

Save disk image

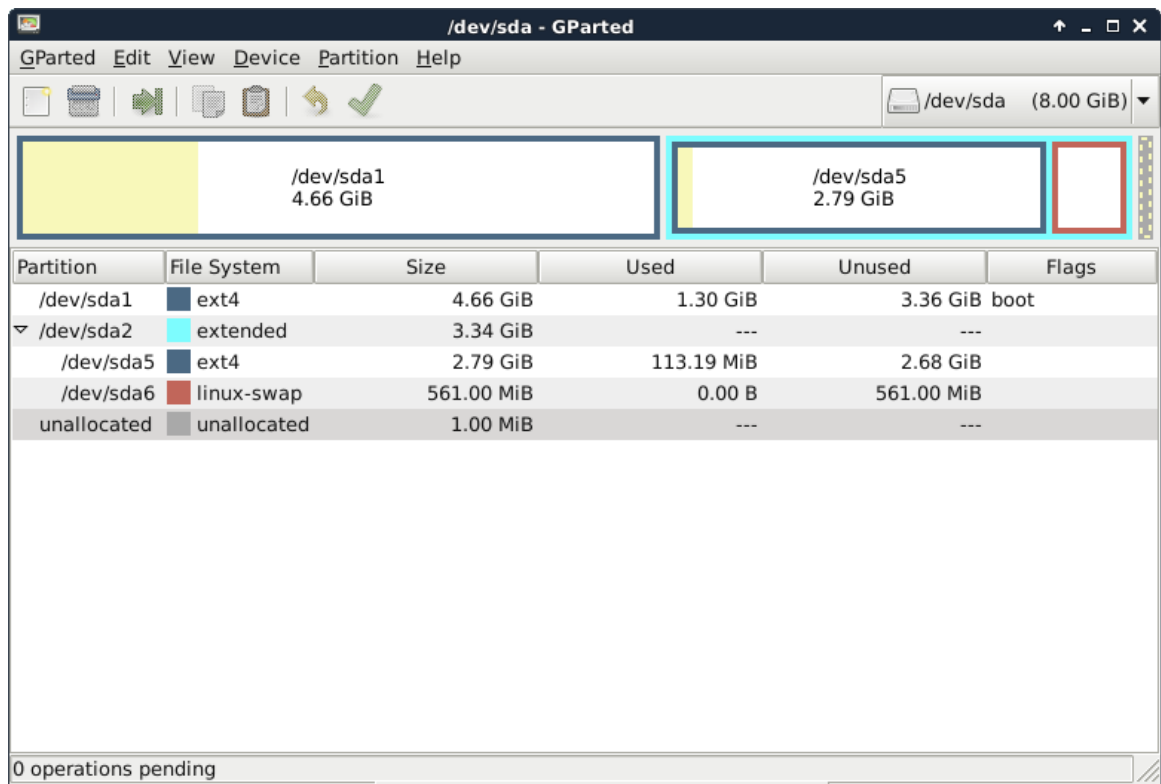
In this example: Save 1st disk (sda) as an image on 2nd disk (sdb) (Step by step)

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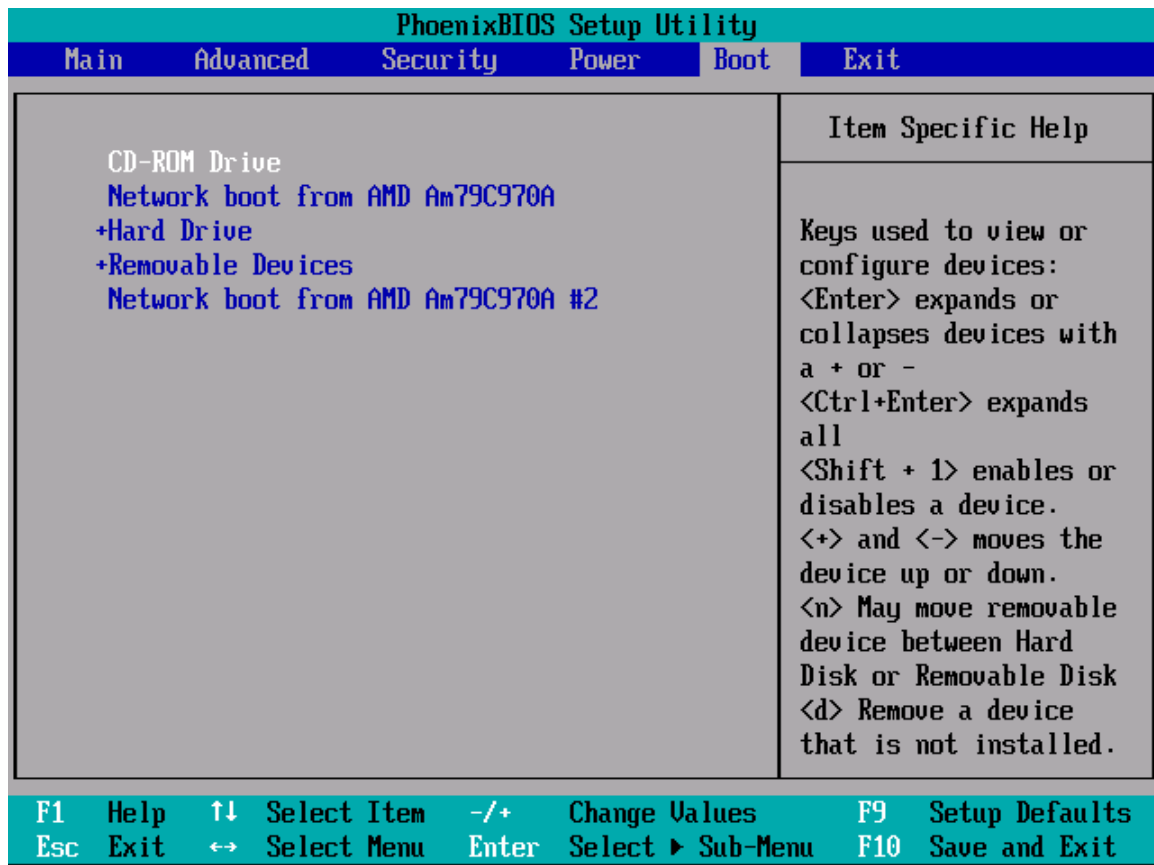
[\[Back to 'Clonezilla Live Doc'\]](#)

- [Boot the machine via Clonezilla live](#) [^TOP^](#)

