

# Making a clone to be used with the Emmabuntüs refurbishing key



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Lead author : Emmabuntüs Collective

The Emmabuntüs refurbishing USB flash drive (or refurbishing USB key) allows you to refurbish all sort of computer by cloning a pre-configured GNU/Linux system.

Since the update of our refurbishing key in October 2022, it supports default installations of many GNU/Linux distributions. So, we have decided to stop providing pre-configured clones as standard, and to stop updating the ones on [this page](#), except for very specific requests coming from associations we collaborate with.

This tutorial will help you to make your own clone, and we are also available on our forum to help you in the making.

You may not find the version that suits you among the clones we provide and this tutorial explains how to make a clone compatible with our refurbishing USB key.

This tutorial accompanies the [Blabla Linux](#) video on [how to make](#) a clone for the refurbishing USB key.

## 1 - Clone principle

A clone is used to duplicate an operating system on other computers whose systems will then be strictly identical copies of the one used to make the clone.

To make the clone, the first operation to perform is to install your GNU/Linux operating system, then to customize it before proceeding to the realization of the clone thanks to the [Clonezilla](#) utility.

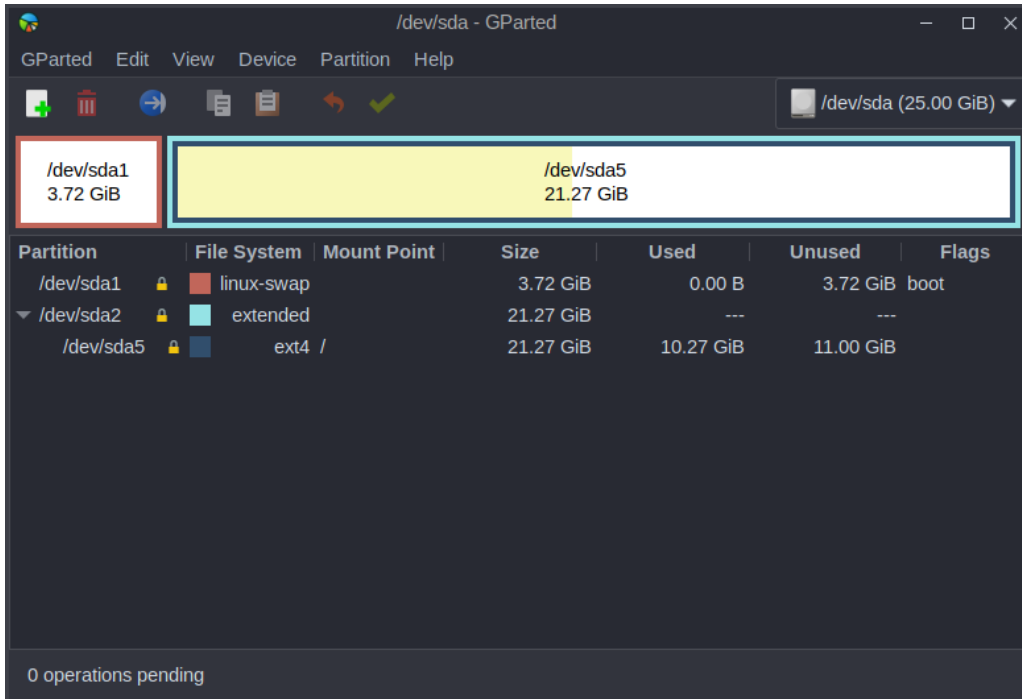
## 2 - Partitioning scheme for the clone drive

The latest versions of our refurbishing key released from October 2022, no longer require to respect the partitioning schemes indicated below, and are compatible with the default installations of the following distributions:

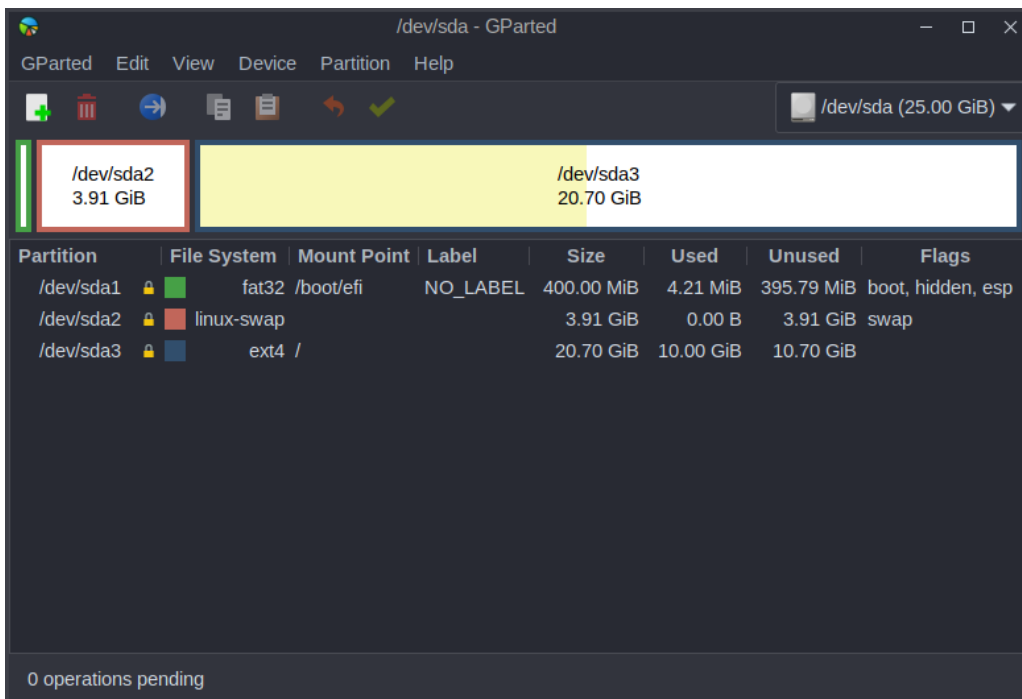
- Emmabuntüs Debian Edition 4 1.02 with classic installer or Calamares
- Debian-Facile 11.5 32 bits
- Ubuntu, Xubuntu, Kubuntu 22.04.1 desktop amd64
- LinuxMint 21 Xfce, Cinnamon 64 bits
- LMDE 5 Cinnamon 64 bits
- MX-Linux 21.2.1 x64
- Majaro xfce 21.3.0
- Fedora Workstation Live x86\_64 36+1.5

If you want to use a GNU/Linux distribution that is not supported by our refurbishing key, then we recommend that you follow the partitioning schemes shown below.

For a 32 or 64 bits GNU/Linux operating system in “BIOS Legacy” mode, use the following partition scheme and in the same order :



For a 32 or 64 bits GNU/Linux operating system in UEFI or Secureboot mode, use the following partition scheme and in the same order :



**Note :** in order to be able to duplicate your clone on hard disks of different sizes and especially small sizes, while you are using you a large physical hard disk to install your reference operating system, we advise you to oversize the SWAP partition, in order to be able to duplicate this future clone on smaller size disks, because the SWAP partition is assimilated by Clonezilla to a zero size partition, whatever its real size was.

