

Here is the step-wise tutorial on cloning a Centos OS using open source software: CLONEZILLA

In this example, the machine has 1 disk (8 GB), we want to clone it to an external disk (16 GB). This is a normal case when you buy a new disk to replace old disk on your machine. Here since we use virtual machine to give this example, we use small disk size, i.e. 8 GB to 16 GB instead of modern disk size.

Steps:

1. Prepare Clonezilla Live

You can download the iso file from the internet(<http://clonezilla.org/downloads/stable/iso-zip-files.php>) and burn it in a CD/DVD.

2. Boot your Clonezilla via CD/DVD

Set CDROM in your first boot priority using the BIOS settings.

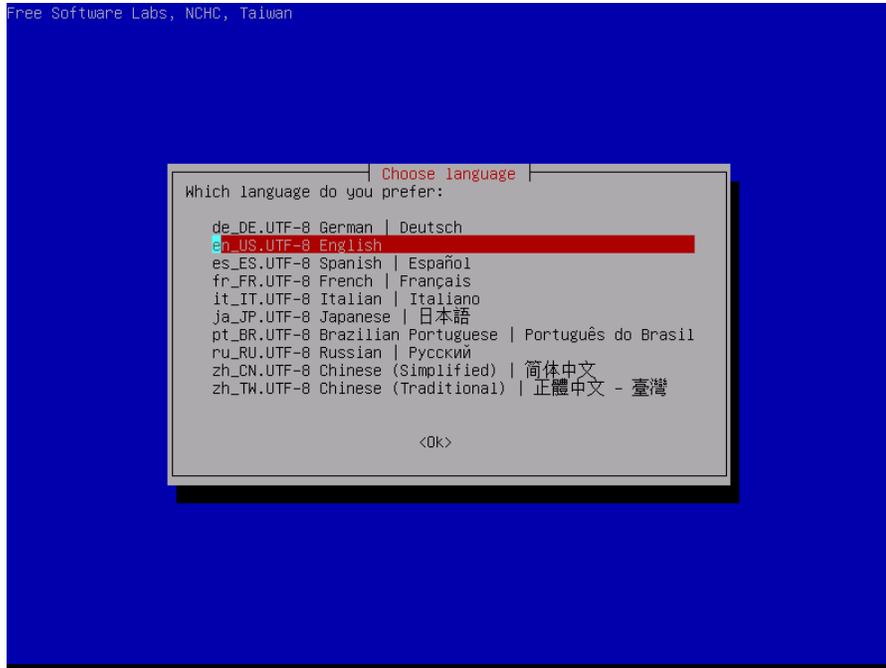
3. After booting Clonezilla Live from CD/DVD, you'll see a screen like this:



