Procédure pour sauvegarder votre carte MicroSD Smartphoton

(aussi valable pour votre SSD si vous en utilisez déjà un.
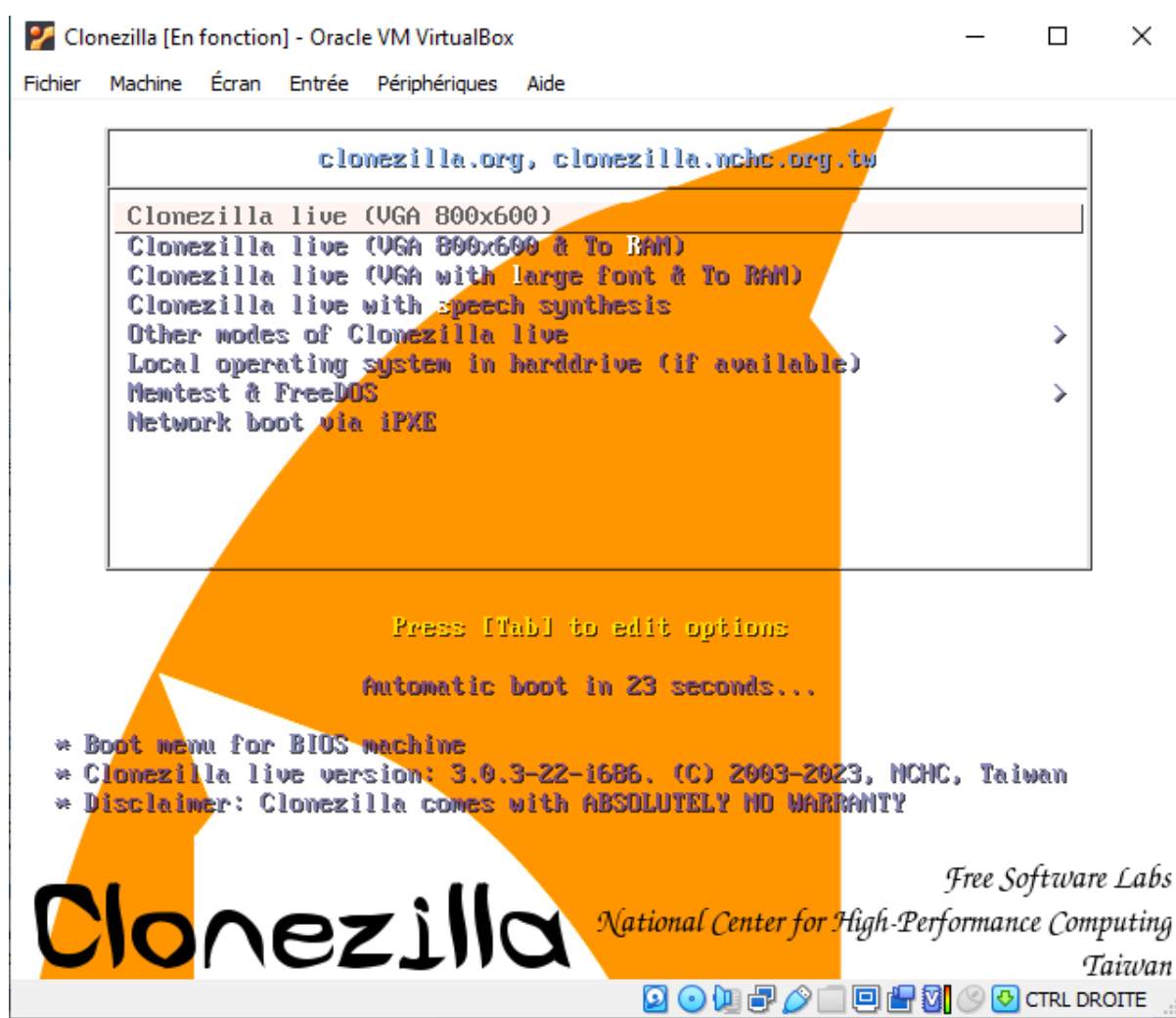
Créer une clé bootable avec le logiciel Clonezilla installé dessus. Il s'agit d'un Live CD installé sur une clé USB
Il se trouve ici: https://clonezilla.org/downloads.php
Une fois la clé USB prête,
vous allez donc devoir démarrer votre PC dessus cette clé USB et vous devez avoir cet écran:

Prendre l'option 1:

Choisir le clavier qui vous va bien:

```
┤ Choose language ├
Which language do you prefer:

 ca_ES.UTF-8 Catalan | Català
 de_DE.UTF-8 German | Deutsch
 el_GR.UTF-8 Greek | Ελληνικά
 en_US.UTF-8 English
 hu_HU.UTF-8 Hungarian | Magyar
 es_ES.UTF-8 Spanish | Español
 fr_FR.UTF-8 French | Français
```

```
┤ Keyboard configuration ├
Change keyboard layout?

 Keep   Keep the default keyboard layout - US keyboard
 Change Change keyboard layout
```

Démarrer le logiciel de clonage:

```
┤ Start Clonezilla ├
Start Clonezilla or enter login shell (command line)?
Select mode:

        Start_Clonezilla Start Clonezilla
        Enter_shell      Enter command line prompt


            <Ok>                    <Cancel>
```

Prendre l'option 1 qui permet donc de faire une sauvegarde de votre SDcard

```
┤ Clonezilla - Opensource Clone System (OCS) ├
*Clonezilla is free (GPL) software, and comes with ABSOLUTELY NO WARRANTY*
///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///
Two modes are available, you can
(1) clone/restore a disk or partition using an image
(2) disk to disk or partition to partition clone/restore.
Besides, Clonezilla lite server and client modes are also available. You can use them for
massive deployment
Select mode:
        device-image   work with disks or partitions using images
        device-device  work directly from a disk or partition to a disk or partition
        remote-source  Enter source mode of remote device cloning
        remote-dest    Enter destination mode of remote device cloning
        lite-server    Enter_Clonezilla_live_lite_server
        lite-client    Enter_Clonezilla_live_lite_client
```

Il s'agit ici de sélectionner l'endroit ou l'entièreté de la carte SD sera sauvegardée
Par exemple un disque local (local ou USB local)

```
                    ┤ 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>
```

Là il vout permet d'insérer tous les disques externes que vous souhaitez utiliser comme
sauvegarde et aussi la source SD si pas déjà fait


```
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......_
```

Ici il voit le disque interne 22.1 Gb (celui de ma VM dans mon cas) et la carte SD de 16 Gb


```
Every 3.0s: ocs-scan-disk                          debian: Sat Feb 18 12:12:08 2023

2023/02/18 12:12:08
You can insert storage device into this machine now if you want to use that, then wait for it to be
detected.
Finding all disks and partitions..
Excluding busy harddisk.....
Excluding linux raid member partition.....
Scanning devices... Available disk(s) on this machine:
====================================
/dev/sda: VBOX_HARDDISK_ VBOX_HARDDISK_VBcc41eff4-4bfb2310 22.1GB
/dev/sdb: MassStorageClass Generic_MassStorageClass_000000001539-0:0 16.0GB
====================================
Update periodically. Press Ctrl-C to exit this window.
```

Il souhaite maintenant connaître quel est le disque qui va recevoir la sauvegarde, celle-ci se
présentera sous la forme d'un gros fichier dans un répertoire que vous allez proposer
Je prends donc le VBOX disque

```
┌──────┤ Clonezilla - Opensource Clone System (OCS) | Mode: ├──────┐
Now we need to mount a device as /home/partimag (Clonezilla image(s) repository) so that we can
read or save the image in /home/partimag.
///NOTE/// You should NOT mount the partition you want to backup as /home/partimag
The partition name is the device name in GNU/Linux. The first partition in the first disk is
"hda1" or "sda1", the 2nd partition in the first disk is "hda2" or "sda2", the first partition
in the second disk is "hdb1" or "sdb1"... If the system you want to save is MS windows, normally
C: is hda1 (for PATA) or sda1 (for PATA, SATA or SCSI), and D: could be hda2 (or sda2), hda5 (or
sda5)...

    sda1 19.6G_ext4(In_VBOX_HARDDISK_)_VBOX_HARDDISK_VBcc41eff4-4bfb2310
    sda5 975M_swap(In_VBOX_HARDDISK_)_VBOX_HARDDISK_VBcc41eff4-4bfb2310
    sdb1 64M_vfat_There_are_di(In_MassStorageClass)_Generic_MassStorageClass_000000001539-0:0
    sdb2 14.7G_ext4(In_MassStorageClass)_Generic_MassStorageClass_000000001539-0:0


                    <Ok>                              <Cancel>

