

CloneZilla Image Creation Guide:

1. Take the CloneZilla USB Thumbdrive you just made or previously made and insert it into a USB port on the computer that you want to image.

Specific notes: *If you are imaging or restoring the simulators, make sure to remove the DisplayPort dummy plug (Small dongle plugged into the video card) before trying to boot off the USB drive, otherwise you will get no video output. MAKE SURE TO PLUG IT BACK IN TO THE EXACT PORT WHERE IT WAS on the video card BEFORE BOOTING the exhibit normally.*

2. Boot off the USB drive. This is a wildly different process for every computer, depending on who manufactured the PC. The gist of this is that you want to start with the computer off and the USB drive in the computer.

When the computer starts, you will need to repeatedly press the key to select the boot device option menu. Unfortunately this is not standardized between manufacturers, common ones are F10, F9, F12, or Delete.

Please refer to this:

<https://youtu.be/wH9q3KSISvQ>

or this (If the computer has a graphical bios):

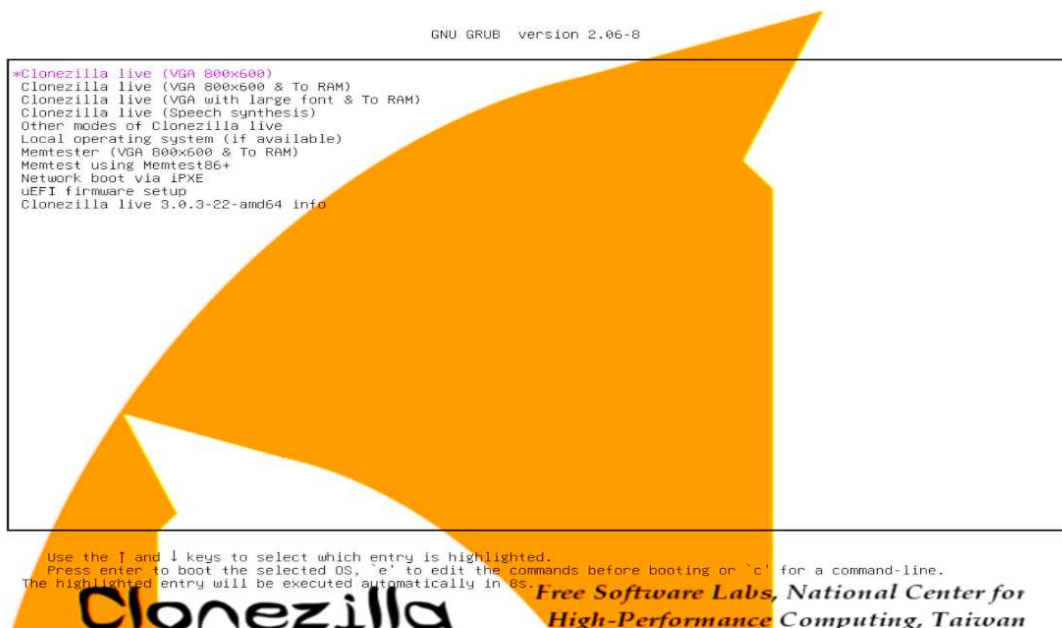
<https://youtu.be/BKVShiMUePc?t=67>

for some assistance, if you are having trouble.

Note: Some PCs do better on USB 3 ports vs USB 2. For other PCs, it can be the opposite. Try moving the bootable drive to different USB ports if you are having trouble, especially between black and blue color ports.

