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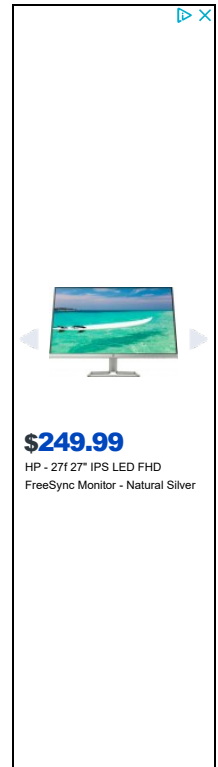
ROLLOVER TODAY



# Clonezilla

The Free and Open Source Software for Disk [Imaging](#) and [Cloning](#)

## Disk to disk clone



In this example: Clone small disk to larger disk (e.g. 8 GB to 20 GB) (Step by step)

1. [Prepare Clonezilla live](#)
2. [Boot your Clonezilla live via USB](#)
3. [Choose "ToRAM" option in the boot menu](#)
4. [Choose language](#)
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6. [Choose "Start Clonezilla"](#)
7. [Choose "disk to local disk"](#)
8. [Choose source disk](#)
9. [Choose target disk](#)
10. [Start cloning](#)
11. [Disk is cloned](#)

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

- [Prepare Clonezilla live](#) [^TOP^](#)

**FIRST OF ALL, BACK UP IMPORTANT DATA BEFORE YOU USE CLONEZILLA LIVE TO DO ANYTHING.**

In this example, the machine has 1 disk (8 GB), we want to clone it to an external disk (20 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 20 GB instead of modern disk size.

Besides, modern "light" laptop normally comes WITHOUT CD drive, or you happen to leave your USB CD drive in another place, it's a good idea to use USB device to boot Clonezilla live. In this example, we use a better, neater method, i.e. **put Clonezilla live on the new disk and use it to boot clonezilla live**. By doing this, you do not have to burn a CD, or prepare another USB flash drive. This is an one-time-use Clonezilla live, because later the clonezilla live files on new disk will be overwritten. Of course, you still can put Clonezilla live in CD or USB flash drive, then boot it to clone the 8 GB disk to 20 GB disk. The procedure is quite similar. Just remember to choose the correct source and destination disk.

Prerequisite: A new, equal or larger disk, an external disk closure, an USB cable. A running MS Windows or GNU/Linux.

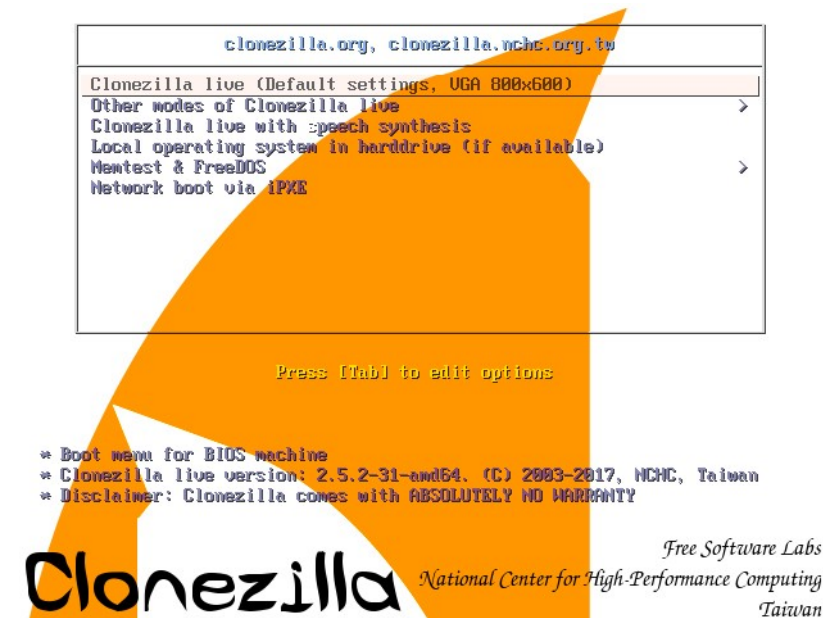
- Put the new disk inside your external disk closure, connect that to your running MS Windows or GNU/Linux via USB cable, then follow [here](#) to put Clonezilla live zip file on your external disk and make it bootable.