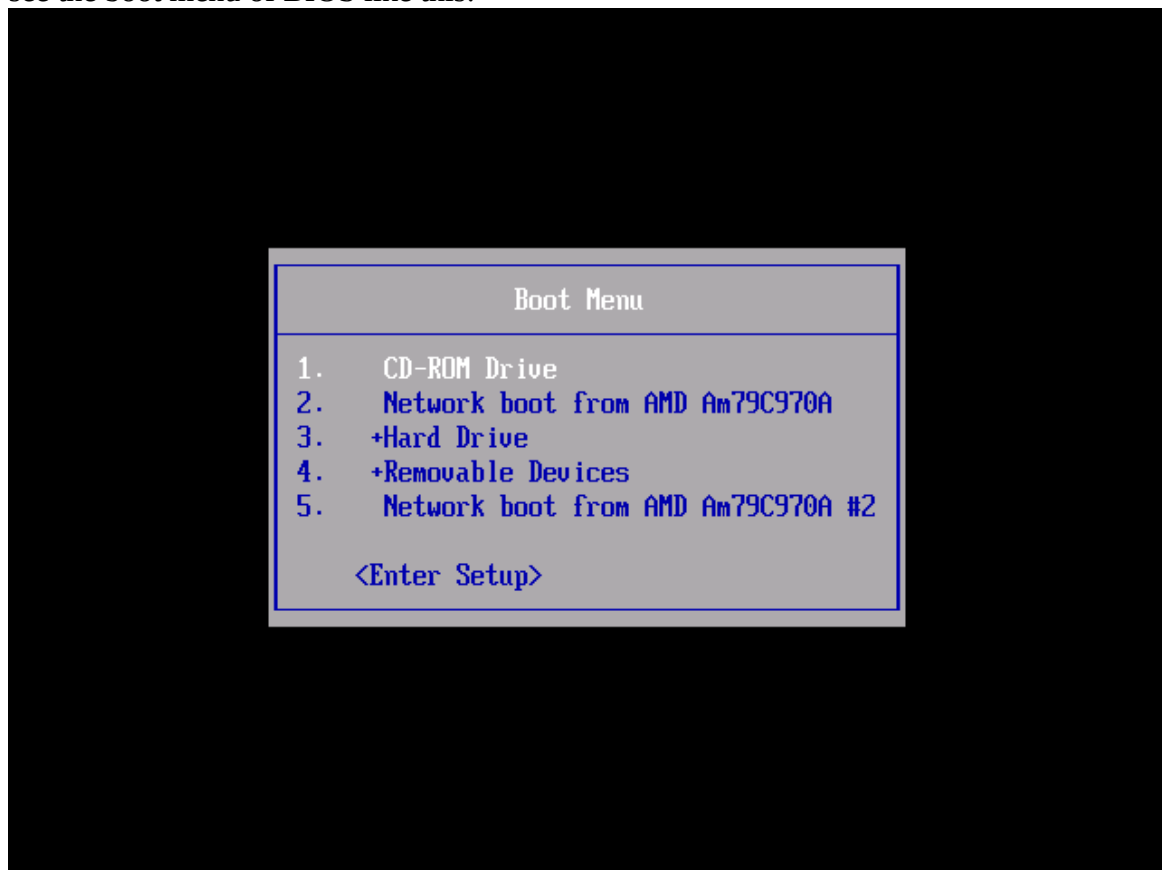
In this example, the machine has 2 disks, 1st disk's name is sda (device name in GNU/Linux), 2nd disk's device name is sdb. The size of disk sda is 8 GB with Ubuntu Utopic (14.10) installed. There are 4 partitions (sda1, sda2, sda5, and sda6) on disk sda as shown in the following:



Once you have the bootable Clonezilla Live CD/DVD or USB flash drive, you can boot the machine you want to clone via Clonezilla live. **Remember to use the Clonezilla live CD or USB flash drive to boot the machine.** For example, if you have Clonezilla Live in USB flash drive, you have to boot it via USB device (Ex. USB-HDD or USB-ZIP). If necessary, you can set the first boot priority in the BIOS as USB-HDD or USB-ZIP so that it can boot Clonezilla Live from your USB flash drive. Here we take CD as an example. You can either set CD as first boot priority in machine's BIOS like this:



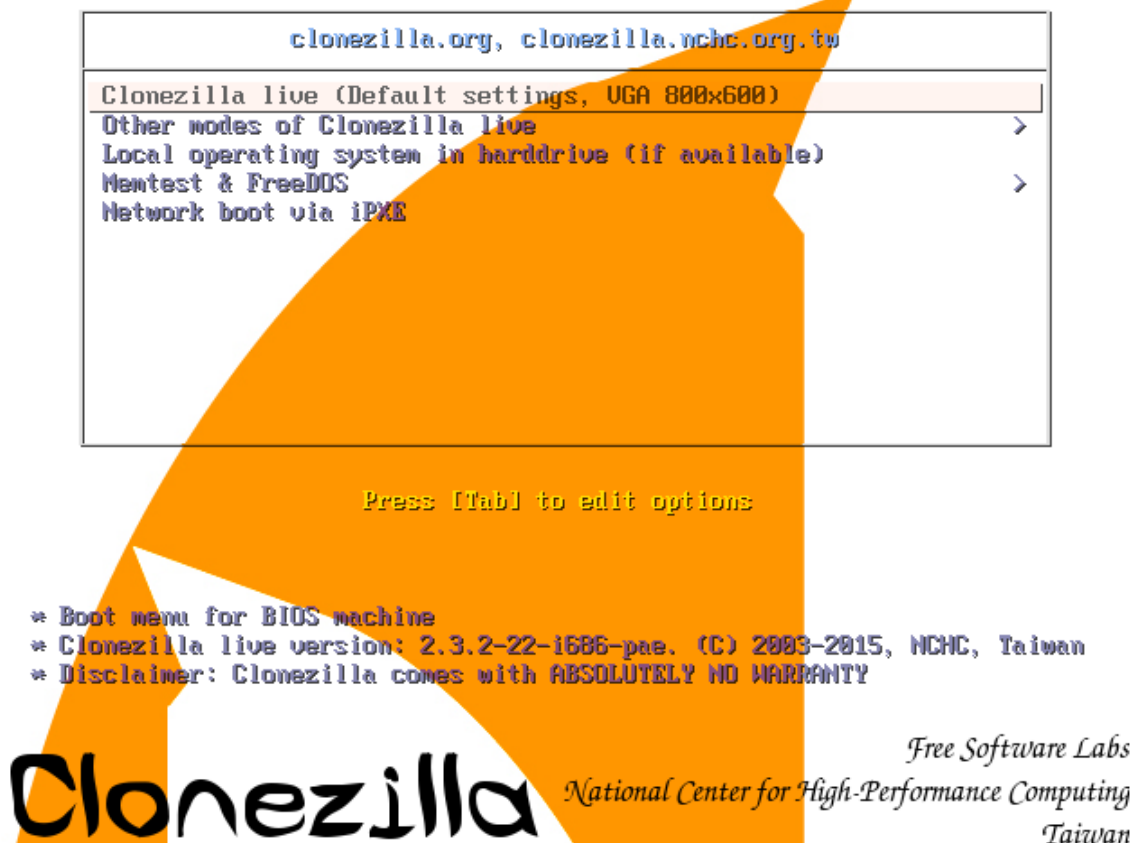
Or by pressing a hotkey (e.g. Esc, F9 or maybe F12) when you boot the machine, you will see the boot menu of BIOS like this:



Check your motherboard manual for more details about how to boot your machine via CD.

