Install OS Into eMMC

Roma is shipped with pre-installed Debian 12. If you want to reinstall the OS in any case, follow below instructions.

1. Download Roma factory image

1.1 TF Card

Please flash this image to your TF card. Also, make space for TF to store the eMMC image if you want to flash the OS into eMMC.

https://drive.google.com/file/d/17IwuxZ65fVoZO0m0a43N87pKvTAjv-f3/view?usp=sharing

1.2 Image for eMMC

If you want to install the OS to eMMC, please use this image after you boot from TF.

https://drive.google.com/file/d/1WonFH_eYhNpoJXsjhh29N_YKLrchWRnv/view?usp=sharing

2. Unzip the image zip file

```
unzip debian12-sdcard.img-en-roma.zip
```

You will have an `sdcard.img` file.

3. Burning image into storage

3.1 Burning image into SD card

You can use any burning tool that you are comfortable with. Here we take Etcher on Windows as an example.

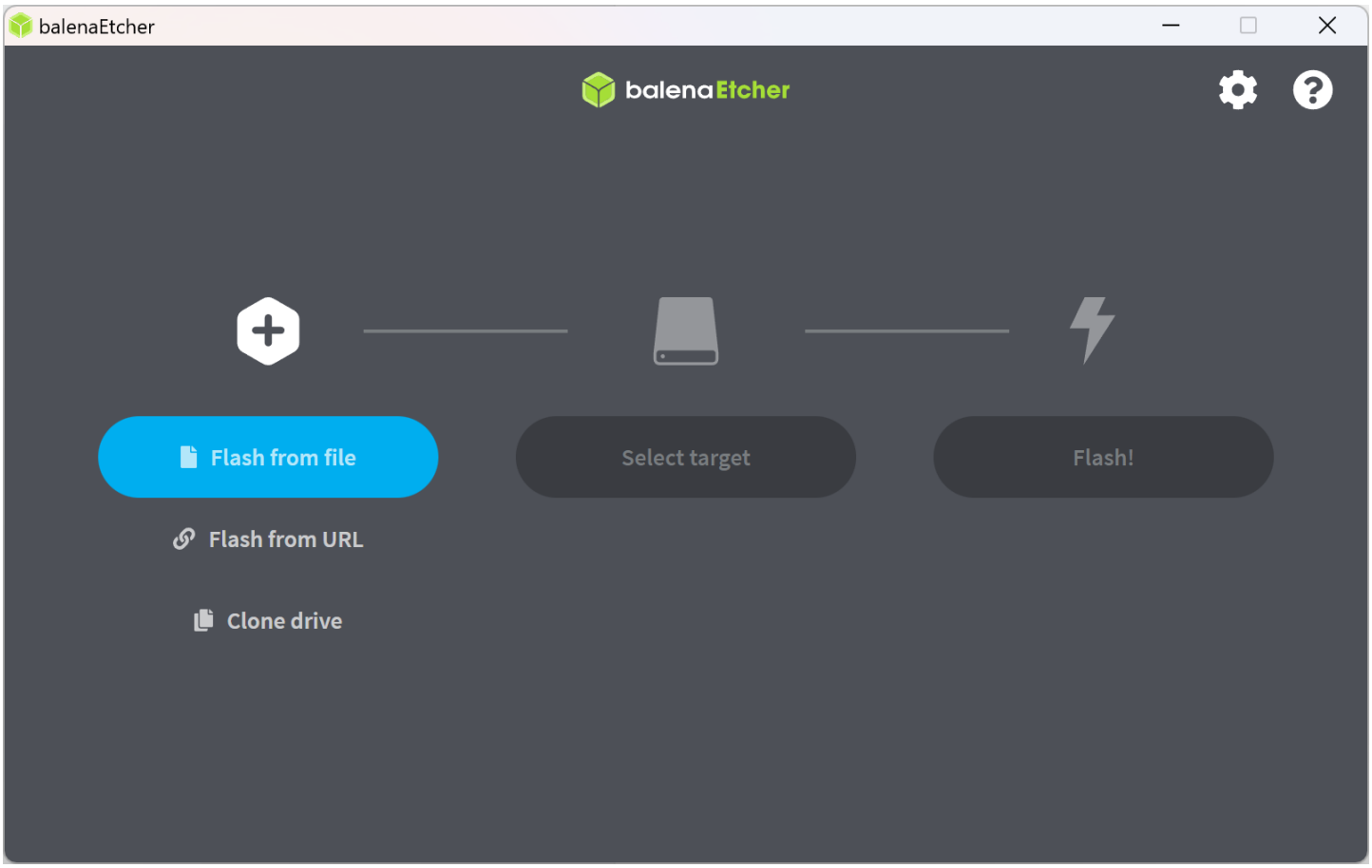
Download Etcher from: https://etcher.balena.io/