- Boot your Clonezilla live via USB [^TOP^](#)

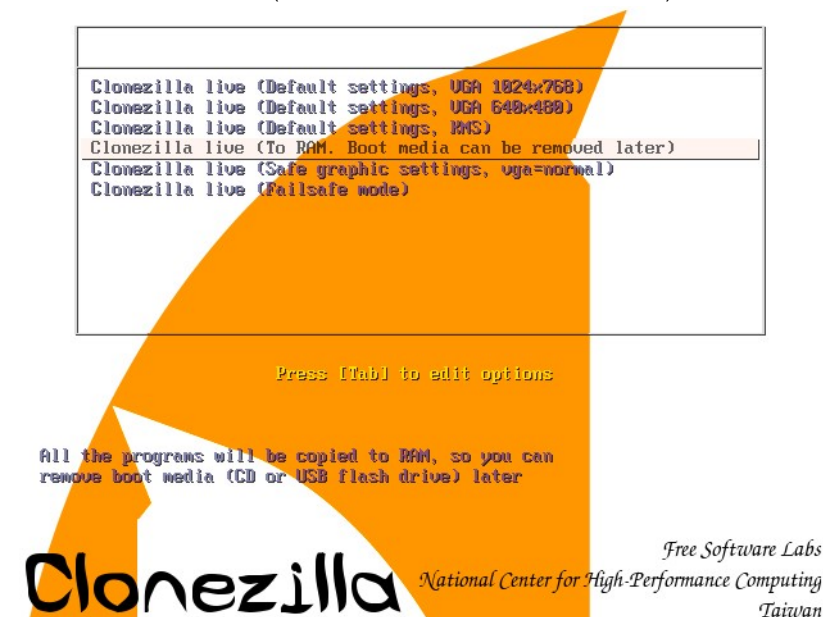
- Insert the new hard drive (which is bootable with Clonezilla live builtin) with the USB cable to your machine.
- Most modern PC comes with USB boot function, you can refer to your montherboard manuel to see how to set it during boot. E.g. On the IBM thinkpad X61, you can press F12 and choose USB device to force the machine to boot via USB device.

- Choose "ToRAM" option in the boot menu [^TOP^](#)

In the boot menu, we choose "Other modes of Clonezilla live"



Then choose "Clonezilla live (To RAM. Boot media can be removed later)"



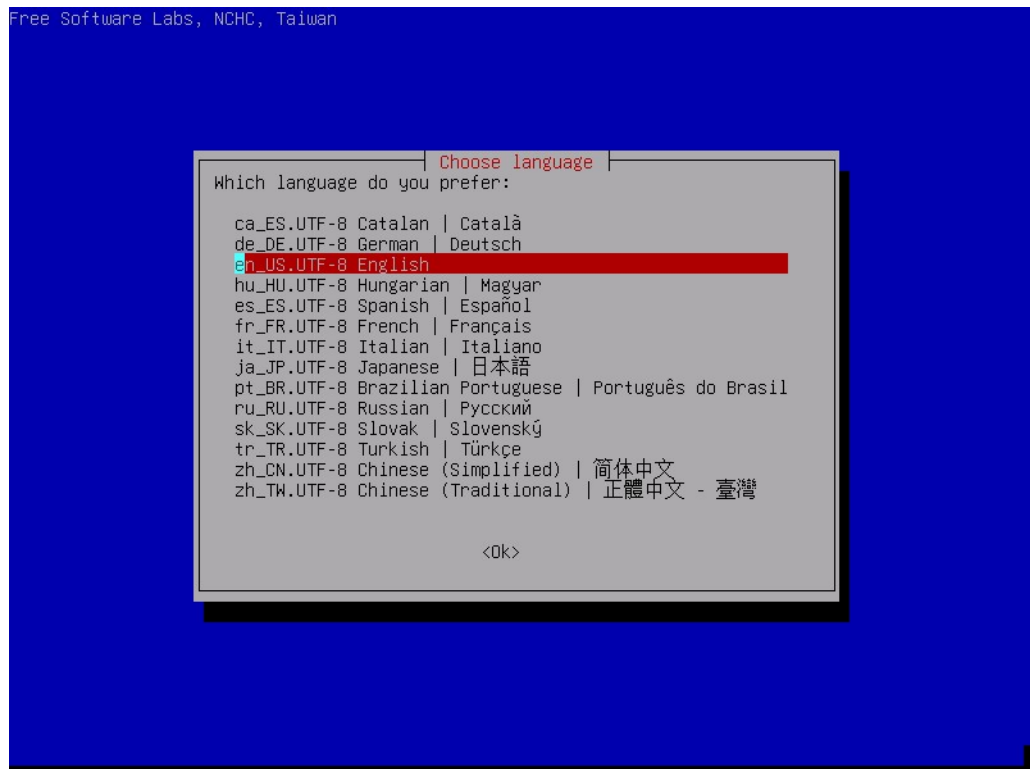
By doing this, all the Clonezilla live file on the new hard drive will be copied to RAM. Therefore the partition of new hard drive can be released, i.e. it won't be busy and locked by running programs.

