



Installing StellarMate

NOTE: To control the AStarBox power sockets, you must download and install the [AStarBox control software](#), even if you are using the Indi or TheSky plugins. Do this after installing StellarMate.

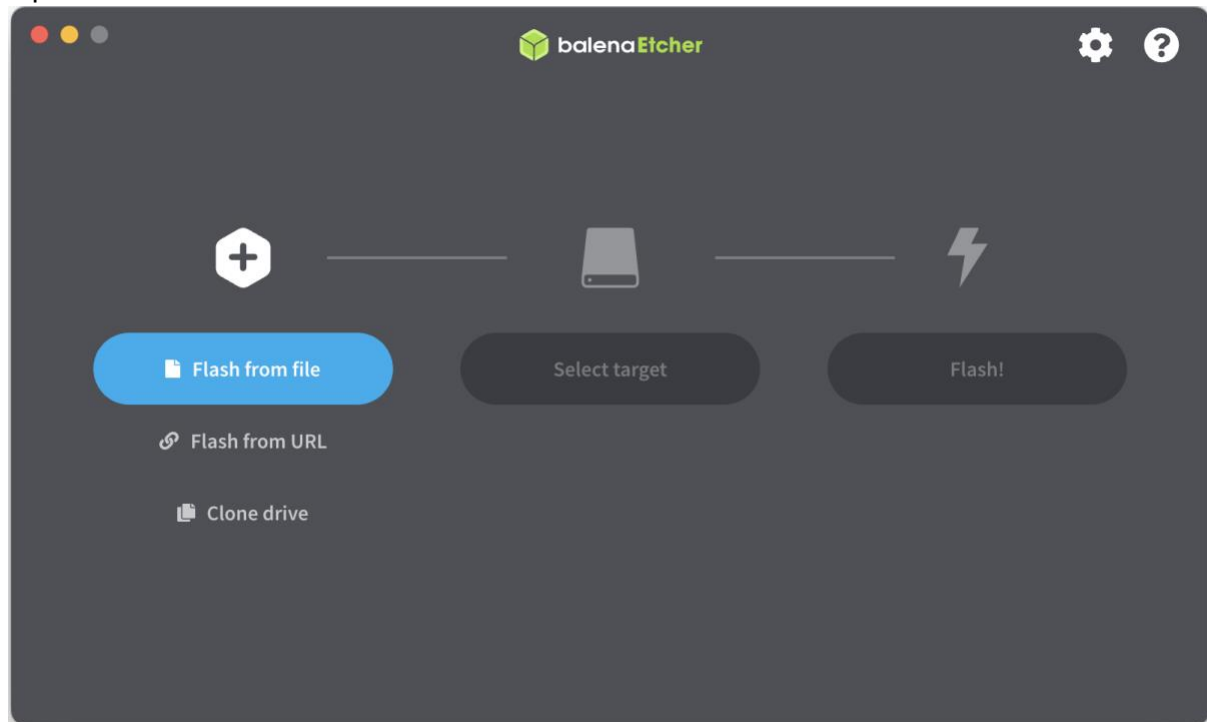
Installing the StellarMate is simple. You will need to download the latest image, then flash it to a microSD card.

Instructions for downloading and using StellarMate can be found once you purchase a copy of StellarMate. The download instructions can be found here:

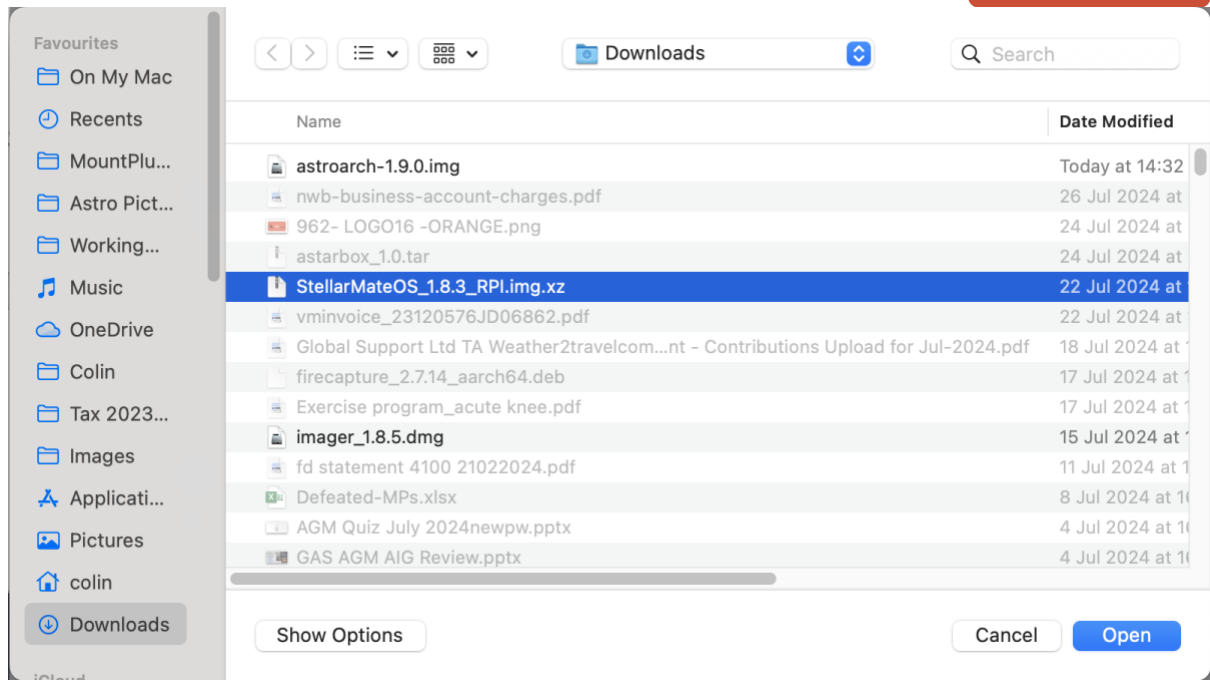
<https://www.stellarmate.com/products/stellarmate-os.html>

The StellarMate image will then need to be flashed to a microSD card or NVME drive (see the [assembly instructions](#) for details of how to use an NVME with your AStarBox). There are several ways of doing this, but [Balena Etcher](#) works well and is described below. There are USB card readers and USB to NVME enclosures available if you don't have the facility to attach these directly to your computer. If you are retrofitting an NVME disk, you can copy your current SD card directly to the installed NVME – see the Appendix.