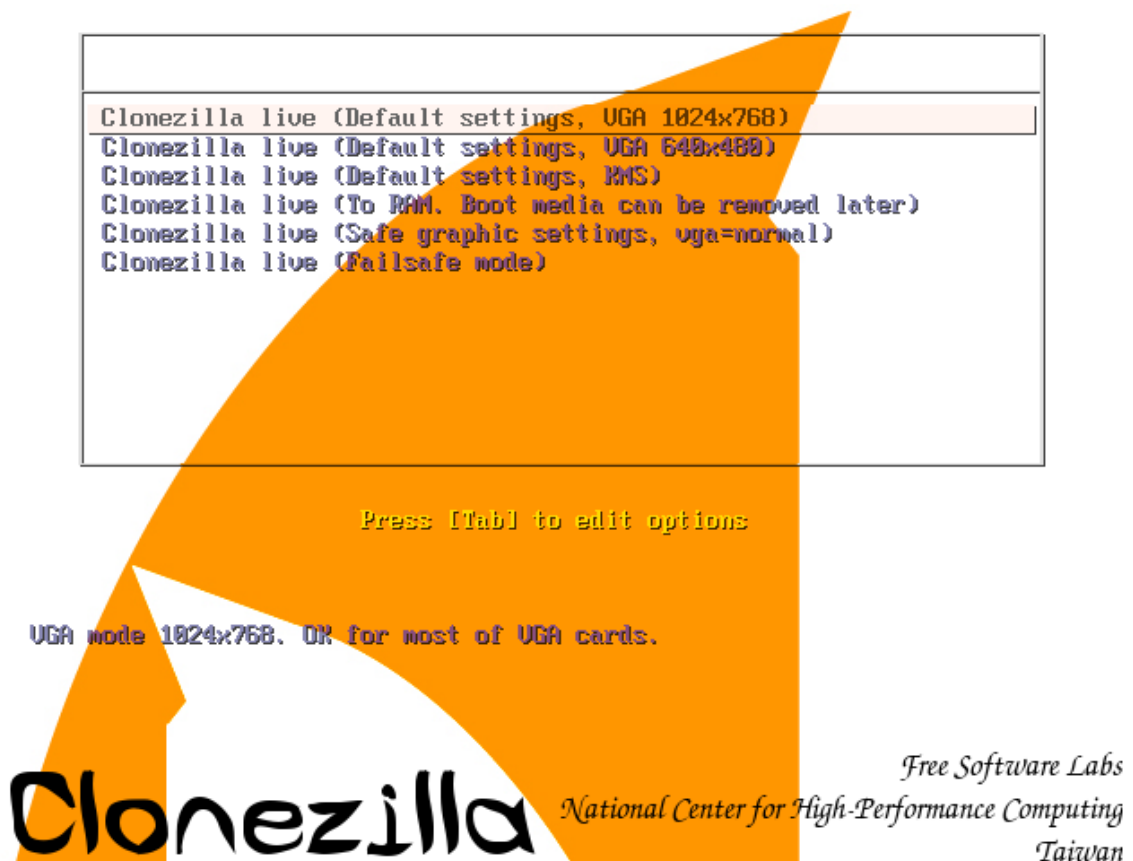
- [The boot menu of Clonezilla live](#) [^TOP^](#)

Here is a screenshot of Clonezilla Live boot menu:



The first one is the default mode for Clonezilla Live. It will default to framebuffer mode with a resolution of 800x600.

There are more modes which you can choose in the 2nd choice "Other modes of Clonezilla live", e.g. 1024X768 or 640x480 one if you want, as shown here:



The choice, "Default settings, KMS" is for you to use [KMS \(Kernel Mode Setting\)](#) for your graphics card. If you have some problem to use the framebuffer mode of your graphics card, you can try it.

The choice, "Clonezilla live (To RAM. Boot media can be removed later)", is the same function with the 1st one except when Clonezilla live booting finishes, all the necessary files are copied to memory. Therefore you can remove the boot media (CD or USB flash drive) then.

If you do not need Chinese or Japanese environment or if your computer experiences problems in the framebuffer mode, you can choose the one "Clonezilla Live (no framebuffer)" to clone in the English environment.

The choice, "Clonezilla live (failsafe mode)", is for something goes wrong when you are not be able to boot your machine, such as ACPI of your machine is not supported in the kernel.

If you want to boot local OS in your harddrive, you can choose the one "Local operating system in harddrive (if available)". This is an extra function in the boot media that has nothing to do with Clonezilla Live.

The choice, "FreeDOS", allows you to boot your machine into [Free DOS](#). This is an extra function in the boot media that has nothing to do with Clonezilla Live.

The choice, "Memory test using Memtest86+," is for memory testing using [Memtest86+](#). This is an extra function in the boot media that has nothing to do with Clonezilla Live.

The choice, "Network boot via iPXE" is used to perform a network boot via [iPXE](#). If your computer does not have a PXE network, you can use this to do boot from a network. This is an extra function in the boot media that has nothing to do with Clonezilla Live.

- Here we choose 800x600 mode, after pressing Enter, you will see Debian Linux booting process

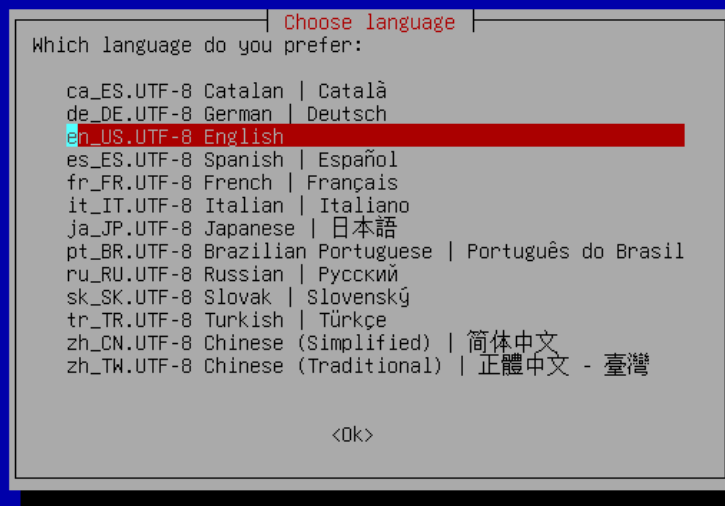
```

Loading, please wait...
[ 6.806227] sd 32:0:2:0: [sdb] Assuming drive cache: write through
[ 6.806231] sd 32:0:0:0: [sda] Assuming drive cache: write through
modprobe: module dm-raid45 not found in modules.dep
INIT: version 2.88 booting
[info] Using makefile-style concurrent boot in runlevel S.
live-config: debconf hostname user-setup sudo locales tzdata keyboard-configurat
util-linux login openssh-server End of live-config jobs.
[ ok ] Starting the hotplug events dispatcher: udevd.
[ ok ] Synthesizing the initial hotplug events...done.
[....] Waiting for /dev to be fully populated...[ 12.143327] piix4_smbus 0000:
Controller not enabled!
[ 12.516248] intel_rapl: no valid rapl domains found in package 0
[ 12.552430] intel_rapl: no valid rapl domains found in package 0
[ 12.588468] intel_rapl: no valid rapl domains found in package 0
done.
[ ok ] Assembling MD arrays...done (no arrays found in config file or automatically).
[ ok ] Setting parameters of disc: (none).
[....] Setting preliminary keymap..._

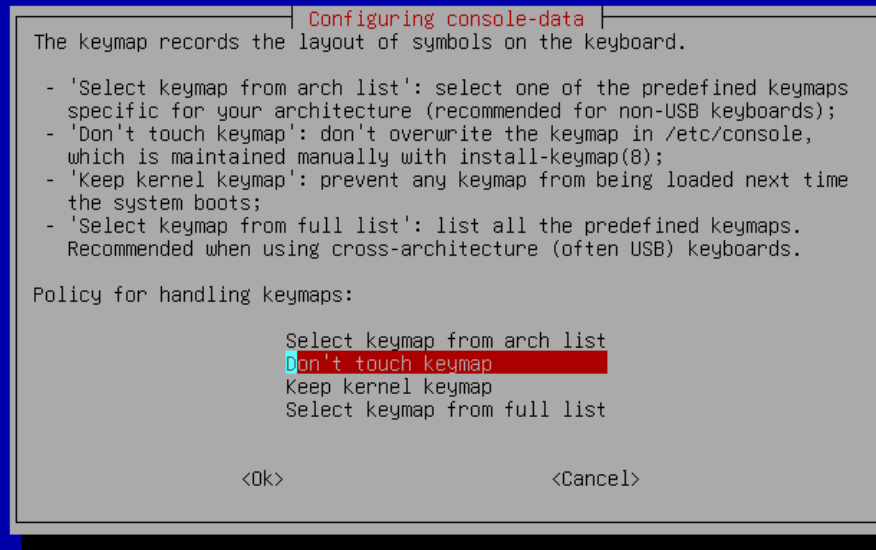
```

- Choose language [^TOP^](#)

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- Choose keyboard layout [^TOP^](#)

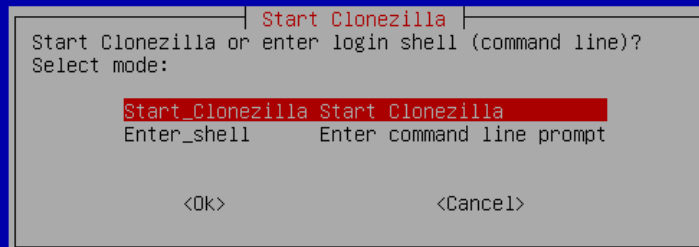


The default keyboard layout is US keyboard, therefore if you are using US keyboard, just press enter (i.e. use the option "Don't touch keymap").