Press Enter, you will see Debian Linux booting process, and it will spend a few minutes when copying the files to RAM:

```
913,568 100% 929.33kB/s 0:00:00 (xfr#7, to-chk=17/26)
live/ipxe.lkn 325,992 100% 330.93kB/s 0:00:00 (xfr#8, to-chk=16/26)
live/mentest 182,704 100% 183.94kB/s 0:00:00 (xfr#9, to-chk=15/26)
live/umluz 4,397,328 100% 4.18MB/s 0:00:01 (xfr#10, to-chk=14/26)
syslinux/
syslinux/boot.cat 2,048 100% 400.00kB/s 0:00:00 (xfr#11, to-chk=13/26)
syslinux/chain.c32 24,560 100% 4.68MB/s 0:00:00 (xfr#12, to-chk=12/26)
syslinux/drblwp.png 43,283 100% 6.88MB/s 0:00:00 (xfr#13, to-chk=11/26)
syslinux/iso_sort.txt 44 100% 7.16kB/s 0:00:00 (xfr#14, to-chk=10/26)
syslinux/isolinux.bin 45,056 100% 7.16MB/s 0:00:00 (xfr#15, to-chk=9/26)
syslinux/isolinux.cfg 7,440 100% 1.01MB/s 0:00:00 (xfr#16, to-chk=8/26)
syslinux/ldlinux.c32 122,308 100% 14.58MB/s 0:00:00 (xfr#17, to-chk=7/26)
syslinux/libcom32.c32 186,500 100% 17.79MB/s 0:00:00 (xfr#18, to-chk=6/26)
syslinux/libutil.c32 24,148 100% 2.09MB/s 0:00:00 (xfr#19, to-chk=5/26)
syslinux/memdisk 26,140 100% 2.08MB/s 0:00:00 (xfr#20, to-chk=4/26)
syslinux/menu.c32 26,596 100% 1.95MB/s 0:00:00 (xfr#21, to-chk=3/26)
syslinux/ocsup.png 46,464 100% 3.17MB/s 0:00:00 (xfr#22, to-chk=2/26)
syslinux/syslinux.cfg 7,504 100% 523.44kB/s 0:00:00 (xfr#23, to-chk=1/26)
syslinux/vesamenu.c32 27,104 100% 1.72MB/s 0:00:00 (xfr#24, to-chk=0/26)
```

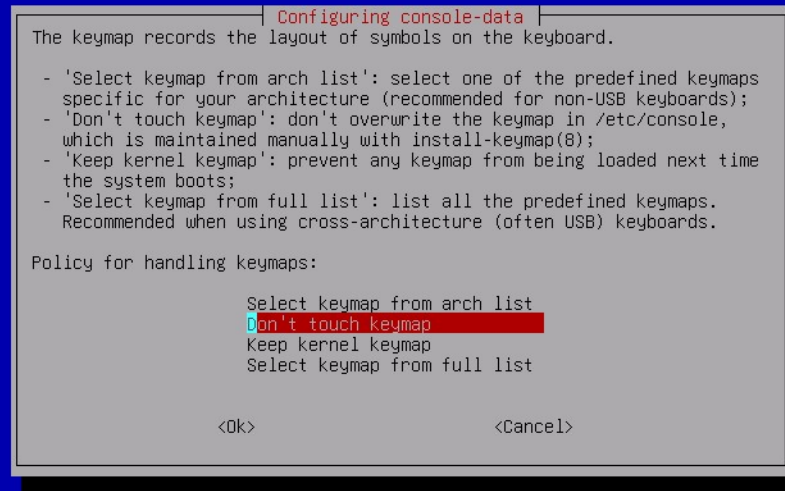
- Choose language [^TOP^](#)

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

Package configuration



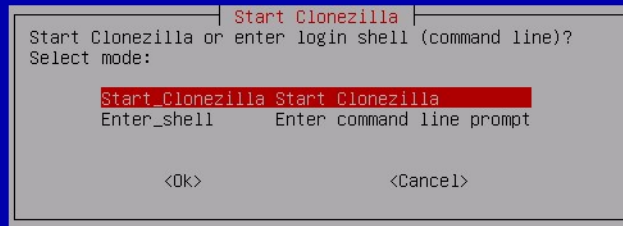
The default keyboard layout is US keyboard, therefore if you are using US keyboard, just press enter (i.e. use the option "Don't touch keymap").