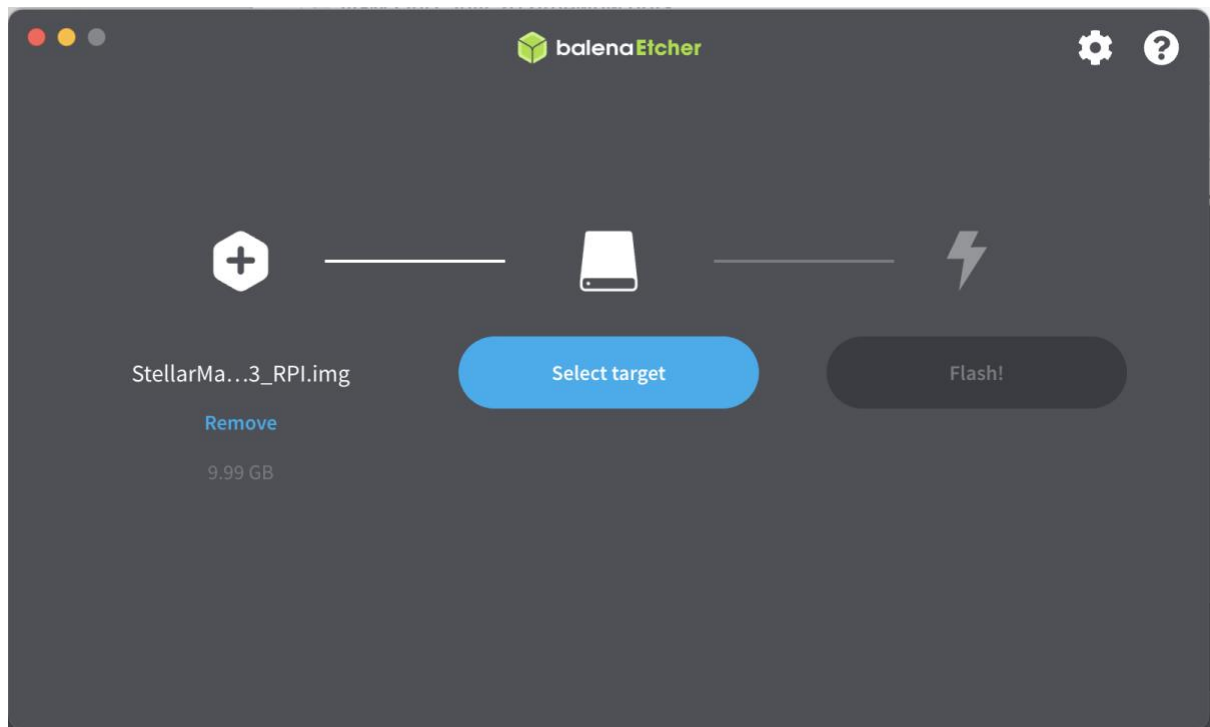
Open Balena Etcher.



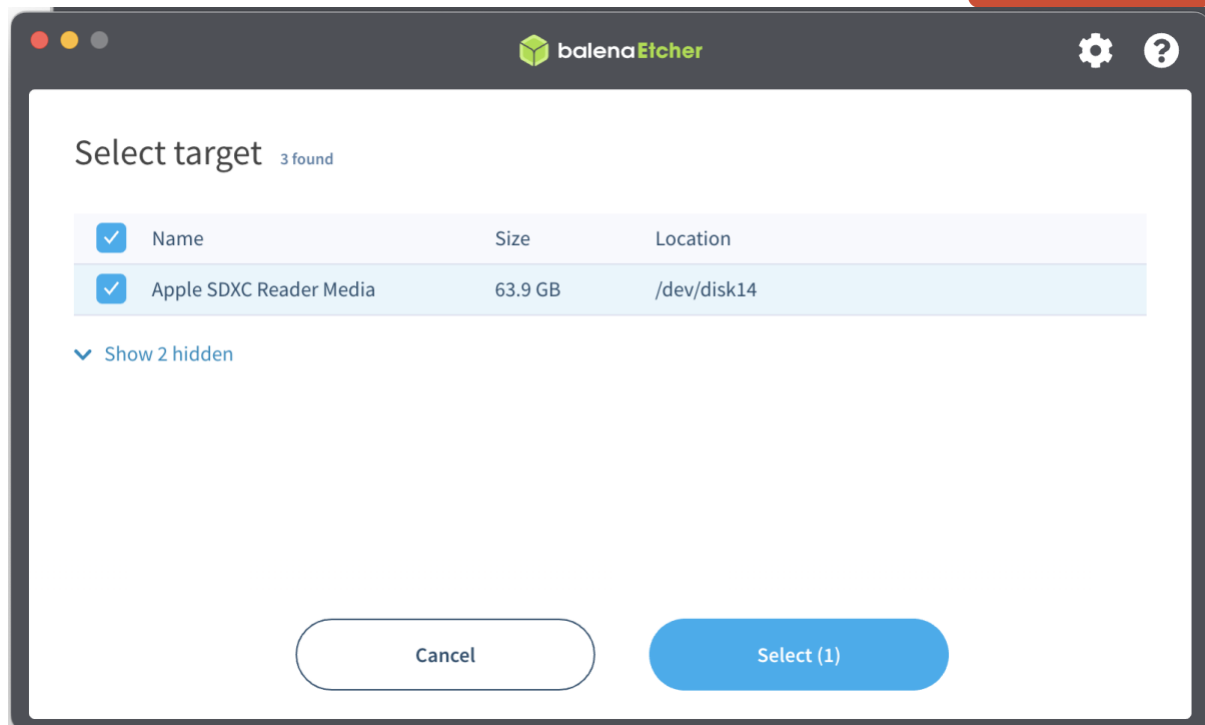
Click on **Flash from file** and select the StellarMate distribution you just downloaded.



