

CLONEZILLA : CREAR Y RECUPERAR EQUIPOS MEDIANTE IMÁGENES

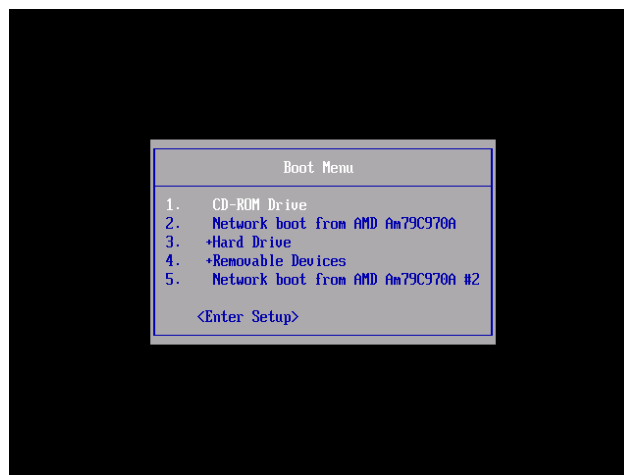
=====

ARRANCAR CON CLONEZILLA CD EL EQUIPO EN QUE HACER BACKUP Ó RESTORE

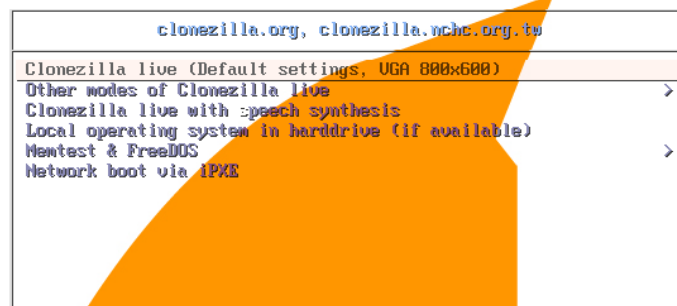
=====

Arrancar el equipo desde el CD de Clonezilla

Once you have the bootable Clonezilla Live CD/DVD you can boot the machine you want to clone via Clonezilla live. Remember to use the Clonezilla live CD to boot the machine. By pressing a hotkey (e.g. Esc, F9 or maybe F12) when you boot the machine, you will see the boot menu of BIOS like this:



En la pantalla de opciones inicial de Clonezilla seleccionar la primera opción : **Clonezilla live (Default settings, VGA 800X600)**



Press [Tab] to edit options

* Boot menu for BIOS machine
 * Clonezilla live version: 2.5.2-31-amd64. (C) 2003-2017, NCHC, Taiwan
 * Disclaimer: Clonezilla comes with ABSOLUTELY NO WARRANTY

Clonezilla

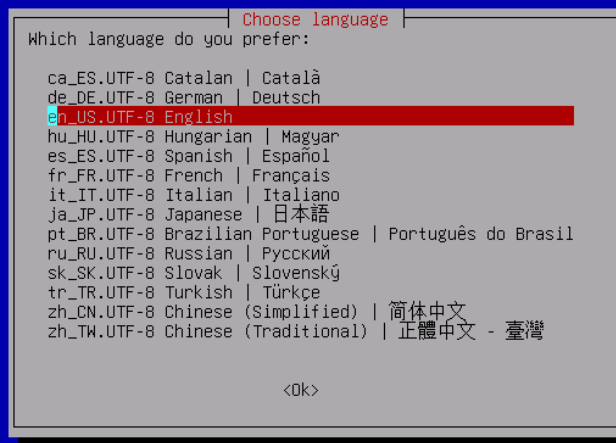
Free Software Labs
 National Center for High-Performance Computing
 Taiwan

Here we choose Clonezilla live (Default settings, VGA 800X600) mode.
After pressing Enter, you will see Debian Linux booting process

```
[ 3.568433] piix4_smbus 0000:00:07.3: SMBus Host Controller not enabled!
[ 3.585730] sd 2:0:1:0: [sdb] Assuming drive cache: write through
[ 3.586064] sd 2:0:2:0: [sdc] Assuming drive cache: write through
[ 3.588408] sd 2:0:4:0: [sde] Assuming drive cache: write through
[ 3.588422] sd 2:0:0:0: [sda] Assuming drive cache: write through
[ 3.588990] sd 2:0:3:0: [sdd] Assuming drive cache: write through
Starting to prepare Clonezilla live env...
Live media is in /lib/live/mount/medium
Updating /etc/ocs/ocs-live.conf based on kernel parameters if found...
done!
Configuring keyboard...
```