3.1.1 Format TF card

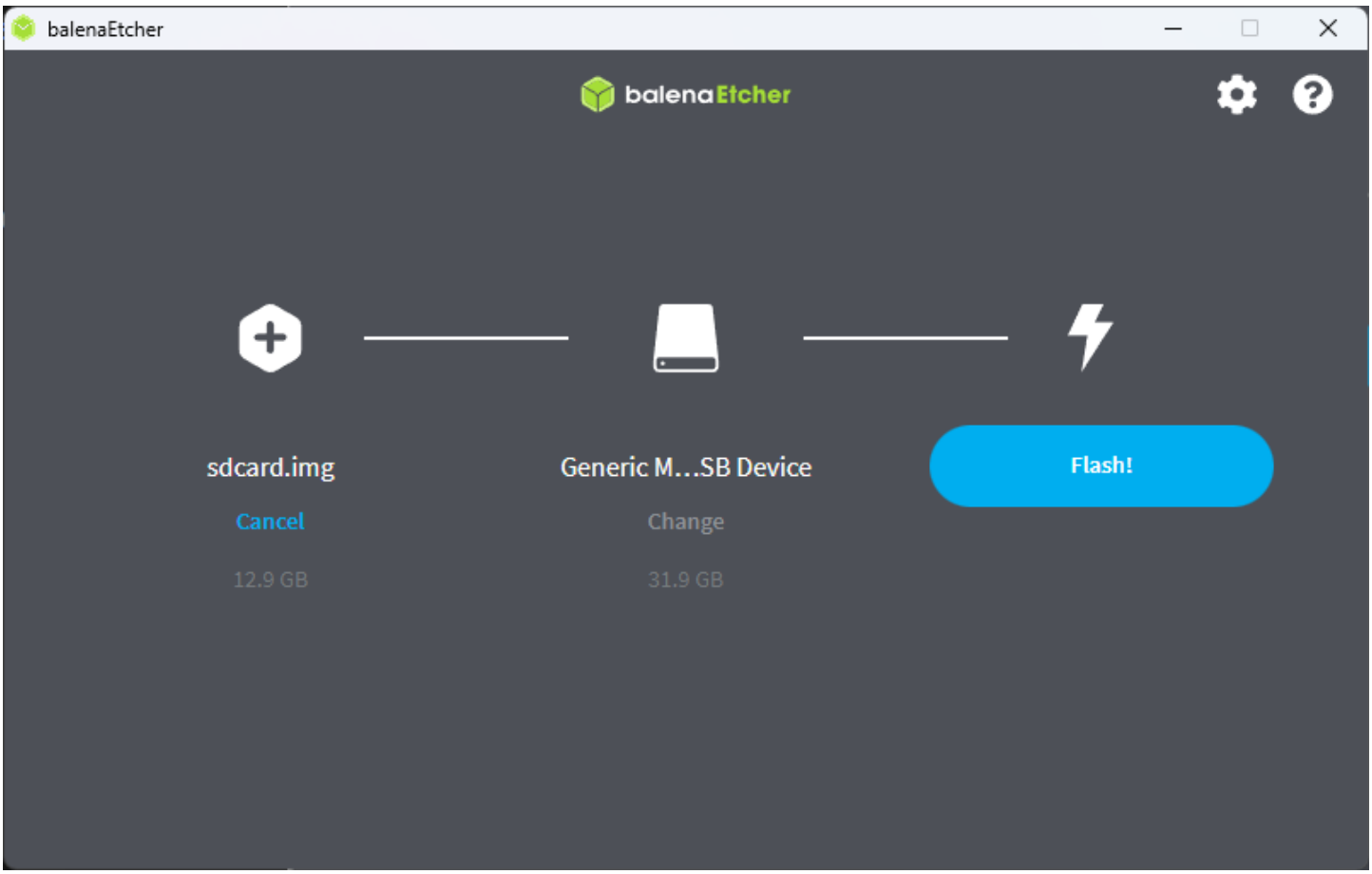
Use disk management or any format tool to format your TF card first. This step is not necessary, but it can make sure your SD card is clean and ready for the next step.

