

Quick start guide



How to flash your development system in one step

Before you start

1. Please make sure to use a Linux Host PC with UBUNTU 18.04 operating system and a high quality standard USB 2.0 Type A to micro USB 2.0 OTG cable. Please use a native setup (no virtual machine). This Host PC must have a high bandwidth Internet connection so that you can download the 3GByte+ installation file.
2. Connect the development system to the network to install SDK components in a later step

Setting up: JNX30D and X221D

1. Connect the development system and the Linux Host PC via the USB 2.0 OTG cable (micro USB on development system) and power up the Host PC.
2. Power up the development system. The development system will detect the host PC and automatically enter the flashing state (force recovery mode).
3. Check that the connection is established with the lsusb command.

```
lsusb
```

```
auvidea@auvidea-HP-Z620-Workstation: /media/auvidea/Storage/Nvidia/Images/JetPa... - □ ×
File Edit View Search Terminal Help
auvidea@auvidea-HP-Z620-Workstation:/media/auvidea/Storage/Nvidia/Images/JetPack
4.6_Linux_JETSON_NANO_TARGETS/Linux_for_Tegra$ lsusb
Bus 002 Device 036: ID 0955:7e19 Nvidia Corp.
Bus 002 Device 032: ID 046d:c03e Logitech, Inc. Premium Optical Wheel Mouse (M-B
T58)
Bus 002 Device 031: ID 046a:0023 Cherry GmbH CyMotion Master Linux Keyboard G230
Bus 002 Device 002: ID 8087:0024 Intel Corp. Integrated Rate Matching Hub
Bus 002 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
Bus 004 Device 002: ID 2109:0815 VIA Labs, Inc.
Bus 004 Device 001: ID 1d6b:0003 Linux Foundation 3.0 root hub
Bus 003 Device 012: ID 067b:2303 Prolific Technology, Inc. PL2303 Serial Port
Bus 003 Device 002: ID 2109:2815 VIA Labs, Inc.
Bus 003 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
Bus 002 Device 002: ID 8087:0024 Intel Corp. Integrated Rate Matching Hub
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
auvidea@auvidea-HP-Z620-Workstation:/media/auvidea/Storage/Nvidia/Images/JetPack
4.6_Linux_JETSON_NANO_TARGETS/Linux_for_Tegra$
```

Download

1. Download the installation file (approx.. 4GB) from <https://auvidea.eu/firmware/>:
Nano, TX2 NX or Xavier NX (JN30D and JNX30D)
AGX Xavier (X221 and X221D)
2. Open a terminal window (CTRL ALT T) on your Linux Host PC and go to your download folder.

```
cd <path to downloaded tar>
```

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3. Extract the tar.gz file.

```
tar xvzf bootloader.tar.gz
```

```
auvidea@auvidea-HP-Z620-Workstation: ~/Downloads
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auvidea@auvidea-HP-Z620-Workstation: ~/Downloads/bootloader
File Edit View Search Terminal Help

./bootloader/t210ref/BCT/P2180_A00_LP4_DSC_204Mhz.cfg
./bootloader/t210ref/BCT/E2220_LP3_DSC_931.2Mhz.cfg
./bootloader/t210ref/BCT/P3448_A00_lpddr4_204Mhz_P987.cfg
./bootloader/t210ref/BCT/P2894_A00_Samsung_3GB_lpddr4_204Mhz_P984_v2.cfg
./bootloader/t210ref/cboot.bin
./bootloader/t210ref/p2371-0000/
./bootloader/t210ref/p2371-0000/u-boot.bin
./bootloader/t210ref/LICENSE.cboot
./bootloader/t210ref/p3541-0000/
./bootloader/t210ref/p3541-0000/u-boot.bin
./bootloader/bmp.blob
./bootloader/tegrasign_v3.py
./bootloader/crc-flash.xml.tmp
./bootloader/mkbootimg
./bootloader/P3448_A00_lpddr4_204Mhz_P987.cfg
./bootloader/LICENSE.tegraopnssl
./bootloader/LICENSE.tos-mon-only.img.arm-trusted-firmware
./bootloader/cboot.bin
./bootloader/kernel_tegra210-p3448-0002-p3449-0000-b00.dtb
./bootloader/nvidia-l4t-bootloader_32.6.1-20210726122000_arm64.deb
./bootloader/tegrahost
./bootloader/LICENSE.mkspase
auvidea@auvidea-HP-Z620-Workstation:~/Downloads$ cd ./bootloader/
auvidea@auvidea-HP-Z620-Workstation:~/Downloads/bootloader$
```