## 3 - Hardware needed for the refurbishing key

To create your refurbishing key, you will need a USB flash drive that meets certain criteria:

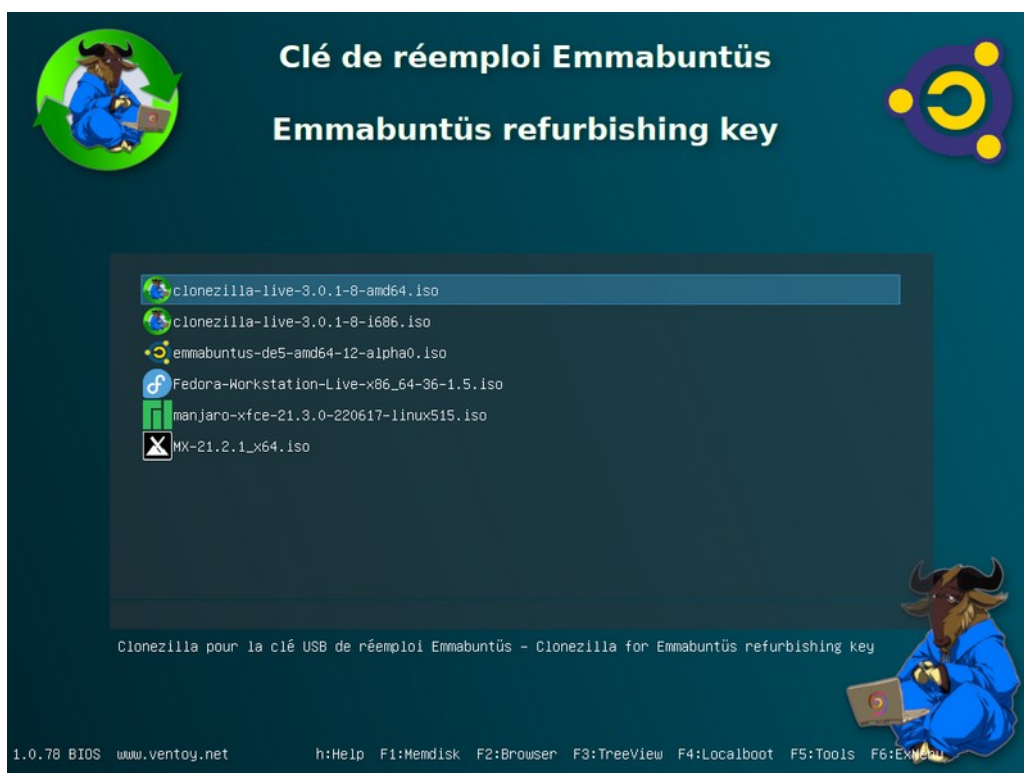
- a minimum capacity of 16 GB
- being of good quality (Kingston Data Traveler, Transcend JetFlash 750...)
- if possible of the type USB-3 to take advantage of the maximum I/O speed when transferring files.

## 4 - Clone creation with Clonezilla

Before proceeding to the creation of your clone, we advise you to prepare your USB flash drive following our flash drive creation tutorials using [Ventoy](#) under either Windows or Linux.

Then proceed to launch the USB key, and select Clonezilla to start the operation of copying the clone on the USB key. The screenshots below are based on a Ventoy refurbishing key usage.

Select a 64-bit version of Clonezilla for referenced operating system in 64-bit: Legacy, UEFI or Secureboot. And you can also use this 64-bit version of Clonezilla even if your referenced operating system is 32-bit one, providing your processor has a 64-bit architecture.

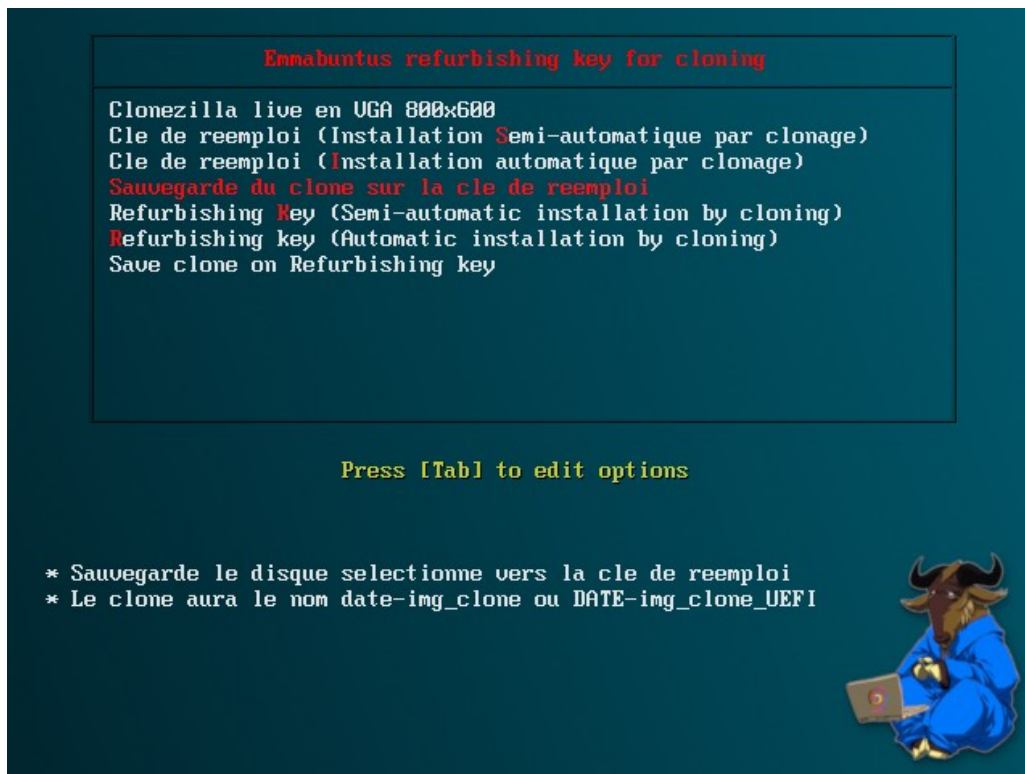


**Note** : you will only need to use the 32-bit version of Clonezilla if you are using a processor that is 32-bit only, i.e. a processor prior to [Pentium 4](#).

## 4.1 - Creation in automatic mode

---

To save the clone in automatic mode, please select the 4<sup>th</sup> entry in the screen capture shown below :



This script will save the clone on the refurbishing key and name it *DATE-img\_clone* , *DATE-img\_clone\_UEFI* or *DATE-img\_clone\_UEFI\_SB* depending on the current system mode : Legacy / UEFI / UEFI\_Secureboot .

You can customize some options of the copy or the backup of the clone, like the compression mode, the control files added to the clone, the clone image verification etc. by modifying the "save\_clone.sh" file header, which resides in the "IMAGES" partition.

**Note :** in theory, the backup operation should take place without any intervention from the user, except in the case of anomalies detected by the script, which performs the following checks:

- size of the partitions on the reference hard disk compared to the limits of the partition scheme or to obtain a generic clone;
- available space on the refurbishing key to store the clone compared to the usable size of the system / (root) partition of the reference hard disk.

During these checks the script offers advice in case of anomalies, so that you get a clone that is compatible with our reuse key, and as generic as possible, i.e. it can be used with different sizes of target hard drives.

Depending on the type of anomaly, the operator will have the choice to continue the backup or to stop the script.

**Note :** If you make several clones, we advise you to rename their root directory with names allowing you to identify them easily.

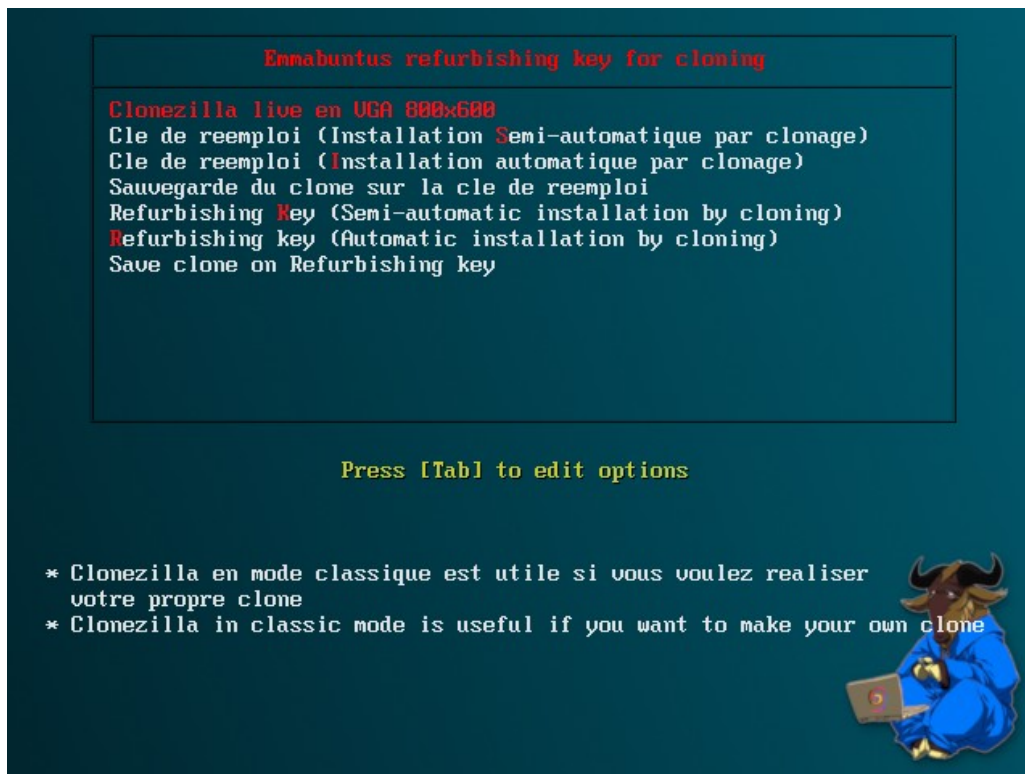
**Warning:** In order to work properly on a UEFI computer, the refurbishing key needs to have clones with the "UEFI" suffix. Same thing for a Secure boot computer, it needs clones with the suffix SB or UEFI\_SB, because Secureboot clones are compatible with UEFI not Secureboot ones.