4. Now, you'll see a screen like this:

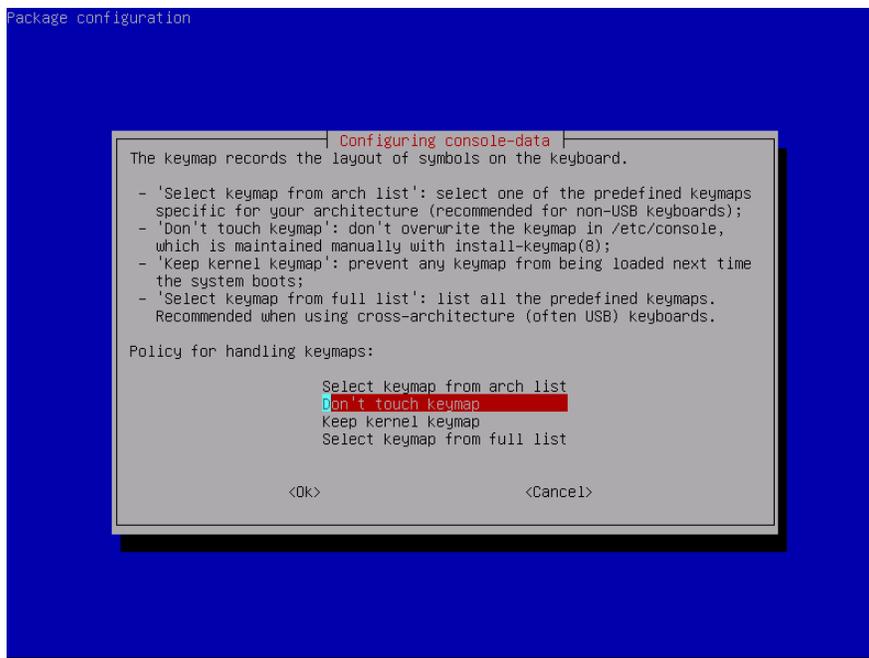


5. After taking few minutes to copy the files to RAM, you'll be given a language selection menu.



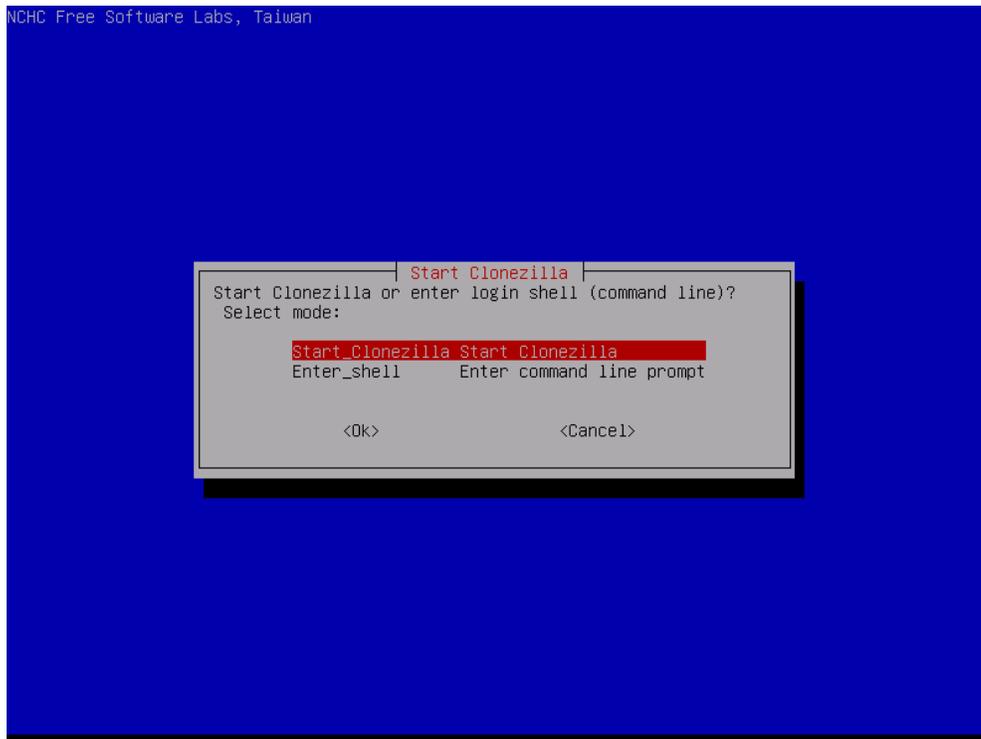
Choose your language in the language menu

6. Then, you'll see a menu for selecting the layout of your keyboard.

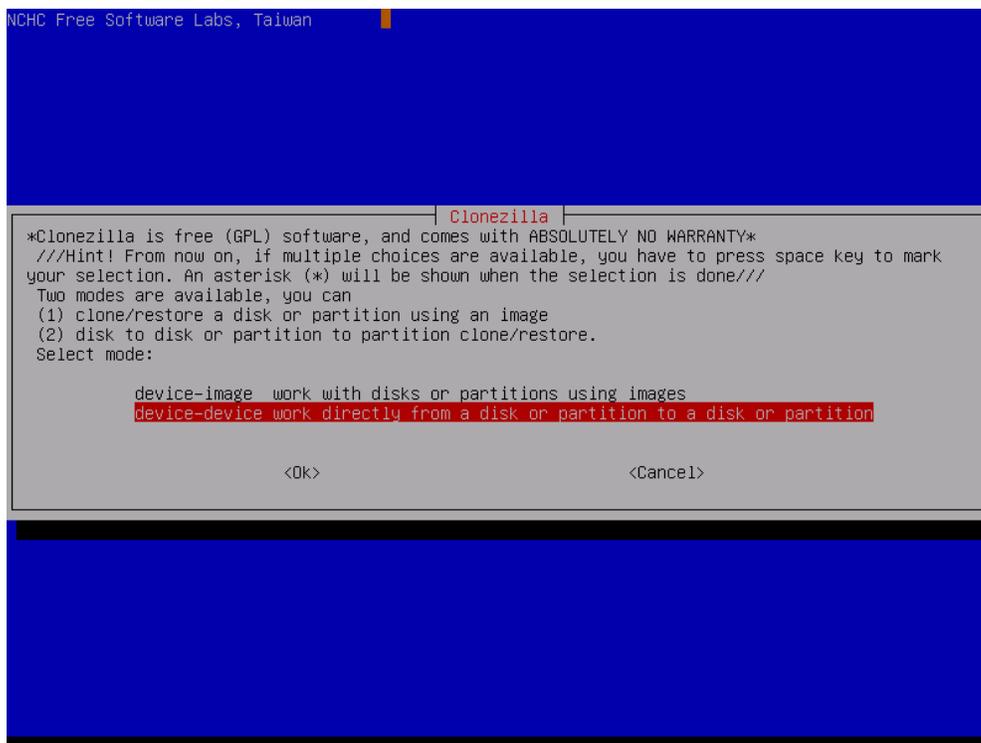


Choose Keyboard layout. Select default i.e; Don't touch keymap if you don't know.