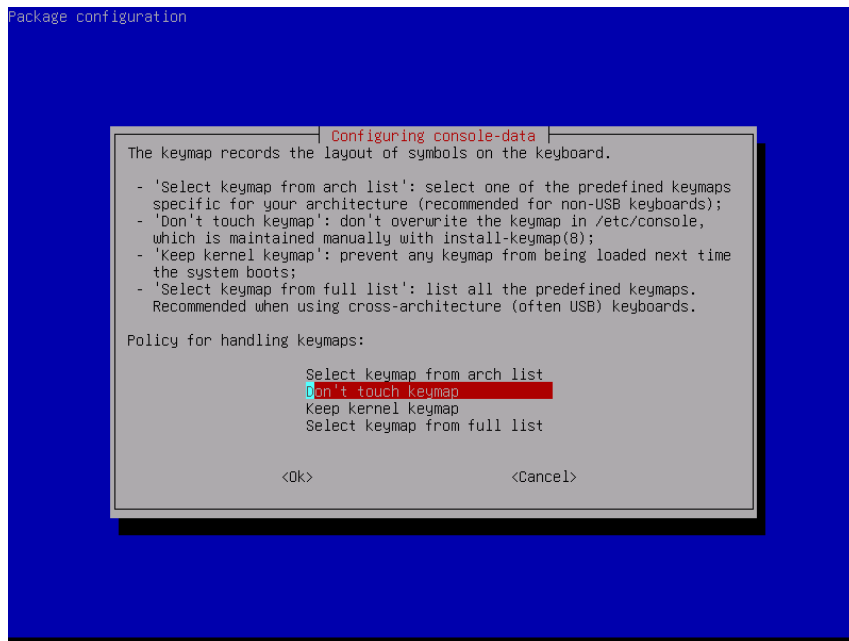
Choose language

Free Software Labs, NCHC, Taiwan



Elegir Spanish | Español

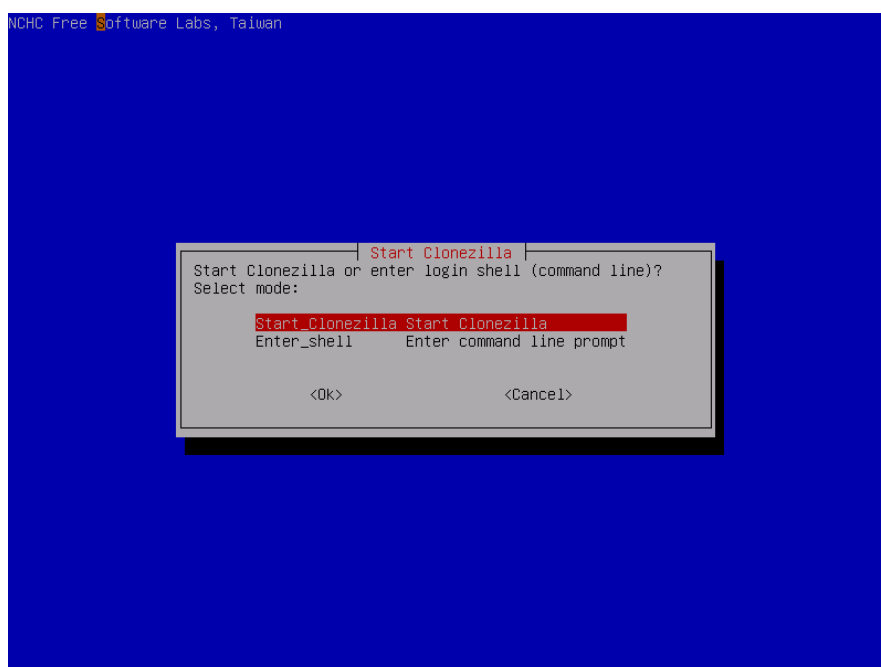
Choose keyboard layout



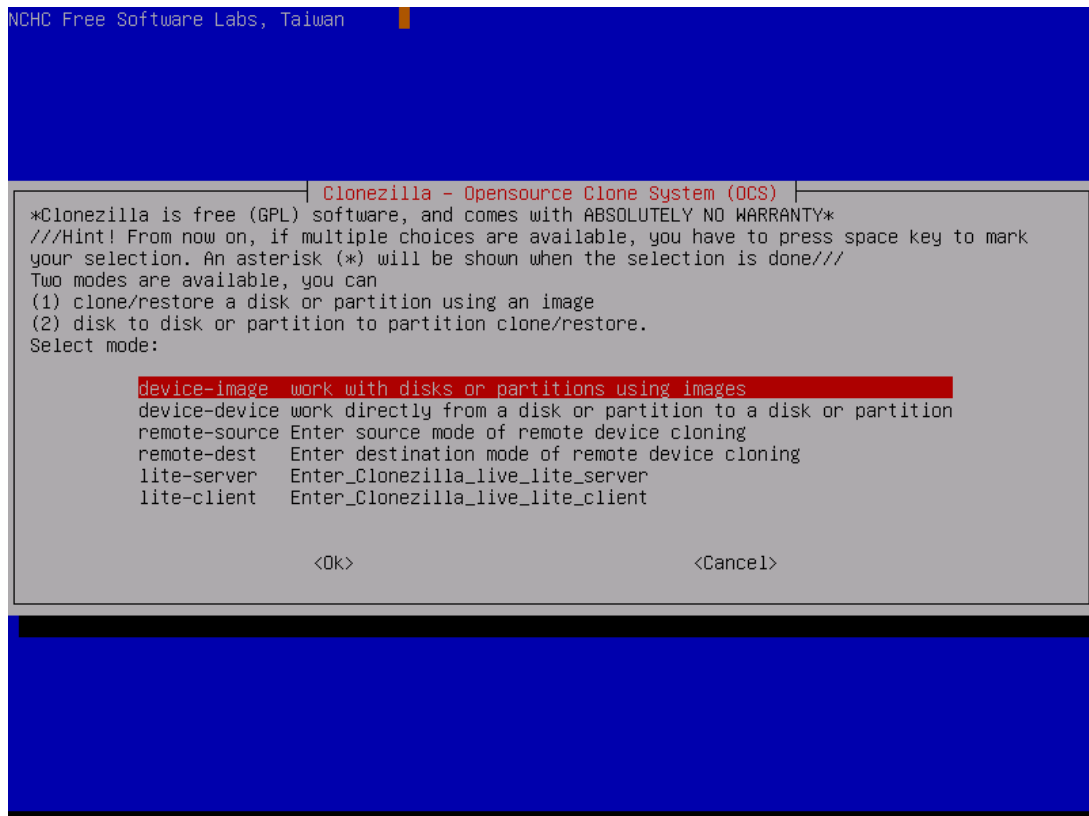
The default keyboard layout is US keyboard, therefore if you are using US keyboard, just press enter (i.e. use the option "Don't touch keymap"). If you want to change keymap, you can either choose "Select keymap from arch list" or "Select keymap from full list".

Seleccionar "Elegir el mapa de teclado según arquitectura" (Select keymap from arch list) y después las opciones : * querty, * Spanish, * Standard, *Standard.
(Probablemente es innecesario ajustar el mapa de teclado).

Choose "Start Clonezilla"



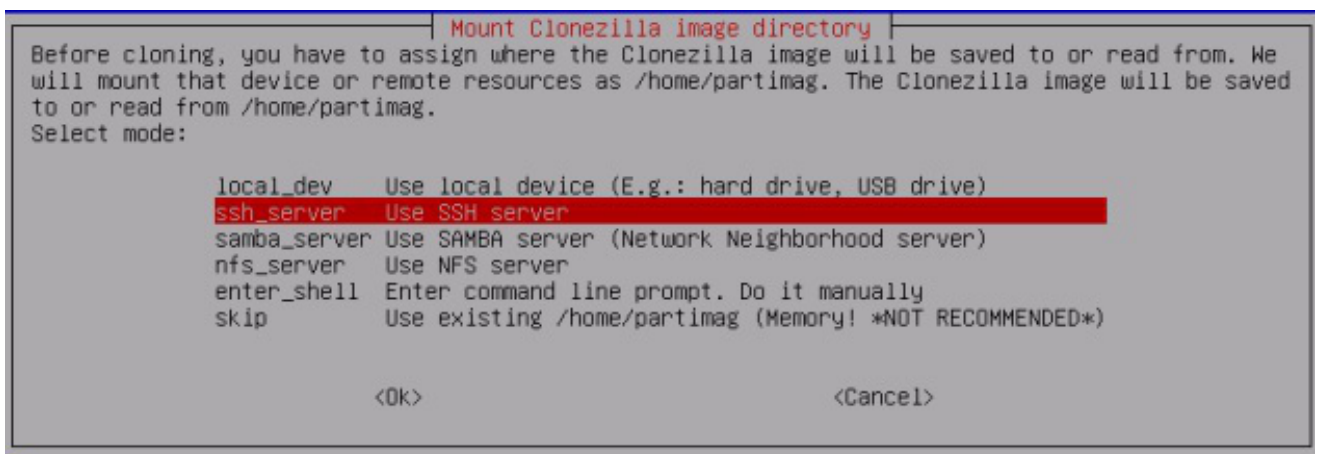
Choose "device-image" option



Elegir "**device-image** Disco/Partición a/desde Imagen"

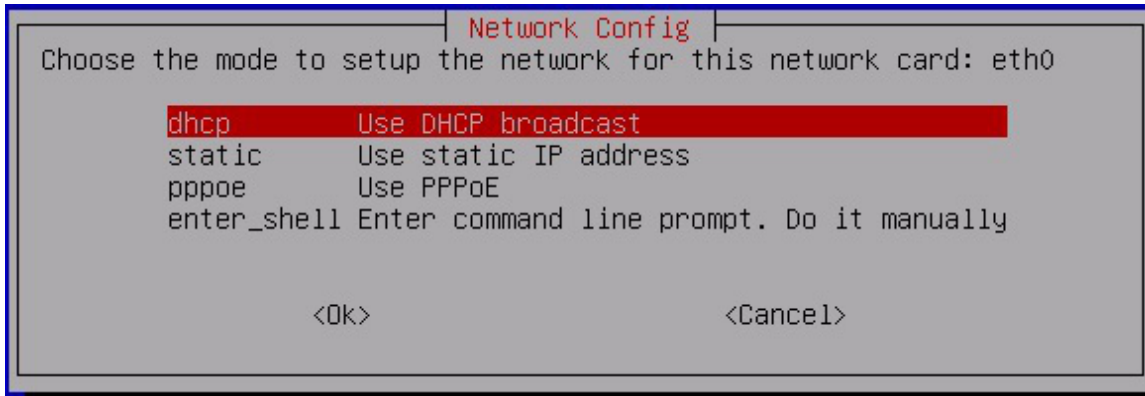
Después ...

Select the device where we want to store the hard drive image. In my case, I have selected SSH server:



Elegir "**ssh_server** Use SSH server"

Here, it will ask the **network setting** (I have selected dhcp): (Probablemente es lo más sencillo, y también funcionó perfectamente).