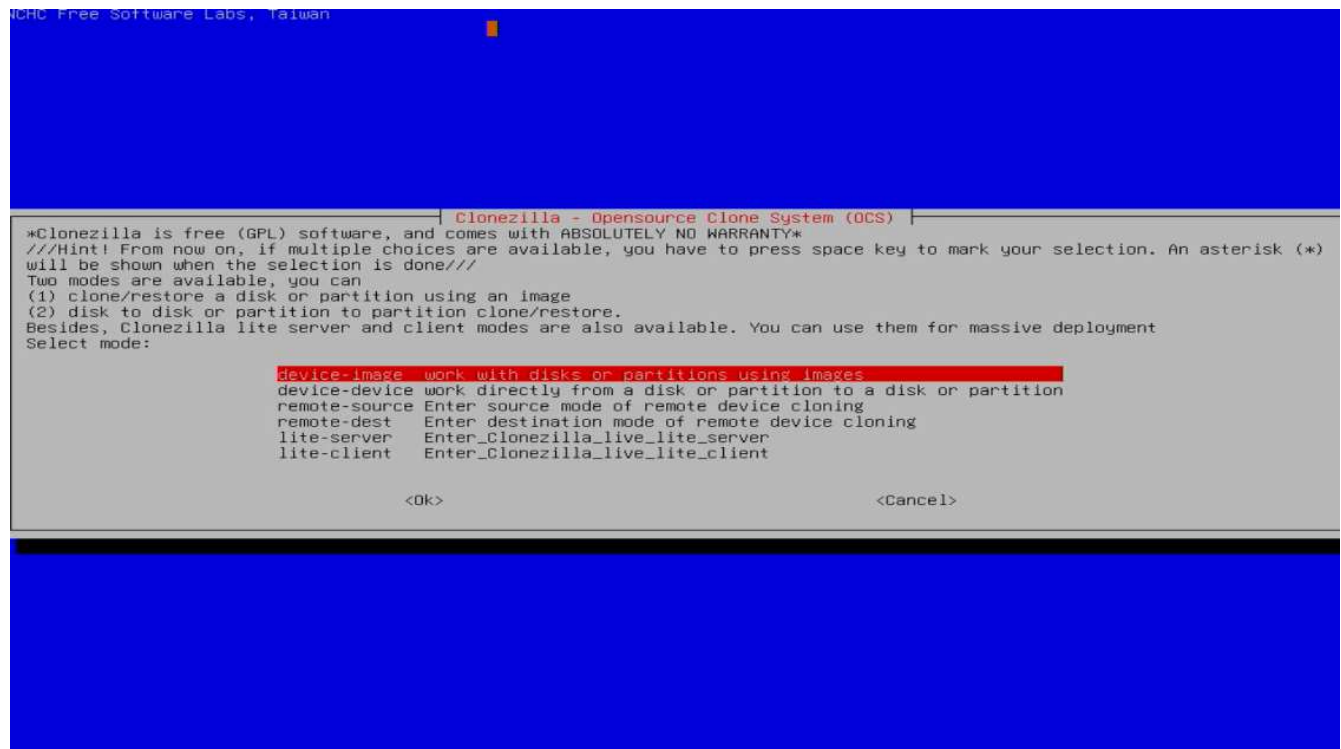
Also, sometimes wireless keyboards do not initialize in time to let you get into the BIOS or boot menu. Try using a wired keyboard if you have trouble.

3. Once succesfully booted off the USB drive, you should see this screen:



4. Pick the first option. (Press enter)

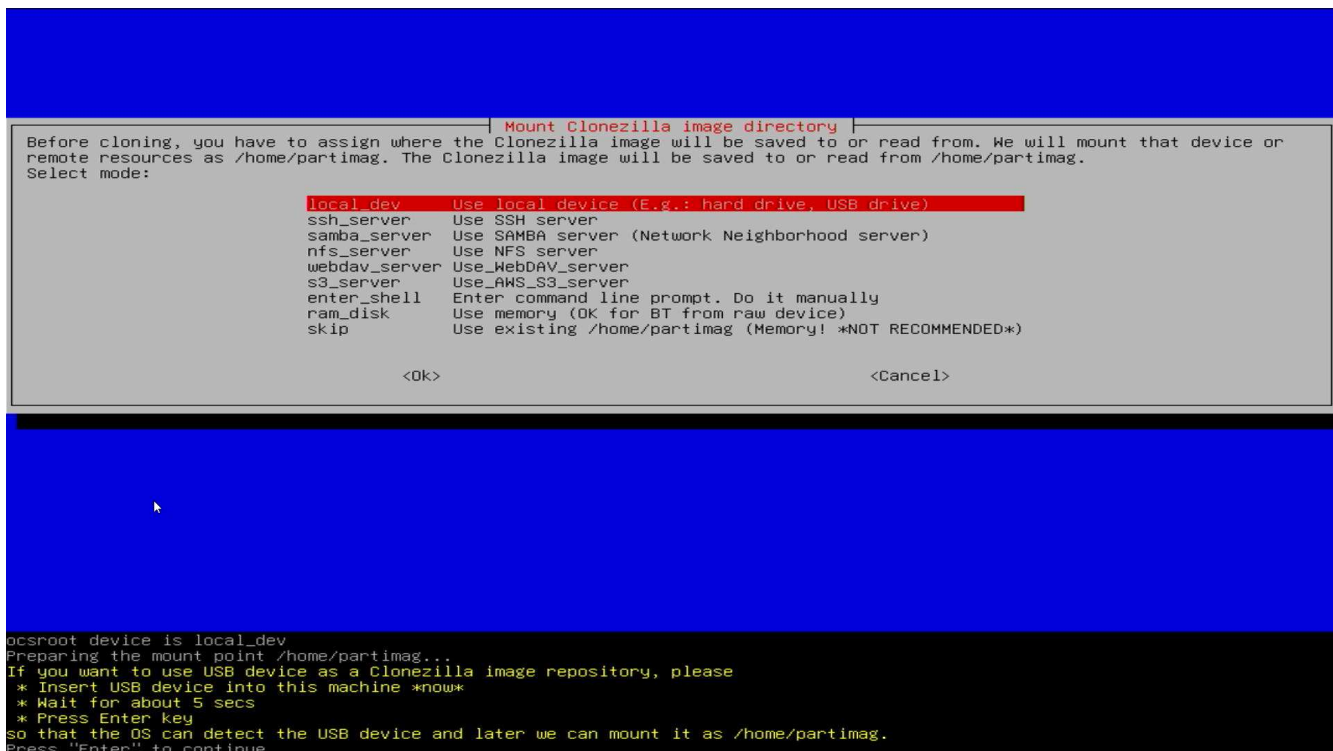
You can then press enter for all the default options until you get to this screen:



5. At this point, plug in the EXHIBITS BACKUPS External-USB Drive. For optimal speed, plug it into a blue port (USB 3) although it will work on any USB port.

6. choose device-image

7. You should see the below message. Since you already inserted the EXHIBITS BACKUP drive, you can just hit enter.



You should then see this screen:

```
Every 3.0s: ocs-scan-disk                                debian: Wed Mar  8 11:02:26 2023
2023/03/08 11:02:26
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/nvme0n1: SAMSUNG_MZALQ128HBHQ-000L1_ SAMSUNG_MZALQ128HBHQ-000L1_S4YFNX0NC23997 128GB
/dev/sdb: Portable_ Seagate_Portable_NB171NQR-0:0 4001GB
=====
Update periodically. Press Ctrl-C to exit this window.
```

8. Press Ctrl + C

9. Once you get to this screen:

NCHC Free Software Labs, Taiwan

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)...

```
nvme0n1p1 128M_MS_Reserved_Partition(In_SAMSUNG_MZALQ128HBHQ-000L1_)_SAMSUNG_MZALQ128HBHQ-000L1_S4YFNX0NC23997
nvme0n1p2 100M_vfat(In_SAMSUNG_MZALQ128HBHQ-000L1_)_SAMSUNG_MZALQ128HBHQ-000L1_S4YFNX0NC23997
nvme0n1p3 118.5G_ntfs(In_SAMSUNG_MZALQ128HBHQ-000L1_)_SAMSUNG_MZALQ128HBHQ-000L1_S4YFNX0NC23997
nvme0n1p4 532M_ntfs(In_SAMSUNG_MZALQ128HBHQ-000L1_)_SAMSUNG_MZALQ128HBHQ-000L1_S4YFNX0NC23997
sdb1      16M_MS_Reserved_Partition(In_Portable_)_Seagate_Portable_NB171NQR-0:0
sdb2      3.6T_exfat(In_Portable_)_Seagate_Portable_NB171NQR-0:0
```