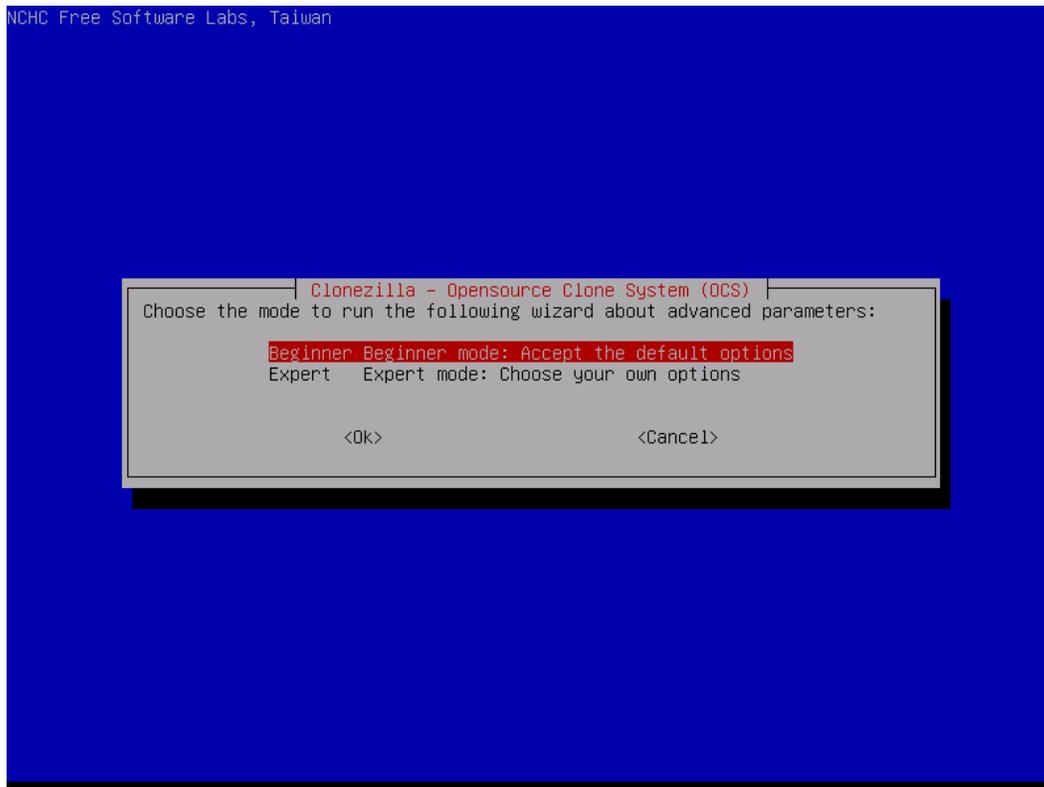
7. Then, choose "Start Clonezilla" in the following menu as:



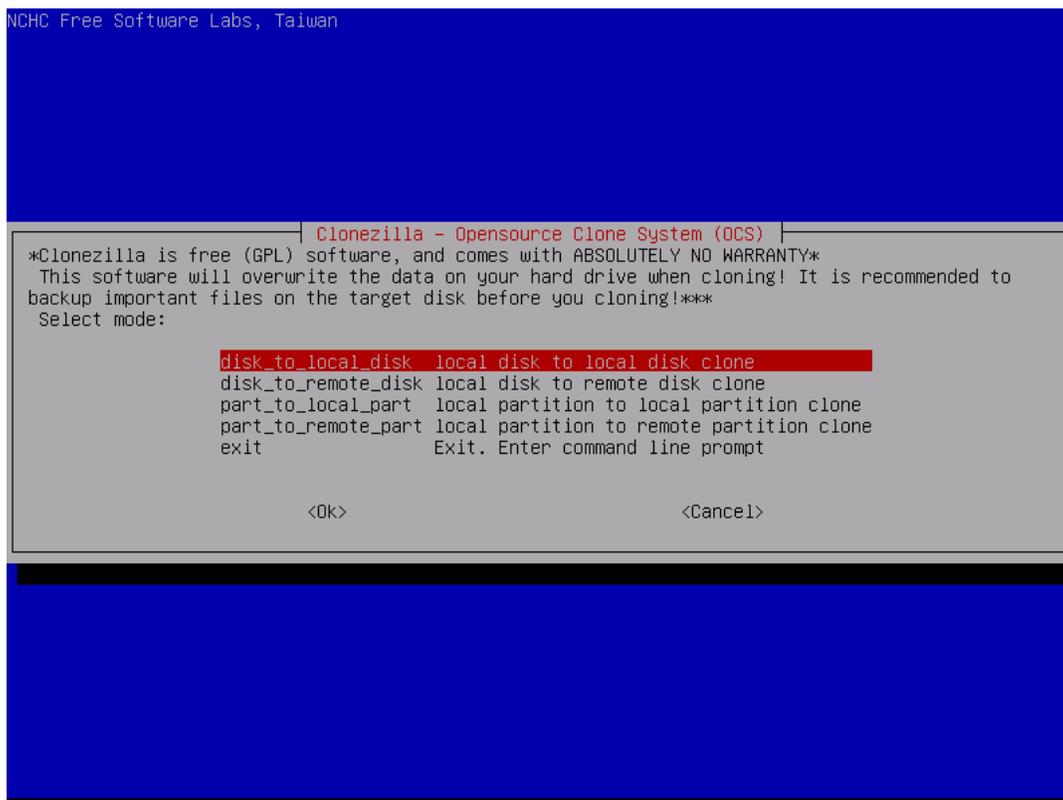
8. Choose "device-device....." Option in the following menu