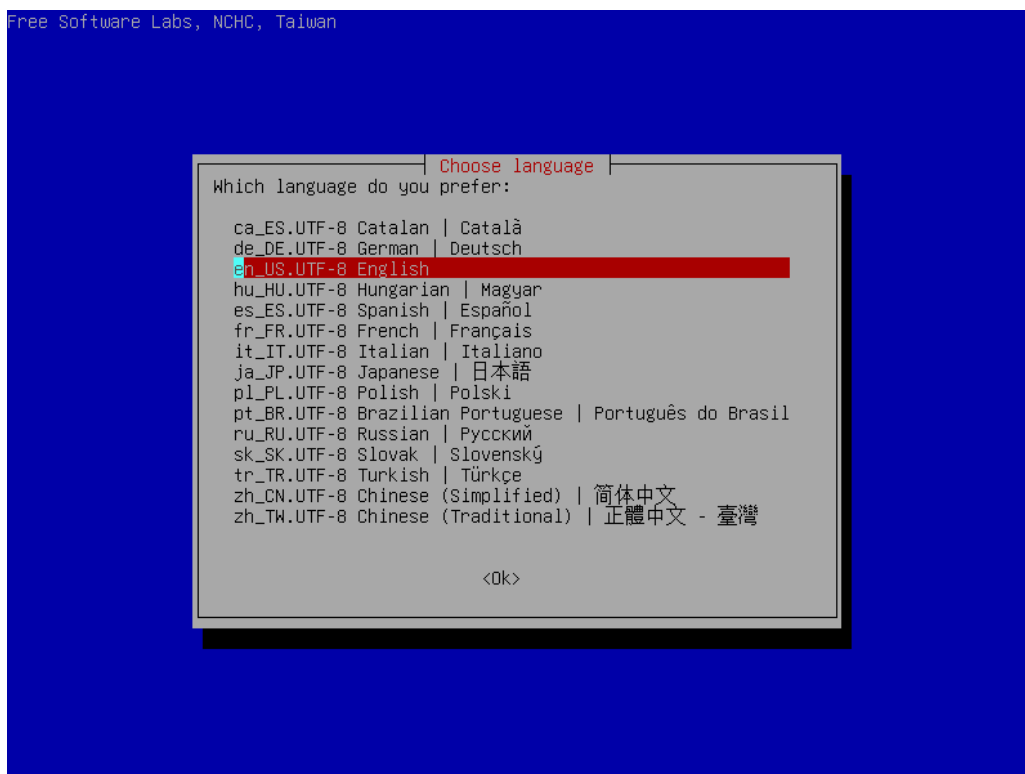
## 4.2 - Creation in manual mode

---

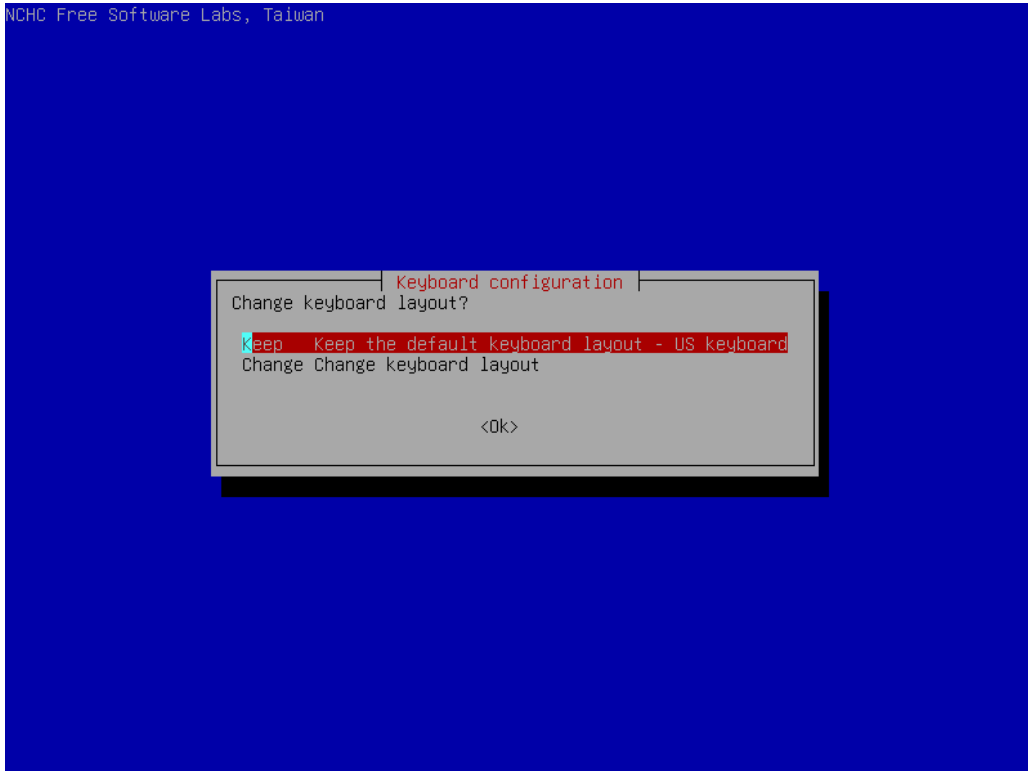
Select the first entry of the screenshot below to launch Clonezilla in classic mode. This entry was originally planned in our refurbishing key to realize clones in manual mode:



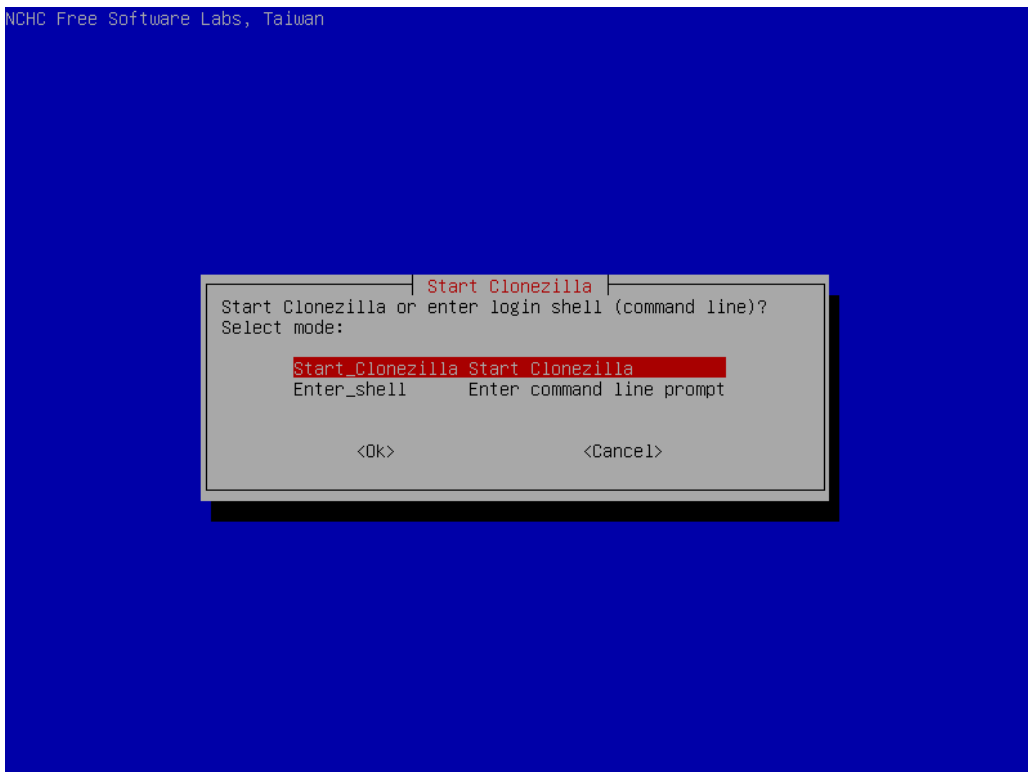
Select your language :