<Ok>

<Cancel>

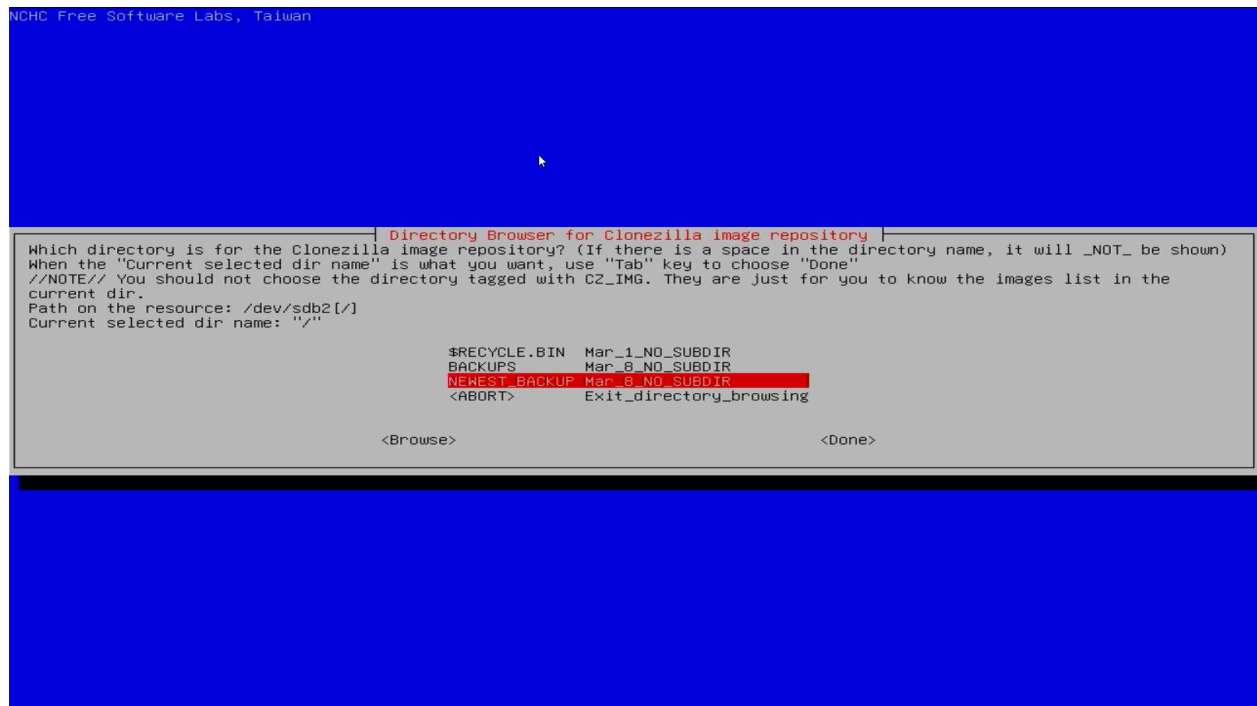
You will need to choose the EXHIBITS BACKUP USB portable hard drive. Be careful! This may not always be sdb2 or even the last entry. What you're looking for is:

- It should start with 3.6T, this refers to the fact that the drive is 4TB.
- It should say exfat, the partition type
- It should say SEAGATE PORTABLE or something very similar.

Once you've found an entry that matches all of the above, select it and hit enter.