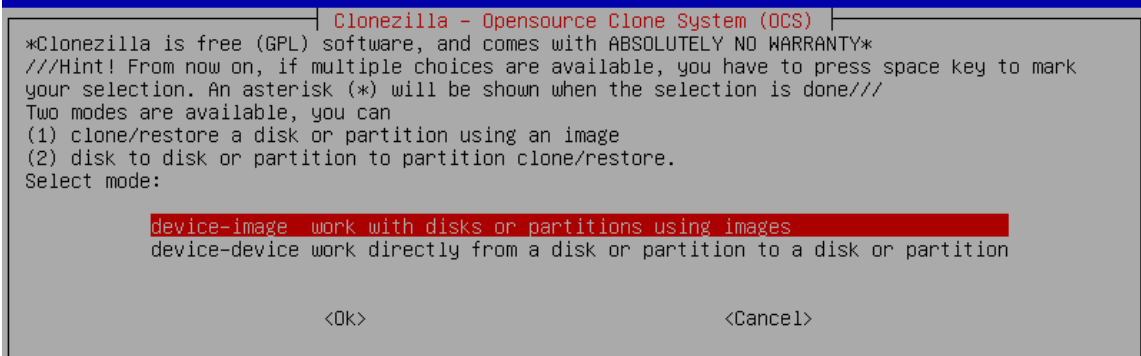
If you want to change keymap, you can either choose "Select keymap from arch list" or "Select keymap from full list".

///**NOTE**///
There is a bug when choosing French keymap in "Select keymap from arch list", so use "Select keymap from full list" to change keymap if you are using French keyboard.

- Choose "Start Clonezilla" [^TOP^](#)



- Choose "device-image" option [^TOP^](#)

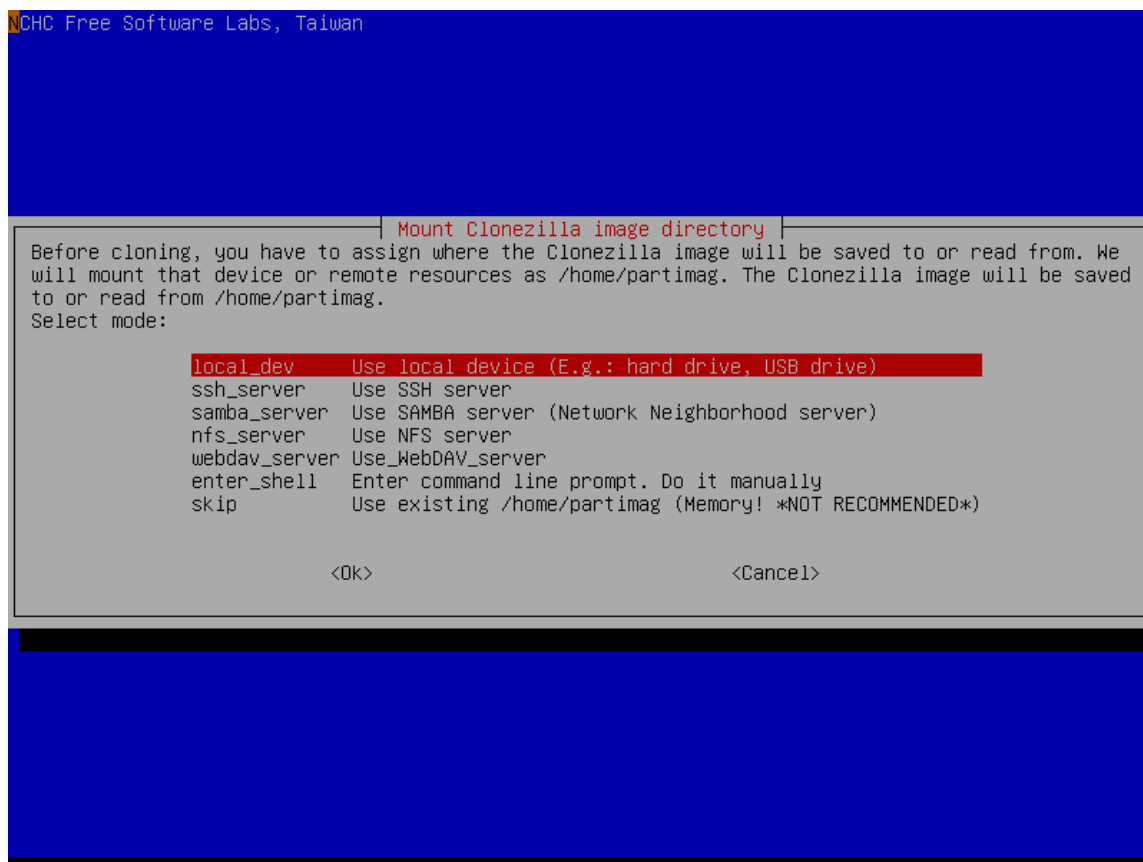



Pay attention to the hints, too. You might need that:

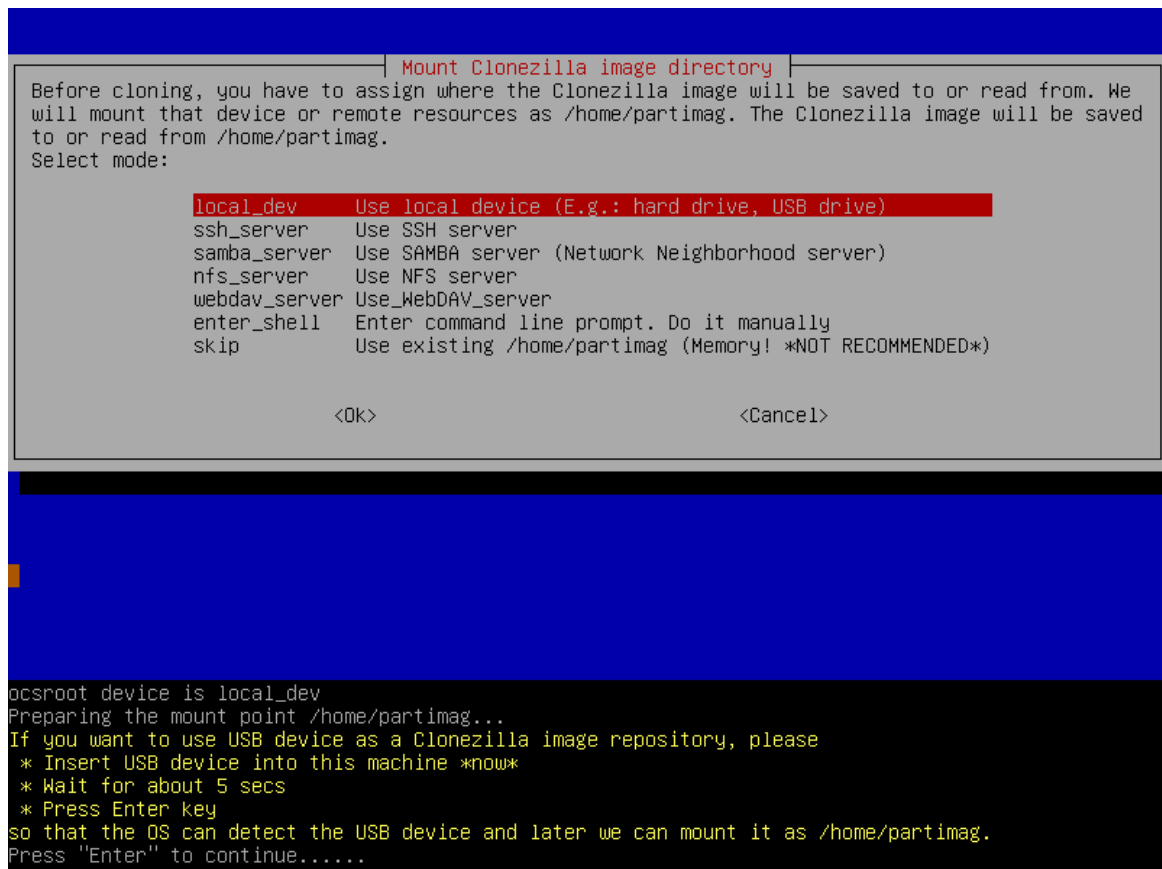
///Hint! From now on, if multiple choices are available, you have to press space key to