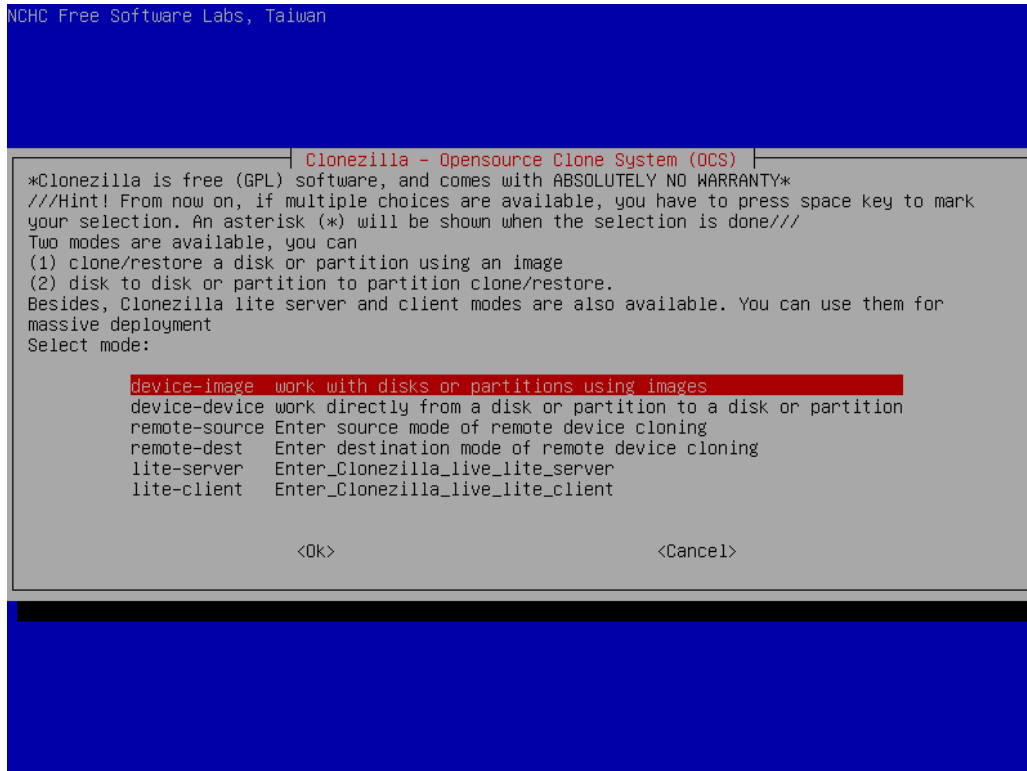
You can keep the keyboard English layout, or change it as you want :



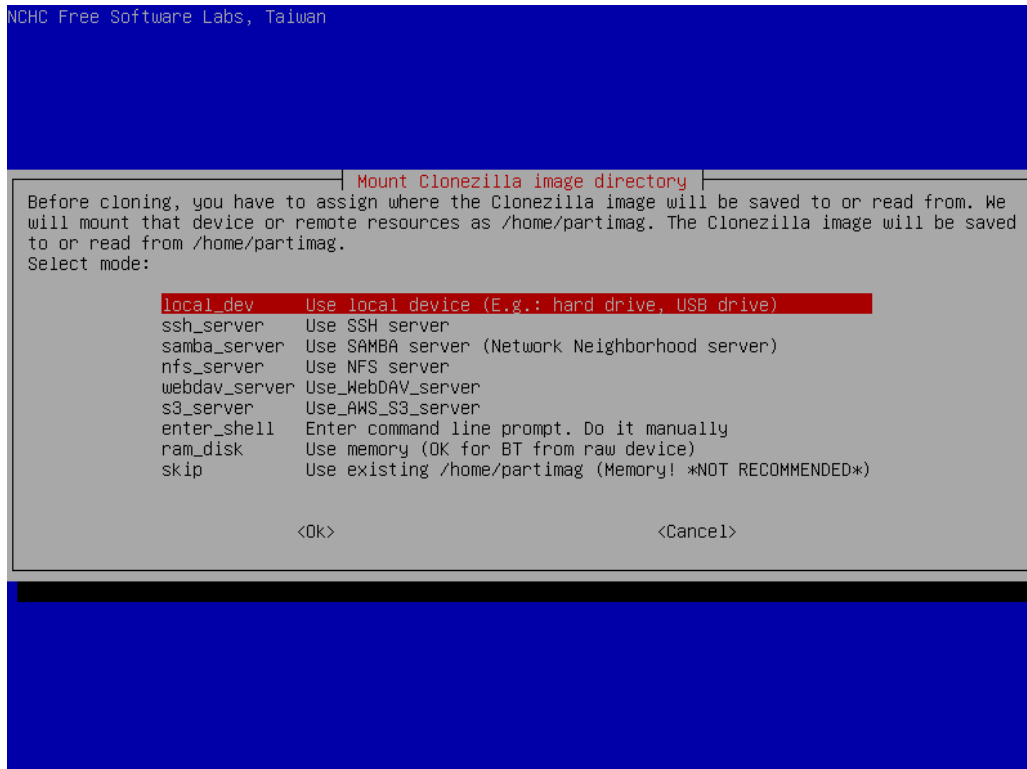
Then launch the "Start Clonezilla" command :



Select the "Device-image" mode to copy the entire disk containing your customized operating system to the USB stick :



Now we are going to select the device where the clone will be copied, and for that select the "local\_dev" mode since your USB key will be connected to your computer :



Clonezilla will now ask you to plug in your local device, and to wait 5 seconds, then press "Enter" to continue:

```
Mount Clonezilla image directory
Before cloning, you have to assign where the Clonezilla image will be saved to or read from. We
will mount that device or remote resources as /home/partimag. The Clonezilla image will be saved
to or read from /home/partimag.
Select mode:
local_dev Use local device (E.g.: hard drive, USB drive)
ssh_server Use SSH server
samba_server Use SAMBA server (Network Neighborhood server)
nfs_server Use NFS server
webdav_server Use_WebDAV_server
s3_server Use_AWS_S3_server
enter_shell Enter command line prompt. Do it manually
ram_disk Use memory (OK for BT from raw device)
skip Use existing /home/partimag (Memory! *NOT RECOMMENDED*)

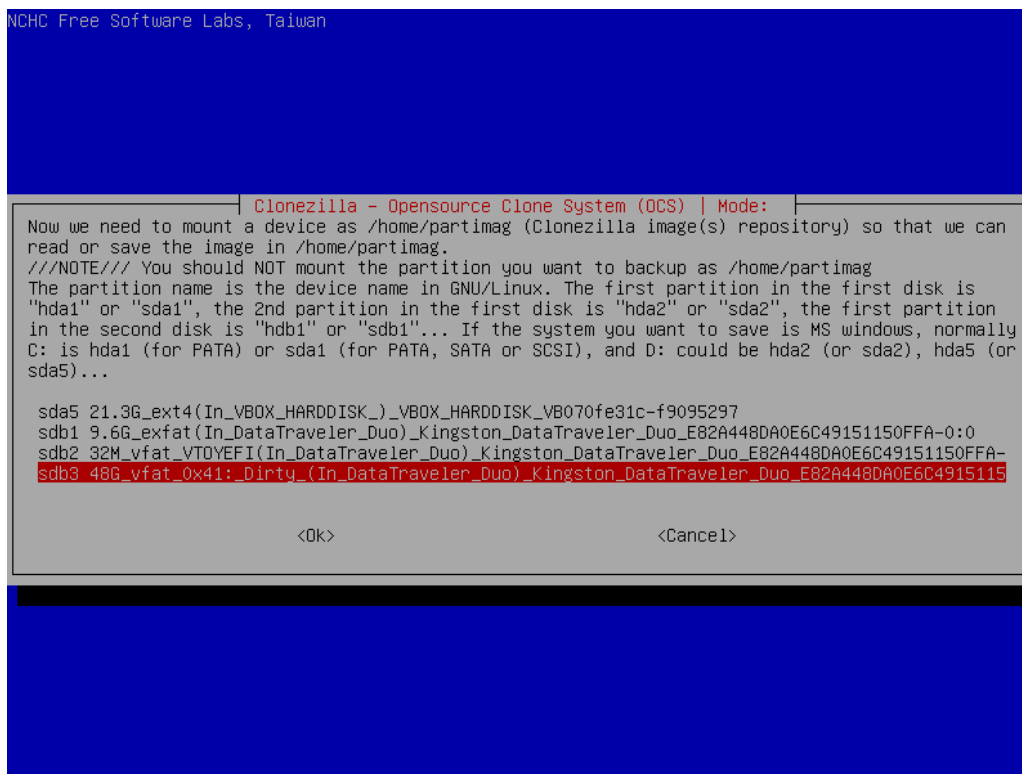
<Ok> <Cancel>

ocsroot device is local_dev
Preparing the mount point /home/partimag..
If you want to use USB device as a Clonezilla image repository, please
* Insert USB device into this machine *now*
* Wait for about 5 secs
* Press Enter key
so that the OS can detect the USB device and later we can mount it as /home/partimag.
Press "Enter" to continue....._
```