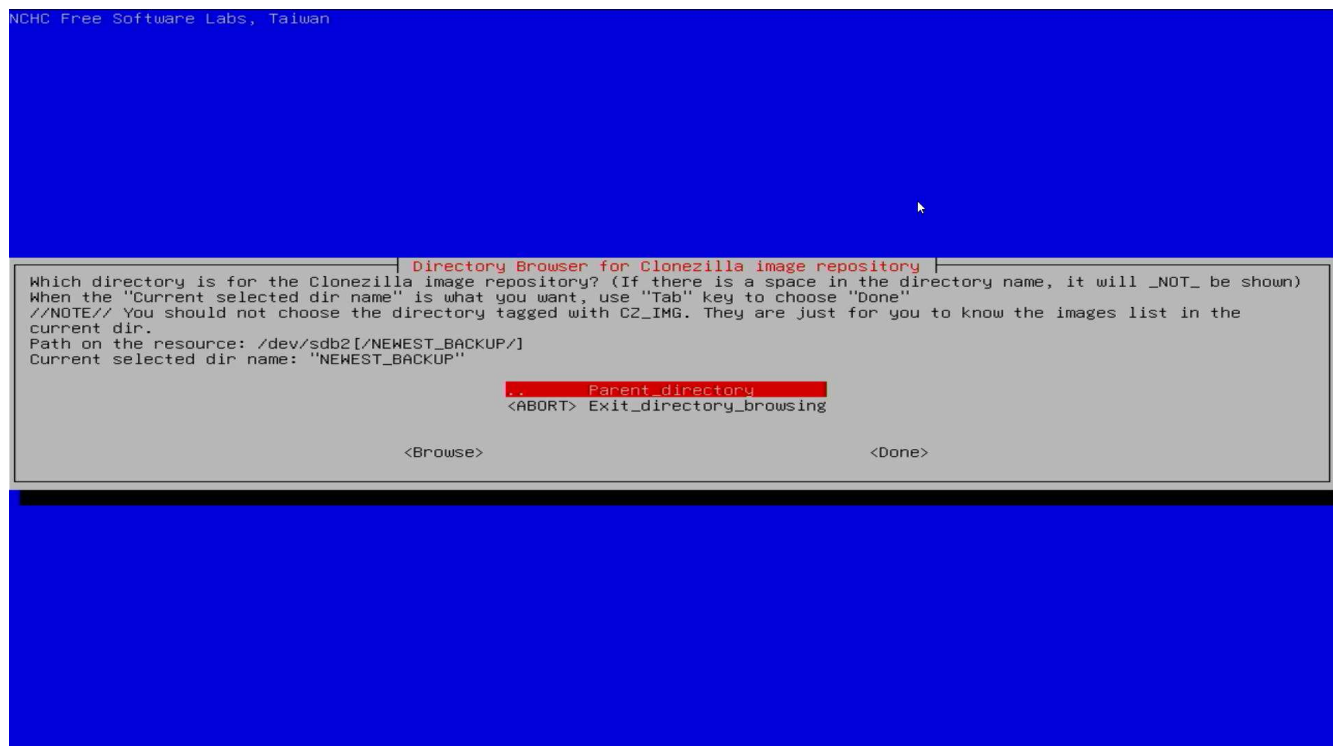
10. On the next screen choose no-fsck

11. On this screen:

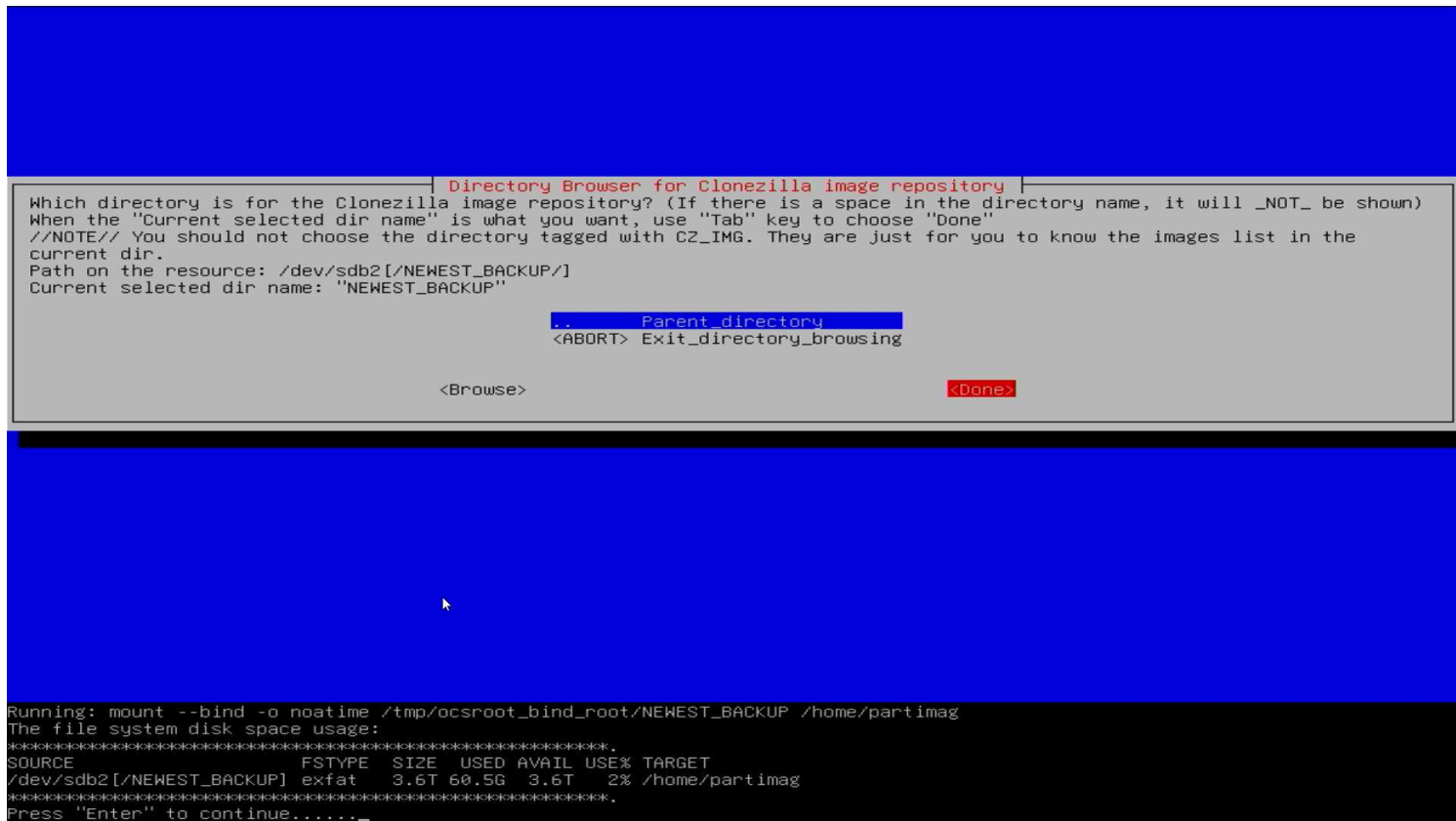


Choose NEWEST_BACKUP folder.

12. You should now see this screen:



Which means you are in the NEWEST_BACKUP folder on the portable hard drive. Choose done, and you should see this message:



Press Enter.

13. On the next screen, choose the “Beginner” option.

14. Choose “savedisk”

15. On the next screen, name your backup. Name it something obvious related to the