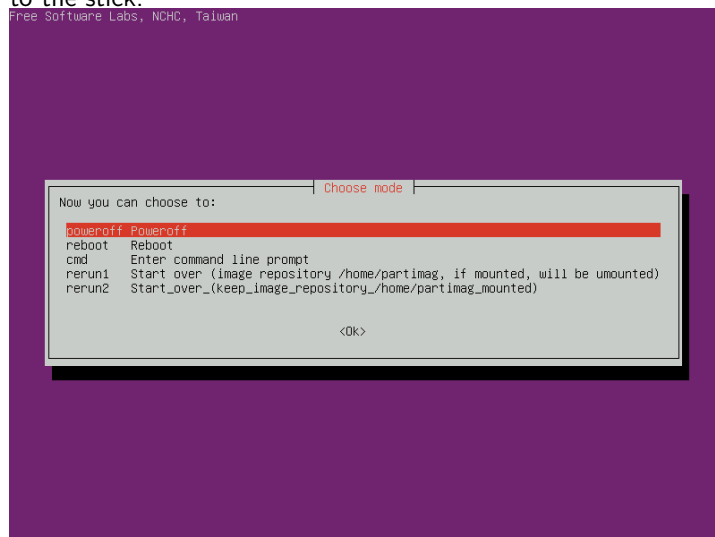
11. Select "Create an iso file for CD/DVD use"



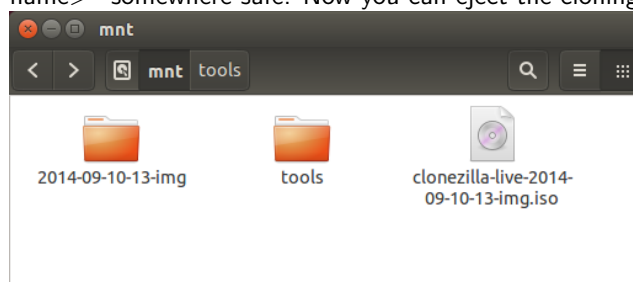
12. After pressing Enter when prompted the ISO creation starts and the image is saved on the stick

```
16.87% done, estimate finish Wed Sep 10 13:22:06 2014
22.50% done, estimate finish Wed Sep 10 13:22:05 2014
28.11% done, estimate finish Wed Sep 10 13:22:04 2014
33.75% done, estimate finish Wed Sep 10 13:22:03 2014
39.36% done, estimate finish Wed Sep 10 13:22:03 2014
44.93% done, estimate finish Wed Sep 10 13:22:03 2014
50.60% done, estimate finish Wed Sep 10 13:22:02 2014
56.24% done, estimate finish Wed Sep 10 13:22:02 2014
61.85% done, estimate finish Wed Sep 10 13:22:02 2014
67.48% done, estimate finish Wed Sep 10 13:22:02 2014
73.10% done, estimate finish Wed Sep 10 13:22:02 2014
78.73% done, estimate finish Wed Sep 10 13:22:02 2014
84.35% done, estimate finish Wed Sep 10 13:22:02 2014
89.98% done, estimate finish Wed Sep 10 13:22:03 2014
95.60% done, estimate finish Wed Sep 10 13:22:03 2014
Total translation table size: 2048
Total rockridge attributes bytes: 30623
Total directory bytes: 71680
Path table size(bytes): 254
Max brk space used 5b000
88926 extents written (173 MB)
Cleaning tmp dirs...
Isohybridizing clonezilla-live-2014-09-10-13-img.iso... done!
You can burn this iso file onto a CD/DVD and then use it to boot other machines to use Clonezilla: c
clonezilla-live-2014-09-10-13-img.iso
Ending /usr/sbin/ocs-sr at 2014-09-10 13:22:28 UTC...
*****
If you want to use Clonezilla again:
(1) Stay in this console (console 1), enter command line prompt
(2) Run command "exit" or "logout"
*****
When everything is done, remember to use 'poweroff', 'reboot' or follow the menu to do a normal powe
rff/reboot procedure. Otherwise if the boot media you are using is a writable device (such as USB f
lash drive), and it's mounted, poweroff/reboot in abnormal procedure might make it FAIL to boot next
time!
*****
Press "Enter" to continue..._
```

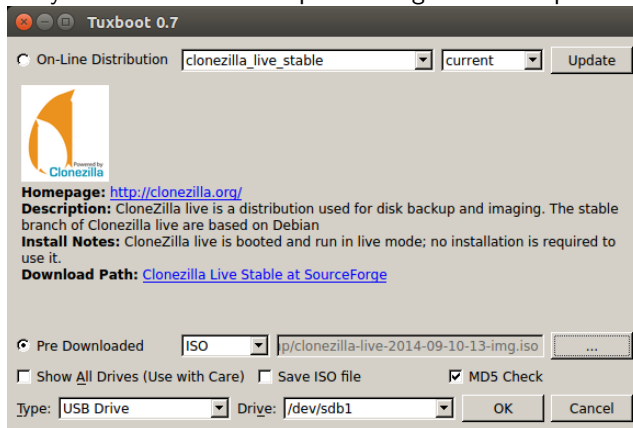
13. After the recovery image is finished, choose “Poweroff” to shut down the system and ensure the data is flushed to the stick.



14. The content of the second partition should now look something like this. Copy the file “clonezilla-live-<image name>” somewhere safe. Now you can eject the cloning stick.



15. Insert a stick to write the automatic recovery image on and start Tuxboot. The destination stick should be formatted with the FAT filesystem and mounted in the system, ie. files visible in the file explorer. Tuxboot should suggest the device name (“/dev/sdb1” in the screenshot below) if it finds USB drives with mounted filesystems. Make sure to pick the right one and press OK to create the recovery stick.



16. After Tuxboot is finished, you can remove the stick, boot a computer with it and the image within will be automatically written to the first hard disk.