mark your selection. A star sign (*) will be shown when the selection is done///

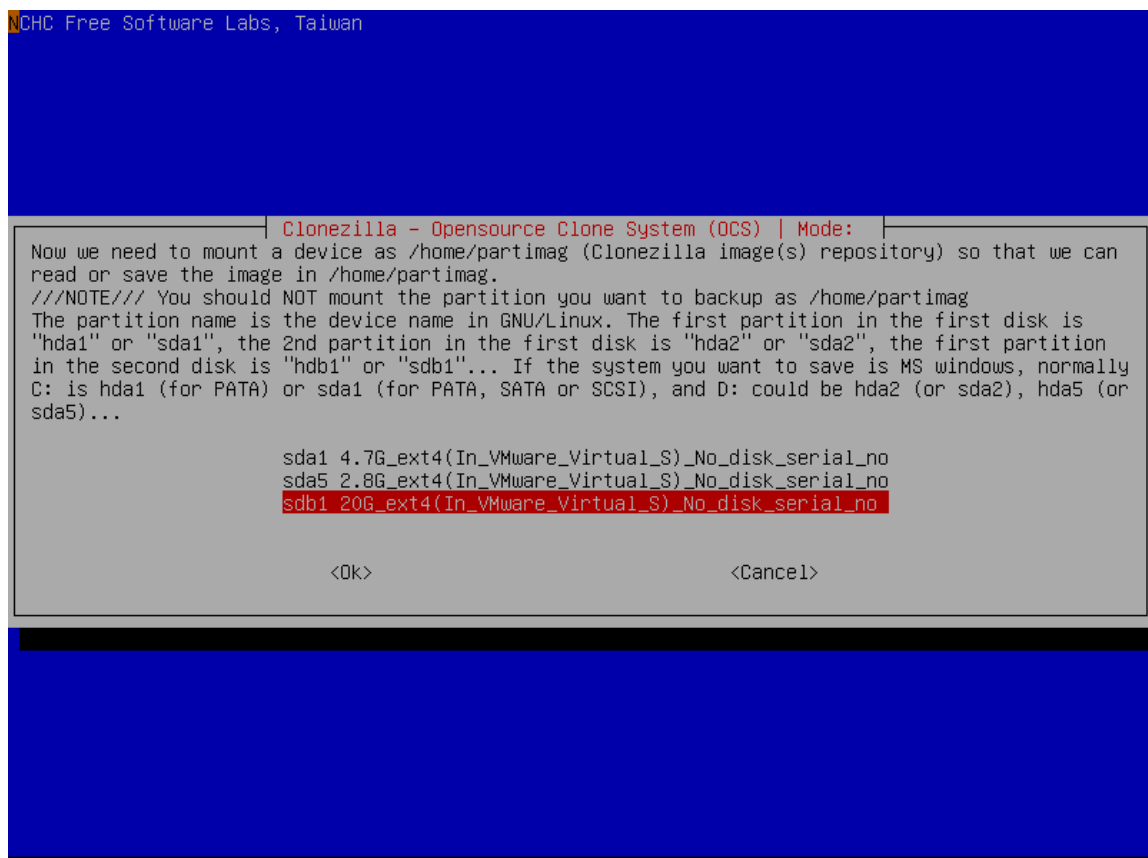
- Choose "local_dev" option to assign sdb1 as the image home [^TOP^](#)



There are other options, e.g. sshfs, samba, nfs or [webdav](#) , you can use when network is available. This is very useful when 2nd local disk is not available. Since we choose "local_dev" option, we can use 2nd disk or USB flash drive to save 1st disk's image. If using USB flash drive as repository, insert USB flash drive and wait a few secs.

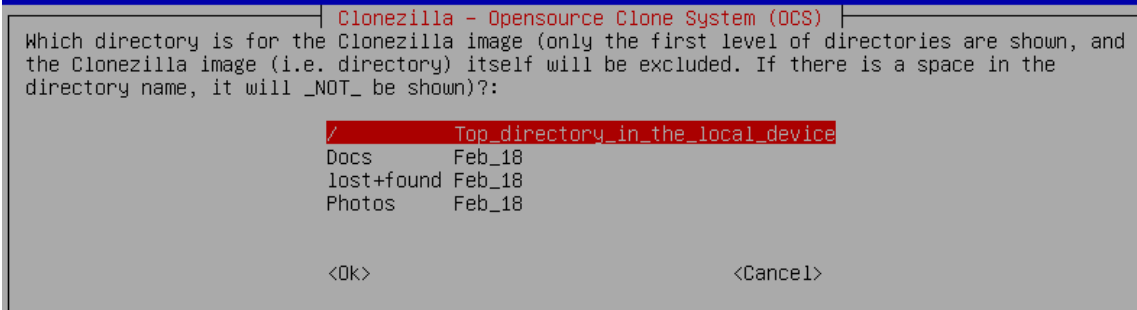


- Select sdb1 as image repository, then choose "savedisk" option [^TOP^](#)



Choose the directory name on /dev/sdb1 as the image repository. Here we put image on the top directory:

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If you are not familiar with the disk or partition name in GNU/Linux, read the hints:

"The partition name is the device name in GNU/Linux. The first partition in the first disk is "sda1", the 2nd partition in the first disk is "sda2", the first partition in the second disk is "sdb1" or "sdb1"... If the system you want to save is MS windows, normally C: is sda1, and D: could be sda2, or sda5..."

Then Clonezilla shows you the disk usage report:

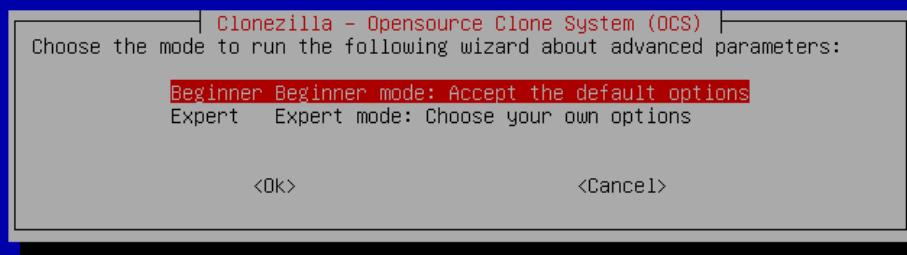
```

The file system disk space usage
*****
Filesystem      Size  Used Avail Use% Mounted on
rootfs          -    -    -    - /
sysfs           0      0      0    - /sys
proc           0      0      0    - /proc
tmpfs          203M  456K  202M   1% /run
/dev/sr0       163M  163M      0 100% /lib/live/mount/medium
/dev/loop0     127M  127M      0 100% /lib/live/mount/rootfs/filesystem.squashfs
tmpfs          1011M      0 1011M   0% /lib/live/mount/overlay
tmpfs          1011M      0 1011M   0% /lib/live/mount/overlay
aufs          1011M  7.7M 1004M   1% /
tmpfs          5.0M      0 5.0M   0% /run/lock
pstore         0      0      0    - /sys/fs/pstore
devtmpfs       10M      0  10M   0% /dev
tmpfs          405M      0 405M   0% /run/shm
devpts         0      0      0    - /dev/pts
fusectl        0      0      0    - /sys/fs/fuse/connections
tmpfs          1011M      0 1011M   0% /tmp
rpc_pipefs     0      0      0    - /run/rpc_pipefs
/dev/sdb1      20G   44M   19G   1% /tmp/local-dev
/dev/sdb1      20G   44M   19G   1% /home/partimag
*****
Press "Enter" to continue.....