4. Go to the extracted file

```
cd ./bootloader
```

Flash the development system

1. Use the flashcmd script to download the software into the Jetson compute module and flash it.

```
sudo bash ./flashcmd.txt
```

```
auvidea@auvidea-HP-Z620-Workstation: ~/Downloads/bootloader
File Edit View Search Terminal Help

auvidea@auvidea-HP-Z620-Workstation:~/Downloads/bootloader$ sudo bash flashcmd.txt
[sudo] password for auvidea:
Welcome to Tegra Flash
version 1.0.0
Type ? or help for help and q or quit to exit
Use ! to execute system commands

[ 0.0025 ] tegrasign --getmode mode.txt --key None
[ 0.0037 ] Assuming zero filled SBK key
[ 0.0039 ]
[ 0.0040 ] Generating RCM messages
[ 0.0065 ] tegrarcn --listrcm rcm_list.xml --chip 0x21 0 --download rcm nvboot_recovery.bin 0 0
[ 0.0076 ] RCM 0 is saved as rcm_0.rcm
[ 0.0084 ] RCM 1 is saved as rcm_1.rcm
[ 0.0084 ] List of rcm files are saved in rcm_list.xml
[ 0.0084 ]
[ 0.0085 ] Signing RCM messages
[ 0.0109 ] tegrasign --key None --list rcm_list.xml --pubkeyhash pub_key.key
[ 0.0121 ] Assuming zero filled SBK key
[ 0.0219 ]
[ 0.0220 ] Copying signature to RCM messages
[ 0.0248 ] tegrarcn --chip 0x21 0 --updatesig rcm_list_signed.xml
[ 0.0271 ]
[ 0.0272 ] Parsing partition layout
[ 0.0300 ] tegraparser --pt flash.xml.tmp
[ 0.0325 ]
[ 0.0326 ] Using default ramcode: 0
[ 0.0327 ] Disable BPMP dtb trtn, using default dtb
```

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2. Please connect a monitor to the development system. After the flashing process has completed the development should automatically boot and show the Ubuntu desktop.



3. Now you can install the NVIDIA SDK components. Please connect the development system to the Internet. Open a terminal window on the development system (CTRL ALT T). Use apt-get to install the components. If this fails please check the Internet connection of the development system.

```
sudo apt-get update && sudo apt-get install nvidia-jetpack
```

```
test@test-desktop: ~  
test@test-desktop:~$ sudo apt-get update && sudo apt-get install nvidia-jetpack  
[sudo] password for test:  
Hit:1 http://ports.ubuntu.com/ubuntu-ports bionic InRelease  
Hit:2 http://ports.ubuntu.com/ubuntu-ports bionic-updates InRelease  
Hit:3 http://ports.ubuntu.com/ubuntu-ports bionic-backports InRelease  
Hit:4 http://ports.ubuntu.com/ubuntu-ports bionic-security InRelease  
Hit:5 https://repo.download.nvidia.com/jetson/common r32.6 InRelease  
Get:6 https://repo.download.nvidia.com/jetson/t210 r32.6 InRelease [2.547 B]  
Fetched 2.547 B in 2s (1.554 B/s)  
Reading package lists... Done  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following packages were automatically installed and are no longer required:  
  apt-c-clone archdetect-deb bogl-bterm busybox-static cryptsetup-bin  
  dpkg-repack gir1.2-timexonemap-1.0 gir1.2-xkl-1.0 grub-common  
  kde-window-manager kinit kio kpackageqt5 kwayland-data kwin-common  
  kwin-data kwin-x11 libdebian-installer4 libkdecorations2-5v5  
  libkdecorations2private5v5 libkf5activities5 libkf5attica5  
  libkf5completion-data libkf5completion5 libkf5declarative-data  
  libkf5declaratives libkf5doctools5 libkf5globalaccel-data libkf5globalaccels  
  libkf5globalaccelprivate5 libkf5idle5 libkf5jobwidgets-data  
  libkf5jobwidgets5 libkf5kcmutils-data libkf5kcmutils5 libkf5kiocore5  
  libkf5kiontln5 libkf5kiowidgets5 libkf5newstuff-data libkf5newstuff5
```

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