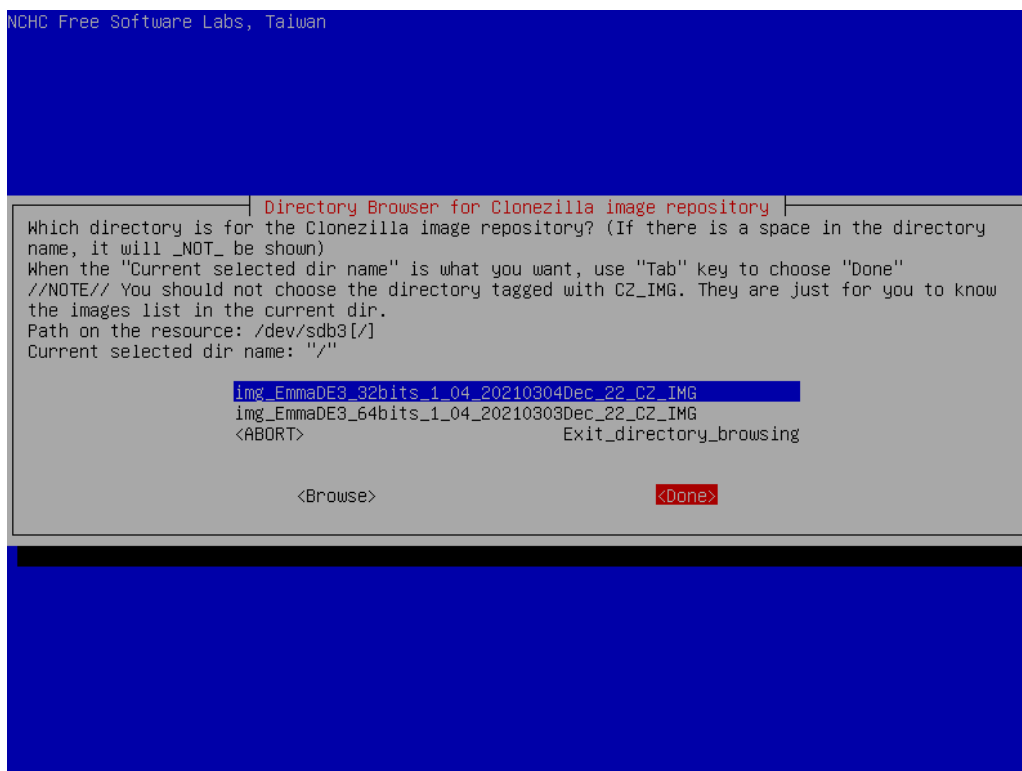
Clonezilla will then identify the local devices on your computer, then click "Ctrl-C" to continue:

```
Every 3.0s: ocs-scan-disk          debian: Fri Dec 31 15:06:56 2021
2021/12/31 15:06:56
You can insert storage device into this machine now if you want to use that, then wait for it to be
detected.
Scanning devices... Available disk(s) on this machine:
=====
Excluding busy partition or disk...
/dev/sda: VBOX_HARDDISK_VB070fe31c-f9095297 26.8GB
/dev/sdb: DataTraveler_Duo Kingston_DataTraveler_Duo_E82A448DA0E6C49151150FFA-0:0 61.9GB
=====
Update periodically. Press Ctrl-C to exit this window.
```

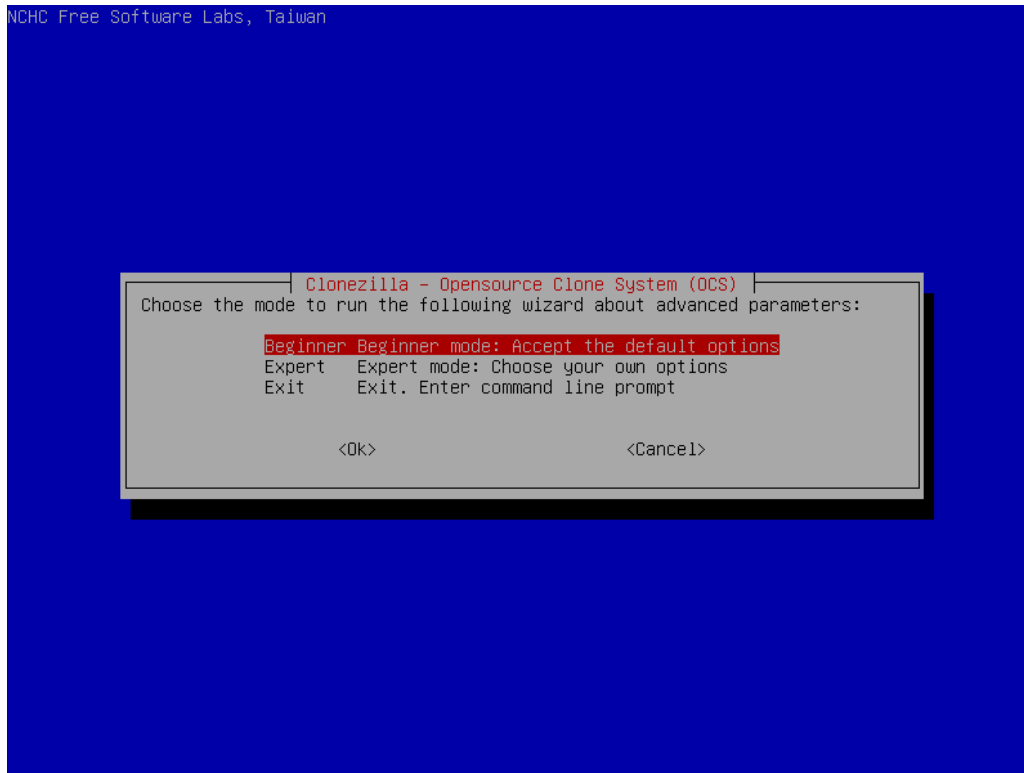
Now select the "sdb3" partition on your USB refurbishing key if, as here, you are using a refurbishing key under Ventoy :



