SETTING UP WAVESHARE JETRACER

Github : https://github.com/waveshare/jetracer
Jetson nano dev kit EMMC guide: https://www.waveshare.com/wiki/JETSON-NANO-DEV-KIT
Jetracer Guide : https://www.waveshare.com/wiki/JetRacer_AI_Kit

For using jetracer the most stable os is jetpack 4.5.1 .Even the jetracer image which you can find here https://drive.google.com/file/d/1bgCAUJ9m16g5FGuYgKy3WmGI-pGjPXN0/view is built on 4.5.1 .

INSTALL THE JETRACER IMAGE IN YOUR SD CARD

In the Jetracer guide https://www.waveshare.com/wiki/JetRacer_AI_Kit follow step 1 and using Balena Etcher burn the image for jetracer in the sd card

DOWNLOADING THE JETPACK OS

There are three method to do this :

1. If you have an ubuntu 18.04 host system you can download the sdk manager and follow these steps : https://www.waveshare.com/wiki/JETSON-NANO-DEV-KIT#Method_One:_Adopt_SDK_Manager_Tool

2. if you have any other version of ubuntu then follow method 2 from : https://www.waveshare.com/wiki/JETSON-NANO-DEV-KIT#Method_Two:_Directly_Download_Jetpack

   Instead of the latest it is recommended to use the 4.5.1 jetpack you can get that from waveshare archive

3. “A pre-made image with the jetpack 4.5.1 is already present in the network attached storage which you can use and directly run the command below once you have done the hardware setup of nano putting it to recovery mode and connected it to your host machine.”

```
cd ~/sources_nano/Linux_for_Tegra
```

```
sudo ./flash.sh jetson-nano-emmc mmcblk0p1
```

Now we have to install the boot program so that it boots from the sd card you are making changes in the extlinux and device tree so as to make it boot from sd card(skip for method 3) : https://www.waveshare.com/wiki/JETSON-NANO-DEV-KIT#Burn_Boot_Program

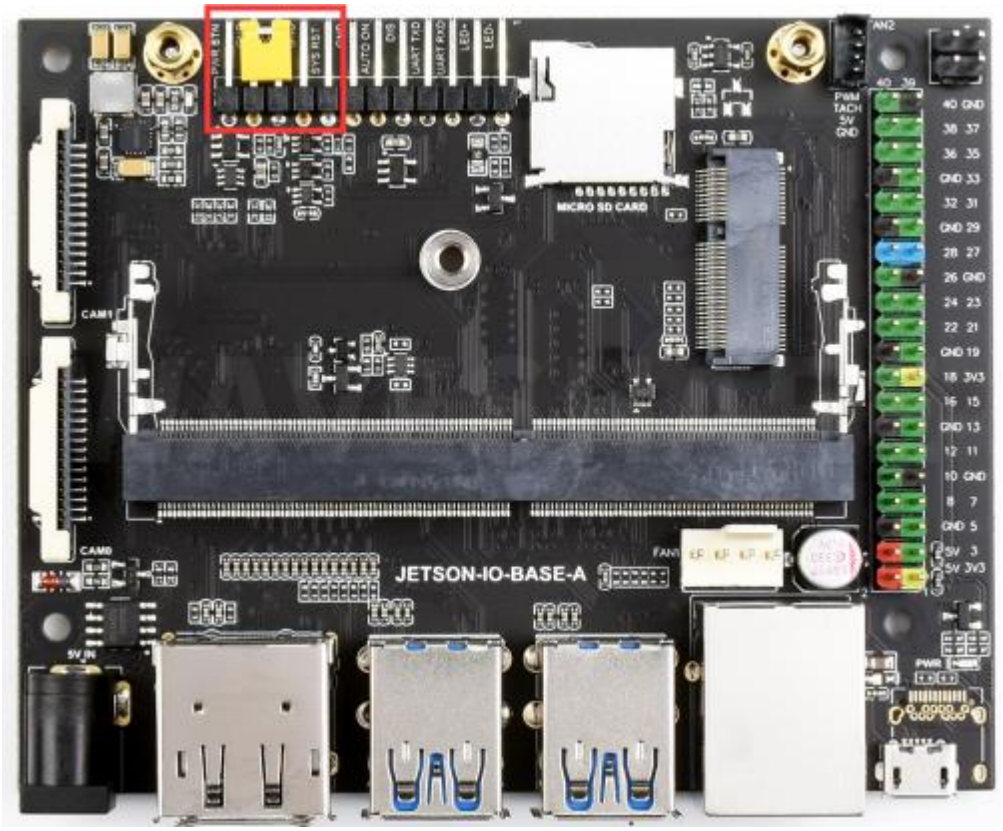
Install Image on EMMC

Equipment preparation

1. Jetson Nano board
2. Ubuntu virtual machine (or host computer)
3. 5V 4A power adapter
4. Jumper caps (or DuPont cable)
5. USB Data cable (Micro USB interface, can transfer data)

Hardware Configuration (entering recovery mode)

6. Short-connect the FC REC and GND pins with a jump cap or DuPont wire, located below the core board, as shown below.
7. Connect the DC power supply to the round power supply port and wait a while.
8. Connect the Jetson Nano's Micro USB port to the Ubuntu host with a USB cable (note the data cable).



System Programming

Programming system, Jetson Nano needs to enter recovery mode and connect to the Ubuntu computer.

```
cd ~/sources_nano/Linux_for_Tegra
```

```
sudo ./flash.sh jetson-nano-emmc mmcblk0p1
```

After the programming is finished, remove the jumping cap of the bottom panel, connect to the monitor, power on it again, and follow the prompts to configure the boot (if it is a pre-config set, enter the system directly after powering on).

INSIDE YOUR JETSON NANO NOW

Do the basic configuration . Once the nano turns on you have to go to the command terminal and run the following :

```
sudo vi /boot/extlinux/extlinux.conf
```

Once you are inside press 'i' to insert and in the APPEND ${cbootargs} you add and make changes such that :

APPEND ${cbootargs} quiet root=/dev/mmcblk0p1 rw rootwait rootfstype=ext4 console=ttyS0,115200n8 console=tty0, change mmcblk0p1 to mmcblk1p1

After this press the 'esc' button

Now type ':wq' and press enter .You will exit the extlinux now .

Sudo reboot .

Now when the device boots up the oled in the extension board will lit up and you can now go to your chrome and try http://<your ip address>:8888 and jupyterlab will open with the examples which you can try out . https://www.waveshare.com/wiki/JetRacer_AI_Kit Here you can refer to step 4 onwards.