

Jetson Orin Setup Manual

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All information is referenced to [Jetpack6.2](#) and Jetson Orin with SDK Manager v2.2.0.

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1. Upgrade Jetpack using SDK Manager

1.1. Prepare a host

SDK Manager need to be installed on a separate x86-64(Amd64) host and flash to the Jetson device with a USB Type-C cable.

For Jetpack6.2, Ubuntu 20.04 / 22.04 / 24.04 is supported.

Base SDKs Host Operating System Compatibility Matrix

See the Base SDKs host operating system compatibility matrix for details:

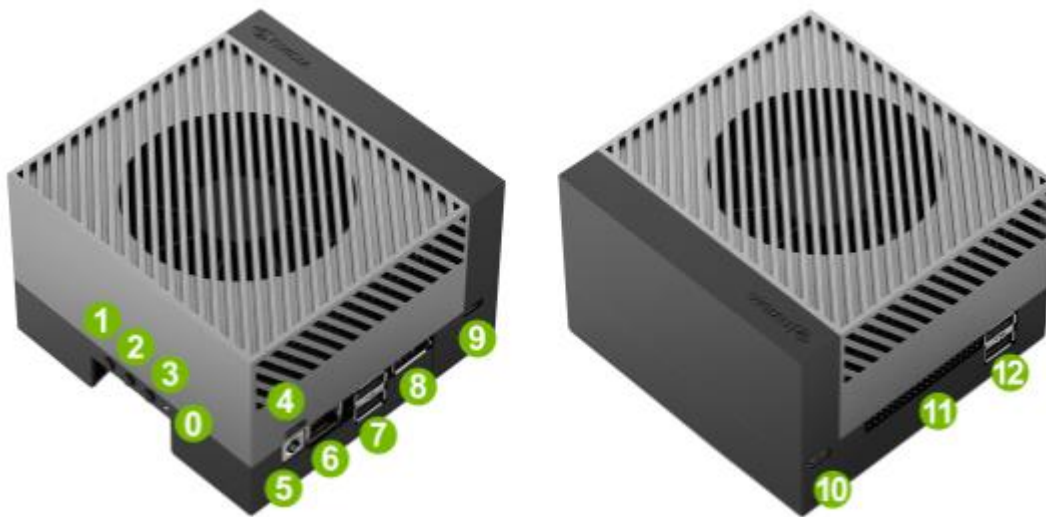
NVIDIA SDK	SDK Version	Supported Host Operating System							
		Ubuntu					CentOS	RHEL	Debian
		16.04	18.04	20.04	22.04	24.04	8.2	8.2	10.8
JetPack	JetPack 4.x	✓	✓						
	JetPack 5.x		✓	✓					
	JetPack 6.0.x			✓	✓				
	JetPack 6.1.x or higher			✓	✓	✓ ¹			
Ethernet Switch	Switch 4.x		✓	✓			✓		
ARC-OTA	Aerial 22-4			✓					
	Aerial 23-4		✓	✓	✓				
	ARC-OTA 1.x		✓	✓	✓				
RAPIDS	RAPIDS 24.x				✓	✓ ²			
Holoscan	HoloPack 1.2		✓						
DRIVE OS	DRIVE OS 5.0.x		✓						
	DRIVE OS 6.0.x			✓					
DOCA	DOCA 1.5		✓	✓	✓		✓	✓	✓
	DOCA 2.2			✓	✓			✓	✓

See https://developer.nvidia.com/sdk-manager#host_os_comp_matrix

1.2. Download SDK Manager

- Download **Ubuntu .deb** from [here](#).
- Install the SDK Manager with command
“sudo dpkg -i sdkmanager_2.2.0-12028_amd64.deb”

1.3. Connect Jetson Orin to host and put the board into Recovery Mode



1.3.1. Connect Jetson Orin to host

- Connect a USB Type-C cable to Type C Port(10) of Orin and host.
- Plug in power cable into Type C Port (4) of Orin.

1.3.2. Put Jetson Orin into Recovery Mode

- Press and hold down the Force Recovery button (2).
- Press and hold down the Reset button (3).
- Hold for 1 second.
- Release the Reset button (3) and then then Force Recovery button (2).