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

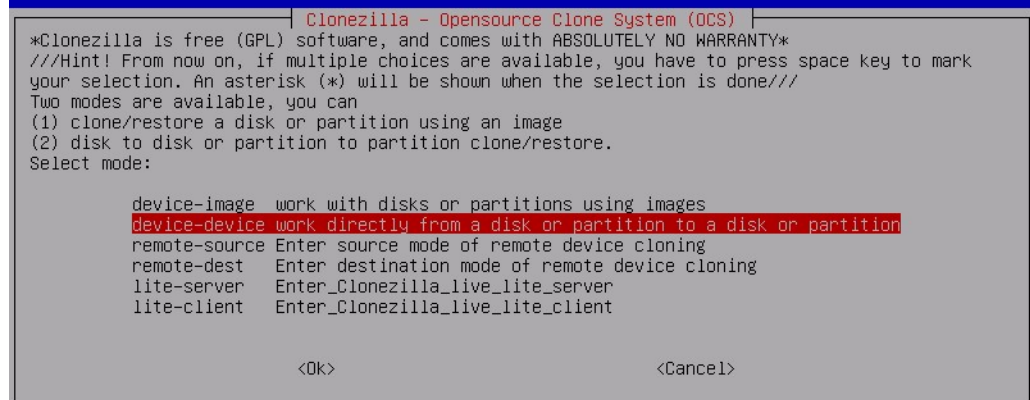
///NOTE/// There is a bug when choosing French keymap in "Select keymap from arch list", so use "Select keymap from full list" to change keymap if you are using French keyboard.

- Choose "Start Clonezilla"

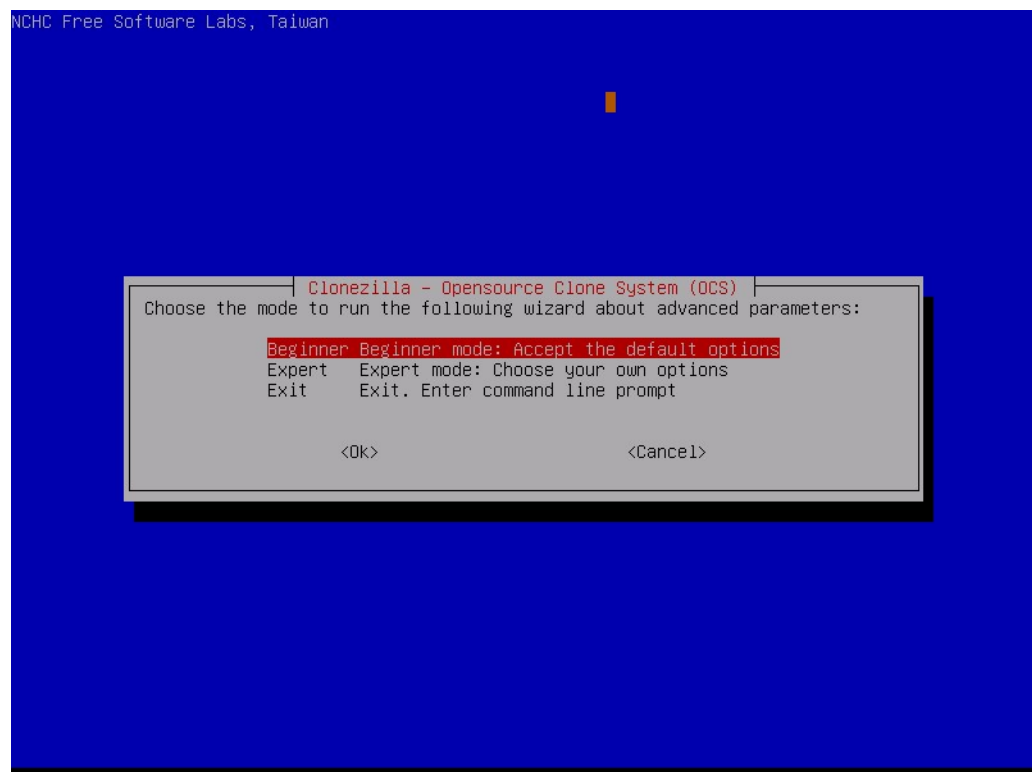
[^TOP^](#)



Choose "device-device"



Choose "Beginner"



If you choose "Expert" mode, you will have some chances to choose advanced parameters, e.g. tune the CHS values of target disk, how to create partition table on the target disk, etc.. You can see more details [here](#).

