Allied Vision

APPLICATION NOTE

Installing Allied Vision Jetpack 4.5.1 on Nvidia Jetson Nano

V.0.3
2021-October

Introduction

The installation of the Allied Vision drivers for CSI-2 cameras may fail on some versions of the Jetson Nano and Jetson Xavier NX development kits. As of JetPack 4.4, users can update L4T directly on the board with apt-upgrade. Doing this will install newer L4T kernel, bootloader and device tree files, which overwrite the driver for Allied Vision cameras. The latest versions of the bootloader include a security element that blocks our modification to the devicetree file. As result, our driver is not loaded when starting the Nvidia Jetson Nano/Xavier NX and the cameras will not appear under /dev/videoX. The modification of the bootloader is made on the SoM and not on the SD-card. This is the reason why using an older Jetpack-SD-image will not work if the bootloader has been updated.

If you use apt-upgrade nevertheless, please prevent overwriting the driver with sudo apt-mark hold nvidia-l4t-kernel nvidia-l4t-kernel-dtbs. Note that both reinstalling the driver or putting the update on hold may cause unavailable features or bugfixes from NVIDIA.

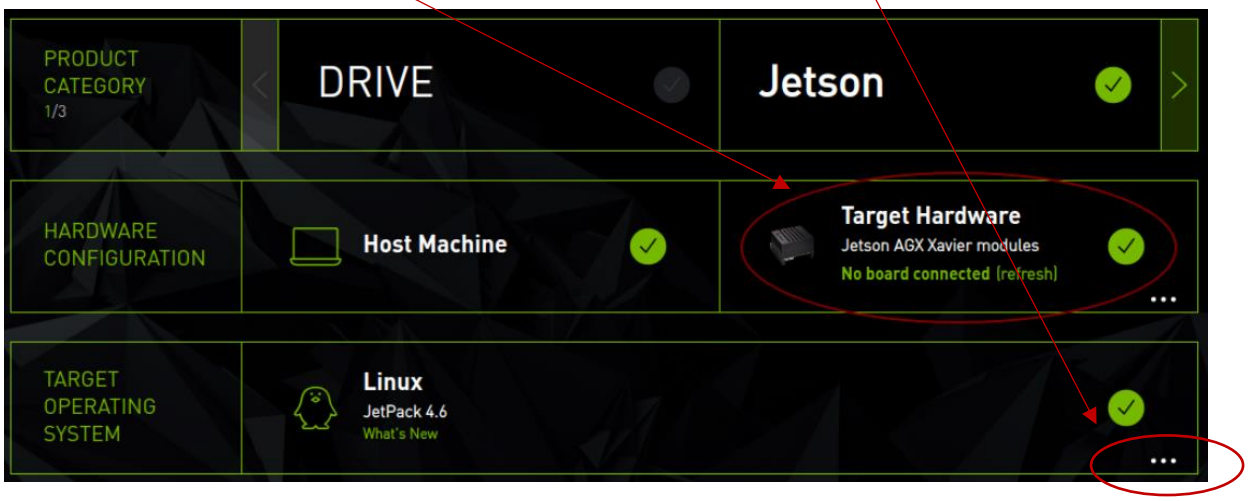
As workaround, the Jetson module must be downgraded to the version Jetpack 4.5.1 using the Nvidia SDK manager from a Linux host PC.

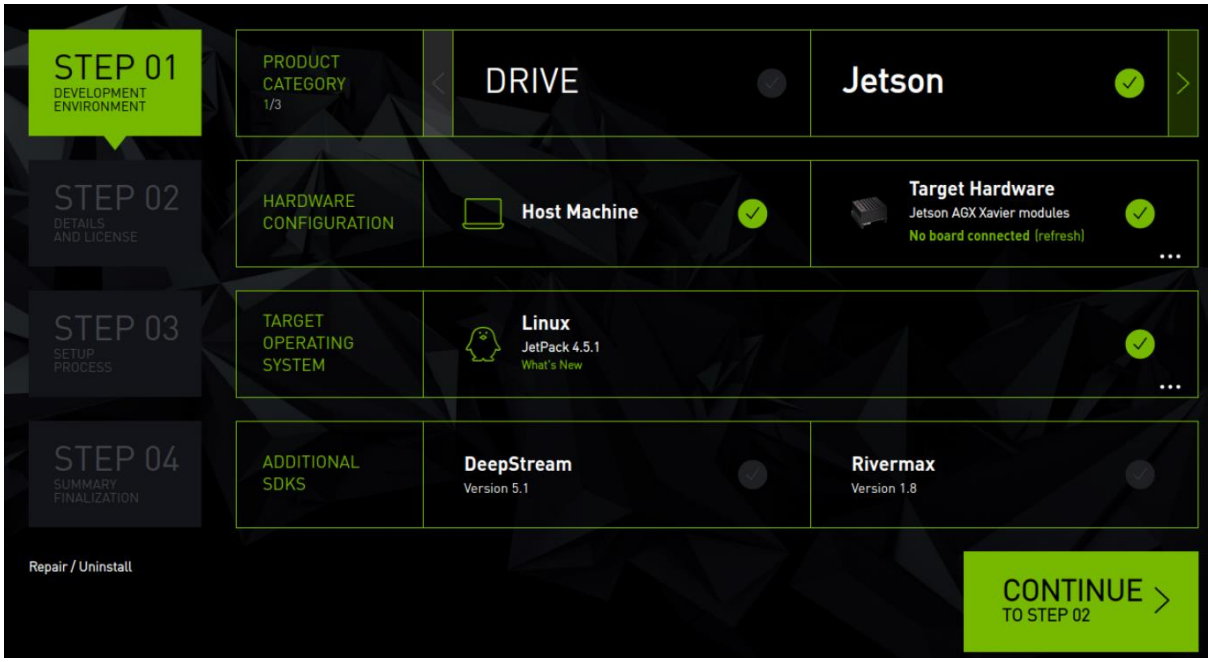
Installing Jetpack 4.5.1

This can be done following the next steps:

Step 1: Download and install the Nvidia SDK manager on a Linux PC with Ubuntu 18.04 from here: https://developer.nvidia.com/nvsdk-manager

Step 2: Set the correct Target hardware and version of the Jetpack: 4.5.1. The default today is Jetpack 4.6





Step 3: Follow the instructions to flash the module. A complete step by step guide can be found here:

Step 4: Finish the installation.

Step 5: Download the binary to our driver v2.1 for the Jetpack 4.5.1 from here:

Nano: https://github.com/alliedvision/linux_nvidia_jetson/releases/download/l4t-32.5.1-2.1.0/AlliedVision_NVidia_nano_L4T_32.5.1_4.9.201-g50008ff.tar.gz

NX: https://github.com/alliedvision/linux_nvidia_jetson/releases/download/l4t-32.5.1-2.1.0/AlliedVision_NVidia_xavier_L4T_32.5.1_4.9.201-g50008ff.tar.gz

Step 6: Decompress the tarball.

Step 7: Run the install script(install.h) and restart the system

Step 8: verify that the Allied Vision drivers have been properly installed by verifying the output of:

```
dmesg |grep avt
```

the output should show the connected cameras and some of their properties.

Disclaimer