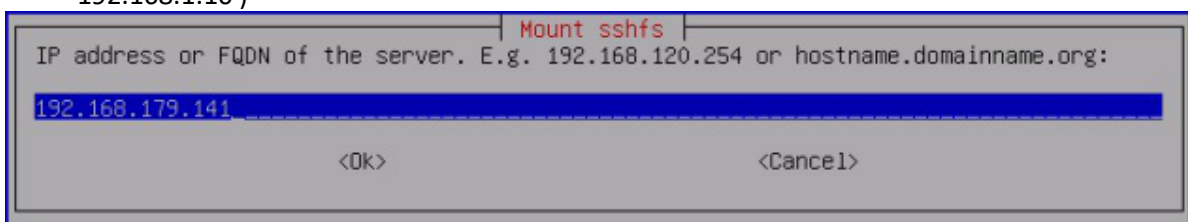


Yo seleccioné "**static Use static IP address**", y entonces en sucesivas ventanas te pide, por este orden :

- 1) Dirección IP para eth0 : Puse la dirección IP externa que yo ya tenía previamente asignada al equipo (p.e. 192.168.1.30 para el HP, en fecha 7 de febrero de 2.018)
- 2) Máscara de RED para eth0: Puse 255.255.255.0, que es el default y lo que yo ya usaba en mi red local.
- 3) Gateway por Defecto: Puse 192.168.1.1, que es mi Gateway por Defecto y la dirección IP interna de mi Router
- 4) Nameserver(s) : Dejé el default, que es 8.8.8.8

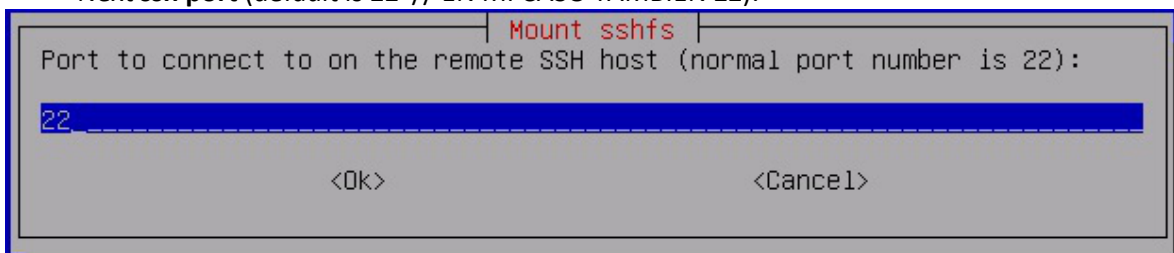
Entonces

Then it will ask the **SSH server address** (In my case, it is 192.168.179.141 // EN MI CASO 192.168.1.10)



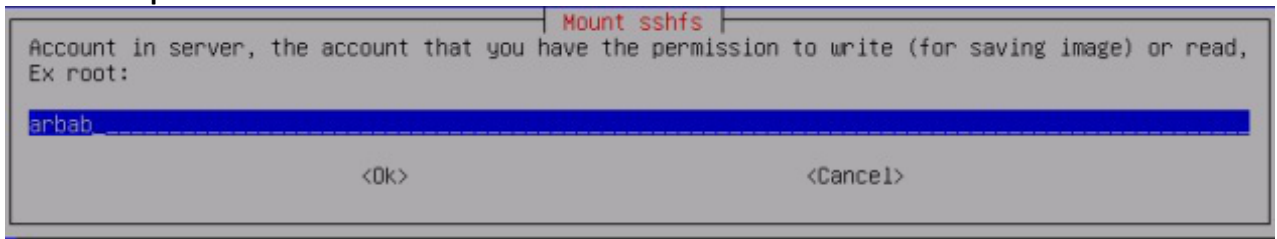
Puse la dirección IP interna de mi Qnap NAS, que es : 192.168.1.10

Next **ssh port** (default is 22 // EN MI CASO TAMBIÉN 22):



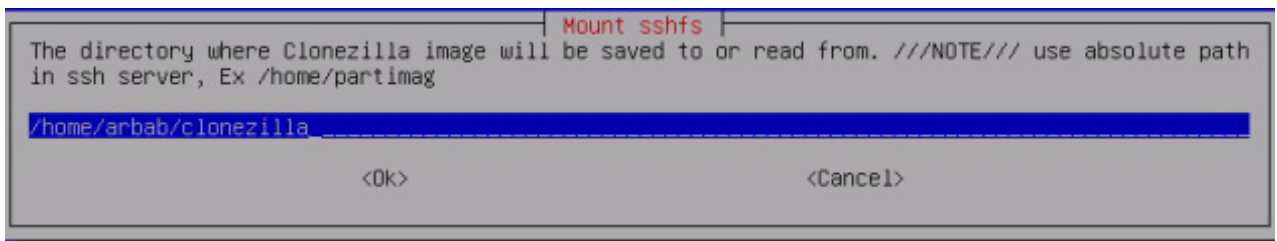
Dejé el puerto 22, que es el que uso

User account on SSH Server that is allowed to write/read on the server: // EN MI CASO backup



Puse "backup", que es el usuario con derechos en el Qnap NAS sobre la carpeta que se utilizará para recibir y almacenar las imágenes

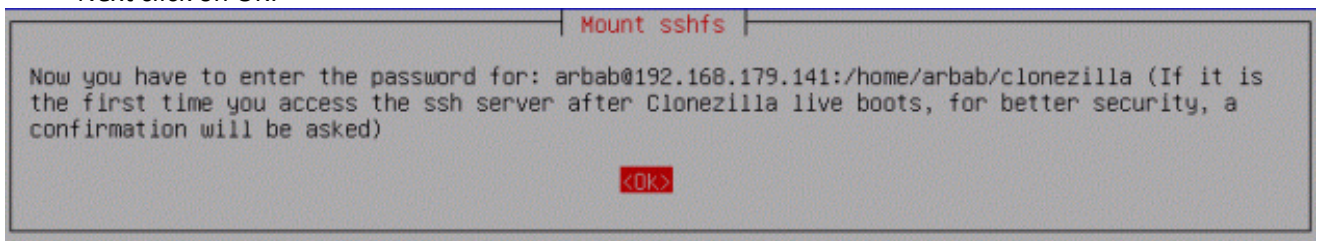
Specify the directory on SSH Server, where CloneZilla image will be saved(In my case, it is /home/arbab/clonézilla): // EN MI CASO /share/homes/backup/backups/clonézilla/hp



Puse el path completo de la carpeta del Qnap NAS donde se almacenarán las copias de seguridad para este equipo (HP). En mi caso era /share/homes/backup/backups/clonézilla/hp (a 7 de febrero de 2.018)

Este paso es el que más se presta a error (por ejemplo es facilísimo poner home en lugar de homes), y si te confundes no te avisa hasta el final (te dice que no puede conectar), y tienes que empezar desde el principio.

Next click on OK:



and then enter your **SSH password**:

```
Mounting sshfs by:
sshfs -o nonempty,noatime -p 22 "arbab"@192.168.179.141: "/home/arbab/clonézilla" /home/partimag
The authenticity of host '192.168.179.141 (192.168.179.141)' can't be established.
RSA key fingerprint is 33:72:e5:75:11:70:a3:2c:3b:86:f4:7a:42:19:ee:d6.
Are you sure you want to continue connecting (yes/no)? yes
arbab@192.168.179.141's password: _
```

Puse la password de backup

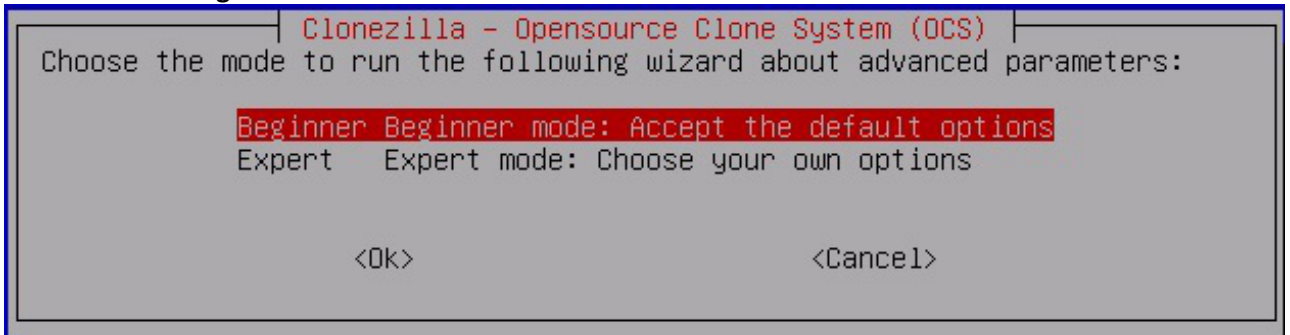
Next screen will confirm the successfully mount. Press "Enter":

```
The file system disk space usage
*****
df: '/filesystem.squashfs': No such file or directory
Filesystem                Size      Used Avail Use% Mounted on
rootfs                    498M       7.5M  491M   2% /
sysfs                     0          0      0   - /sys
proc                      0          0      0   - /proc
udev                     10M          0    10M   0% /dev
devpts                    0          0      0   - /dev/pts
tmpfs                     100M       232K   100M   1% /run
/dev/sr0                  114M      114M      0 100% /live/image
tmpfs                     498M       7.5M  491M   2% /live/cow
aufs                     498M       7.5M  491M   2% /
tmpfs                     498M          0  498M   0% /live
tmpfs                     5.0M          0   5.0M   0% /run/lock
tmpfs                     200M          0  200M   0% /run/shm
fusectl                   0          0      0   - /sys/fs/fuse/connections
tmpfs                     498M          0  498M   0% /tmp
rpc_pipefs                0          0      0   - /var/lib/nfs/rpc_pipefs
arbab@192.168.179.141:/home/arbab/clonezilla 28G 192M 26G 1% /home/partimag
*****
Press "Enter" to continue....._
```