///NOTE/// By default, Clonezilla will clone the "same" size of source disk to target disk. i.e. in this example, only 8 GB will be cloned to target disk, so the rest of 12 GB on the destination disk will be unallocated. If you want to make use all of the target disk size, remember to enter "Expert" mode and choose option "-k1".

- Choose "disk\_to\_local\_disk"  
[^TOP^](#)

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#### Clonezilla - Opensource Clone System (OCS)

\*Clonezilla is free (GPL) software, and comes with ABSOLUTELY NO WARRANTY\*  
This software will overwrite the data on your hard drive when cloning! It is recommended to  
backup important files on the target disk before you cloning!\*\*\*

disk\_to\_local\_disk local\_disk\_to\_local\_disk\_clone  
part\_to\_local\_part local\_partition\_to\_local\_partition\_clone  
exit Exit. Enter command line prompt

<Ok>

<Cancel>

- Choose source disk [^TOP^](#)

Here the source disk is sda, which is 8 GB in size".

///WARNING/// Be careful! Do not choose the wrong disk. Since all the data on the target disk will be  
overwritten!!!

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#### Clonezilla - Opensource Clone System (OCS) | Mode: disk\_to\_local\_disk

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"...

sda 8590MB\_VMware\_Virtual\_S\_No\_disk\_serial\_no  
sdb 21.5GB\_VMware\_Virtual\_S\_No\_disk\_serial\_no