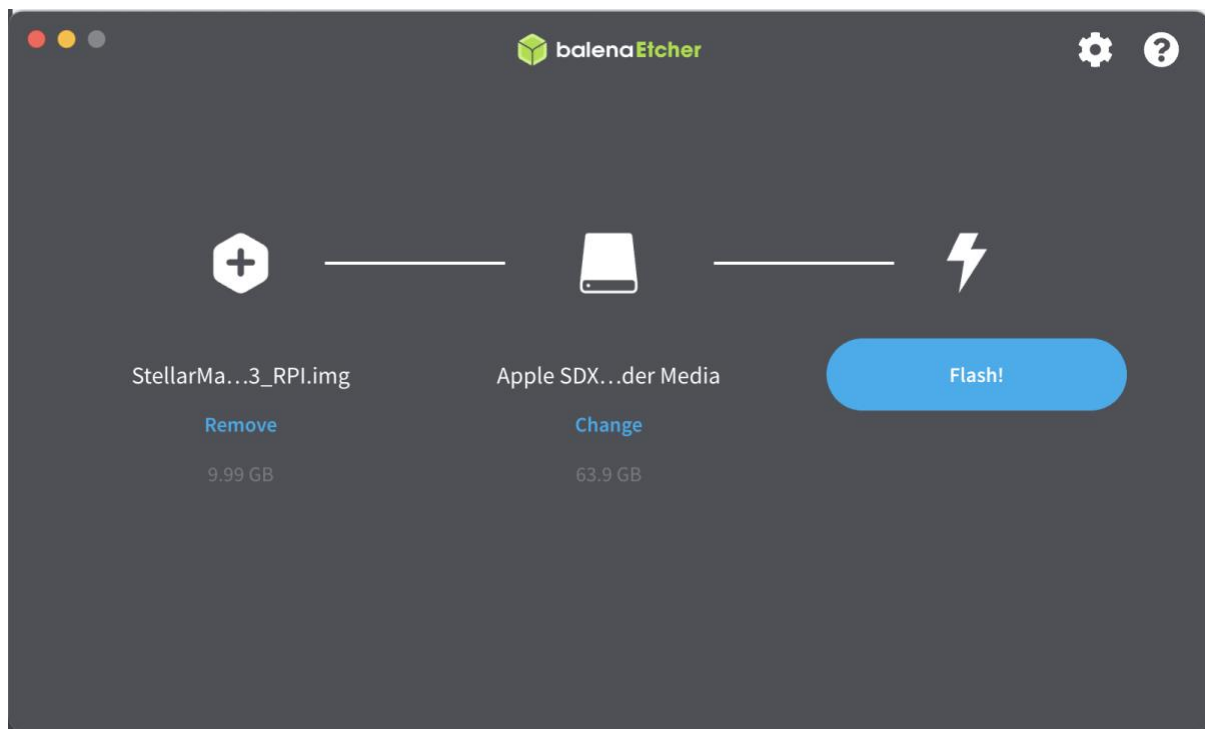
Click on **Select target**.



Choose the SD card you want to flash the image to.



Press **Select**. You can now flash the image by pressing **Flash!**



Balena Etcher will now flash and verify the image – it will take several minutes to do this. Once completed, you can remove the SD card from your computer.

If using an SD card, once set up, put the card in the microSD card socket – this can be accessed by turning your AStarBox over. In this configuration, the card should be



inserted so that the contacts are face down – the little lip on the card should face up. You will be able to remove the card by using your thumbnail on the lip and pulling outward. See image below.



