



SOP_How to install Jetpack and Aetina BSP Patch

SOP description:

1. Host Ubuntu version is Linux 18.04 LTS.
2. The NVIDIA SDK Manager version is 1.3.1.7110.
(The latest version is ok)
3. The SOP used JetPack_4.4.1 as BSP version.
4. The SOP used R32.4.4 as Patch version.
5. The SOP take AX720 and AGX Xavier as the example.
6. The SOP Patch is "R32_4_4_Xavier_AX720_1.tar.gz".
7. The SOP will install Jetson SDK Components.

Requirement for Patch installation device:

1. Xavier module and carrier board.
(Include Power Adapter and cable)
2. Host PC
(Include Ubuntu 16.04 or Ubuntu 18.04 system) and monitor.
3. USB OTG Cable.
(Micro-B To Type-A)



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Use NVIDIA SDK Manager to download BSP (HOST PC)

1. **Note: Don't link AX720 to the host PC or power on it before all packages downloaded.**
2. Please download NVIDIA SDK Manager from Jetson download center.
<https://developer.nvidia.com/embedded/downloads>
3. Click SDK manager .deb file to install SDK Manager.
4. Click "Install".
5. Click top left corner "Search your computer", search SDK manager and open it.

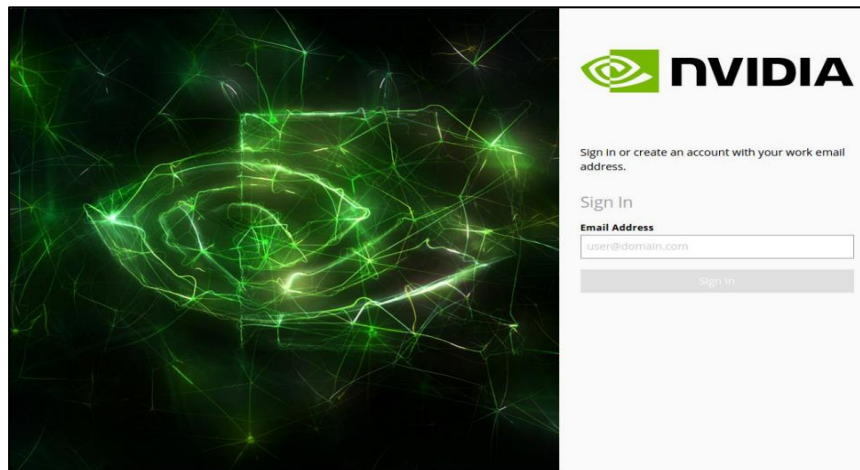


6. Open SDK Manager, click LOGIN.



7. Enter "Account and Password" and Click "LOGIN".

If you don't have the Account and Password, please visit Nvidia website and register.



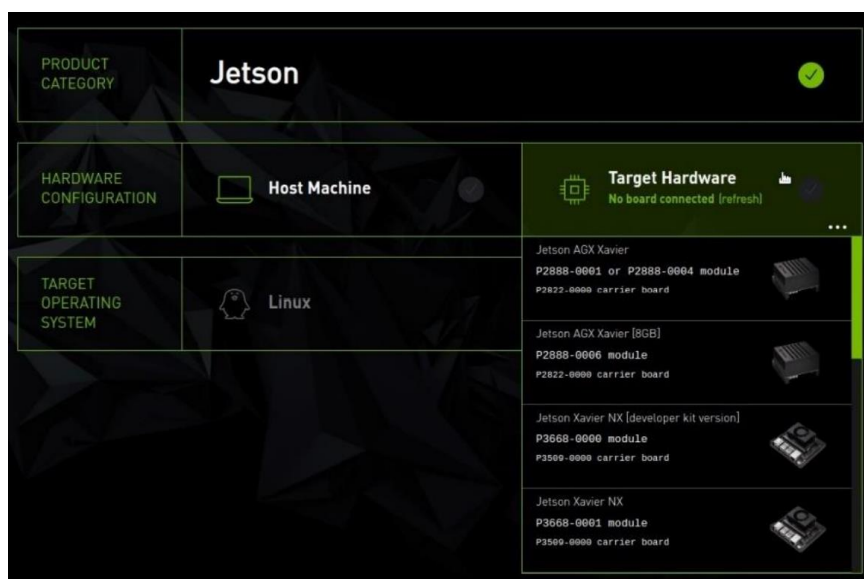
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- After Login. Please cancel “Host Machine” selection if you don’t need host components.