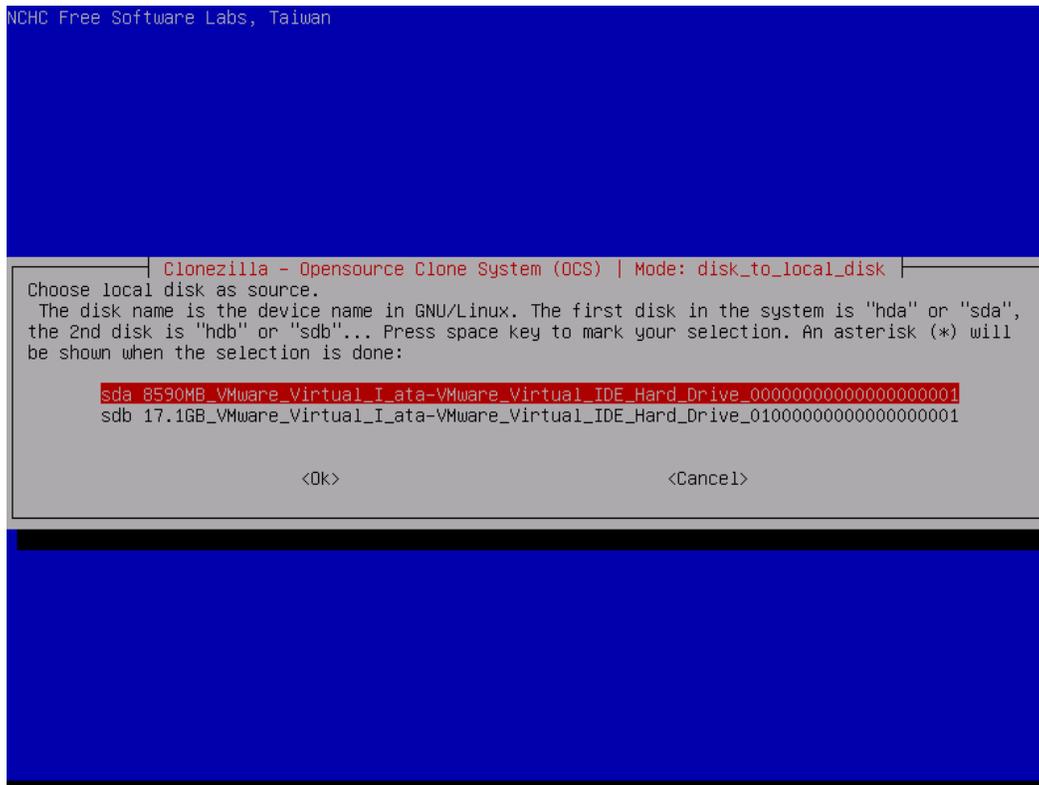
9. Then, choose "Beginner" option in the following menu.