```

Pas besoin de vérification si vous aviez bien proprement arrêté le Pi avec la carte SD dedans

```
┤ Clonezilla - Opensource Clone System (OCS): REPOSITORY ├
 Choose if you want to check and repair the file system before mounting the image repository.
 This option is only for certain file systems which are well supported by fsck on GNU/Linux, like
 ext2/3/4, reiserfs, xfs, jfs, vfat. Not for NTFS, HFS+...
    //NOTE// This is for mounting local storage device as an image repository!

          no-fsck Skip checking/repairing the file system before mounting
          fsck    Interactively check and repair the file system before mounting
          fsck-y  Auto (Caution!) check and repair file system before mounting
```

```
┤ Clonezilla - Opensource Clone System (OCS) ├
 Choose the mode to run the following wizard about advanced parameters:

          Beginner  Beginner mode: Accept the default options
          Expert    Expert mode: Choose your own options
          Exit      Exit. Enter command line prompt
```

```
┤ Directory Browser for Clonezilla image repository ├
 Which directory is for the Clonezilla image repository? (If there is a space in the directory
 name, it will _NOT_ be shown)
 When the "Current selected dir name" is what you want, use "Tab" key to choose "Done"
 //NOTE// You should not choose the directory tagged with CZ_IMG. They are just for you to know
 the images list in the current dir.
 Path on the resource: /dev/sda1[/home/pi/Documents/]
 Current selected dir name: "Documents"

              ..        Parent_directory
              <ABORT> Exit_directory_browsing

          <Browse>                          <Done>
```

```
Running: mount --bind -o noatime /tmp/ocsroot_bind_root/home/pi/Documents /home/partimag
The file system disk space usage:
********************************************************.
SOURCE                      FSTYPE  SIZE  USED AVAIL USE% TARGET
/dev/sda1[/home/pi/Documents] ext4  19.1G  4.2G   14G  22% /home/partimag
********************************************************.
Press "Enter" to continue......
```

spécifiez que l'on va sauvegarder sous forme de fichier la carte SD

```
┤ 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
```

Et là il faut lui donner l'endroit où sauvegarder le fichier et indiquer son nom

```
┌──────┤ Clonezilla - Opensource Clone System (OCS) | Mode: savedisk ├──────┐
│ Input a name for the saved image to use.                                  │
│ Some reserved image names have special meanings, including "ask_user", "autoname", "autoname-*" │
│ "autohostname", and "autoproductname". Please check Clonezilla website for more details. │
│                                                                           │
│ Smartphoton-V5-18-02-2023.img_____ │
│                                                                           │
│              <Ok>                                    <Cancel>             │
│                                                                           │
└───────────────────────────────────────────────────────────────────────────┘
```

Lui donner la source à sauvegarder, évidemment la carte SD

```
┌──────┤ 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"... If multiple choices are available, press space key to mark │
│ your selection. An asterisk (*) will be shown when the selection is done   │
│                                                                           │
│   [*] sdb  16.0GB_MassStorageClass_Generic_MassStorageClass_000000001539-0:0 │
└───────────────────────────────────────────────────────────────────────────┘
```

```
┌──────┤ Clonezilla advanced extra parameters | Mode: savedisk ├──────┐
│ Choose if you want to check and repair the file system before saving it. This option is only for │
│ certain file systems which are well supported by fsck on GNU/Linux, like ext2/3/4, reiserfs, │
│ xfs, jfs, vfat. Not for NTFS, HFS+...                                      │
│                                                                           │
│         -sfsck    Skip checking/repairing source file system              │
│         -fsck     Interactively check and repair source file system before saving │
│         -fsck-y   Auto (Caution!) check and repair source file system before saving │
└───────────────────────────────────────────────────────────────────────────┘
```

ou alors check si vous avez arrêté brutalement le Pi …

```
┌──────┤ Clonezilla advanced extra parameters | Mode: savedisk ├──────┐
│ Choose if you want to check and repair the file system before saving it. This option is only for │
│ certain file systems which are well supported by fsck on GNU/Linux, like ext2/3/4, reiserfs, │
│ xfs, jfs, vfat. Not for NTFS, HFS+...                                      │
│                                                                           │
│         -sfsck    Skip checking/repairing source file system              │
│         -fsck     Interactively check and repair source file system before saving │
│         -fsck-y   Auto (Caution!) check and repair source file system before saving │
│                                                                           │
│              <Ok>                                    <Cancel>             │
│                                                                           │
└───────────────────────────────────────────────────────────────────────────┘
```