3.1.2 Burning image into TF card

First locate the Roma system image you are going to burn into TF card



Then select your TF card location



Finally, click "Flash" and wait for finishing.

3.2 Boot from TF card

- Shut down Roma.
- Hold "RV+t" keys then press the power key.
- Release "RV+t" keys, system will boot from TF card.

3.3 Burning image into eMMC

If you want to install the OS into eMMC, download the factory image for eMMC, and unzip the image, then copy it to another storage which plugs into Roma later.

3.3.1 Locating eMMC device

```
# locate your eMMC disk, you should be able to find the EMMC on mmcblk0
sudo fdisk -l
```

3.3.2 Burning image into eMMC

```
dd if=./sdcard.img of=/dev/mmcblk0 bs=10M

# check if burning is successful, you should see below screen
sudo fdisk -l
```

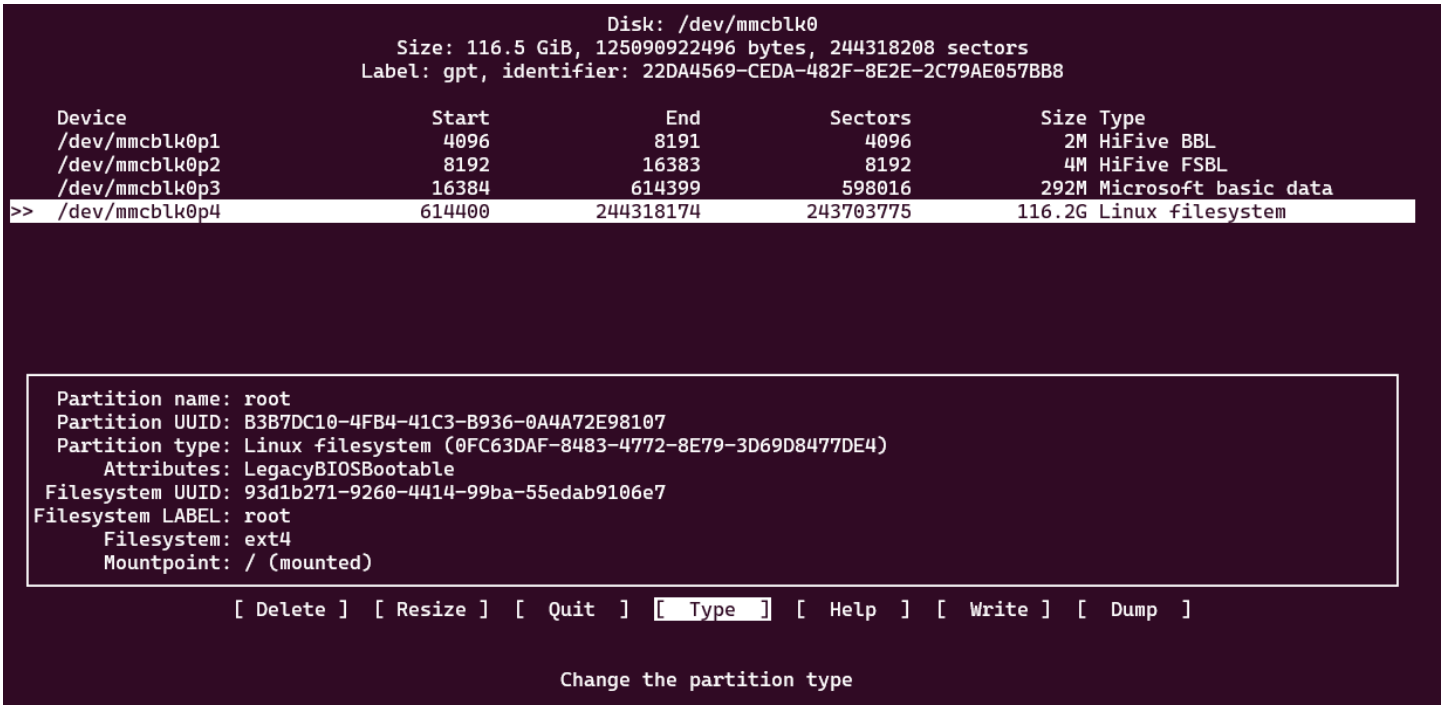
```
Disk /dev/mmcblk0: 28.91 GiB, 31037849600 bytes, 60620800 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: gpt
Disk identifier: 62B2380F-0600-4172-AF4B-979E1F6577B4

Device          Start      End  Sectors  Size Type
/dev/mmcblk0p1   4096     8191     4096    2M HiFive BBL
/dev/mmcblk0p2   8192    16383     8192    4M HiFive FSBL
/dev/mmcblk0p3  16384   221183   204800  100M EFI System
/dev/mmcblk0p4 221184 60620733 60399550 28.8G Linux filesystem
root@starfive:~#