exhibit name. I do not know if you can have spaces. I would suggest not having spaces until tested.

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.

middleFlightSim

<Ok>
<Cancel>

16. Press enter

17. You should see the selection screen for internal hard disks to image. Most exhibits should only have one option. If there is more than one, you will need to repeat this process and make multiple images.

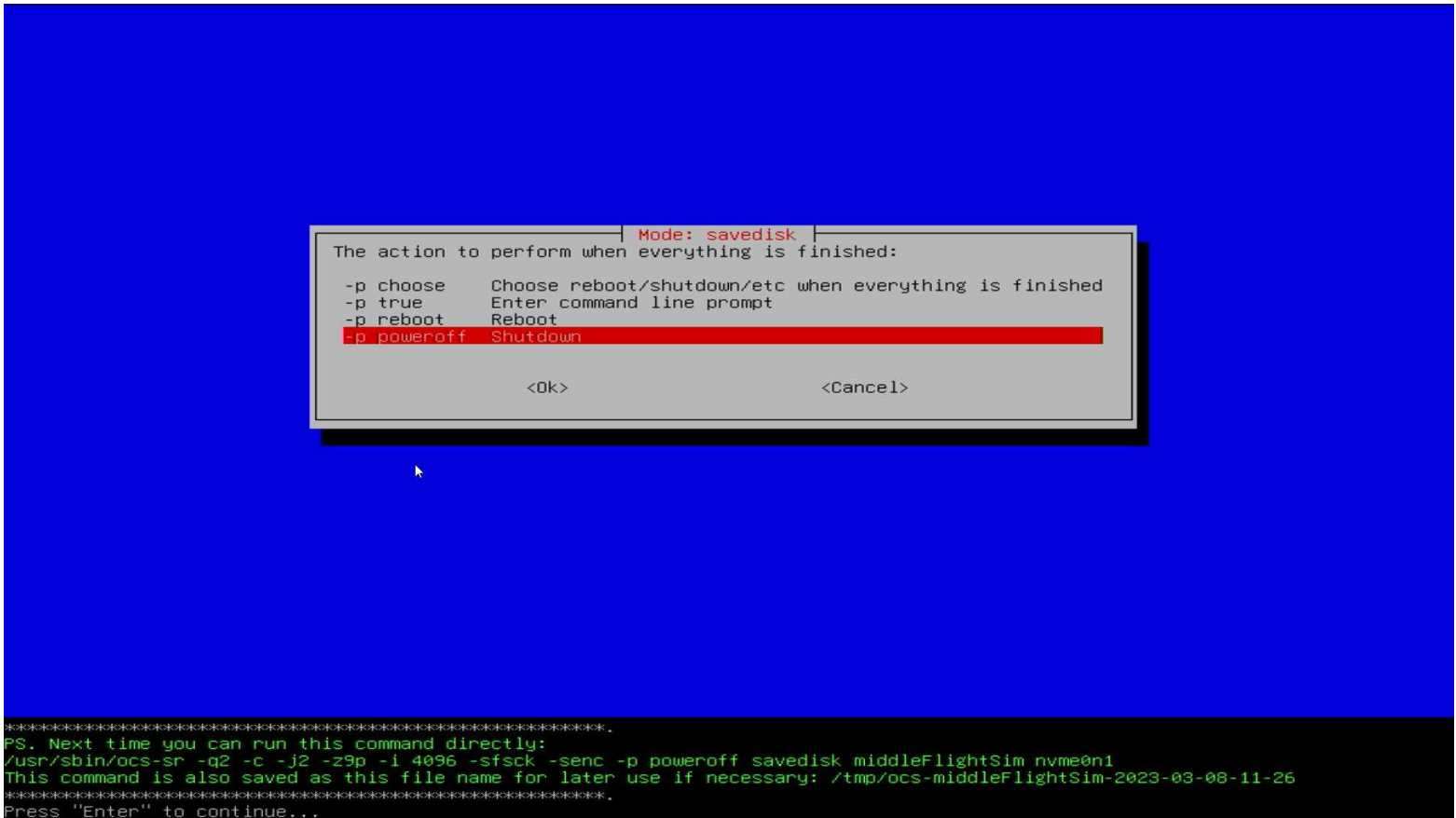
Clonezilla - Opensource Clone System (OCS) | Mode: savedisk

