



Jetson TX1 BSP flashing guide

Version 2.1

Preliminary

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Requirements

Host system

The host system is required to flash the TX1 and reset the module to its default state. New TX1 modules ship with no installed firmware, resulting in a module that does not boot and shows no display output

- The host system should be a 14.04 Ubuntu LTS x64

64 bit - Ubuntu: https://wiki.ubuntuusers.de/Downloads/Trusty_Tahr/

- suitable network connection and at least 10 GB of free disk space on the host system

TX1 system

- micro USB to USB type A cable

commonly used as a smartphone charging adapter

- TX1 compatible Jetson carrier board e.g. Auvideo J120, J130, J140

The Auvideo J100 and J106 carriers require a M90, M100 or M110 motherboard to access the micro USB OTG port required for flashing.

- TX1 module mounted on the carrier board, please ensure proper heat dissipation and use a suitable power supply
- optional: HDMI monitor or UART TTL adapter to check success of the flashing operation

Flashing the TX1

Installing Jetpack L4T

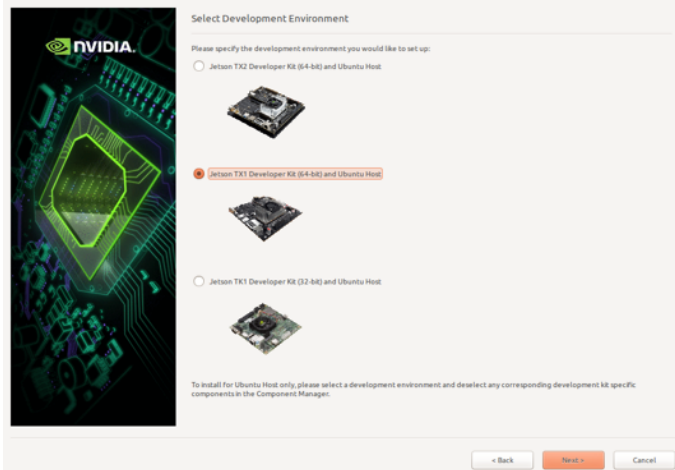
according to the Nvidia documentation:

http://docs.nvidia.com/jetpack-l4t/#developertools/mobile/jetpack/l4t/3.0/jetpack_l4t_install.htm

On the host system:

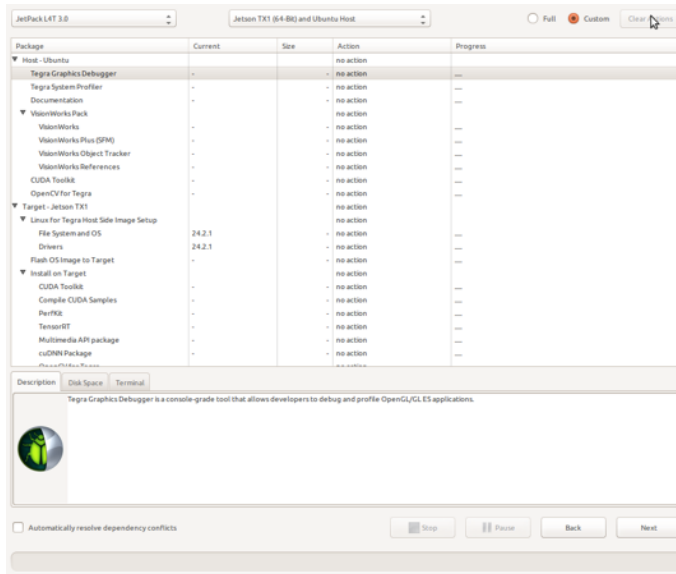
1. download the latest version of Jetpack here <https://developer.nvidia.com/embedded/jetpack>
an Nvidia developer Membership (no fees involved) is required to access the download.
2. open the Ubuntu terminal (ctrl + alt + t) and create a new directory, copy the downloaded Jetpack file and make it executable:

```
$ mkdir ~/Jetpack
$ cd ~/Jetpack/
$ cp ~/Downloads/JetPack-L4T-3.0-linux-x64.run ~/Jetpack/.
$ chmod +x JetPack-L4T-3.0-linux-x64.run
$ ./JetPack-L4T-3.0-linux-x64.run
```

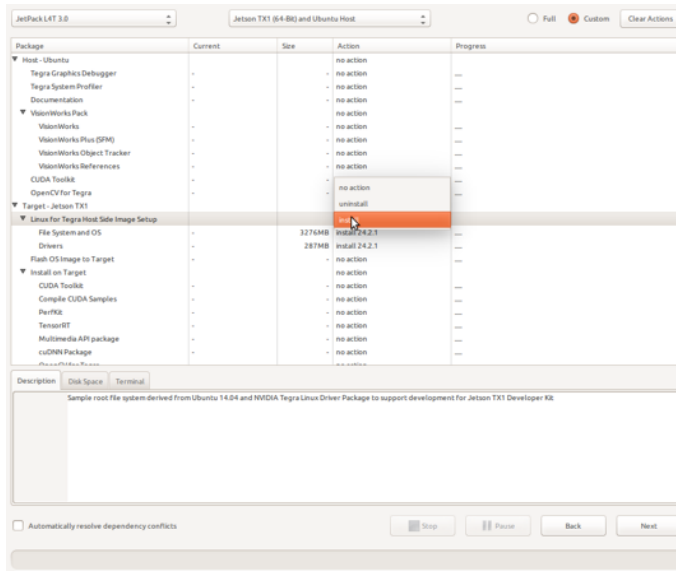


Follow the instructions on screen:

Select the TX1 platform, click next,
Authenticate using your root password

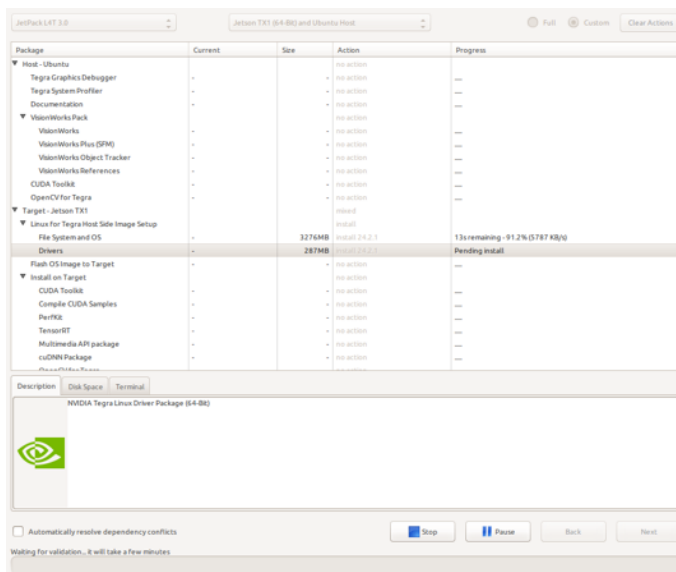


click „Clear Action“ to prevent Jetpack from installing all development components.



Use the „Action“ drop down menu to install the „LT4 Host Side Image Setup“, „File System and OS“ and „Drivers“.

This will prepare all needed components needed for flashing the TX1 but not actually flash the TX1 yet. Click Next and accept the Terms and conditions.

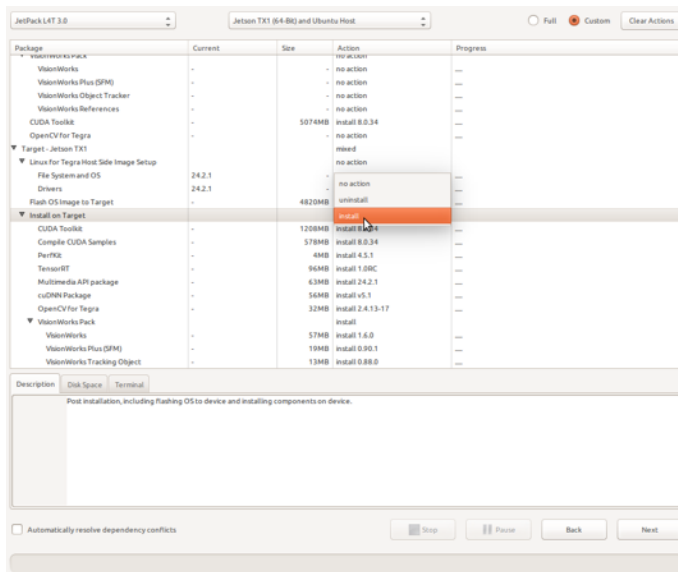


Wait for Jetpack to finish downloading the selected components. This will take a few minutes depending on the available internet bandwidth.

Confirm the installation dialog and wait for the installation to finish.

Back in the terminal issue the following commands to download, untar and install the BSP.

```
$ wget https://auvidea.com/download/firmware/TX1/v2.0/bsp_L4T_24_2_1_V2.1.zip
$ tar -xvf bsp_L4T_24_2_1_V2.1.tar.gz
$ patch -p0 < J10x_J120.patch
$ rm -r 64_TX1/Linux_for_Tegra_64_tx1/kernel/
$ tar -C 64_TX1/Linux_for_Tegra_64_tx1/ -xvf kernel.tar.gz
$ sudo ./64_TX1/Linux_for_Tegra_64_tx1/apply_binaries.sh
$ sudo ./JetPack-L4T-3.0-linux-x64.run
```



Repeat the steps as shown above until the selection of the components. Now select Flash OS image to Target.

Optional: select „Install on Target“ to install development packages. A ethernet connection to the TX1 is required.

Follow the on screen instructions for flashing the TX1, for details on where to find the force recovery and reset buttons please refer to the associated manual.

Disclaimer

Thank you for reading this manual. If you have found any typos or errors in this document, please let us know.

This is the preliminary version of this data sheet. Please treat all specifications with caution as there may be any typos or errors.

The Auvideo Team