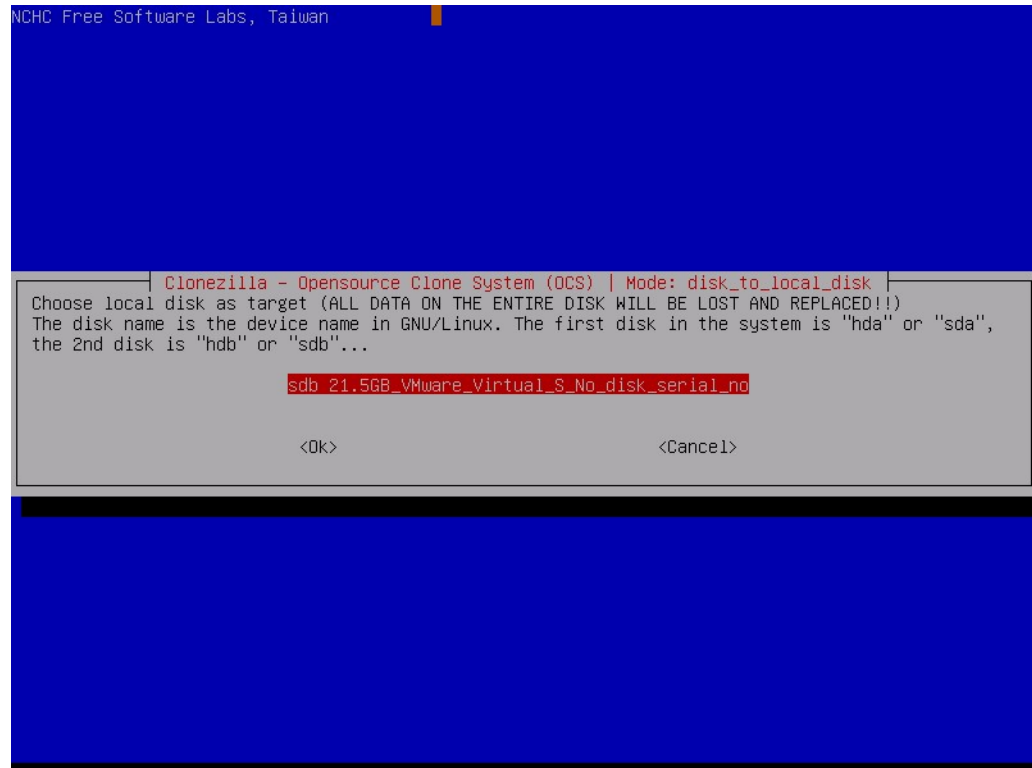
<Ok>

<Cancel>

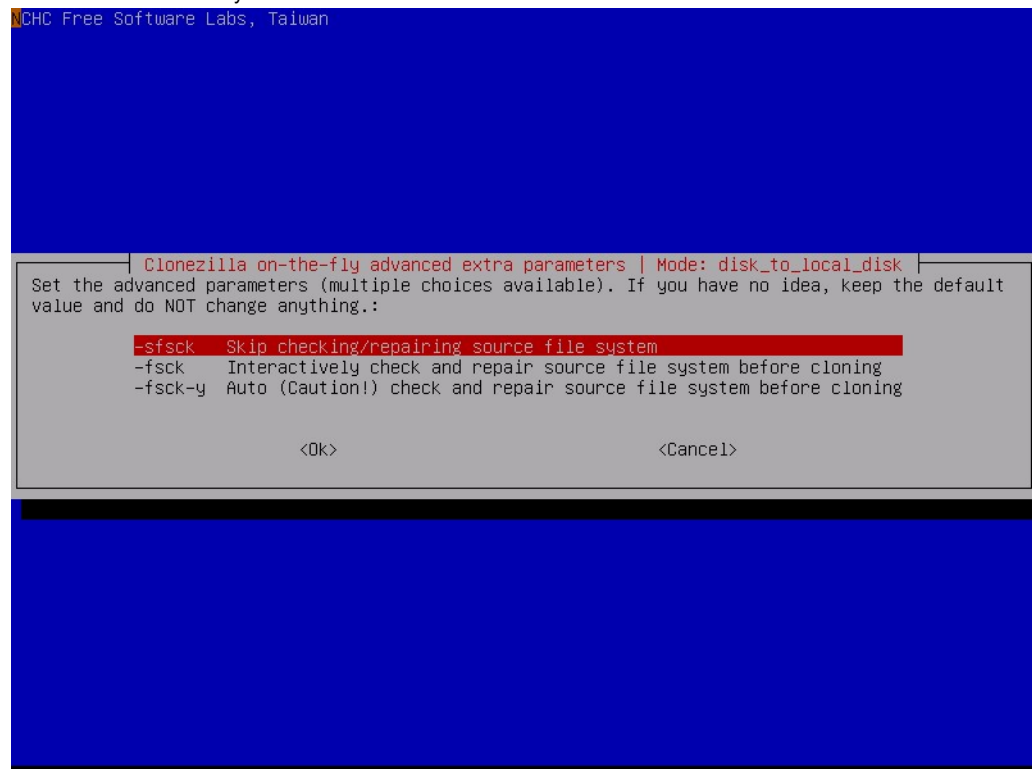
- Choose target disk [^TOP^](#)

Here the target disk is sdb, which is 20 GB in size"

///WARNING/// Be careful! Do not choose the wrong disk. Since all the data on the target disk will be overwritten!!!



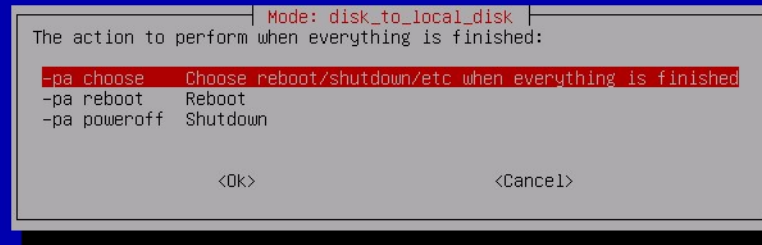
Select if the source file system need to be checked or not:



Select the mode you want after the disk cloning is done:

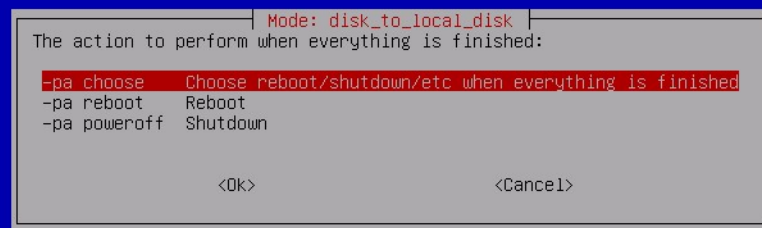


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By default we will choose later, but if you have decided, you can choose to reboot or poweroff the machine.

Clonezilla shows you the complete command to run this disk to disk clone action:



PS. Next time you can run this command directly:  
/usr/sbin/ocs-onthefly -g auto -e1 auto -e2 -r -j2 -fsck -pa choose -f sda -t sdb  
This command is also saved as this file name for later use if necessary: /tmp/ocs-onthefly-2017-09-24-07-13  
\*\*\*\*\*  
Press "Enter" to continue...