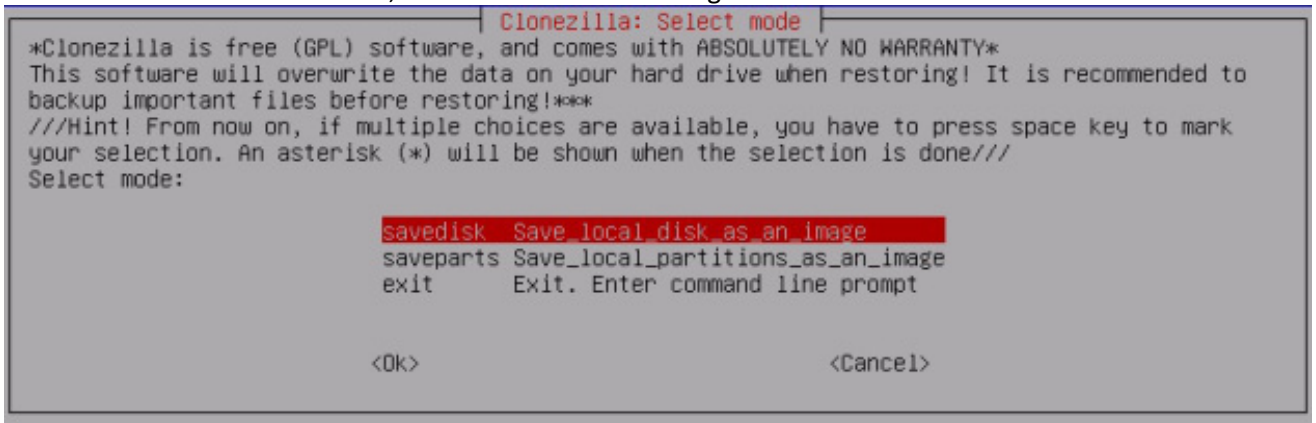
Hasta aquí todo el proceso es idéntico ya se trate de CREAR UNA IMAGEN o de RECUPERAR DESDE UNA IMAGEN

```
=====
CREAR UNA IMAGEN
=====
```

Choose "Beginner" then hit Enter:

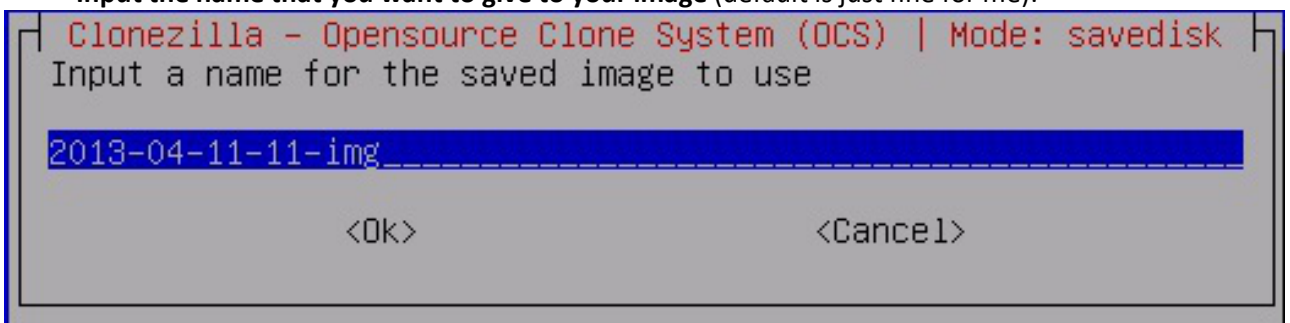


Select "savedisk" because, we want to create an image of the full hard drive:



Elegir "savedisk Save_local_disk_as_an_image"

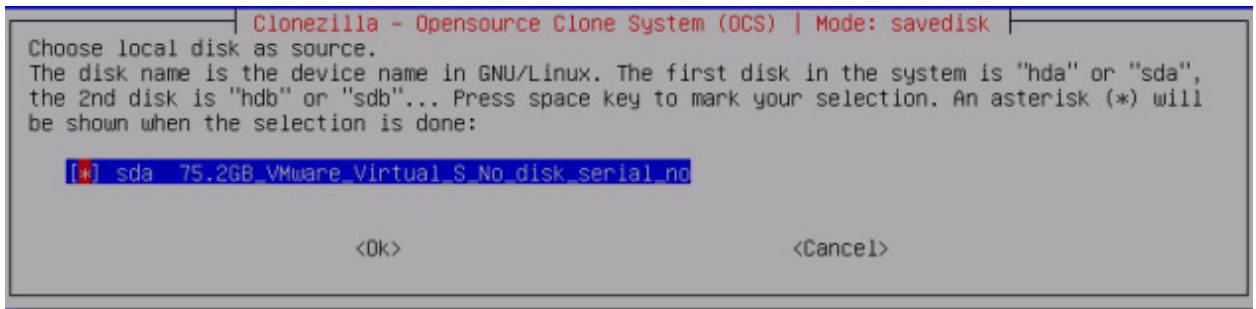
Input the name that you want to give to your image (default is just fine for me):



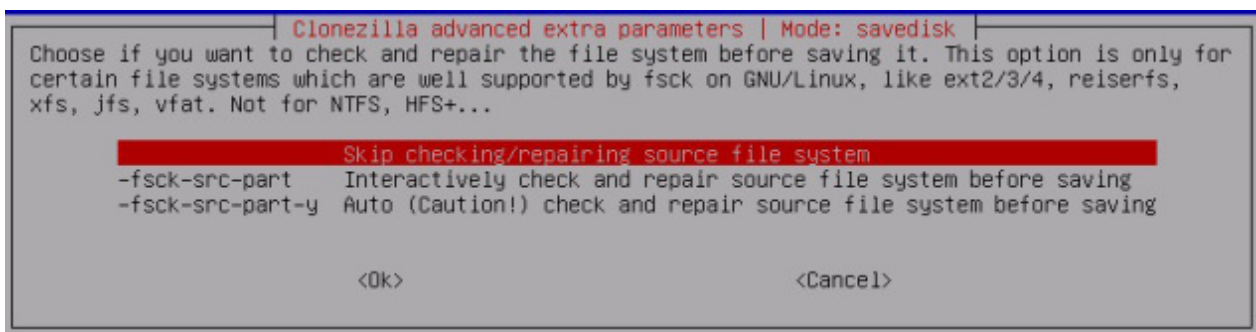
Puse la fecha del día : 2018-02-07-img

Con el nombre que asignes aquí (EN MI CASO 2018-02-07-img) Clonezilla creará una carpeta dentro de la carpeta de destino en el Qnap NAS (/share/homes/backup/backups/clonezilla/hp). Después, para recuperar desde la imagen habrá que indicarle esta carpeta (/share/homes/backup/backups/clonezilla/hp) y Clonezilla te mostrará para que lo elijas una lista con los nombres de imagen disponibles dentro de dicha carpeta.