```

Here we choose "Beginner" mode:

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Now we can select "savedisk" option:

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Clonezilla - Opensource Clone System (OCS): Select mode

Clonezilla is free (GPL) software, and comes with ABSOLUTELY NO WARRANTY
This software will overwrite the data on your hard drive when restoring! It is recommended to
backup important files before restoring!***
///Hint! From now on, if multiple choices are available, you have to press space key to mark
your selection. An asterisk (*) will be shown when the selection is done///

savedisk Save local disk as an image
saveparts Save local partitions as an image
exit Exit. Enter command line prompt

<Ok>

<Cancel>

If you choose "Expert" mode, you will have some chances to choose advanced parameters, e.g. imaging program, compression program, etc.. You can see more details [here](#).

- [Input image name and select source disk](#) [^TOP^](#)

Enter the image name, Clonezilla will give an image name based on date and time, feel free to change it

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Clonezilla - Opensource Clone System (OCS) | Mode: savedisk
Input a name for the saved image to use

utopic-x86-20150218

<Ok> <Cancel>

Select the source disk "sda" we want to save:

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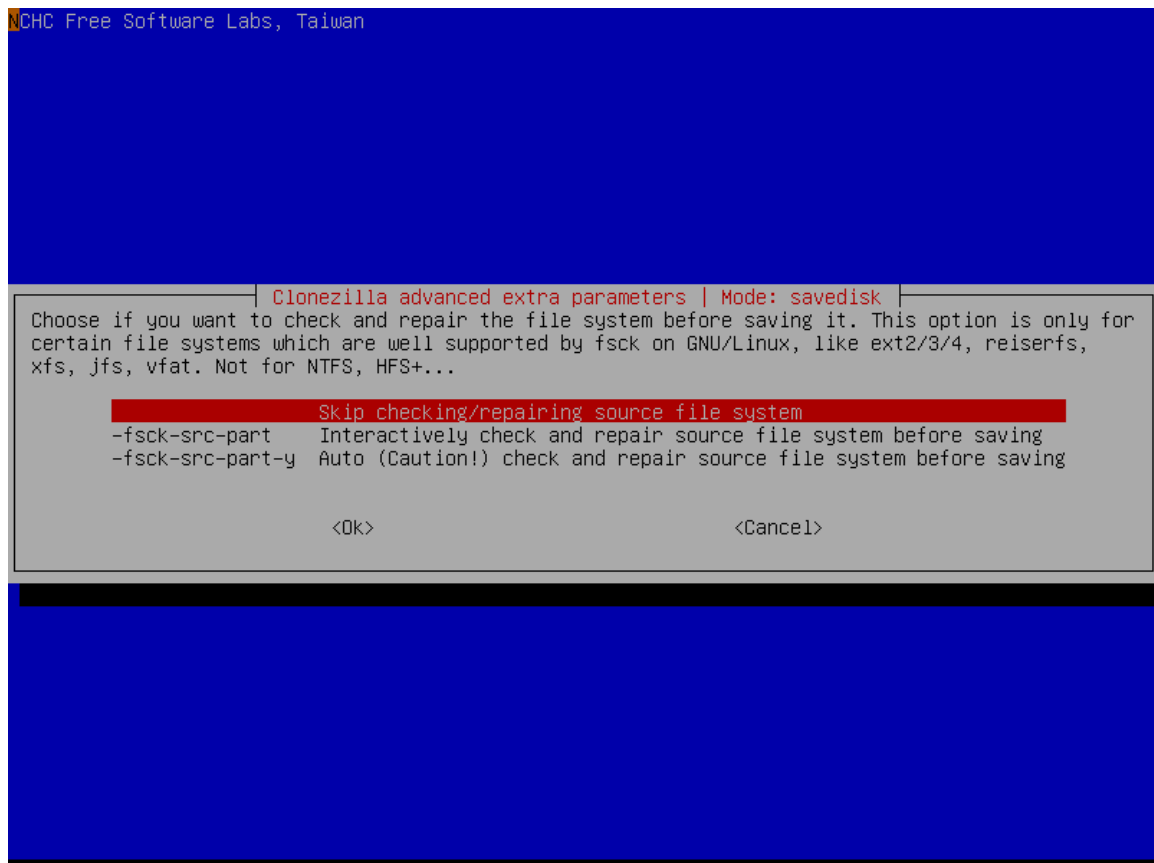
Clonezilla - Opensource Clone System (OCS) | Mode: savedisk

Choose local disk as source.
The disk name is the device name in GNU/Linux. The first disk in the system is "hda" or "sda", the 2nd disk is "hdb" or "sdb"... Press space key to mark your selection. An asterisk (*) will be shown when the selection is done

[*] sda 8590MB_VMware_Virtual_S_No_disk_serial_no

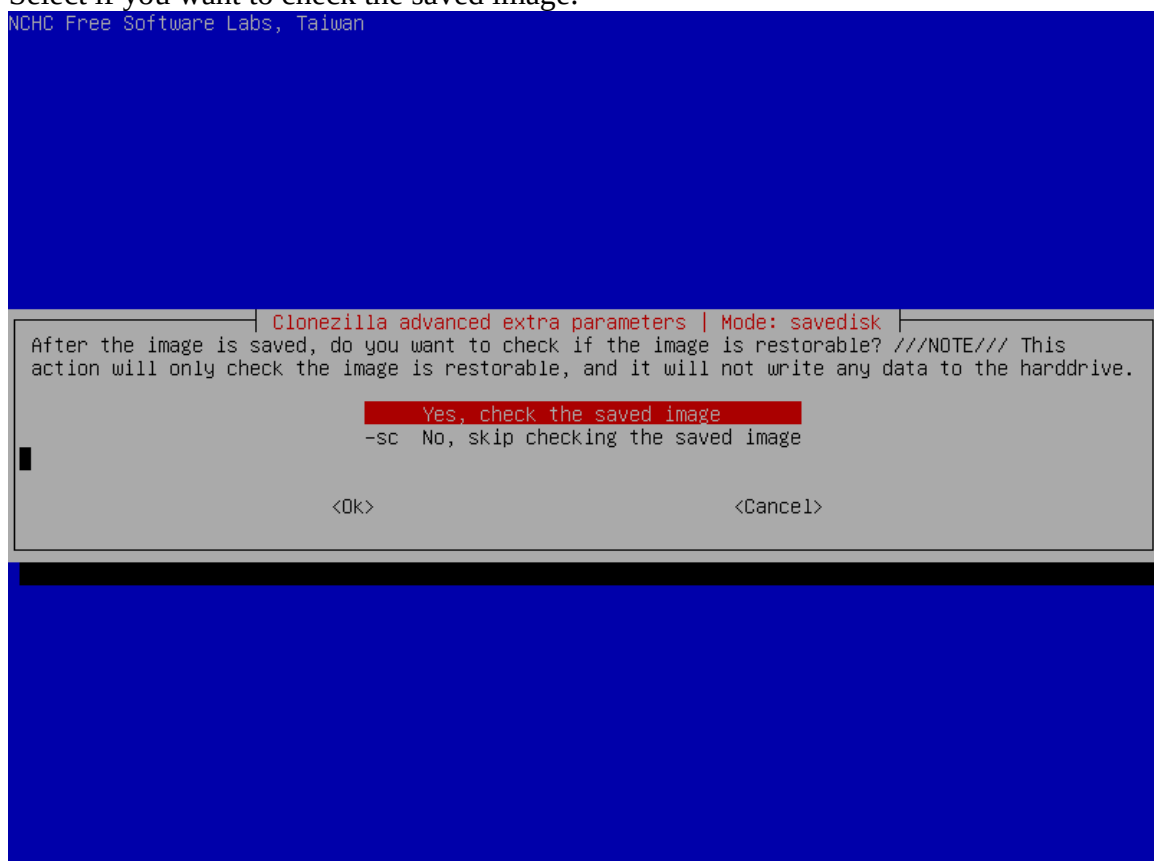
<Ok> <Cancel>

Select if the source file system need to be checked or not:



Here we skip the file system check. However, if you are not sure if the source file system is clean, it's recommended to do such a check.