- Start cloning [^TOP^](#)

Before doing the real cloning, Clonezilla will ask confirmation:

```
PS. Next time you can run this command directly:
/usr/sbin/ocs-onthefly -g auto -e1 auto -e2 -r -j2 -sfsck -pa choose -f sda -t sdb
This command is also saved as this file name for later use if necessary: /tmp/ocs-onthefly-2017-09-24-07-13
*****
Press "Enter" to continue...
*****
*****
Searching for data partition(s)...
Excluding busy partition or disk...
Unmounted partitions (including extended or swap): sdb1
Collecting info.. done!
Getting /dev/sdb1 info...
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 (21.5GB_VMWare_Virtual_S_No_disk_serial_no)
sdb1 (20G_ext4(In_VMWare_Virtual_S)_No_disk_serial_no)
*****
Are you sure you want to continue? (y/n) y_
```

Ask confirmation agin:

```
PS. Next time you can run this command directly:
/usr/sbin/ocs-onthefly -g auto -e1 auto -e2 -r -j2 -sfsck -pa choose -f sda -t sdb
This command is also saved as this file name for later use if necessary: /tmp/ocs-onthefly-2017-09-24-07-13
*****
Press "Enter" to continue...
*****
*****
Searching for data partition(s)...
Excluding busy partition or disk...
Unmounted partitions (including extended or swap): sdb1
Collecting info.. done!
Getting /dev/sdb1 info...
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 (21.5GB_VMWare_Virtual_S_No_disk_serial_no)
sdb1 (20G_ext4(In_VMWare_Virtual_S)_No_disk_serial_no)
*****
Are you sure you want to continue? (y/n) y
OK, let's do it!!
*****
Let me ask you again.
WARNING!!! WARNING!!! WARNING!!!
WARNING! THE EXISTING DATA IN THIS HARDDISK/PARTITION(S) WILL BE OVERWRITTEN! ALL EXISTING DATA WILL
BE LOST: sdb
Are you sure you want to continue? (y/n) y_
```

First ask confirmation about cloning boot loader to target disk:

```

PS. Next time you can run this command directly:
/usr/sbin/ocs-onthefly -g auto -e1 auto -e2 -r -j2 -sfsck -pa choose -f sda -t sdb
This command is also saved as this file name for later use if necessary: /tmp/ocs-onthefly-2017-09-24-07-13
*****
Press "Enter" to continue...
*****
*****
*****
*****
Searching for data partition(s)...
Excluding busy partition or disk...
Unmounted partitions (including extended or swap): sdb1
Collecting info.. done!
Getting /dev/sdb1 info...
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 (21.5GB_VMWare_Virtual_S_No_disk_serial_no)
sdb1 (20G_ext4(In_VMWare_Virtual_S)_No_disk_serial_no)
*****
Are you sure you want to continue? (y/n) y
OK, let's do it!!
*****
Let me ask you again.
WARNING!!! WARNING!!! WARNING!!!
WARNING! THE EXISTING DATA IN THIS HARDDISK/PARTITION(S) WILL BE OVERWRITTEN! ALL EXISTING DATA WILL
BE LOST: sdb
Are you sure you want to continue? (y/n) y
OK, let's do it!!
*****
Do you want to clone the boot loader (executable code area, the first 446 bytes) to: sdb ?
[Y/n]

```

Then it will create partition table on the destination disk:

```

sfdisk --force /dev/sdb < /tmp/ocs_onthefly_local.jfwjTc/tgt-pt.sf
Partition #1 contains a ext4 signature.Checking that no-one is using this disk right now ... OK

Disk /dev/sdb: 20 GiB, 21474836480 bytes, 41943040 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: 0x51d46f0d

Old situation:

>>> Script header accepted.
>>> Script header accepted.
>>> Script header accepted.
>>> Script header accepted.
>>> Created a new DOS disklabel with disk identifier 0x4f12182e.
/dev/sdb1: Created a new partition 1 of type 'Linux' and of size 7 GiB.

Partition #5 contains a swap signature./dev/sdb2: Created a new partition 2 of type 'Extended' and of size 1 GiB.
/dev/sdb3: Created a new partition 5 of type 'Linux swap / Solaris' and of size 1023 MiB.

/dev/sdb6: Done.

New situation:

Device      Boot      Start         End      Sectors   Size Id Type
/dev/sdb1   *                2048    14680063    14678016    7G 83 Linux
/dev/sdb2                  14680064    16777215    2097152    1G  5 Extended
/dev/sdb5                  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 "sfdisk --force /dev/sdb < /tmp/ocs_onthefly_local.jfwjTc/tgt-pt.sf"
Informing the OS of partition table changes..._