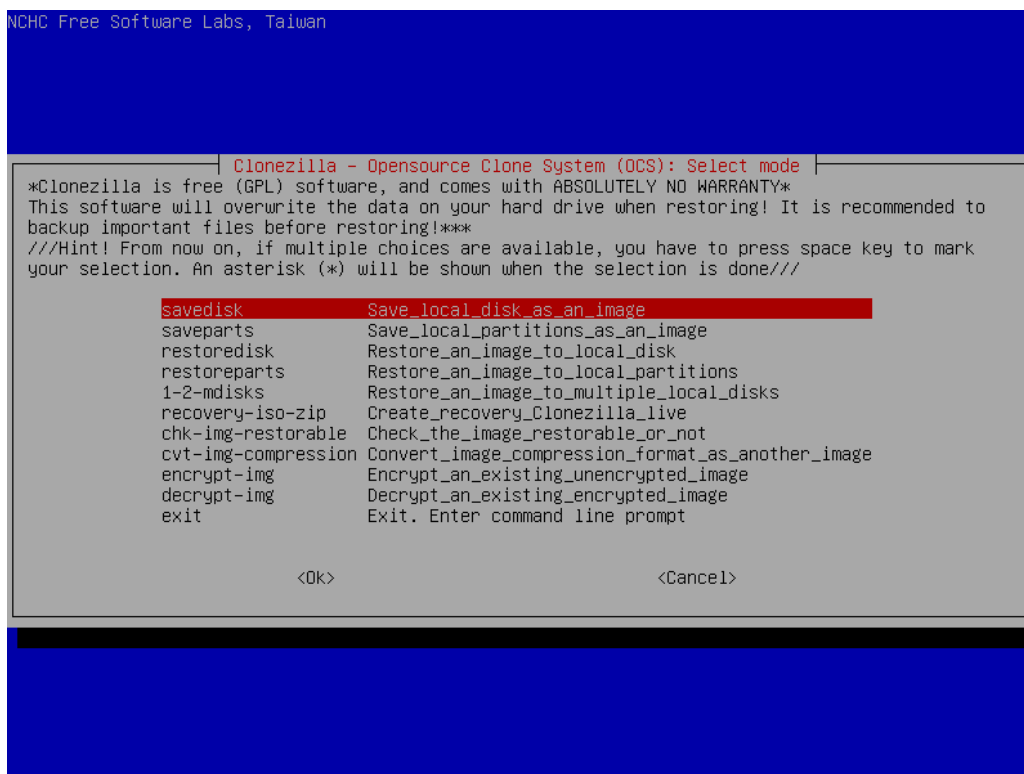
Then click on the tab key to activate the "Done" button and validate, because you are going to put your clone at the root of your partition :



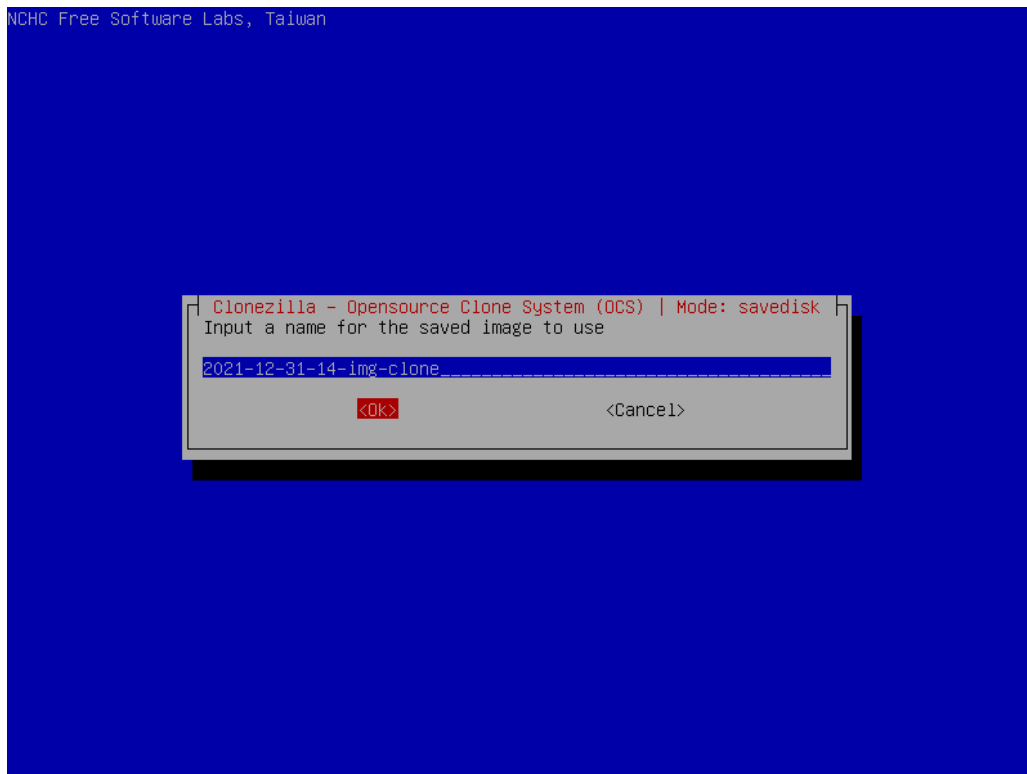
Select the beginner mode which is suitable for making the clone, and it is not necessary here to use the expert mode :



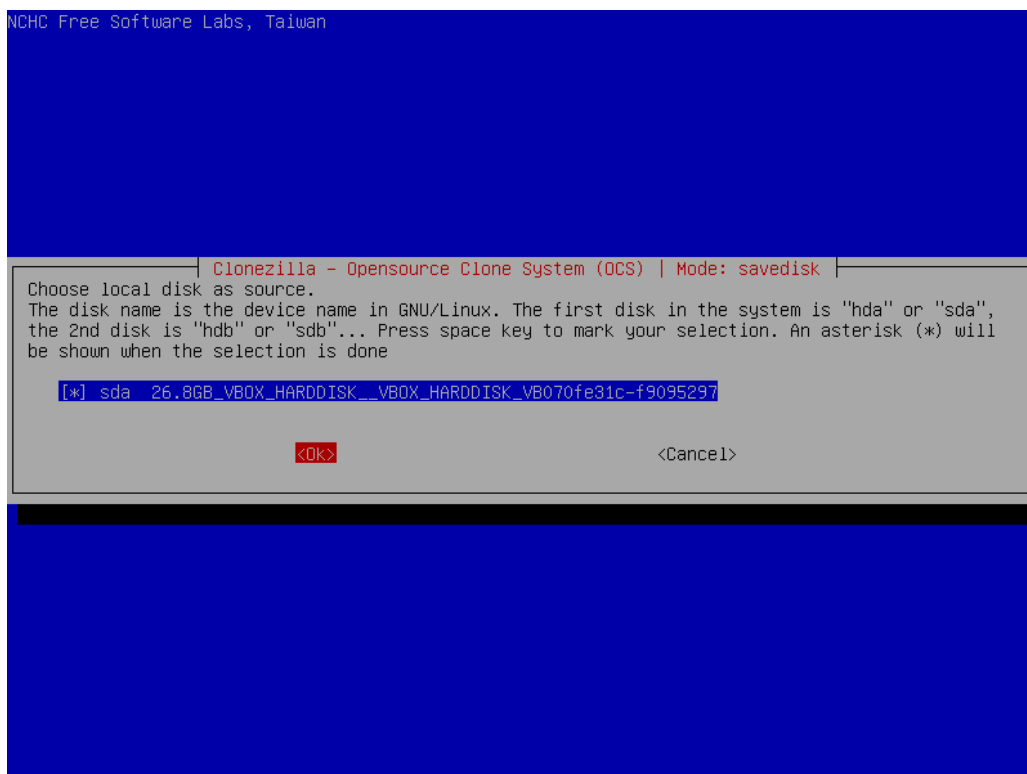
Select the "Savedisk" mode which allows you to save your entire disk containing your customized operating system, then <OK> to validate :



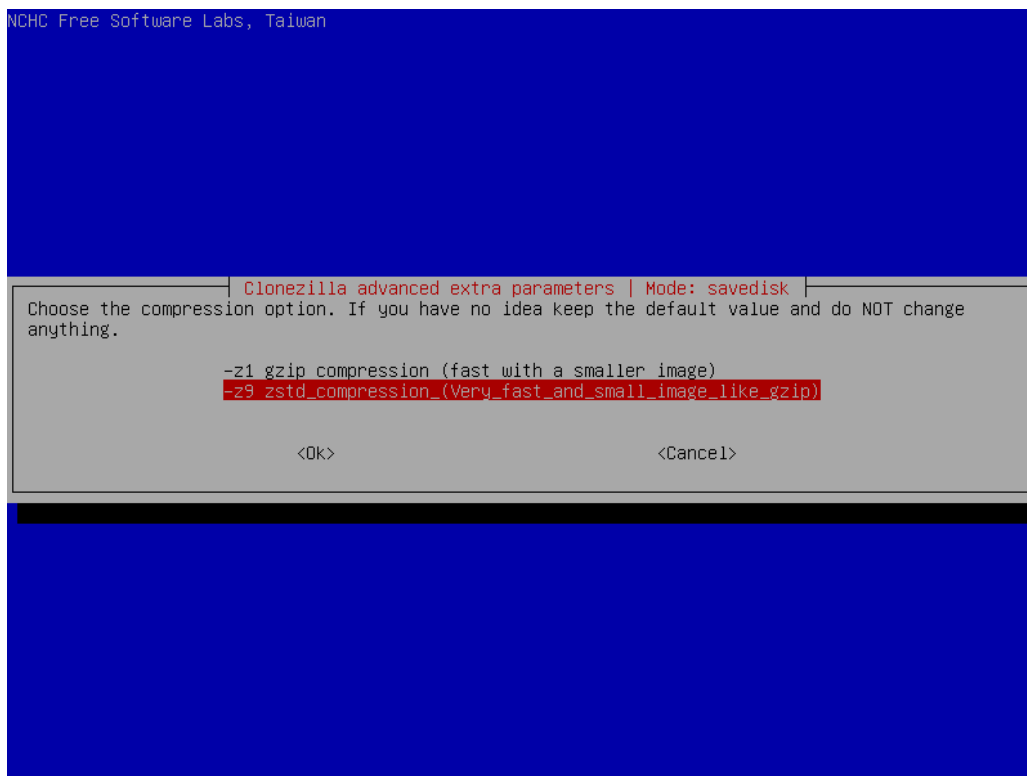
Enter the name of your clone, then <OK> to validate :