Figure 1. Location of the SD card slot. The electrical connectors should face downwards and be inserted into the slot. The lip on the SD card will allow you to remove the card if necessary.

If using an NVME, insert this into the Waveshare adapter as described in the [assembly instructions](#) before completing assembly. There are instructions for increasing the speed of the NVME later in the guide.

WARNING: Do NOT connect your AStarBox directly to the mains. This is dangerous, will destroy your AStarBox and Raspberry Pi 5 and will invalidate your warranty.

You can now power up the Raspberry Pi. You can either do this by connecting 12v to power input XT60 connector, or 5v through the USB-C connector on the Pi. The second method will work fine to control the PI but will not power the external power ports on the AStarBox.



Figure 2. Location of input power. Provide 12 input via the male XT60 connector circled in blue, or 5v through the USB-C port circled in purple.



To connect to StellarMate you can use your favourite VNC viewer (e.g. RealVNC Viewer) using the address `stellarmate.local`. You must first either connect both your computer and your AStarBox to ethernet, or connect your computer to the wifi hotspot created by StellarMate – it will be called **stellarmate**. The WiFi hotspot password is **smate**.

For more details, refer to the StellarMate first time setup guide:

<https://stellarmate.com/support/first-time-setup/stellarmate-os.html>

Other facilities from StellarMate

Accessing files remotely. Smb is installed and enabled under StellarMate. You should be able to see the computer as STELLARMATE in your computer file manager and access files remotely.

StellarMate App. StellarMate also provides an app to control your imaging session. More information can be found at:

<https://stellarmate.com/downloads/mobile-app/category/3-stellarmate-app.html>

Providing Optional Hot Spot. By default, StellarMate provides a hot spot. You may want to also to connect to your home WiFi network. You can do this using the StellarMate app. For details, see:

<https://www.stellarmate.com/help/InfrastructureConnection.html>

By default, the priority for the home network will be 0, and -10 for the hot spot. That way, StellarMate will connect to your home WiFi if available, and if not (e.g. at a remote location), you will be able to connect through the hot spot.

Further Help

The StellarMate site contains lots of useful information:

<https://stellarmate.com>

For help with StellarMate, join the StellarMate discussion forums on indilib.org:

<https://indilib.org/forum/stellarmate.html>

There is also support, a manual and other documentation available to StellarMate users:

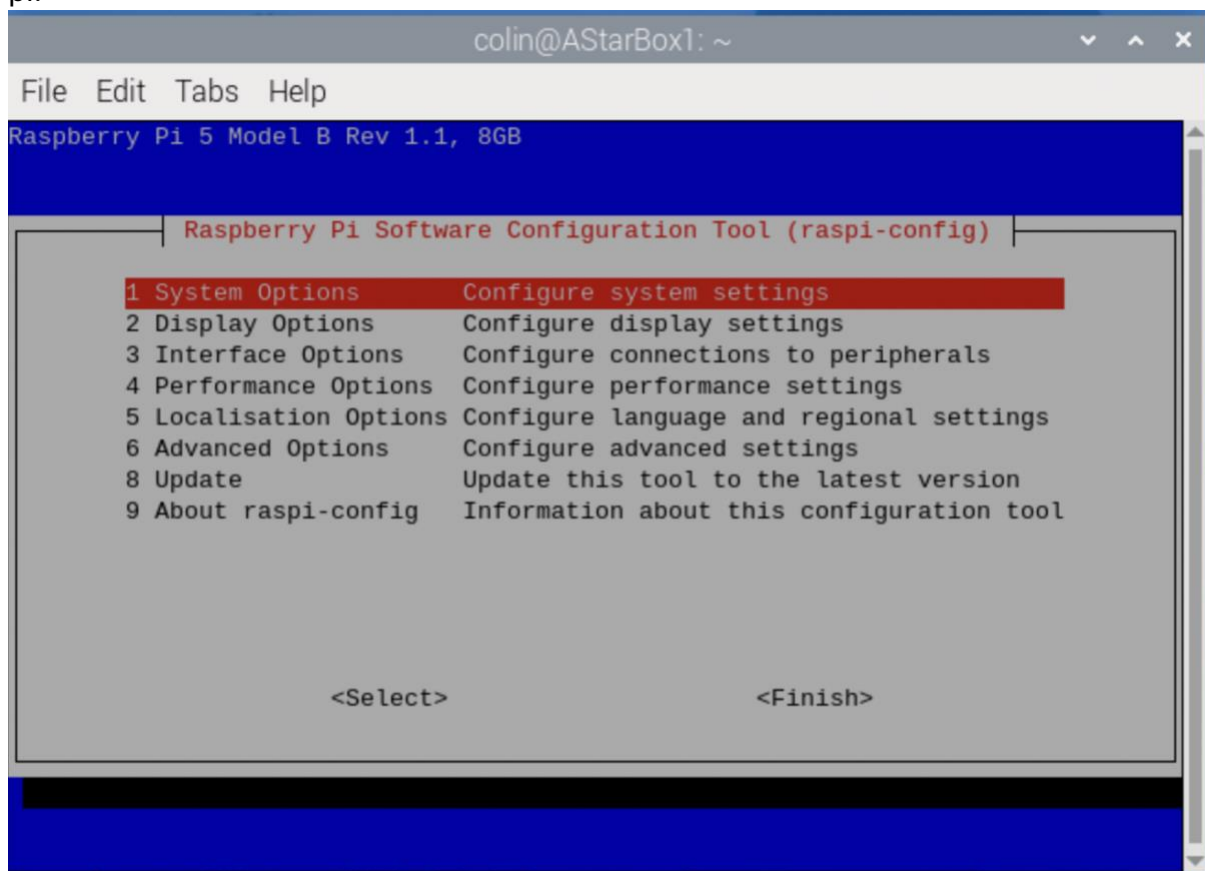
<https://stellarmate.com/support.html>

Increasing the Speed of the NVME

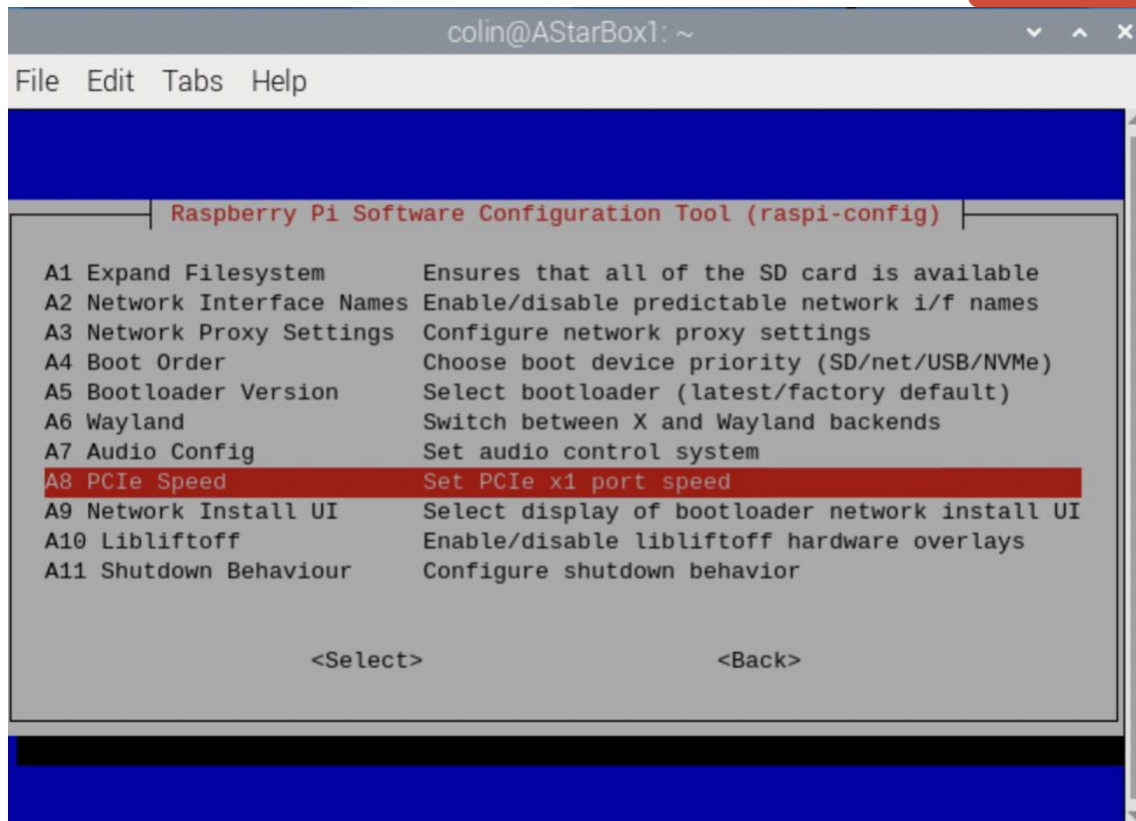
If you have installed an NVME drive, by default this will run at PCIe gen 2 speed (up to 500MB/s). The Pi 5 has an experimental option to work at gen 3 speeds (up to 1000MB/s). This will work for the drive recommended in the [assembly instructions](#), and likely many others. To do this, open a terminal window (click the terminal icon  on the top row) and type:

```
sudo raspi-config
```