- Select the AGX Xavier Module option for download the correct package.

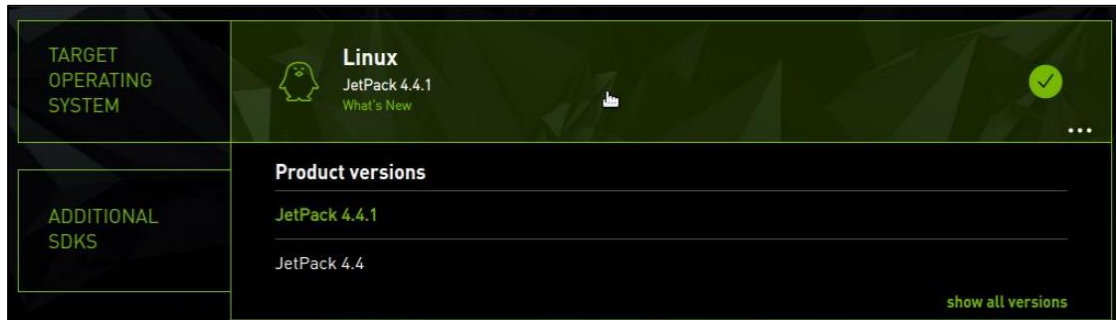
Note: Please select AGX Xavier production version, not develop kit.



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10. Select the JetPack Version (BSP Version).

Please select "JetPack_4.4.1".

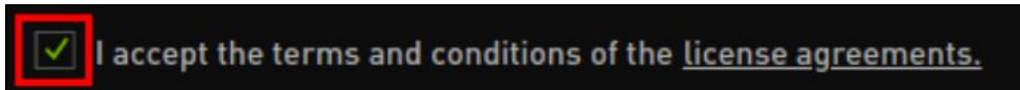


11. Ensure the Module and BSP version. Then click "CONTINUE TO STEP 02".

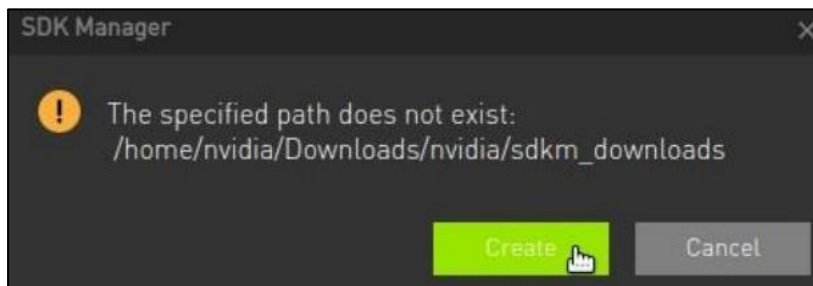
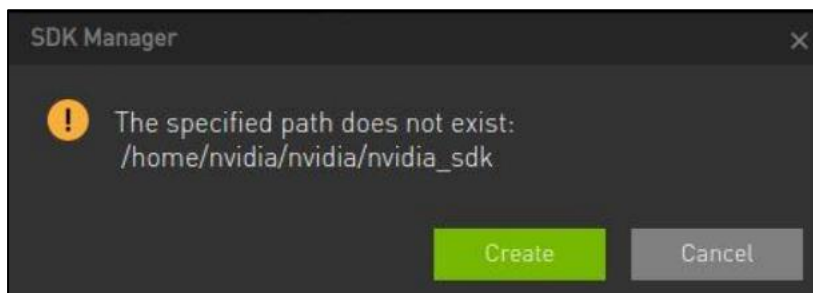
12. The default option will select "Jetson OS" and "Jetson SDK Components".