```

3.3.3 Resize the data partition

Modify partition table, select remember when you select the "Write" after resizing

```
1 sudo cfdisk /dev/mmcblk0
```



Executing the resizing

```
1 sudo resize2fs /dev/mmcblk0p4
```

```
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
roma@starfive:~$ sudo cfdisk
[sudo] password for roma:
cfdisk: cannot open /dev/sda: No such file or directory
roma@starfive:~$ lsblk
NAME         MAJ:MIN RM   SIZE RO TYPE MOUNTPOINTS
mtdblock0     31:0    0   256K  0 disk
mtdblock1     31:1    0     3M  0 disk
mtdblock2     31:2    0     1M  0 disk
mmcblk0      179:0    0 116.5G  0 disk
├─mmcblk0p1  179:1    0     2M  0 part
├─mmcblk0p2  179:2    0     4M  0 part
├─mmcblk0p3  179:3    0   292M  0 part
└─mmcblk0p4  179:4    0 116.2G  0 part /
mmcblk0boot0 179:8    0     4M  1 disk
mmcblk0boot1 179:16   0     4M  1 disk
nvme0n1      259:0    0 931.5G  0 disk
roma@starfive:~$ sudo cfdisk mmcblk0
cfdisk: cannot open mmcblk0: No such file or directory
roma@starfive:~$ sudo cfdisk /dev/mmcblk0

roma@starfive:~$ sudo resize2fs /dev/mmcblk0p4
resize2fs 1.46.6-rc1 (12-Sep-2022)
Filesystem at /dev/mmcblk0p4 is mounted on /; on-line resizing required
old_desc_blocks = 2, new_desc_blocks = 15
The filesystem on /dev/mmcblk0p4 is now 30462971 (4k) blocks long.

roma@starfive:~$
```