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

[*] nvme0n1 128GB_SAMSUNG_MZALQ128HBHQ-000L1_SAMSUNG_MZALQ128HBHQ-000L1_S4YFNX0NC23997

<Ok>
<Cancel>

18. Once you have selected which internal disk to image to the portable HDD, press enter.
19. Choose -z9p
20. Choose -sfsck (skip)
21. Select “Yes, check the saved image”
22. Select -senc (Not to encrypt)
23. Choose -p poweroff, (Although you can leave the computer on, but make sure to turn it off before removing the USB HDD and thumbdrive, if you do so.)
24. You should then see this message:




and this means the backup is about to start! Press enter to start it!


You will get a confirmation message similar to this:


```

Partclone v0.3.23 http://partclone.org
Starting to check image (-)
Calculating bitmap... Please wait...
done!
File system:  NTFS
Device size:  127.2 GB = 31063807 Blocks
Space in use: 107.1 GB = 26140561 Blocks
Free Space:   20.2 GB = 4923246 Blocks
Block size:   4096 Byte

Elapsed: 00:00:30 Remaining: 00:09:50   Rate:  10.35GB/min
Current Block: 1268780   Total Block: 31063807

Data Block Process:
 4.83%

Total Block Process:
 4.08%

```

```

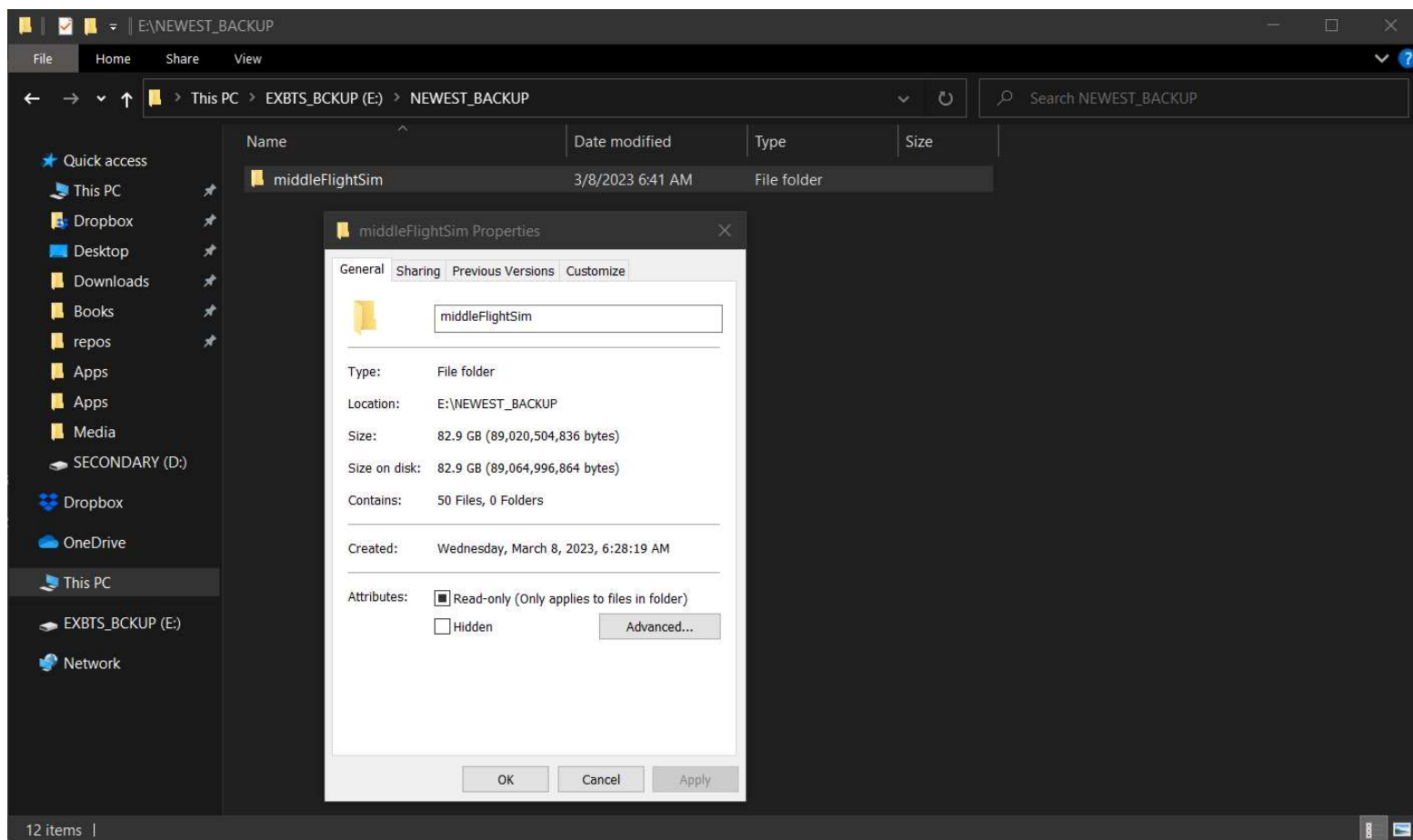
Total Block Process:
100.00%

Checked successfully.
The image of this partition is restorable: nvme0n1p4
*****
All the images of partition or LV devices in this image were checked and they are restorable: middleFlightSim
Summary of image checking:
=====
Partition table type: gpt
The partition table file for this disk was found: nvme0n1, /home/partimag/middleFlightSim/nvme0n1-pt.sf
Image was saved by dd or partclone.dd. No need or no way to check the file system integrity: nvme0n1p1
The image of this partition is restorable: nvme0n1p1
The image of this partition is restorable: nvme0n1p2