TARGET COMPONENTS	DOWNLOAD SIZE	STATUS
<input checked="" type="checkbox"/> Jetson OS		
> Jetson OS image	1,637 MB	
> Flash Jetson OS		
<input checked="" type="checkbox"/> Jetson SDK Components		
> CUDA	1,011 MB	
> CUDA-X AI	1,103 MB	
> Computer Vision	142.3 MB	
> NVIDIA Container Runtime	1.1 MB	
> Multimedia	67.2 MB	

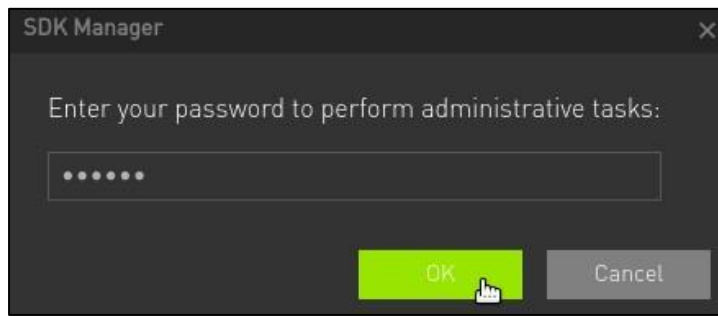
13. Click "I accept the terms and conditions of the license agreements".



14. Click Create. Then continue to step 03.



15. Enter host PC password.

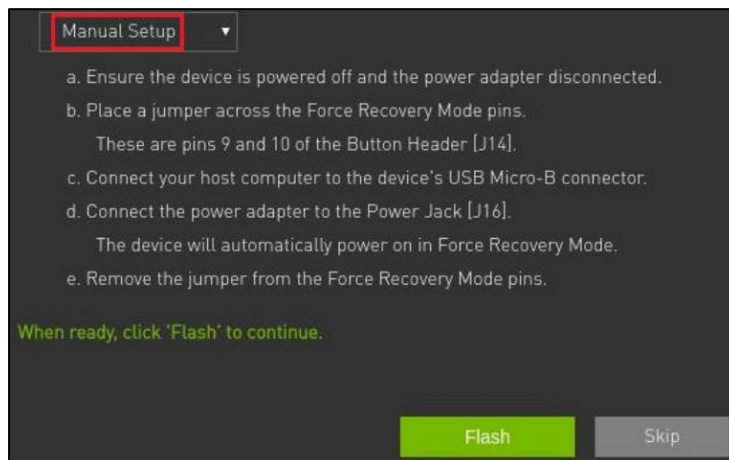


16. The system will download Jetson OS image and Jetson SDK Components.

TARGET COMPONENTS	DOWNLOAD SIZE	STATUS
▼ Jetson OS		
▶ Jetson OS image	1,637 MB	🔄 Downloading - 4.7%
▶ Flash Jetson OS		⏸ Flash Pending
▼ Jetson SDK Components		
▶ CUDA	1,011 MB	🔄 Downloading - 4.2%
▶ CUDA-X AI	1,103 MB	🔄 Downloading - 3%
▶ Computer Vision	142.3 MB	🔄 Downloading - 34.6%
▶ NVIDIA Container Runtime	1.1 MB	⏸ Download Pending
▶ Multimedia	67.2 MB	⏸ Download Pending

17. After download success, please select Manual Setup.

(This page is for the old version which is lower than Jetpack 4.6)