Vérifiez l'image créée, ça ne coûte pas plus cher

```
┌──────┤ Clonezilla advanced extra parameters | Mode: savedisk ├──────┐
│ After the image is saved, do you want to check if the image is restorable? ///NOTE/// This │
│ action will only check the image is restorable, and it will not write any data to the harddrive. │
│              Yes, check the saved image                                    │
│         -scs  No, skip checking the saved image                           │
└───────────────────────────────────────────────────────────────────────────┘
```

```
┌──────┤ 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.                                                                   │
│                                                                           │
│         -senc  Not to encrypt the image                                   │
│         -enc   Encrypt the image                                          │
└───────────────────────────────────────────────────────────────────────────┘
```

```
                           ┌──────────── Mode: savedisk ────────────┐
                           │ The action to perform when everything is finished: │
                           │                                                     │
                           │   -p choose    Choose reboot/shutdown/etc when everything is finished │
                           │   -p true      Enter command line prompt            │
                           │   -p reboot    Reboot                                │
                           │   -p poweroff  Shutdown                              │
                           │                                                     │
                           │            <Ok>                  <Cancel>           │
                           └─────────────────────────────────────────────────────┘
```

```
*********************************************************.
PS. Next time you can run this command directly:
/usr/sbin/ocs-sr -q2 -c -j2 -z1 -i 0 -sfsck -senc -p choose savedisk Smartphoton-V5-18-02-2023.img s
db
This command is also saved as this file name for later use if necessary: /tmp/ocs-Smartphoton-V5-18-
02-2023.img-2023-02-18-12-23
*********************************************************.
Press "Enter" to continue... _
```

Il vous informe qu'il va sauvegarder la carte 16Gb

```
Activating the partition info in /proc... done!
Selected device [sdb] found!
The selected devices: sdb
Searching for data/swap/extended partition(s)...
Finding all disks and partitions..
Excluding busy partition......
Excluding linux raid member partition.....
Unmounted partitions (including extended or swap): sdb1 sdb2
Collecting info... done!
The data partition to be saved: sdb1 sdb2
Activating the partition info in /proc... done!
Selected device [sdb1] found!
Selected device [sdb2] found!
The selected devices: sdb1 sdb2
Getting /dev/sdb1 info...
Getting /dev/sdb2 info...
*********************************************************.
The following step is to save the hard disk/partition(s) on this machine as an image:
*********************************************************.
Machine: VirtualBox
sdb (16.0GB_MassStorageClass_Generic_MassStorageClass_000000001539-0:0)
sdb1 (64M_vfat_There_are_di(In_MassStorageClass)_Generic_MassStorageClass_000000001539-0:0)
sdb2 (14.7G_ext4(In_MassStorageClass)_Generic_MassStorageClass_000000001539-0:0)
*********************************************************.
-> "/home/partimag/Smartphoton-V5-18-02-2023.img".
Are you sure you want to continue? (y/n)
```

c'est parti

```
┌─────────────────── Partclone ───────────────────┐
│ Partclone v0.3.23 http://partclone.org          │
│ Starting to clone device (/dev/sdb1) to image (-) │
│ Reading Super Block                             │
│ Calculating bitmap... Please wait...            │
│ done!                                           │
│ File system:   FAT32                            │
│ Device size:    67.1 MB = 131072 Blocks         │
│ Space in use:   43.4 MB = 84845 Blocks          │
│ Free Space:     23.7 MB = 46227 Blocks          │
│ Block size:    512 Byte                         │
│                                                 │
│                                                 │
│ Elapsed: 00:00:02 Remaining: 00:03:18   Rate:   0.00byte/min │
│ Current Block: 0  Total Block: 131072           │
│                                                 │
│ Data Block Process:                             │
│ ████████████████████████████████████    1.00%  │
│                                                 │
│ Total Block Process:                            │
│ ████████████████████████████████████    0.00%  │
└─────────────────────────────────────────────────┘
```

```
┌─────────────────── Partclone ───────────────────┐
│ Partclone v0.3.23 http://partclone.org          │
│ Starting to clone device (/dev/sdb2) to image (-) │
│ Reading Super Block                             │
│ Calculating bitmap... Please wait...            │
│ done!                                           │
│ File system:   EXTFS                            │
│ Device size:    15.8 GB = 3863552 Blocks        │
│ Space in use: 605.4 MB = 147799 Blocks          │
│ Free Space:     15.2 GB = 3715753 Blocks        │
│ Block size:   4096 Byte                         │
│                                                 │
│                                                 │
│ Elapsed: 00:01:32 Remaining: 00:01:00   Rate: 237.95MB/min │
│ Current Block: 3579216  Total Block: 3863552    │
│                                                 │
│ Data Block Process:                             │
│ ██████████████████████████          60.27%      │
│                                                 │
│ Total Block Process:                            │
│ ██████████████████████████████████  92.64%      │
└─────────────────────────────────────────────────┘
```

Résumé de son travail

```
┤ Choose mode ├
Now you can choose to:

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/sda1[/home/pi/Docum

                                  <Ok>
```

Voilà le fichier de sauvegarde est là à disposition

Vous avez sauvegardé votre carte SD. Cette sauvegarde pourra donc être utilisée dans l'autre sens (restauration) en cas de besoin. Retour en arrière si plantée plus tard.

Il est bien de faire des sauvegardes / clones régulièrement

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