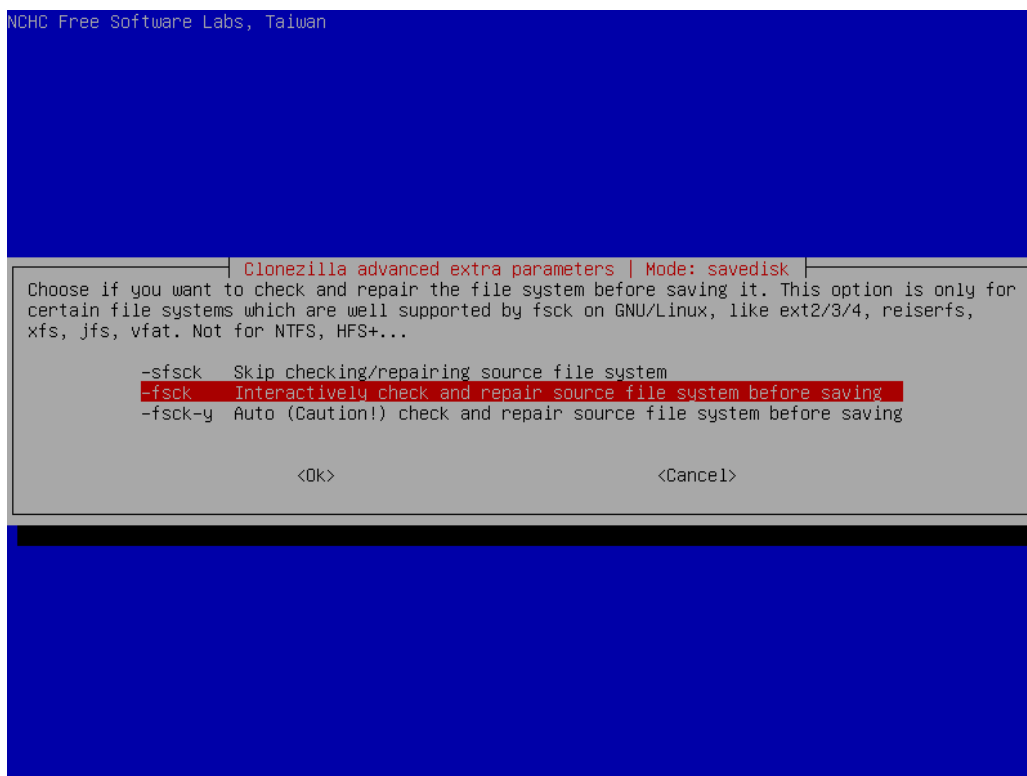
Now you need to select the hard disk containing your customized operating system. Usually there is only one hard drive already selected, unless you have several hard drives on your computer, and in that case you need to select the one you want to clone to the USB stick:



Select the "-z9" compression mode which gives the best compression ratio, and validate:

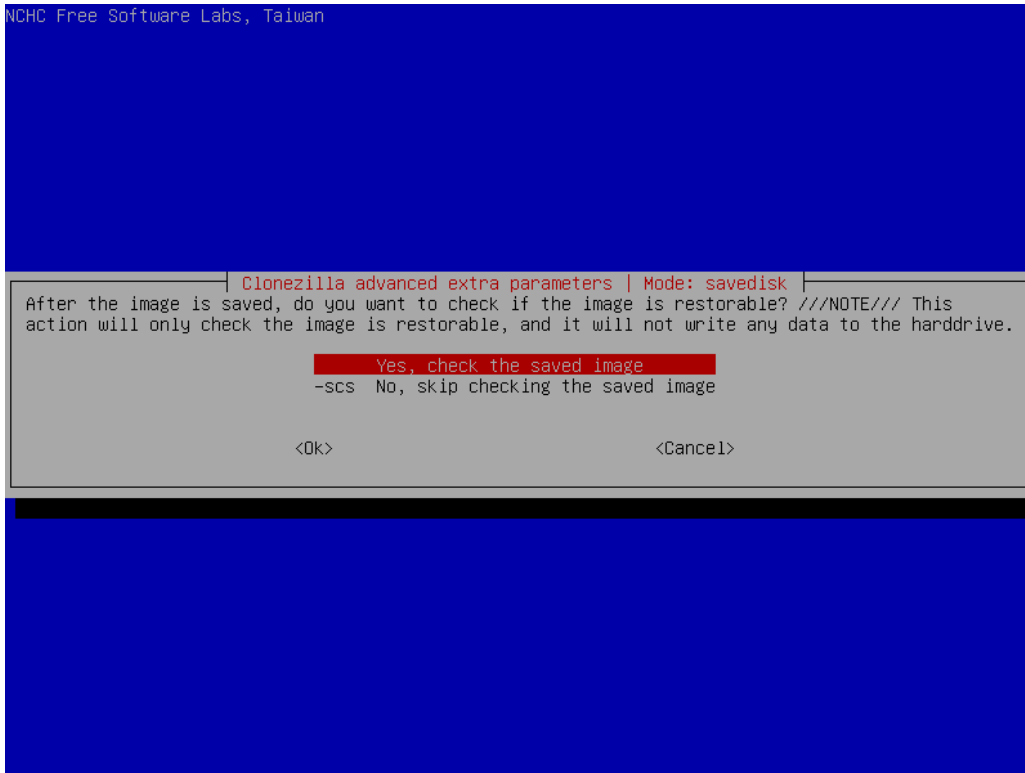


Activate the verification and repair option, case of ...

