

Partial microSD Image

Instructions to partially clone the image from a microSD (or anything else), where the filesystem does not cover the entire disk. For example, a 128GB microSD with a fresh RasPi image that only encompasses ~5.4 GB of space.

Run `sudo fdisk -l` to display partitioning details:

```
Disk /dev/mmcblk0: 119.38 GiB, 128177930240 bytes, 250347520 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: 0x1aa4489a

Device            Boot    Start        End Sectors   Size Id Type
/dev/mmcblk0p1                8192    1056767  1048576   512M  c W95 FAT32 (LBA)
/dev/mmcblk0p2          1056768  10600447  9543680   4.6G  83 Linux
```

In this case, sector size of `512 bytes` multiplied by the **End** sector is the total space used by these partitions.

`10600447 * 512 bytes = 5.4GB`

So divide that total size by whatever block size is preferred to use with **dd**, and round up to an integer:

`(10600447 * 512 bytes)/4MB < 1400`

Finally, run **dd** with **count**:

```
sudo dd if=/dev/mmcblk0 of=partial_image.img bs=4M status=progress count=1400
```

Check the image with gparted:

```
sudo gparted partial_image.img
```

Or, mount the partitions in the image using [this technique](#):

```
$ sudo mount -o loop,offset=4194304,sizelimit=536870912 ./partial_image.img
/mnt/mount_point/mount_A
# offset: 512 bytes * 8192 sectors = 4194304 bytes
# sizelimit: 512 bytes * 1048576 sectors = 536870912 bytes

$ sudo mount -o loop,offset=541065216,sizelimit=4886364160 ./partial_image.img
/mnt/mount_point/mount_B
# offset: 512 bytes * 1056768 sectors = 541065216 bytes
# sizelimit: 512 bytes * 9543680 sectors = 4886364160 bytes
```

If it's just a single partition image, then you can get away with simply this:

```
sudo mount -o loop partial_image.img /mnt/mount_point/
```

Apparently you can also use **kpartx**:

```
$ sudo kpartx -a partial_image.img
$ sudo mount -o loop /dev/mapper/loop0p2 /mnt/mount_point

# after you're done:
$ sudo kpartx -d partial_image.img
```

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