1.3.3. (For WSL2 only) Connect USB devices to WSL2

In Window PowerShell, type the following

```
Administrator: Windows PowerShell
PS C:\WINDOWS\system32> usbipd.exe list
Connected:
BUSID  VID:PID  DEVICE  STATE
-----
1-4    0955:7023  APX     Not shared
1-5    26ce:01a2  USB Input Device  Not shared
1-7    413c:301a  USB Input Device  Not shared
1-8    413c:2113  USB Input Device  Not shared

Persisted:
GUID  DEVICE
-----
579b0745-a501-4a1b-93b2-d0278e5affbd  Intel(R) RealSense(TM) Depth Camera 455  Depth, Intel(R) ...1
66352d86-8a74-499a-802c-4fea17c7f92d  Remote NDIS Compatible Device, USB Serial Device (COM3), ...
71897356-dc60-4034-963e-8f58e2099fca  APX
81abfe70-1d6e-4932-8d87-487e6739ca39  APX
fbc9a2be-2f58-4c21-9f57-be8df8990917  CANBus Analyser

PS C:\WINDOWS\system32> usbipd.exe bind --busid 1-4
PS C:\WINDOWS\system32> usbipd.exe attach --wsl --busid=1-4 --auto-attach
usbipd: info: Using WSL distribution 'Ubuntu-20.04' to attach; the device will be available in all WSL 2 distributions.
usbipd: info: Using IP address 172.17.0.2 reach the host.
usbipd: info: Starting endless attach loop; press Ctrl+C to quit.
WSL Attached
```