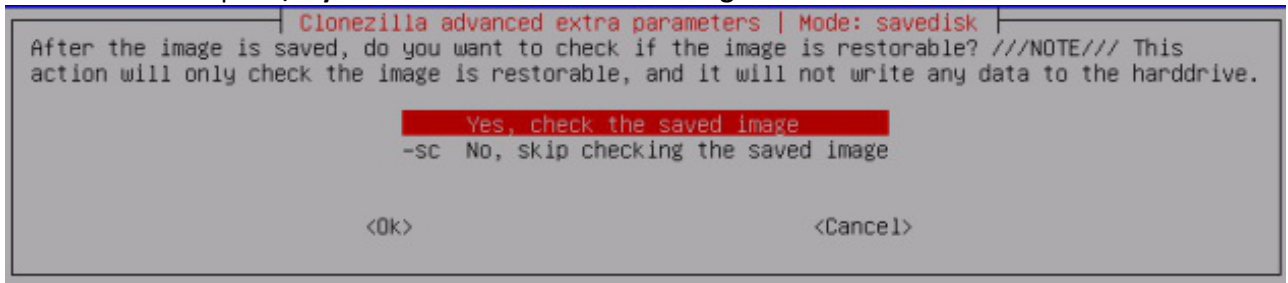
Choose the hard drive for which you want to create an image:



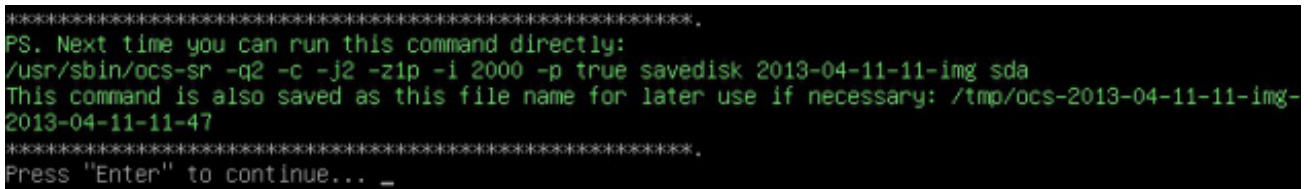
Select an option, **if you want to check & repair the file system before saving** (I am going with default option, which is skip):



Select this option, **if you want to check the saved image is restorable**:



Hit Enter:



Then press “y” and Hit Enter to start the image creation process:


```
Activating the partition info in /proc... done!
Selected device [sda] found!
The selected devices: sda
Searching for data partition(s)...
Excluding busy partition or disk...
Unmounted partitions (including extended or swap): sda1 sda2 sda5
Collecting info.... done!
Searching for swap partition(s)...
Excluding busy partition or disk...
Unmounted partitions (including extended or swap): sda1 sda2 sda5
Collecting info.... done!
The data partition to be saved:   sda1 sda5
The swap partition to be saved:
Activating the partition info in /proc... done!
Selected device [sda1] found!
Selected device [sda5] found!
The selected devices: sda1 sda5
Getting /dev/sda1 info...
Getting /dev/sda5 info...
*****
The following step is to save the hard disk/partition(s) on this machine as an image:
*****
Machine: VMware Virtual Platform
sda (75.2GB_VMWare_Virtual_S_No_disk_serial_no)
sda1 (243M_ext2(In_VMWare_Virtual_S)_No_disk_serial_no)
sda5 (69.8G_LVM2_member(In_VMWare_Virtual_S)_No_disk_serial_no)
*****
-> "/home/partimag/2013-04-11-11-img".
Are you sure you want to continue? ? (y/n) _
```


After this, image creation process will start (please be patient, this may take some time):

```

Partclone v0.2.59 http://partclone.org
Starting to clone device (/dev/tendo/root) to image (-)
Reading Super Block
Calculating bitmap... Please wait... done!
File system:  EXTFS
Device size:   73.8 GB = 18023424 Blocks
Space in use:  4.2 GB = 1036896 Blocks
Free Space:    69.6 GB = 16986528 Blocks
Block size:    4096 Byte

Elapsed: 00:00:15 Remaining: 00:08:01   Rate: 513.59MB/min
Current Block: 87614   Total Block: 18023424

Data Block Process:
 3.02%

Total Block Process:
 0.49%

```

After the successful image creation, press ENTER:

```

Checked successfully.
This partition in the image is restorable: tendo-root
*****
Found the swap partition /dev/tendo/swap_1 info:
UUID="019353bc-7db5-40d2-b128-90f995a9346b"
LABEL=""
Swap partition info file found!
*****
All the images of partition or LV devices in this image were checked and they are restorable: 2013-0
4-11-11-img
*****
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!
Now syncing - flush filesystem buffers...

Ending /usr/sbin/ocs-sr at 2013-04-11 12:02:41 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...

```

Select your desired option to Poweroff/Reboot etc the CloneZilla Live system:

```

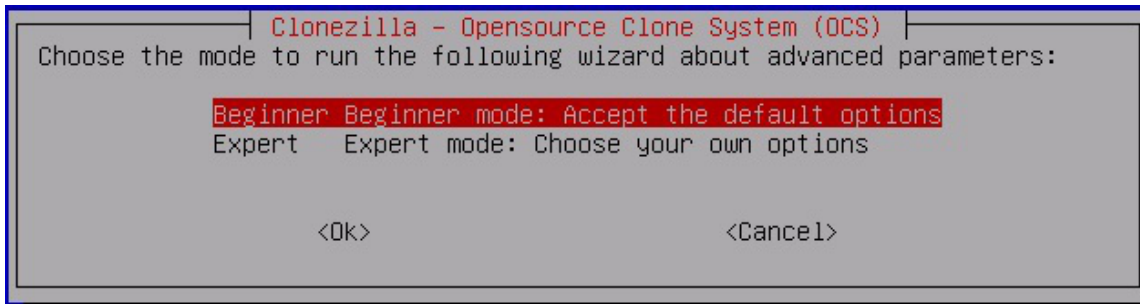
"ocs-live-general" is finished.
Now you can choose to:
(0) Poweroff
(1) Reboot
(2) Enter command line prompt
(3) Start over (image repository /home/partimag, if mounted, will be umounted)
(4) Start over (keep image repository /home/partimag mounted)
[2]

```

Login to SSH Server and verify the disk image

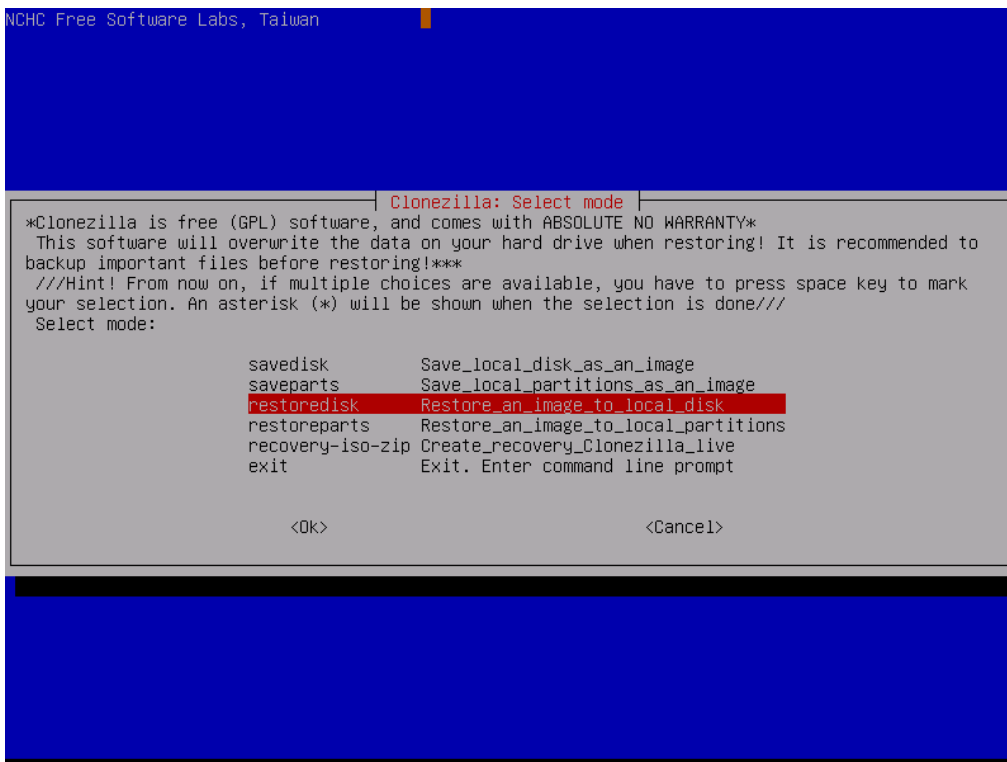
```
=====
RECUPERAR DESDE UNA IMAGEN
=====
```

