

BOARD SUPPORT PACKAGE

For Connect Tech NVIDIA Jetson AGX Xavier Carriers

BSP Version: AGX-32.1.0 V003

Last Updated: 2021/04/21

Introduction

This Board Support Package adds support for Connect Tech Jetson AGX Xavier family of carrier boards to Linux4Tegra. It includes any extra files required to use all the features of the carriers. Please check the "Product Specific Details" section for what features for your board is supported with this BSP release and the "Changes" section for the changes made between versions. You can check which version of the BSP you have installed by running: `cat /etc/cti/CTI-L4T.version`

Check for the Latest Version of the CTI-L4T BSP at:

<https://connecttech.com/resource-center/l4t-board-support-packages/>

Requirements

- x86 based host machine running Ubuntu 16.04 or 18.04
- JetPack 4.2 installed (from NVIDIA Embedded Download Center)
- AGX Xavier module
- Connect Tech AGX Xavier Carrier
- USB Cable for flashing
- L4T 32.1.0

*L4T version can be found in `/etc/nv_tegra_release` and will look like this:

```
# R32 (release), REVISION: 1.0
```

Supported Cameras in BSP

- Leopard: LI-IMX274

Installation

1. Before Installing the BSP you will need to install JetPack 4.2 on the x86 host system using the NVIDIA SDK Manager or from the source packages on NVIDIA's website as detailed below.
2. Copy the CTI-L4T-AGX-32.1.0-V003.tgz package into
`~/nvidia/nvidia_sdk/JetPack_4.2_Linux_JETSON_AGX_XAVIER/Linux_for_Tegra/`
3. Extract the BSP:
`tar -xzf CTI-L4T-AGX-32.1.0-V003.tgz`
4. Change into the CTI-L4T directory:

```
cd ./CTI-L4T
```

5. Run the install script (as root or sudo) to automatically install the BSP files to the correct locations:

```
sudo ./install.sh  
cd ..
```
6. The CTI-L4T BSP is now installed on the host system and it should now be able to flash the AGX Xavier module.
7. To flash on the AGX Xavier use the following (do not add ".conf"):
CTI Assisted Flashing: `./cti-flash.sh`
Manual Flash: `./flash.sh cti/<module>/<boardname> mmcblk0p1`
Examples:

```
./flash.sh cti/xavier/rogueX mmcblk0p1  
./flash.sh cti/xavier-8G/rogue-IMX274 mmcblk0p1
```

Installing JetPack from NVIDIA's Source Packages (Alternate Approach)

Go to <https://developer.nvidia.com/embedded/linux-tegra-archive> and click on the green button labeled "32.1.0 >".

Download the "L4T Driver Package (BSP)" and "Sample Root Filesystem" files for AGX Xavier. Afterwards, you should have the files "Tegra186_Linux_R32.1.0_aarch64.tbz2" and "Tegra_Linux_Sample-Root-Filesystem_R32.1.0_aarch64.tbz2".

Create a directory named `~/nvidia/nvidia_sdk/JetPack_4.2_Linux_JETSON_AGX_XAVIER/` and copy the "Tegra186_Linux_R32.1.0_aarch64.tbz2" file you downloaded into that directory.

Unzip the tarball:

```
"sudo tar jxf Tegra186_Linux_R32.1.0_aarch64.tbz2"
```

You should now have a new directory called `Linux_for_Tegra` in your "JetPack_4.2_Linux_JETSON_AGX_XAVIER" folder. Change directories into that and then copy the "Tegra_Linux_Sample-Root-Filesystem_R32.1.0_aarch64.tbz2" file you downloaded into the `rootfs` folder inside.

Change into the `rootfs` folder and unzip the tarball:

```
"sudo tar jxf Tegra_Linux_Sample-Root-Filesystem_R32.1.0_aarch64.tbz2"
```

If you wish to flash one of NVIDIA's devkits, or move on to installing CTI's BSP. You can change directories back to

```
~/nvidia/nvidia_sdk/JetPack_4.2_Linux_JETSON_AGX_XAVIER/Linux_for_Tegra/ and run:  
"sudo ./appy_binaries.sh"
```

Flashing Instructions

Connect the AGX Xavier and Carrier to the computer via USB, following the instructions in the appropriate manual

Put the system to be flashed into recovery mode, following the instructions in the appropriate manual

Run `./cti-flash.sh` or `./flash.sh cti/<module>/<board> mmcblk0p1` from `Linux_for_Tegra` directory

Once the flashing has completed, the Xavier will reboot

To switch between different boards, you can repeat these steps. Alternatively follow the instructions below for runtime switching profiles on the Xavier

Product Specific Details

AGX101 (Rogue)

- CAN Support
- USB Support
- GbE Phy Support
- PCIe Support

NOTE: Currently NO CSI camera support

AGX001 (Mimic)

- CAN Support
- USB Support
- PCIe Support
- GbE Phy Support

NOTE: Currently NO CSI camera support

NOTE: Currently NO SPI support

GMSL Camera Platform for AGX Xavier Dev kit (JCB004)

- Supports JCB004 adapter on dev kit for 8 cameras (e-Con)

Changes

Version AGX-32.1.0-V003, Apr 21, 2021

- Fixed USB issue on Rogue Rev E.

Version AGX-32.1.0, Nov 08, 2019

- Added camera support(MIPI CSI Expansion)

Version AGX-32.1.0, Nov 04, 2019

- Initial Release

Version 203, Jun 17, 2019

- Added Rogue Camera Support

- Fixed an Issue Where Some Modules Would Not Flash

Version 202, Apr 30, 2019

- Changed Kernel Name to 4.9.104-tegra

Version 201, Apr 8, 2019

- Initial Release for the Mimic and Rogue JetPack 4.2 (L4T 32.1.0)

Version 200, Mar 15, 2019

- Initial Release for the Mimic and Rogue JetPack 4.1 (L4T 31.1.0)

Contact Connect Tech

If you have any problems, questions or suggestions regarding the Board Support Package and hardware, please feel free to contact Connect Tech Inc.

Contact Information	
Support	<p>Please go to the Connect Tech Resource Center for product manuals, installation guides, device drivers, BSPs and technical tips.</p> <p>Submit your technical support questions to our support engineers. Technical Support representatives are available Monday through Friday, from 8:30 a.m. to 5:00 p.m. Eastern Standard Time.</p>
Contact Information	<p>support@connecttech.com sales@connecttech.com www.connecttech.com/</p> <p>Toll Free: 800-426-8979 (North America only) Telephone: +1-519-836-1291 Facsimile: 519-836-4878 (on-line 24 hours)</p>