This will bring up the screen shown below for altering the configuration of the raspberry pi.



Use the arrow keys to select option 6 (Advanced Options), which will bring up the screen below:



Use the arrow keys to select option A8 PCIe Speed and use the Tab button to select <Yes>.





Navigate back to the start screen and exit. It will ask if you want to reboot. Select yes. Once rebooted, the NVME will operate at up to 1000MB/s speeds.

Appendix: Copying Existing OS from an SD card

This may be particularly useful if you have configured the OS to your desire on an SD card and are now retrofitting the WaveShare NVME card. The NVME must be larger than the SD card for this to work reliably.

Click on the Raspberry at the top left, then select the “SD Card Copier” from the “Accessories” menu – see Figure 3 below.

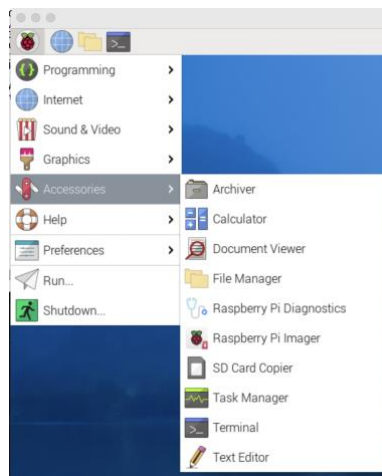


Figure 3. Select the SD Card Copier from the Accessories Menu.

Select the SD card as the “Copy From” device – this is likely called `/dev/mmcblk0`, and the NVME as the “Copy To” device.

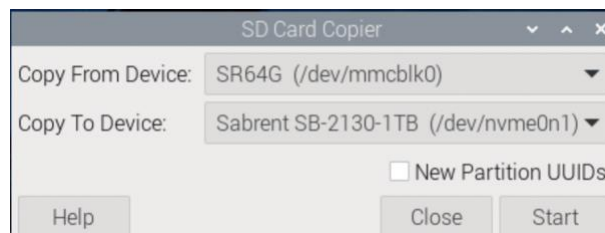


Figure 4. Select the SD as the copy from and the NVME as the Copy To device.

Once the devices have been selected, press Start. This will warn you that the contents of the NVME will be erased. Select Yes and let the process complete. This may take a while depending on the size of the SD card. Once done, shut down the Pi, remove the SD card and it will reboot from the NVME card. You may wish to increase the PCIe speed – see optional configuration above.