Select if you want to check the saved image:

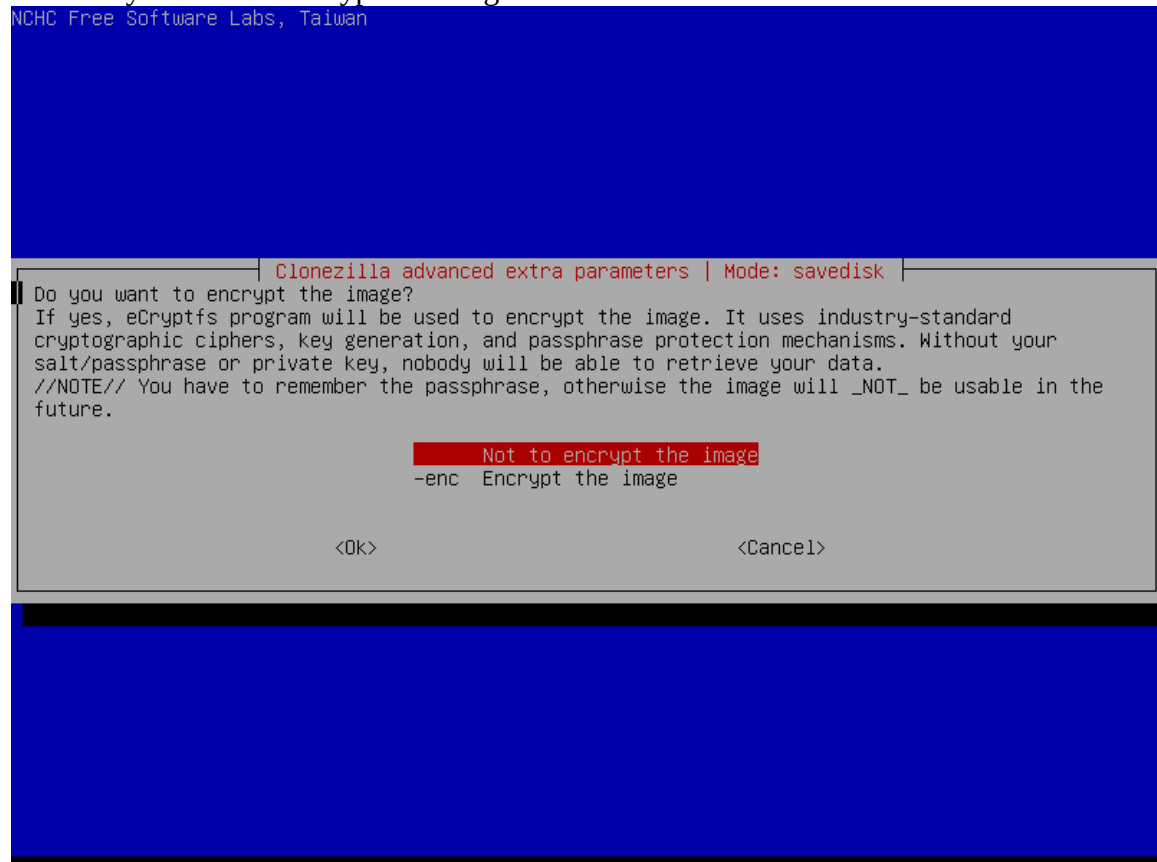


By default this will be done. It's recommended to do such a check.

Select if you want to encrypt the image:



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By default the image won't be encrypted. If you want to encrypt the image, it will prompt you to enter a passphrase for the image. **//NOTE// You have to remember the passphrase otherwise the image will _NOT_ be useable in the future. There is no back door to decrypt the image.**

Clonezilla will prompt us the command to save the image. This command is very useful when you want to create a customized Clonezilla live:


```
Clonezilla advanced extra parameters | Mode: savedisk |
Do you want to encrypt the image?
If yes, eCryptfs program will be used to encrypt the image. It uses industry-standard
cryptographic ciphers, key generation, and passphrase protection mechanisms. Without your
salt/passphrase or private key, nobody will be able to retrieve your data.
//NOTE// You have to remember the passphrase, otherwise the image will _NOT_ be usable in the
future.

    Not to encrypt the image
    -enc Encrypt the image

    <Ok>                                <Cancel>

*****
PS. Next time you can run this command directly:
/usr/sbin/ocs-sr -q2 -c -j2 -zip -i 4096 -p true savedisk utopic-x86-20150218 sda
This command is also saved as this file name for later use if necessary: /tmp/ocs-utopic-x86-2015021
8-2015-02-18-04-14
*****
Press "Enter" to continue... _
```

Before starting to save the disk image, we still have a chance to say no:

```
*****
PS. Next time you can run this command directly:
/usr/sbin/ocs-sr -q2 -c -j2 -zip -i 4096 -p true savedisk utopic-x86-20150218 sda
This command is also saved as this file name for later use if necessary: /tmp/ocs-utopic-x86-2015021
8-2015-02-18-04-14
*****
Press "Enter" to continue...
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 sda6
Collecting info..... done!
Searching for swap partition(s)...
Excluding busy partition or disk...
Unmounted partitions (including extended or swap): sda1 sda2 sda5 sda6
Collecting info..... done!
The data partition to be saved: sda1 sda5
The swap partition to be saved: sda6
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 (8590MB_VMWare_Virtual_S_No_disk_serial_no)
sda1 (4.7G_ext4(In_VMWare_Virtual_S)_No_disk_serial_no)
sda5 (2.8G_ext4(In_VMWare_Virtual_S)_No_disk_serial_no)
*****
-> "/home/partimag/utopic-x86-20150218".
Are you sure you want to continue? (y/n) y
```

- Clonezilla is saving disk image (sda) to the partition of 2nd disk (sdb1) [^TOP^](#)


Clonezilla now is saving disk sda as an image. The job is done by saving:


- MBR (by dd)
- Partition table (by sfdisk and parted), CHS of disk.
- Data on every partition or LV (logical volume) (by partimage, ntfscclone, partclone or dd. It depends on the "-q" option you choose)

```

Partclone v0.2.76 http://partclone.org
Starting to clone device (/dev/sda1) to image (-)
Reading Super Block
Calculating bitmap... Please wait... done!
File system:  EXTFS
Device size:   5.0 GB = 1220352 Blocks
Space in use:  1.4 GB = 339715 Blocks
Free Space:    3.6 GB = 880637 Blocks
Block size:    4096 Byte

Elapsed: 00:00:02 Remaining: 00:00:11   Rate:    6.20GB/min
Current Block: 103936   Total Block: 1220352

Data Block Process:
 14.84%

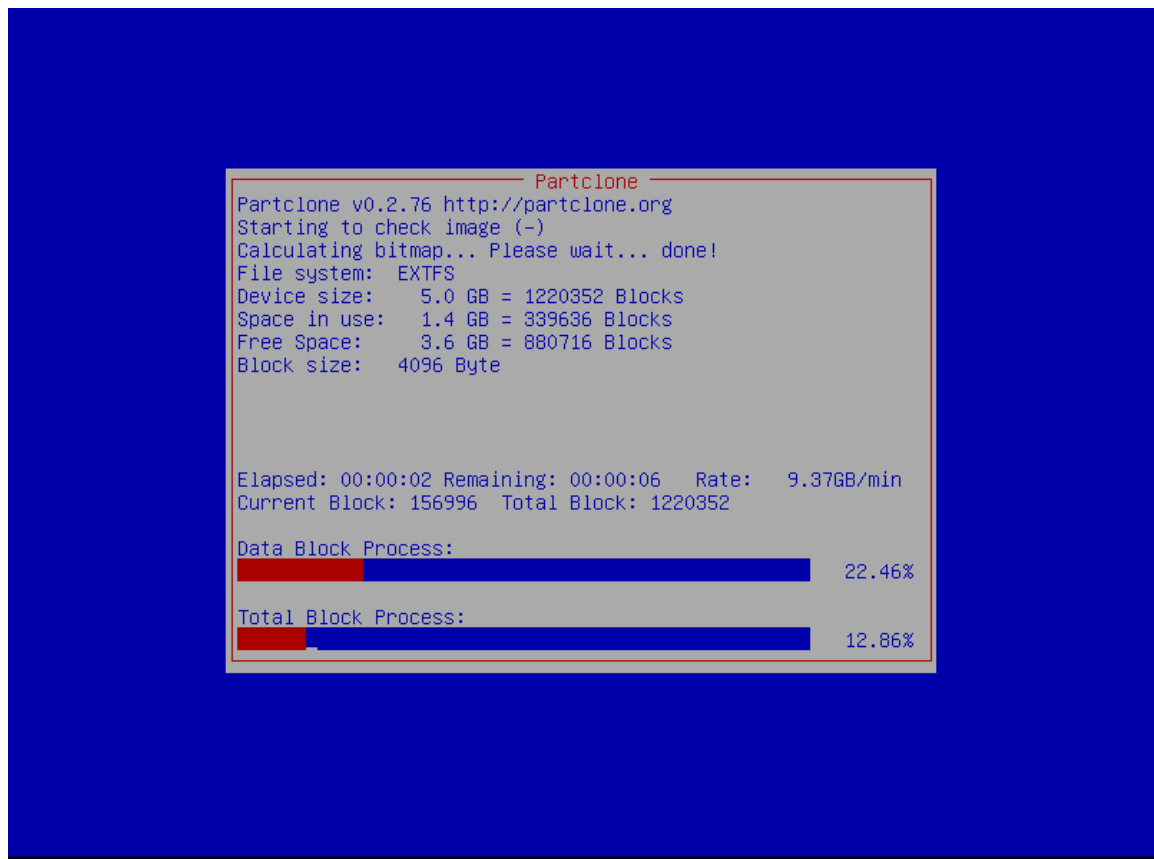
Total Block Process:
 8.52%

```

```
- Partclone -  
Partclone v0.2.76 http://partclone.org  
Starting to clone device (/dev/sda1) to image (-)  
Reading Super Block  
Calculating bitmap... Please wait... done!  
File system: EXTFS  
Device size:    5.0 GB = 1220352 Blocks  
Space in use:   1.4 GB = 339715 Blocks  
Free Space:     3.6 GB = 880637 Blocks  
Block size:    4096 Byte  
  
Total Time: 00:00:12 Remaining: 00:00:00  
Ave. Rate:    6.95GB/min  
  
Data Block Process:  
██████████████████████████████████████████ 100.00%  
  
Total Block Process:  
██████████████████████████████████████████ 100.00%
```

```
- Partclone -  
Partclone v0.2.76 http://partclone.org  
Starting to clone device (/dev/sda5) to image (-)  
Reading Super Block  
Calculating bitmap... Please wait... done!  
File system: EXTFS  
Device size:    3.0 GB = 732160 Blocks  
Space in use: 118.7 MB = 28976 Blocks  
Free Space:     2.9 GB = 703184 Blocks  
Block size:    4096 Byte  
  
Total Time: 00:00:02 Remaining: 00:00:00  
Ave. Rate:   3.47GB/min  
  
Data Block Process:  
███████████████████████████████████████████████████ 100.00%  
  
Total Block Process:  
███████████████████████████████████████████████████ 100.00%
```

Once the image is saved, since we have choosed to check the saved image, Clonezilla will do such a check:



When everything is done, Clonezilla will prompt you if you want to run it again,

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

```

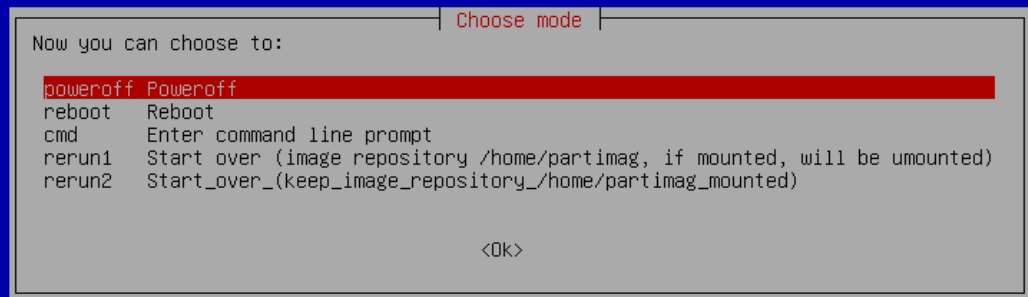
Checked successfully.
The image of this partition is restorable: sda5
*****
All the images of partition or LV devices in this image were checked and they are restorable: utopic
-x86-20150218
Summary of image checking:
=====
Partition table file for disk was found: sda
MBR file for this disk was found: sda
The image of this partition is restorable: sda1
The image of this partition is restorable: sda5
All the images of partition or LV devices in this image were checked and they are restorable: utopic
-x86-20150218
=====
*****
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 2015-02-18 04:19:11 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:

- Poweroff
- Reboot
- Enter command line prompt
- Start over (image repository /home/partimag, if mounted, will be umounted)
- Start over (keep image repository /home/partimag mounted)



Here we choose Poweroff (0), then when the shutdown process is done, it will ask you to remove the disk and close the try (if any) then press ENTER.

```
The next step: poweroff
Trying to unmount /home/partimag... done!
Trying to unmount /tmp/local-dev... done!
Will poweroff... 5 4 3 2 1
Broadcast message from root@debian (tty1) (Wed Feb 18 04:20:52 2015):

The system is going down for system halt NOW!
INIT: Sending processes the TERM signal
user@debian:~$ [info] Using makefile-style concurrent boot in runlevel 0
[ ok ] Unmounting iscsi-backed filesystems: Unmounting all devices marked
[ ok ] Stopping mouse interface server: gpm.
[ ok ] Asking all remaining processes to terminate...done.
[ ok ] All processes ended within 2 seconds...done.
[ ok ] Stopping enhanced syslogd: rsyslogd.
rpcbind: rpcbind terminating on signal. Restart with "rpcbind -w"
[ ok ] Stopping rpcbind daemon....
[ ok ] Deconfiguring network interfaces...done.
[ ok ] Stopping NFS common utilities: idmapd statd.
[ ok ] Unmounting temporary filesystems...done.
[ ok ] Deactivating swap...done.
[ ok ] Stopping remaining crypto disks...done.
[ ok ] Stopping early crypto disks...done.
live-boot: caching reboot files...

Please remove the disc, close the tray (if any) and press ENTER to conti
```

That's all. We have successfully saved disk image (sda) on 2nd disk (sdb1). The image on the 2nd disk is a directory with name "utopic-x86-20150218" and its contents are: