

# 1. Jetson Nano write system

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- I. Preparation for installation
2. Burn the USB flash drive system
3. Burning EMMC Boot

Note:

1. Jetson Nano has several versions, Jetson Nano 4G TF version (public version) and Jetson Nano 4G SUB version, both versions can be used with the robot, this product comes standard with Jetson Nano 4G SUB version, the robot has been configured with a good robot image system before shipment, in general, users do not need to follow the tutorial burning. In general, users do not need to follow this tutorial to burn the mirror system.
2. Different versions have different burning methods, among which, Jetson Nano 4G TF version (public version) uses TF card to burn the image, and Jetson Nano 4G SUB version needs to burn the image on USB flash disk and EMMC boot method.
3. The process of burning a U disk system is the same as burning a TF card system, the following is an example of burning a U disk image.

## I. Preparation for installation

1. Prepare a Win10 system computer and a USB flash drive (recommended 32G or larger), this burning USB flash drive steps do not require the participation of Jetson Nano.
2. Download the image

Find the factory image in the data, according to different motherboards to download the corresponding mirror compressed package file.

System default username: jetson, password: yahboom

3. Format SD card

Use SDFormatter to format the USB flash drive, here note that you must not choose the wrong Drive, otherwise it will cause unnecessary trouble. If the U disk has been burned system, may be the first format will be an error, and then executed once on the line.



## 2. Burn the USB flash drive system

1. Unzip the downloaded system zip file, get the img image file
2. Insert the USB flash drive into the USB port of your computer.
3. Unzip and run Win32DiskImager tool
4. In the software, select the img (image) file, select the disk letter of the USB flash drive under "Device", and then select "Write".

Then start burning the system, according to the speed of your USB flash drive, the burning process is fast or slow.



5. Burning will pop up after the end of the completion dialog box, indicating that the installation is complete, if unsuccessful, please close the firewall software, re-insert the U disk for burning. Please note that after the installation, windows system to see the USB flash drive is divided into multiple partitions and can not be clicked to enter, this is a normal phenomenon, because linux under the disk partition under win is not visible!

At this point, the Jetson Nano will be burned successfully. Burning successfully after the system may not be able to recognize the partition and prompted to format the partition, this time do not format! Do not format! Don't format! Click Cancel, and then eject the USB flash drive.

### 3. Burning EMMC Boot

This step is not required for the Jetson Nano 4G TF version (public version) and is specific to the Jetson Nano 4G SUB version. Generally speaking, the Jetson Nano 4G SUB motherboard from the factory has already burned the EMMC boot file, so unless you have performed a burn operation to erase the EMMC boot, you don't need to re-burn the EMMC boot again.

1. Prepare the Jetson nano motherboard, jumper caps, display, mouse and keyboard.
2. Let jetson Nano enter the system REC flashing mode.

Connect the jumper cap to the FC REC and GND pins, that is, to the second and third pins of the carrier board below the core board, as shown below:



3. Connect the wiring, connect the HDMI display, mouse, and keyboard to the Jetson Nano, then plug in the power supply, and finally plug in the microUSB cable. Since the jumper cap has been connected to the FC REC and GND pins in the previous step, it will automatically enter the REC brushing mode after powering on the device.



Under normal circumstances, the following window pops up after plugging in the microUSB cable. Note here that using a virtual machine requires that the device be set to connect to the virtual machine.



4. Please transfer the Jetson\_Boot\_USB.tar.gz file in the profile to the Ubuntu 18.04 system and open the terminal to run the unzip command.

tar xzvf Jetson\_Boot\_USB.tar.gz

```
yahboom@YAB:~$ tar xzvf Jetson_Boot_USB.tar.gz
./Jetson_Boot_USB/
./Jetson_Boot_USB/jetson-nano-devkit.conf
./Jetson_Boot_USB/jetson-nano-devkit-emmc.conf
./Jetson_Boot_USB/jetson-tx1-devkit.conf
./Jetson_Boot_USB/nv_tools/
./Jetson_Boot_USB/nv_tools/scripts/
```

5. Unzip it from into the Jetson\_Boot\_USB folder, and then

cd Jetson\_Boot\_USB/

ls



```

yahboom@YAB:~$ cd Jetson_Boot_USB/
yahboom@YAB:~/Jetson_Boot_USB$ ls
apply_binaries.sh      p2597-0000+p2180-1000-24x7.conf
bootloader             p2597-0000+p2180-1000.conf
build_l4t_bup.sh       p3448-0000.conf.common
flash.sh               p3448-0000-max-spi.conf
hybrid-qspi.conf       p3448-0000-max-spi-sd.conf
jetson-nano-2gb-devkit.conf p3449-0000+p3448-0000-qspi.conf
jetson-nano-devkit.conf p3449-0000+p3448-0000-qspi-sd.conf
jetson-nano-devkit-emmc.conf p3449-0000+p3448-0002.conf
jetson-nano-emmc.conf  p3450.conf
jetson-nano-qspi.conf  p3542-0000+p3448-0003-qspi.conf
jetson-nano-qspi-sd.conf p3542-0000+p3448-0003-qspi-sd.conf
jetson-tx1.conf        p3542.conf
jetson-tx1-devkit.conf README_Autoflash.txt
kernel                README_Massflash.txt
l4t_generate_soc_bup.sh rootfs
nvautoflash.sh        source
nvmassflashgen.sh     source_sync.sh
nv_tegra              tools
nv_tools              TX1_boot-firmware-redundancy.txt
p2371.conf

```

6. Run the command to burn the EMMC boot file.

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

```

yahboom@YAB:~/Jetson_Boot_USB$ sudo ./flash.sh -r jetson-nano-devkit-emmc mmcblk0p1
[sudo] password for yahboom:
#####
# L4T BSP Information:
# R32 , REVISION: 5.2
#####
# Target Board Information:
# Name: jetson-nano-devkit-emmc, Board Family: t210ref, SoC: Tegra 210,
# OpMode: production, Boot Authentication: ,
# Disk encryption: disabled ,

```

7. Finally, wait for the file to burn into the EMMC, the success will prompt "The target t210ref has been flashed successfully."

Reset the board to boot from internal eMMC."

```

[ 8.3892 ]
*** The target t210ref has been flashed successfully. ***
Reset the board to boot from internal eMMC.

```

If an error message appears, please make sure the Jetson Nano is connected properly and enter the flashing mode to reconnect for burning.

After the burn is completed, please unplug the Jetson Nnao's jumper cap, then insert the USB flash drive and re-power on the machine.

Note: If you are using the virtual machine provided in the YAHBOOM Smart Profile, which already contains the Jetson\_Boot\_USB file, you do not need to pass it into the system again.

Virtual machine username: yahboom

Password: yahboom