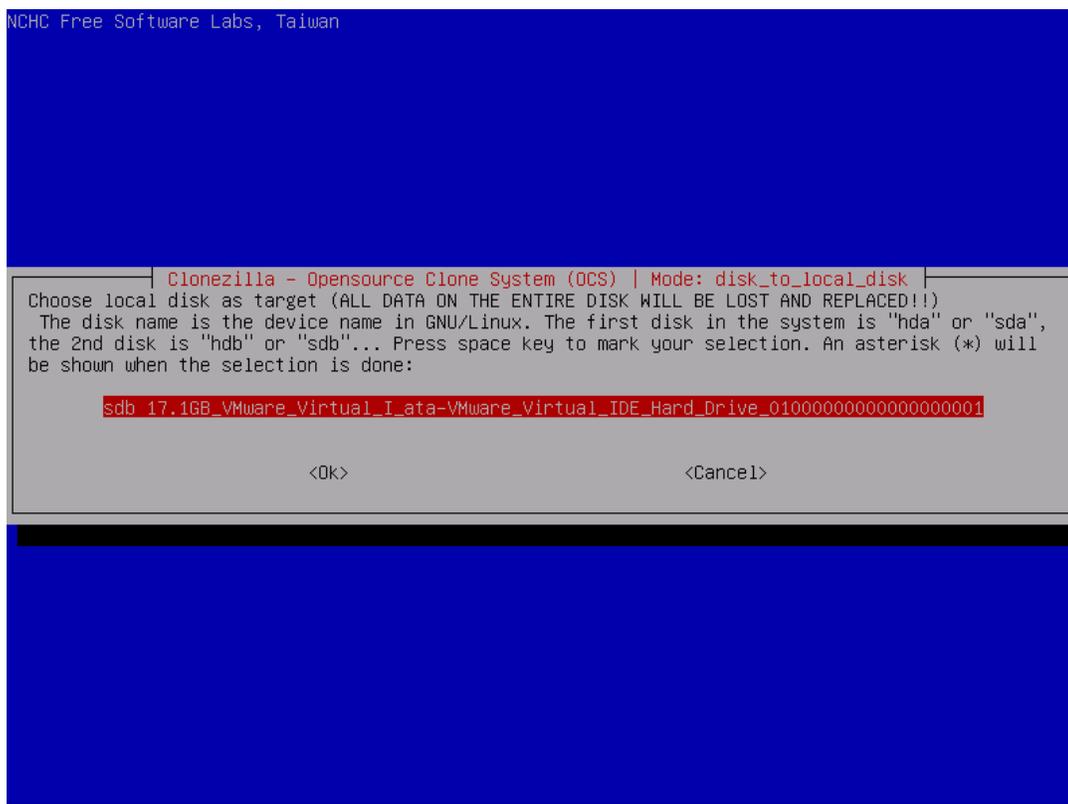
10. Choose "Local to local disk" option



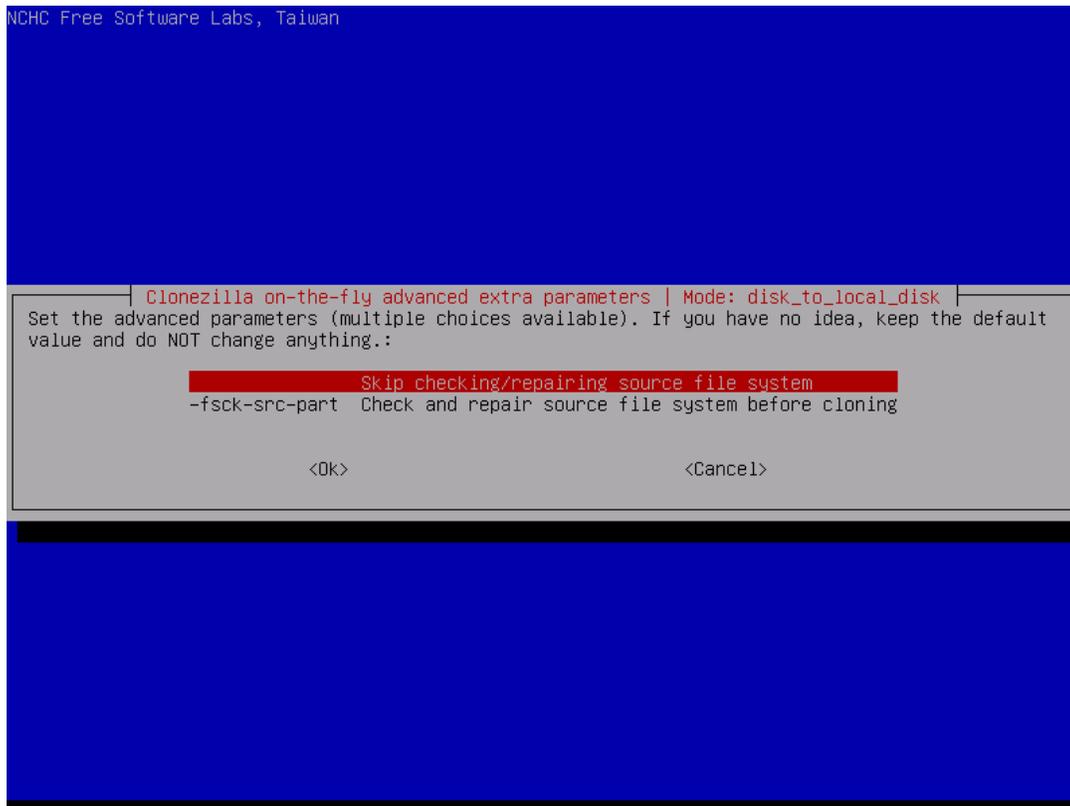
11. Choose source disk. It is the disk that you are going to clone on other disk.