***** DON'T CLICK FLASH / SKIP OR CLOSE SDK MANAGER *****

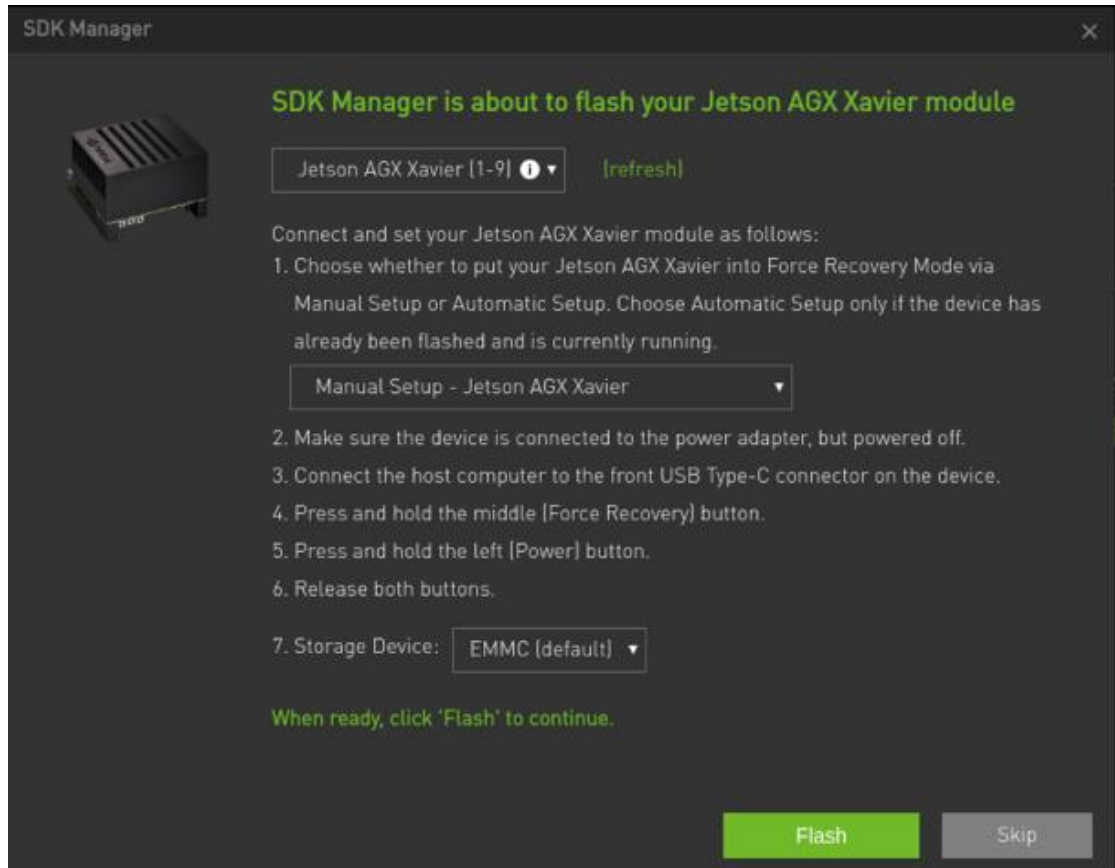
Please get into the Host system path "home/nvidia/nvidia_sdk" to install the patch.

18. At Jetpack 4.6, there have different page as below.

For the 1st option, it does not need to change.

For the 2nd option, please select "Manual Setup – Jetson AGX Xavier/NX/Nano...etc"

For the 3rd option, the default is as traditional to install upon eMMC, but NVIDIA upgrade SDK manager, if you have been updated to the newest version and you want to install the Jetpack 4.6 version that you can install it to other external storage such as NVMe or USB or custom, it depends on your requirement.



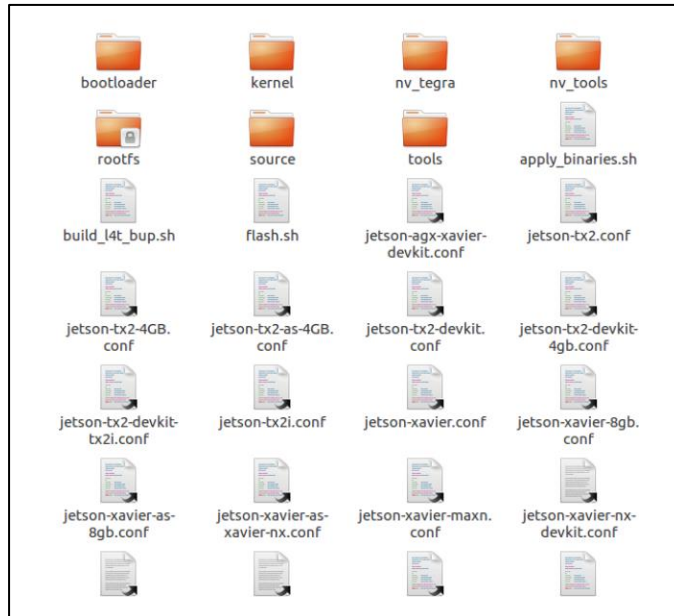
Note: It is for the newest SDK manager (1.7.2.9007 or highest) and Jetpack 4.6 only.

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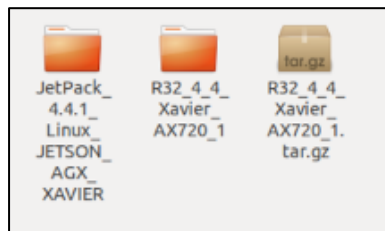
Install Patch

1. After complete downloading Jetson OS image (BSP), the Jetpack folder will be “~/nvidia/nvidia_sdk”.

If you want to confirm the Jetson OS image (BSP) does download complete, please check the Jetpack folder as below picture to see does folder has a file inside.



2. Copy the patch file to “Home/nvidia/nvidia_sdk”



3. Click right button of mouse. Click “Open in Terminal”.
Enter unzip command.

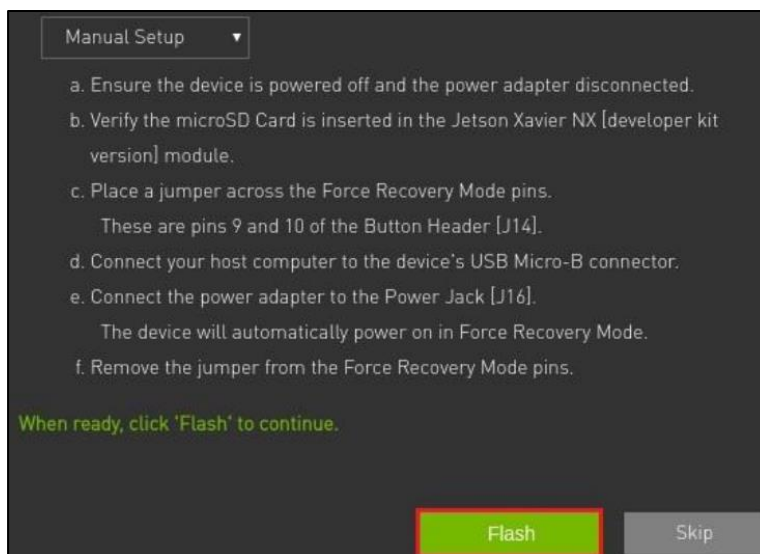
Unzip Command: `tar -zxvf R32_4_4_Xavier_AX720_1.tar.gz`

4. Enter patch folder
`cd “R32_4_4_Xavier_AX720_1/”`
5. Enter patch installation command. “./setup.sh”
6. When the patch install procedure done, it will show “Updated successfully”.

```
Update...  
[sudo] password for aetina:  
Updated successfully.
```

Jetson OS flash (BSP)

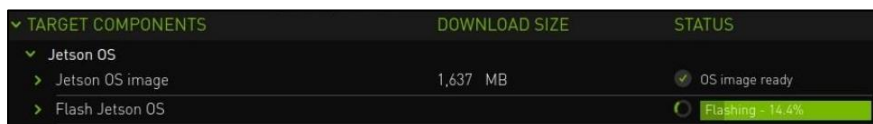
1. Before flash BSP, please connect USB OTG Cable (Micro-B To Type-A) to AX720 Micro-B connector and PC USB port ◦
2. Power on System then press and hold the FORCE RECOVERY button; While pressing the FORCE RECOVERY button, press and release the RESET button; wait two seconds and release the FORCE RECOVERY button.
3. **Go back to HOST PC SDK manager window and click Flash.**



If the Jetson device has not boot up or get into recovery mode, it will show up an error message when clicking Flash button.



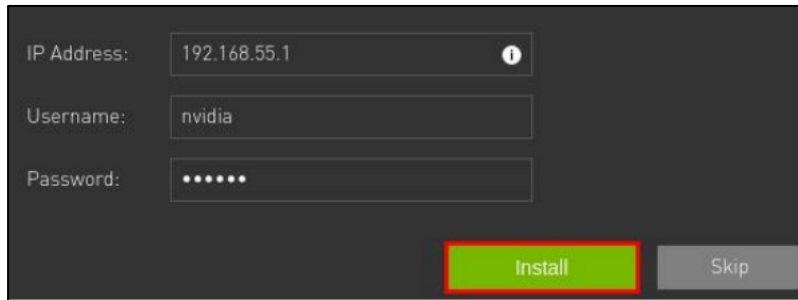
4. The flash procedure start.



Install Jetson SDK Components

1. When the flash procedure done, please enter Jetson default Account / Password, then click install.

Jetson will auto boot when flash procedure done. (Default Account / Password is "nvidia/nvidia")



IP Address: 192.168.55.1

Username: nvidia

Password:

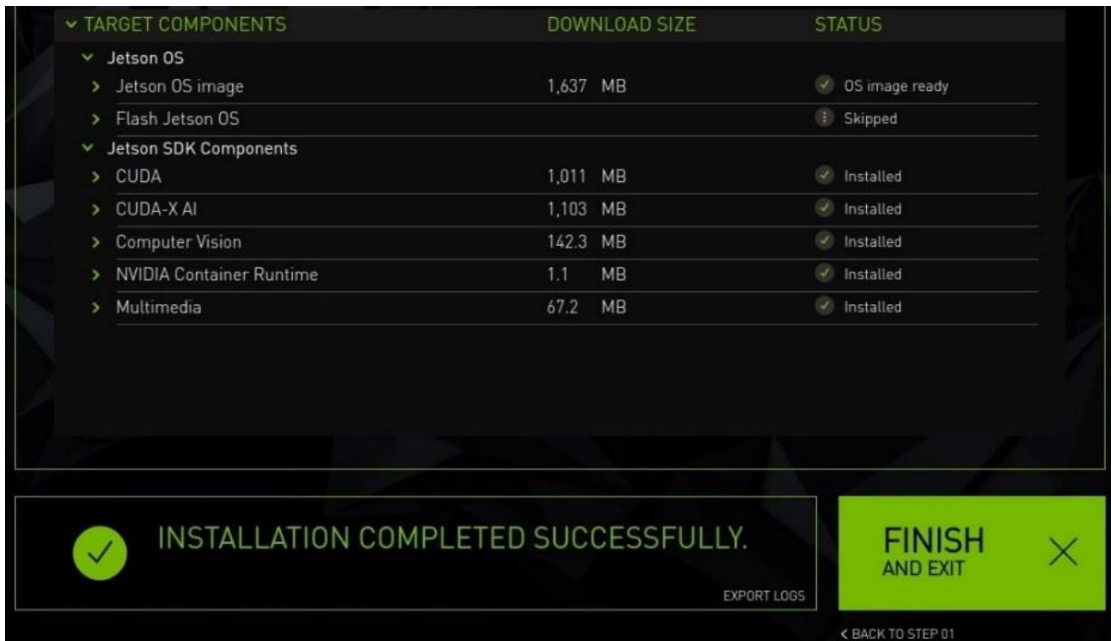
Install Skip

2. It will continue to install Jetson SDK Components.



Component	Size	Status
Jetson SDK Components		
> CUDA	1,011 MB	Install Pending
> CUDA-X AI	1,103 MB	Install Pending
> Computer Vision	142.3 MB	Install Pending
> NVIDIA Container Runtime	1.1 MB	Install Pending
> Multimedia	67.2 MB	Install Pending

3. Installation success.



TARGET COMPONENTS	DOWNLOAD SIZE	STATUS
Jetson OS		
> Jetson OS image	1,637 MB	OS image ready
> Flash Jetson OS		Skipped
Jetson SDK Components		
> CUDA	1,011 MB	Installed
> CUDA-X AI	1,103 MB	Installed
> Computer Vision	142.3 MB	Installed
> NVIDIA Container Runtime	1.1 MB	Installed
> Multimedia	67.2 MB	Installed

INSTALLATION COMPLETED SUCCESSFULLY.

EXPORT LOGS

FINISH AND EXIT

BACK TO STEP 01