The image of this partition is restorable: nvme0n1p3
The image of this partition is restorable: nvme0n1p4
All the images of partition or LV devices in this image were checked and they are restorable: middleFlightSim
=====
The mounted bitlocker device was not found. Skip unmounting it.
Now syncing - flush filesystem buffers...
Ending /usr/sbin/ocs-sr at 2023-03-08 11:52:36 UTC...
"ocs-live-general" finished.
Check /var/log/clonezilla.log for more details.
The next step: poweroff
Trying to unmount /home/partimag... done!
Trying to unmount /tmp/ocsroot_bind_root... done!
Synchronizing cached writes to persistent storage... done!
Disk /dev/nvme0n1 is not a hard disk device. No need to park it.
Unmounting busy partition /dev/sda1... done!
Unmounting busy partition /dev/sda1... umount: /run/live/medium: target is busy.
done!
Disk /dev/sda is not a hard disk drive. No need to park it.
Disk /dev/sdb is not a hard disk drive. No need to park it.
Will poweroff (Press Ctrl-C to abort)... 7 6 5 ^Cuser@debian:~$

```

(I have aborted it to save the screen, yours will simply shut down unless there is an error.)

25. Turn off the exhibit computer you were backing up if it is still on.
26. Remove the EXHIBITS BACKUPS HDD and the thumbdrive.
27. Put the EXHIBITS BACKUPS HDD into a working computer.
28. Open the NEWEST_BACKUP folder on the EXHIBITS BACKUPS HDD
29. Right click the backup folder you made, and click properties



Make sure it's a reasonable size. If it's less than about 30gb, something may have gone wrong.

30. Press ok
31. Move the new backup out of NEWEST_BACKUP into the appropriate folder in BACKUPS
32. Use “Safely remove hardware” in Windows to eject the EXHIBITS BACKUPS HDD
33. Return the EXHIBITS BACKUPS HDD to the exhibits department manager.