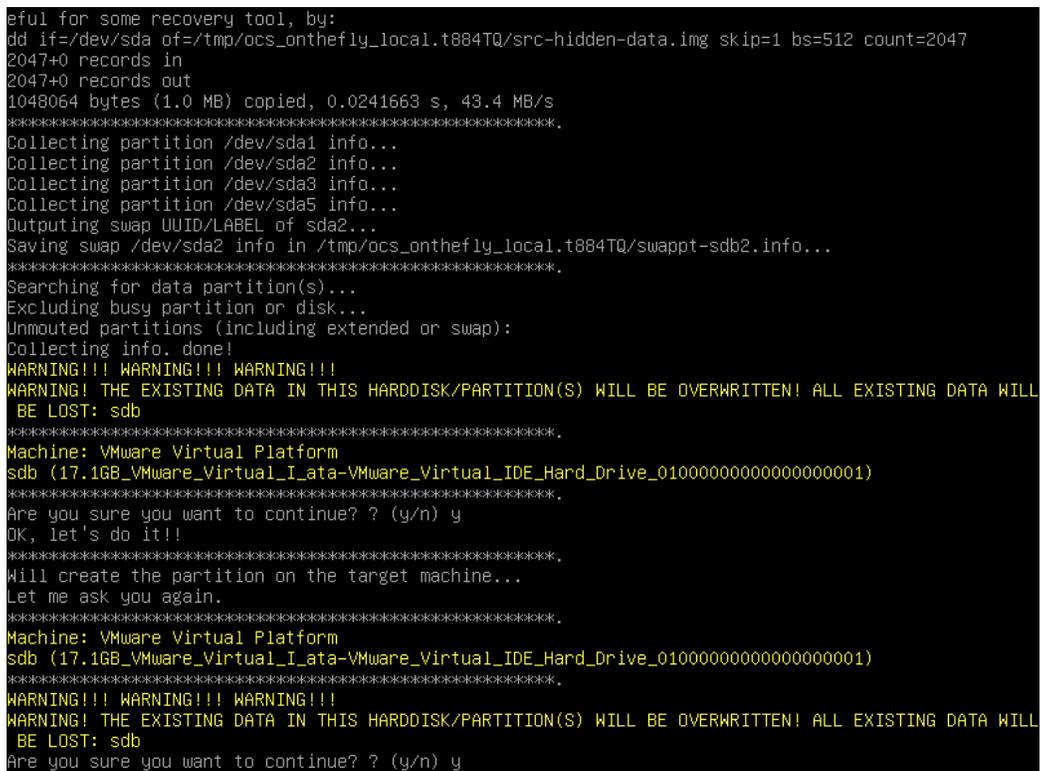
12. Choose target disk. While choosing this disk, you must be aware that all the data in this disk will be lost and replaced by the data in the source disk.



13. If you get any other selection options, leave the default option and continue.



14. You'll see many confirmation questions as:
Ask confirmation about creating partition on the target disk.



Ask confirmation about cloning boot loader to target disk

```
Device Boot      Start         End      #sectors  Id System
/dev/sdb1  *          2048         7813119      781072   83 Linux
/dev/sdb2            7813120       8812543       999424   82 Linux swap / Solaris
/dev/sdb3            8814590      16775167      7960578   5 Extended
/dev/sdb4              0             -              0   0 Empty
/dev/sdb5            8814592      16775167      7960576   83 Linux
Warning: partition 1 does not end at a cylinder boundary
Successfully wrote the new partition table

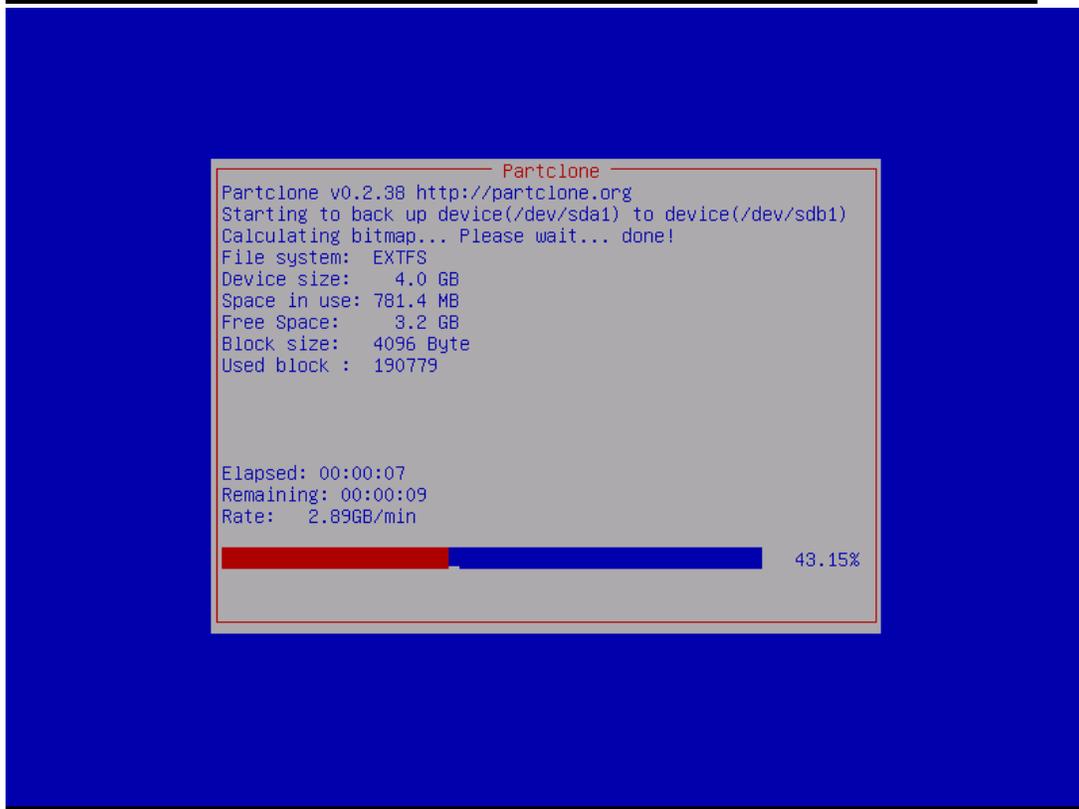
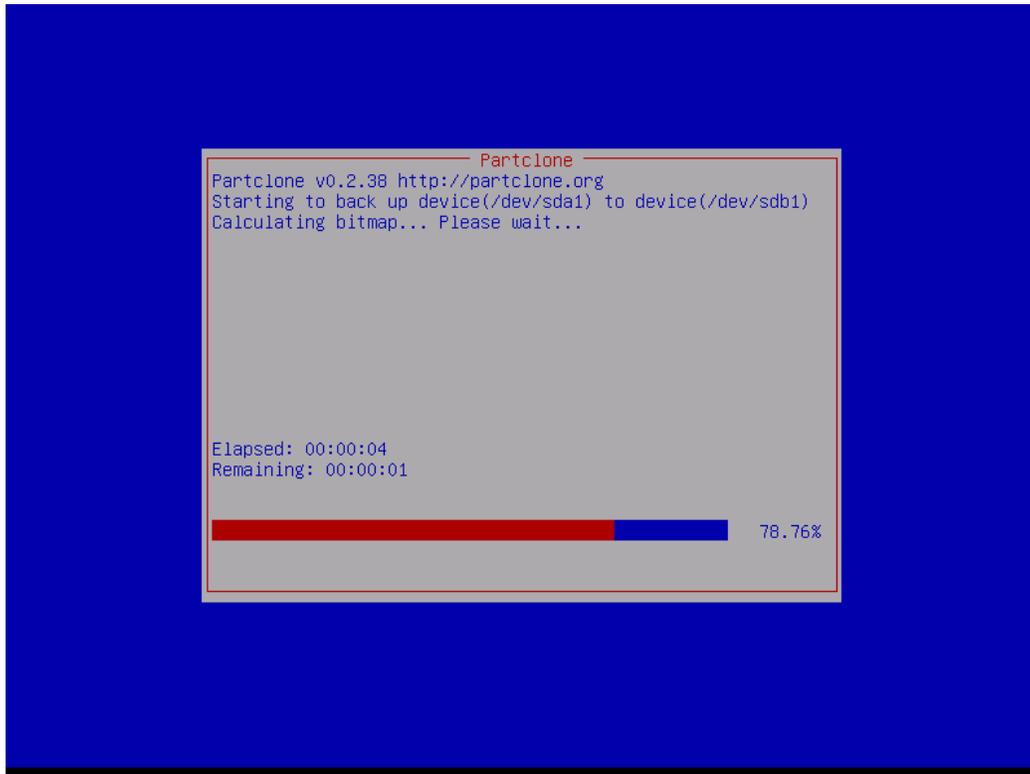
Re-reading the partition table ...
[ 793.008986]  sdb: sdb1 sdb2 sdb3 < sdb5 >

If you created or changed a DOS partition, /dev/foo7, say, then use dd(1)
to zero the first 512 bytes:  dd if=/dev/zero of=/dev/foo7 bs=512 count=1
(See fdisk(8).)
This is done by "sfdisk --force /dev/sdb < /tmp/ocs_onthefly_local.t884TQ/tgt_pt.sf"
Informing the OS that partition table has changed...
[ 793.152761]  sdb: sdb1 sdb2 sdb3 < sdb5 >
Checking the integrity of partition table in the disk /dev/sdb...
done!
*****
The first partition of disk /dev/sdb starts at 2048.
Restoring the hidden data between MBR (1st sector, i.e. 512 bytes) and 1st partition, which might be
useful for some recovery tool, by:
dd if=/tmp/ocs_onthefly_local.t884TQ/tgt-hidden-data.img of=/dev/sdb seek=1 bs=512 count=2047
2047+0 records in
2047+0 records out
1048064 bytes (1.0 MB) copied, 0.0510845 s, 20.5 MB/s
*****
Do you want to clone the boot loader (executable code area, the first 446 bytes) to: sdb ?
[Y/n] y
Cloning the boot loader (executable code area) from "sda" to "sdb"...
*****
Now we will start to clone data to the target machine...
Are you sure you want to continue? ? (y/n) y_
```