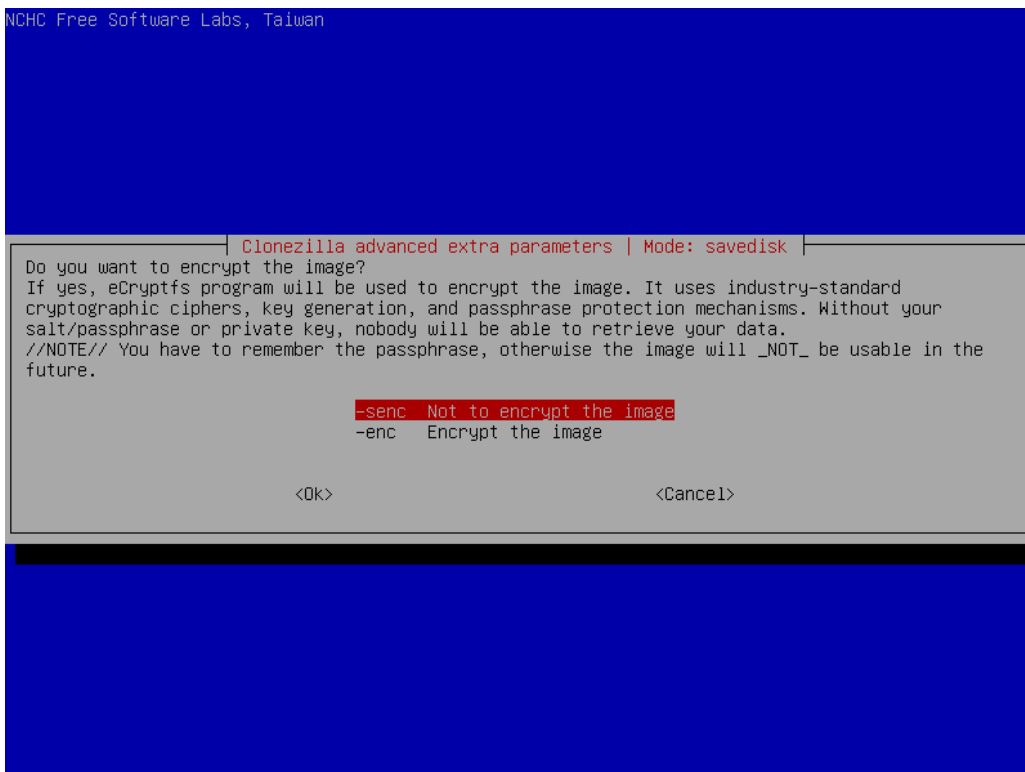




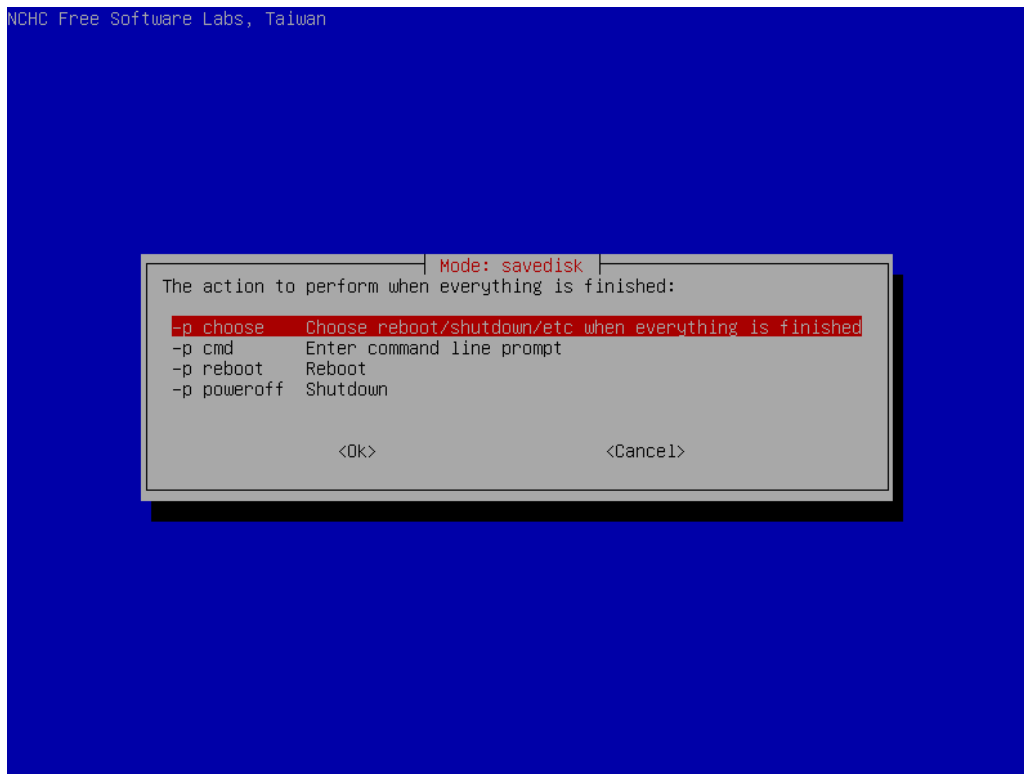
Ask for the verification of the clone after its backup, you can never be too careful with USB media ;)



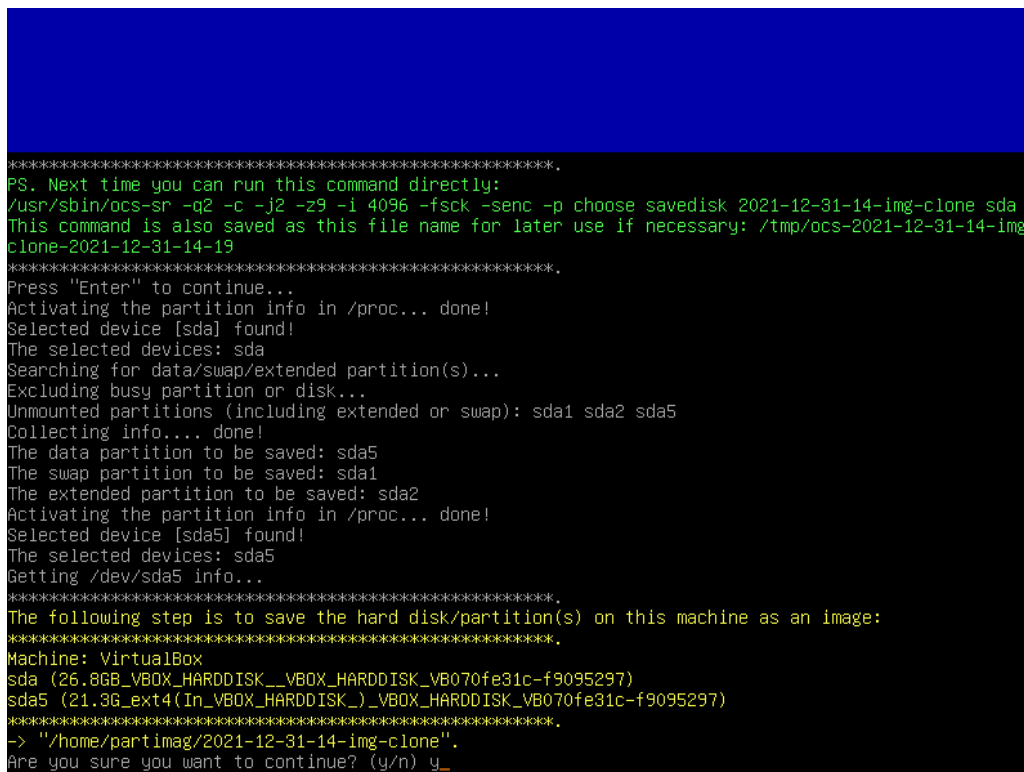
Do not encrypt your image, i.e. the clone, unless you want to protect it with a password :



Choose the finish mode that is best for you:



Clonezilla gives you the command line it will execute and a report. Type the letter "y" to accept and validate to continue :





Your clone was successfully saved. Press "Enter" to continue :

```
Checked successfully.
The image of this partition is restorable: sda5
*****
All the images of partition or LV devices in this image were checked and they are restorable: 2021-12-31-14-img-clone
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: sda5
All the images of partition or LV devices in this image were checked and they are restorable: 2021-12-31-14-img-clone
*****
*****
Checking if udevd rules have to be restored...
This program is not started by Clonezilla server, so skip notifying it the job is done.
Finished!
Generating a tag file for this image...
Now syncing - flush filesystem buffers...
Ending /usr/sbin/ocs-sr at 2021-12-31 14:45:20 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 poweroff/reboot procedure. Otherwise if the boot media you are using is a writable device (such as USB flash drive), and it's mounted, poweroff/reboot in abnormal procedure might make it FAIL to boot next time!
*****
Press "Enter" to continue..._
```

You can stop Clonezilla, and now you just have to test your embedded clone on our refurbishing key to clone a new computer :)

```
Free Software Labs, NCHC, Taiwan

Now you can choose to:
Choose mode
poweroff Poweroff
reboot Reboot
cmd Enter command line prompt
rerun1 Start over (image repository /home/partimag, if mounted, will be umounted)
rerun2 Start_over_(keep_image_repository_/home/partimag_mounted)
rerun3 Start_over_(Remount_subdir_in_medium_of_current_repository):_/dev/sdb3

<Ok>
```

## 5 - Tips and Advice

It is also possible to use a virtual machine like [Oracle VM VirtualBox](#) or [VMware Workstation Pro](#) to install your reference GNU/Linux operating system and then copy it via Clonezilla to your refurbishing key. The method for copying the clone to the reuse key is the same as the one used with a physical hard disk except that you need to use an ISO image of [PLOP Boot Manager](#) in your virtual machine's CD/DVD drive to allow the refurbishing USB stick to be launched in the virtual machine.

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