El arranque desde el CD y la conexión con el Qnap NAS son idénticos al Recuperar Imagen que al Crear Imagen, hasta llegar a la siguiente pantalla :

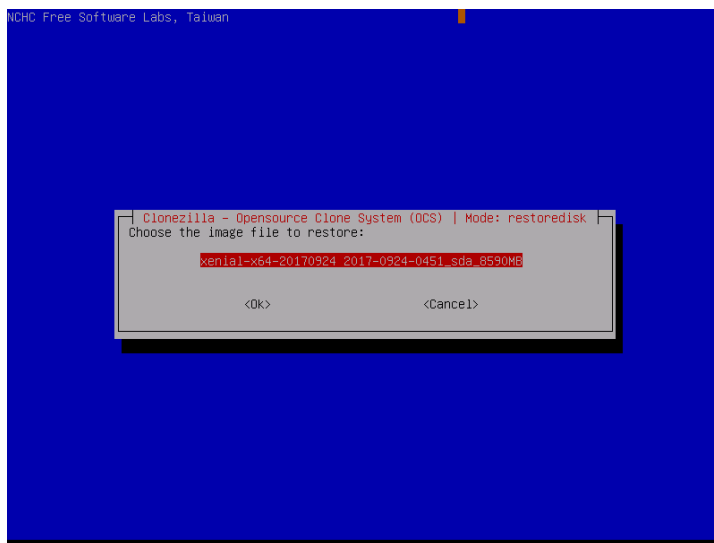


Ahora, para restaurar, elegimos "**Expert Expert mode: Choose your own options**" (No hace falta, también funciona perfectamente en Beginner, y desde Beginner también te lleva a la siguiente pantalla en que puedes elegir restore disk; la única diferencia es que en modo Expert luego te ofrece dos pantallas especiales de configuración, que no utilicé y dejé con los defaults).

En la siguiente pantalla elegimos "**restore disk Restaurar_imagen_a_disco_local**"



En la siguiente pantalla **elegimos la imagen que recuperar de la lista que nos ofrece** (en el ejemplo debajo solo aparece una)

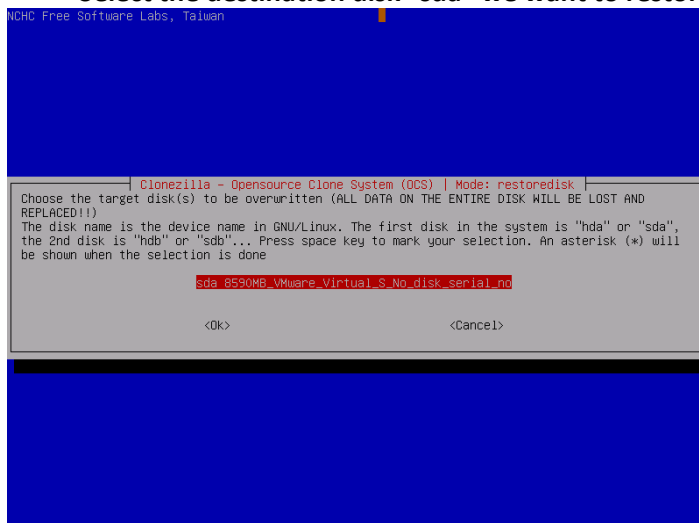


En la lista aparecen dos columnas: PRIMERA, el nombre que le diste a la imagen al crearla (EN MI CASO 018-02-07-img). SEGUNDA, descripción informativa creada por Clonezilla (EN MI CASO 2018-0207-1814_sda_250GB), con el timestamp de creación de la imagen (2018-0207-1814), el disco origen de la imagen (sda) y el tamaño de la imagen (250GB).

Al crear una imagen y darle nombre, Clonezilla creó una carpeta con dicho nombre (EN MI CASO 018-02-07-img) y dentro a su vez de la carpeta de destino en el Qnap NAS (/share/homes/backup/backups/clonezilla/hp). Esta carpeta (su path completo EN MI CASO "/share/homes/backup/backups/clonezilla/hp/018-02-07-img") contiene los archivos de copia de la imagen (muchos).

En la lista mostrada en la pantalla más arriba Clonezilla nos ofrece las imágenes disponibles dentro de la carpeta de destino en el Qnap NAS (la elegida al establecer la conexión SSH, ver más arriba en el proceso de arranque y conexión)..

Select the destination disk "sda" we want to restore:

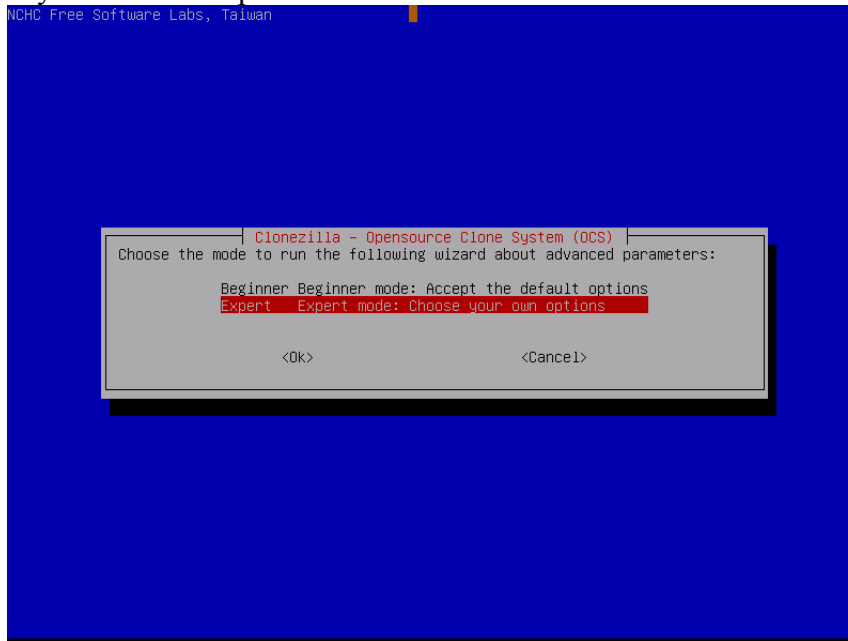


Después de elegir el disco sda (y porque antes yo había elegido Expert mode) me mostró 2 pantallas de opciones avanzadas (muchas opciones), en las que dejé todas las opciones por default.

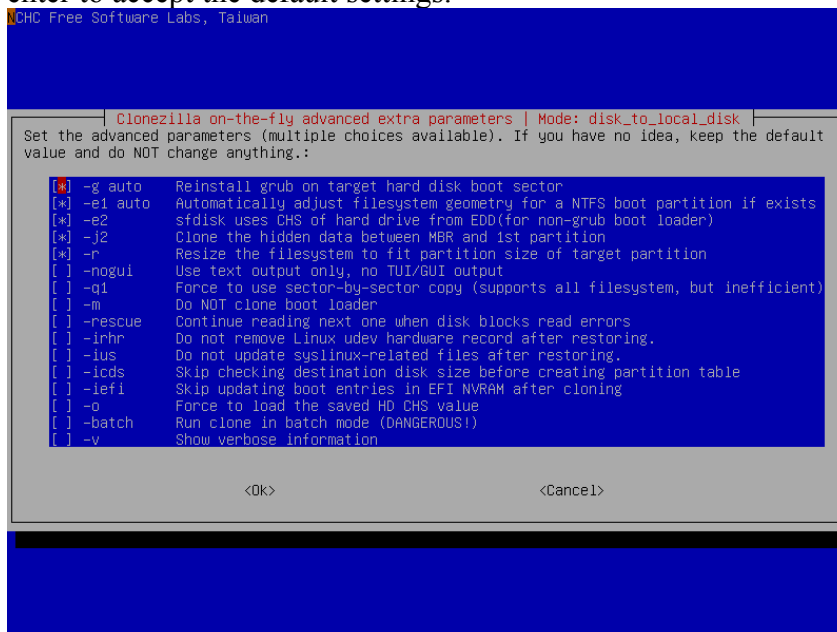
The advanced parameters for disk cloning