```

Clonezilla is cloning the data from source disk to target disk:

```
Partclone
```

```
Partclone v0.2.91 http://partclone.org  
Starting to back up device(/dev/sda1) to device(/dev/sdb1)  
Calculating bitmap... Please wait... done!  
File system: EXTFS  
Device size:    7.5 GB = 1834752 Blocks  
Space in use:   1.5 GB = 375049 Blocks  
Free Space:     6.0 GB = 1459703 Blocks  
Block size:    4096 Byte  
Image Version: 0001
```

```
Elapsed: 00:00:01 Remaining: 00:01:39 Rate: 0.00byte/min  
Current Block: 0 Total Block: 1834752
```

```
Data Block Process:
```

1.00%

```
Total Block Process:
```

0.00%

```

Now tuning the file system size on partition /dev/sdb1 to fit the partition size...
e2fsck -f -y /dev/sdb1; resize2fs -p -f /dev/sdb1
e2fsck 1.43.6 (29-Aug-2017)
Pass 1: Checking inodes, blocks, and sizes
Pass 2: Checking directory structure
Pass 3: Checking directory connectivity
Pass 4: Checking reference counts
Pass 5: Checking group summary information
/dev/sdb1: 89310/458752 files (0.1% non-contiguous), 375049/1834752 blocks
resize2fs 1.43.6 (29-Aug-2017)
The filesystem is already 1834752 (4k) blocks long. Nothing to do!

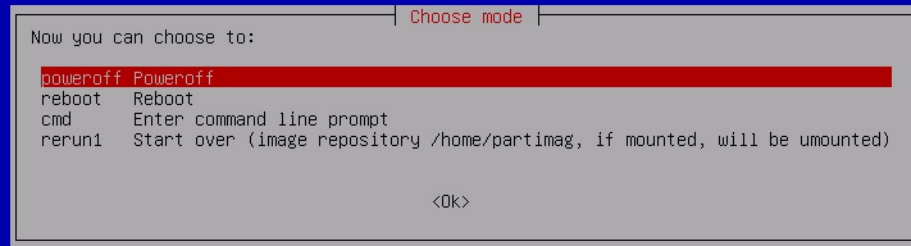
*****
Creating the swap partition if exists...
Found the swap partition /dev/sdb5, create it by:
mkswap -U 608815fc-c140-43ea-99a4-f4f49f18582c /dev/sdb5
mkswap: /dev/sdb5: warning: wiping old swap signature.
Setting up swappspace version 1, size = 1023 MiB (1072689152 bytes)
no label, UUID=608815fc-c140-43ea-99a4-f4f49f18582c
*****
Trying to remove udev hardware record in the restored OS...
The specified destination device: sdb1
Trying to remove udev persistent files. The devices to be searched: sdb1...
Now searching possible device /dev/sdb1...
done!
*****
Device /dev/sdb1 is not a FAT partition.
Skip updating syslinux on that.
*****
Running: ocs-install-grub -s sdb auto
Found grub partition: /dev/sdb1
Found boot loader grub in the MBR of disk /dev/sdb.
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...

```

- Disk is cloned ^TOP^

When everything is done, Clonezilla will prompt you if about reboot, poweroff, etc.

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Then we choose poweroff:



The next step: poweroff  
Will poweroff (Press Ctrl-C to abort)... 7 6 5 \_

and the machine will be halted:

Please remove the live-medium, close the tray (if any) and press ENTER to continue:

That's all. The new hard drive is ready to be used. You can remove the old (8 GB) disk from your machine, and put the new one (20 GB) in your machine. Boot it, you can enjoy the new disk.

**//NOTE// You can only keep one of the disks in the same machine before you boot it.** If you boot the machine with the source disk and the cloned destination disk on the same machine, the booting OS will be confused since there are two identical file systems on the same machine. They have same UUID so the booting OS might mount the wrong file system.

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

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A horizontal advertisement banner for Best Buy. It features three icons: a monitor, a laptop, and a tablet, each with a blue arrow pointing towards the center. To the right of the icons, the text "Find something for everyone." is displayed in a bold, black font. Further right, there is a yellow button with the text "Shop Now". In the bottom left corner, there is a small copyright notice: "© 2019 Best Buy".

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