Ask confirmation about cloning data from source disk to target disk

```
PS. Next time you can run this command directly:
/opt/drbl/sbin/ocs-onthefly -g auto -e1 auto -e2 -r -j2 -f sda -t sdb
This command is also saved as this file name for later use if necessary: /tmp/ocs-onthefly-2011-11-3
0-01-45
Press "Enter" to continue..
*****
The first partition of disk /dev/sda starts at 2048.
Restoring the hidden data between MBR (1st sector, i.e. 512 bytes) and 1st partition, which might be us
eful for some recovery tool, by:
dd if=/dev/sda of=/tmp/ocs_onthefly_local.t884TQ/src-hidden-data.img skip=1 bs=512 count=2047
2047+0 records in
2047+0 records out
1048064 bytes (1.0 MB) copied, 0.0241663 s, 43.4 MB/s
*****
Collecting partition /dev/sda1 info...
Collecting partition /dev/sda2 info...
Collecting partition /dev/sda3 info...
Collecting partition /dev/sda5 info...
Outputting swap UUID/LABEL of sda2...
Saving swap /dev/sda2 info in /tmp/ocs_onthefly_local.t884TQ/swappt-sdb2.info...
*****
Searching for data partition(s)...
Excluding busy partition or disk...
Unmounted partitions (including extended or swap):
Collecting info. done!
WARNING!!! WARNING!!! WARNING!!!
WARNING! THE EXISTING DATA IN THIS HARDDISK/PARTITION(S) WILL BE OVERWRITTEN! ALL EXISTING DATA WILL
BE LOST: sdb
*****
Machine: VMware Virtual Platform
sdb (17.1GB_VMWare_Virtual_I_ata-VMware_Virtual_IDE_Hard_Drive_01000000000000000001)
*****
Are you sure you want to continue? ? (y/n) y_
```

15. Now you'll see several windows like these on your screen. Wait until the whole cloning process is completed.



16. When everything is done, Clonezilla will prompt you if you want to run it again, 'Stay in this console (console 1), enter command line prompt' 'Run command "exit" or "logout"'

```
Found grub partition: /dev/sdb1
Found boot loader grub in the MBR of disk /dev/sdb.
[ 147.183599] EXT4-fs (sdb1): mounted filesystem with ordered data mode. Opts: (null)
Found grub 2 installed in the restored OS.
Test if we can chroot the restored OS partition /dev/sdb1...
Yes, we are able to chroot the restored OS partition /dev/sdb1.
Trying to use the grub2 in the restored OS!
Running: run_grub2_from_restored_os "/dev/sdb1" "/dev/sdb1" "/dev/sdb"
Re-installing grub2 on disk /dev/sdb with grub2 dir in partition /dev/sdb1 and root partition /dev/sdb1...
[ 154.121070] EXT4-fs (sdb1): mounted filesystem with ordered data mode. Opts: (null)
Installation finished. No error reported.
done!
*****
Try to run partclone.ntfsfixboot for NTFS boot partition if it exists. Scanning partition(s): sdb1
sdb2 sdb5...
The NTFS boot partition was not found or not among the restored partition(s). Skip running partclone
.ntfsfixboot.
*****
*****
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..
"ocs-live-general" is finished.
Now you can choose to:
(0) Poweroff
(1) Reboot
(2) Enter command line prompt
(3) Start over
[2] 0
```

17. Then, choose '0' to power-off and the machine will be halted. Now, you can remove your hard drive and keep it in some safe place as a backup.