Select advanced parameters

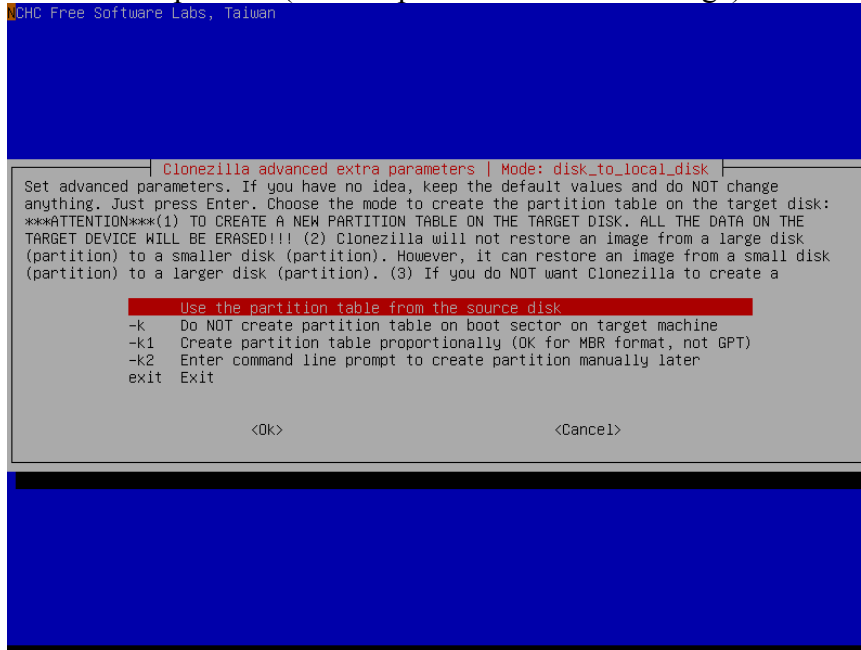
If you choose "Expert" mode:



Then you will have chances to choose the extra parameters you want. Here we just press enter to accept the default settings:



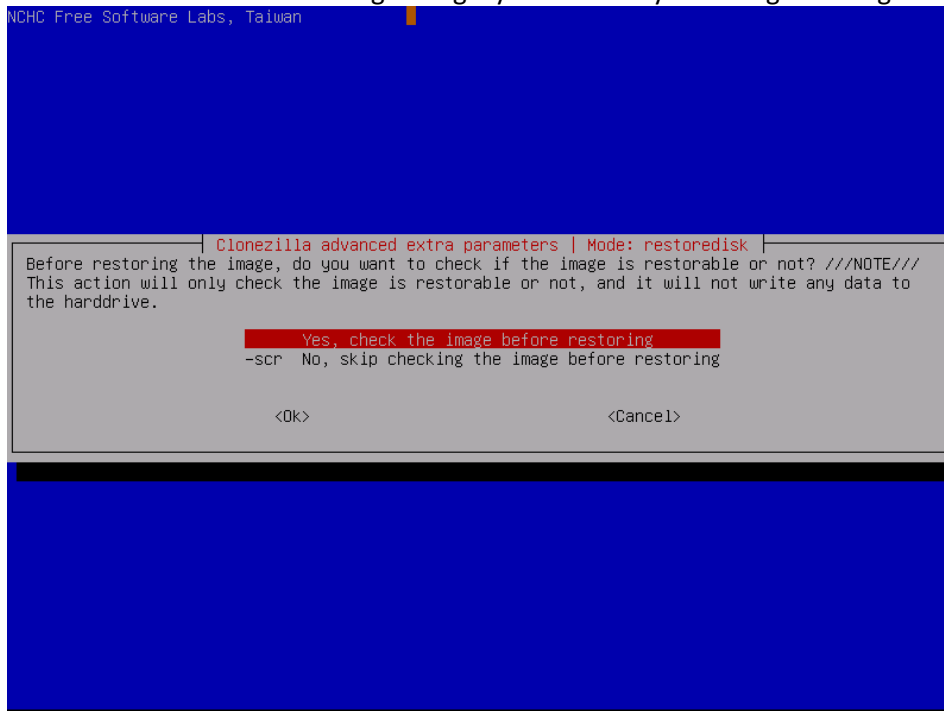
Choose the option "" (Use the partition table from image)



If the target disk size is larger than the source disk, you can try to use option "-k1" which will create the partition table proportionally in the target disk and turn on option "-r" to resize the file file system in the partition automatically. This is useful to make use all of the target disk size.

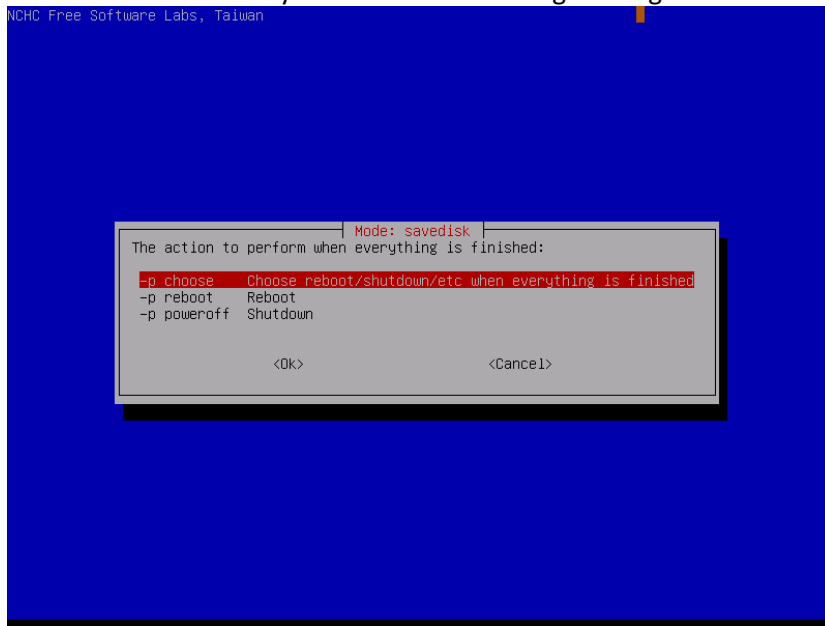
Tras esas dos pantallas ...

Choose to check the image integrity before really restoring the image to disk sda:



It's recommended to check the image before restoring it. You will not know if the image is broken or not. If you are really sure about the integrity is OK, then of course you can choose "-scr" to skip checking.

Select the mode you want after the image saving is done:



By default we will choose later, but if you have decided, you can choose to reboot or poweroff the machine.

Before starting to restore the disk image to disk sda, Clonezilla will ask you to confirm that TWICE:

```

Checked successfully.
The image of this partition is restorable: sda1
*****
All the images of partition or LV devices in this image were checked and they are restorable: xenial
-x64-20170924
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
All the images of partition or LV devices in this image were checked and they are restorable: xenial
-x64-20170924
*****
Activating the partition info in /proc... done!
Getting /dev/sda1 info...
Getting /dev/sda2 info...
Getting /dev/sda5 info...
*****
The following step is to restore an image to the hard disk/partition(s) on this machine: "/home/part
imag/xenial-x64-20170924" -> "sda sda1"
The image was created at: 2017-0924-0451
WARNING!!! WARNING!!! WARNING!!!
WARNING. THE EXISTING DATA IN THIS HARDDISK/PARTITION(S) WILL BE OVERWRITTEN! ALL EXISTING DATA WILL
BE LOST:
*****
Machine: VMware Virtual Platform
sda (8590MB_VMWare_Virtual_S_No_disk_serial_no)
sda1 (7G_ext4(In_VMWare_Virtual_S_No_disk_serial_no)
*****
Are you sure you want to continue? (y/n) y

```

Clonezilla now is restoring the selected disk image to 1st disk (sda). The job is done by restoring:

- MBR (by dd), and Boot loader (by grub)
- Partition table (by sfdisk).
- Data on every partition or LV (logical volume) (by partimage, ntfsclone, partclone or dd. It depends on the image of each partition or LV.)


```

# a /var/log/clonezilla.log
Checking that no-one is using this disk right now ... OK

Disk /dev/sda: 8 GiB, 8589934592 bytes, 16777216 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x71f7215d

Old situation:

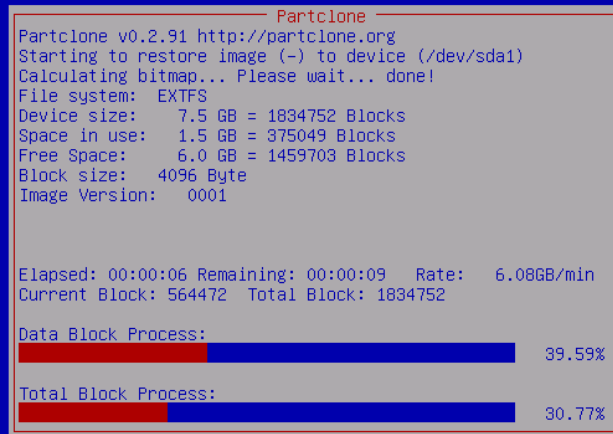
>>> Script header accepted.
>>> Script header accepted.
>>> Script header accepted.
>>> Script header accepted.
>>> Created a new DOS disklabel with disk identifier 0x4f12182e.
/dev/sda1: Created a new partition 1 of type 'Linux' and of size 7 GiB.
/dev/sda2: Created a new partition 2 of type 'Extended' and of size 1 GiB.
/dev/sda3: Created a new partition 5 of type 'Linux swap / Solaris' and of size 1023 MiB.
/dev/sda6: Done.

New situation:

Device      Boot      Start        End    Sectors   Size Id Type
/dev/sda1   *                2048  14680063  14678016    7G 83 Linux
/dev/sda2                14680064  16777215  2097152    1G  5 Extended
/dev/sda5                14682112  16777215  2095104  1023M 82 Linux swap / Solaris

The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.
This was done by: LC_ALL=C sfdisk --force /dev/sda < /home/partimag/xenial-x64-20170924/sda-pt.sf 2>
81 | tee -a /var/log/clonezilla.log
Checking the integrity of partition table in the disk /dev/sda...
*****
Informing the OS of partition table changes..._

```



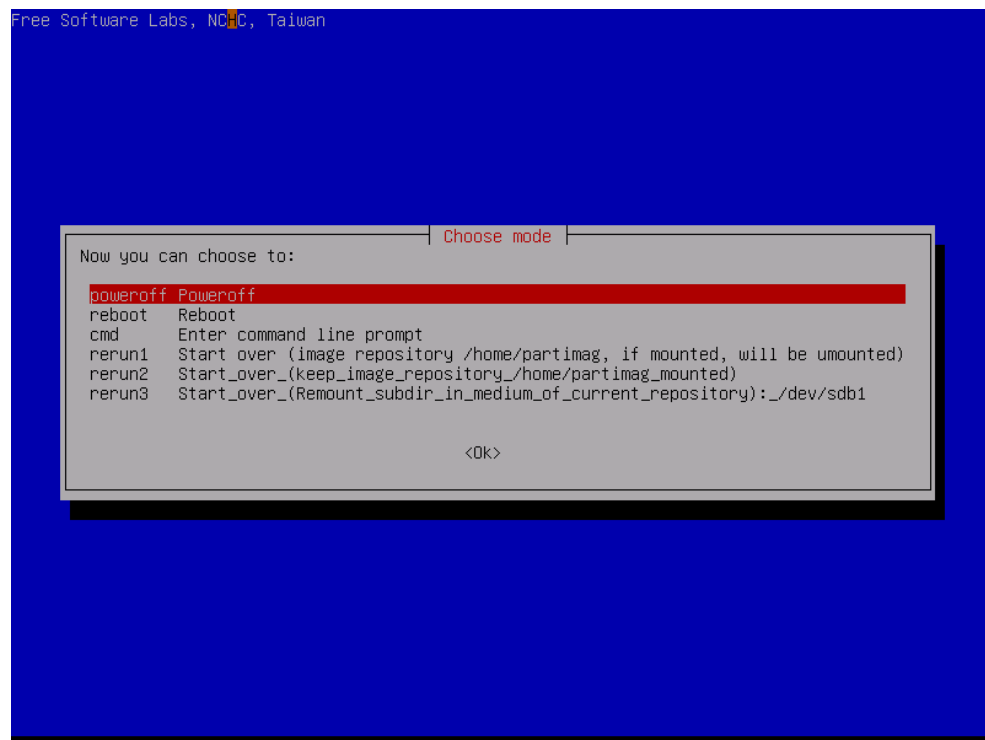
1. 'Stay in this console (console 1), enter command line prompt'
2. 'Run command "exit" or "logout"'

```

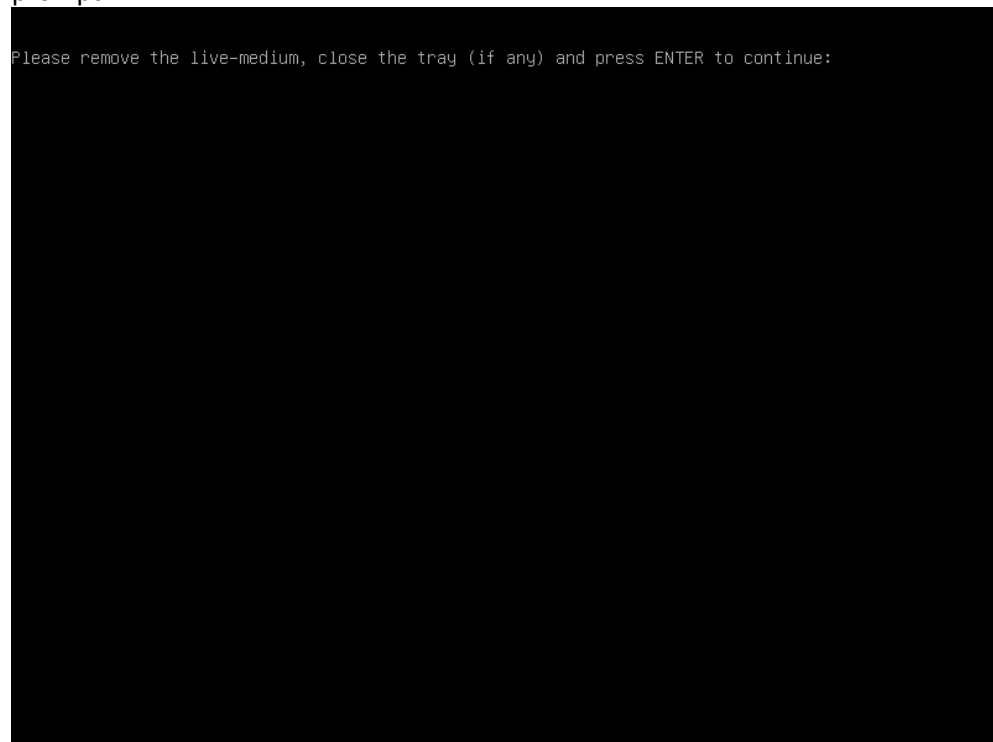
Found boot loader grub in the MBR of disk /dev/sda.
Found grub 2 installed in the restored OS.
Test if we can chroot the restored OS partition /dev/sda1...
Yes, we are able to chroot the restored OS partition /dev/sda1.
Trying to use the grub2 in the restored OS...
Running: run_grub2_from_restored_os "/dev/sda1" "/dev/sda"
Re-installing grub2 on disk/partition /dev/sda with grub2 dir in partition /dev/sda1 and root partition /dev/sda1...
The options for grub2-install in the chroot: --force --recheck --no-floppy /dev/sda
Installing for i386-pc platform.
Installation finished. No error reported.
done!
*****
Running: run_ntfsreloc_part -p "sda1" auto
The NTFS boot partition was not found or not among the restored partition(s). Skip running partclone.ntfsfixboot.
*****
End of restoreparts job for image xenial-x64-20170924.
End of restoredisk job for image xenial-x64-20170924.
*****
*****
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!
Now syncing - flush filesystem buffers...
Ending /usr/sbin/ocs-sr at 2017-09-24 05:37:22 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...

```

Then you can choose to:



Here we choose Poweroff, then when the shutdown process is done, it will ask you to remove the disk and close the tray (if any) then press ENTER if you boot Clonezilla live from CD. If you boot Clonezilla live from USB flash drive, then there is no such prompt.



That's all. The 1st disk (sda) is ready to be used.