1.3.4. Confirm if host is successfully connected to Jetson Orin in Recovery Mode

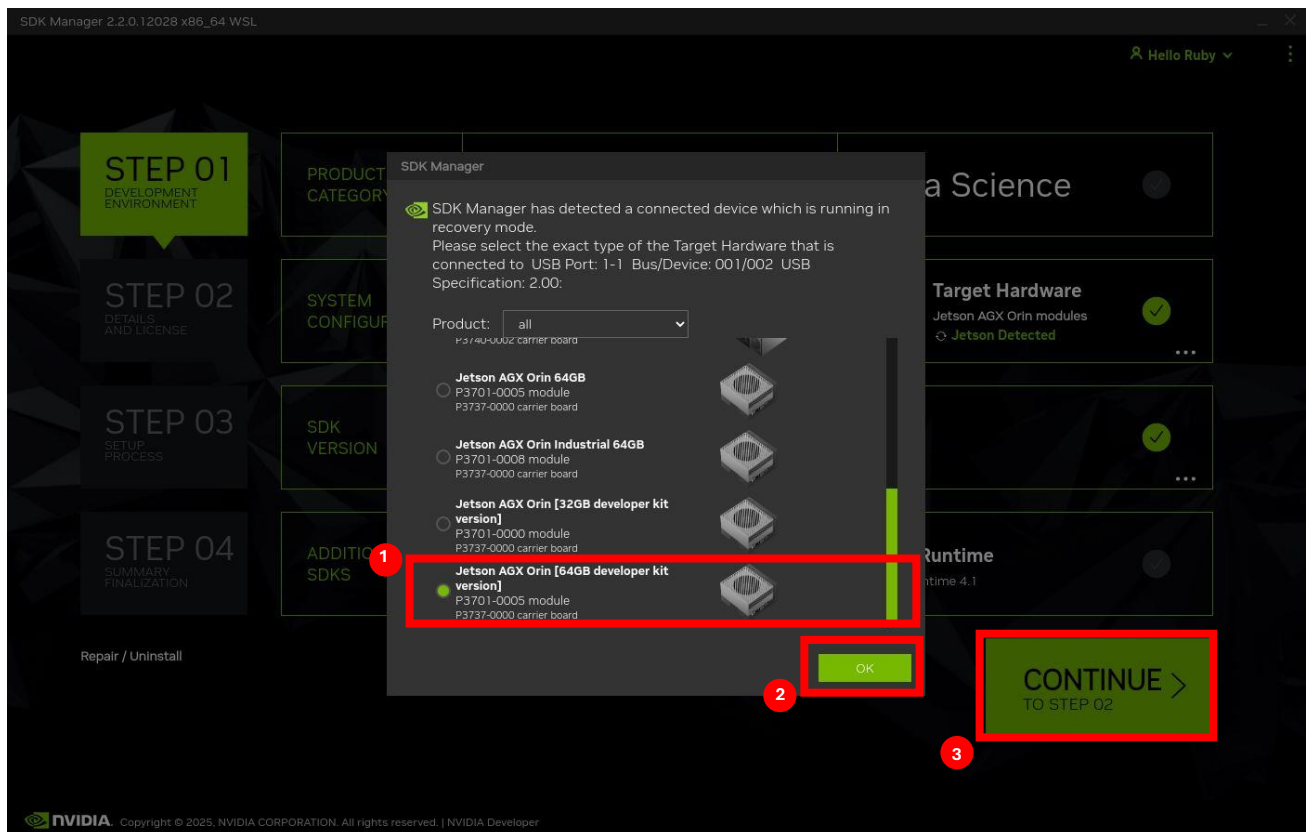
In Ubuntu host, type the following

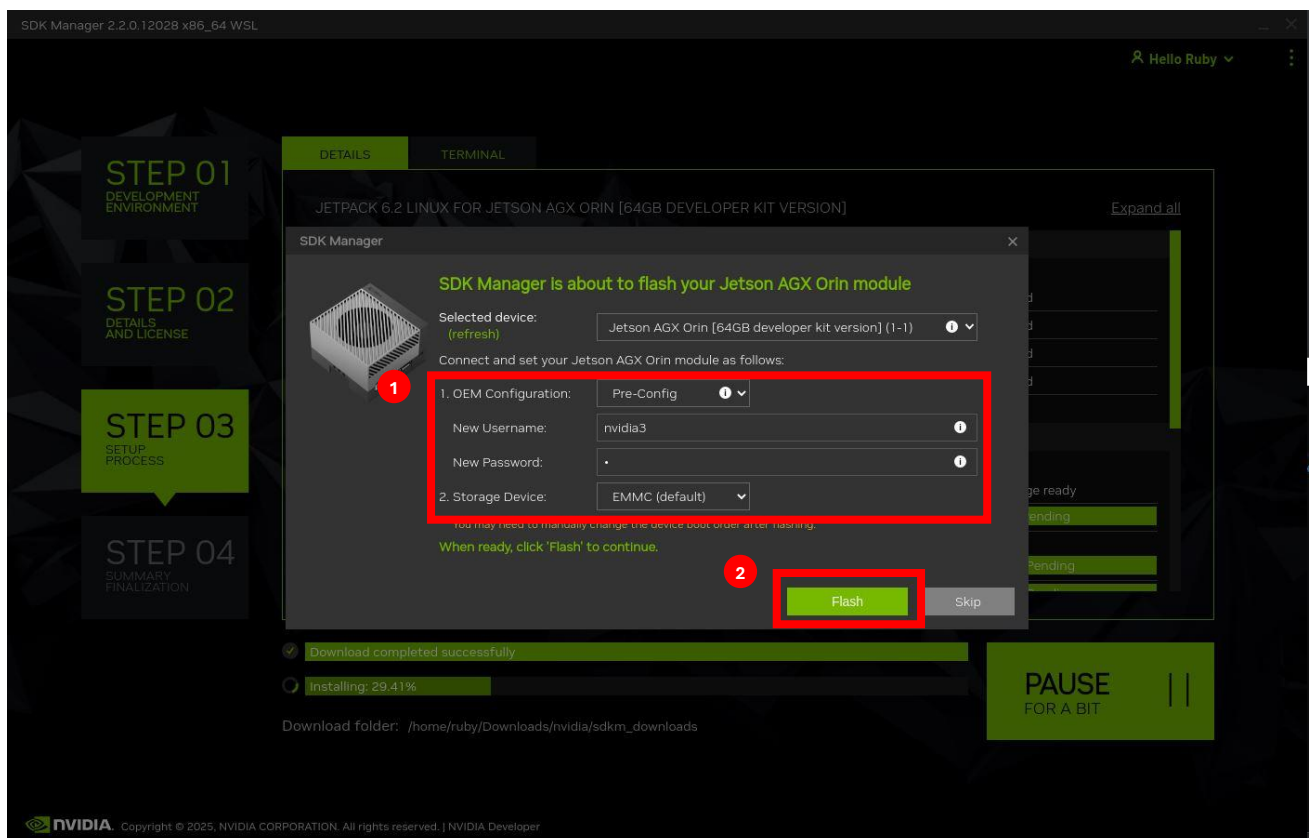
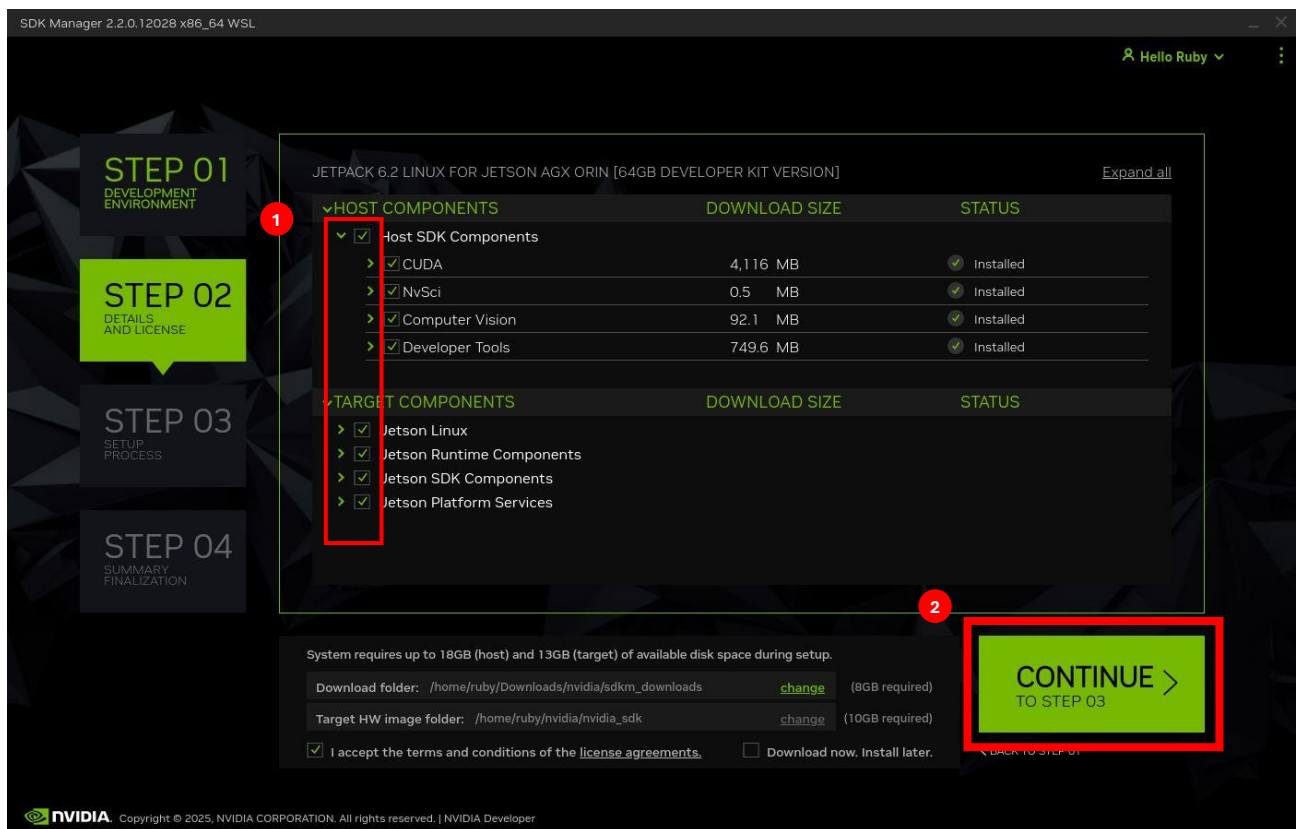
```
ruby@CW20057: ~  
ruby@CW20057:~$ lsusb  
Bus 002 Device 001: ID 1d6b:0003 Linux Foundation 3.0 root hub  
Bus 001 Device 002: ID 0955:7023 NVIDIA Corp. APX  
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub  
ruby@CW20057:~$
```

1.4. Upgrade using SDK Manager

In host terminal, type “sdkmanager” to open the SDK Manager. Login in and follow steps as shown below.

1.4.1. Flash OS



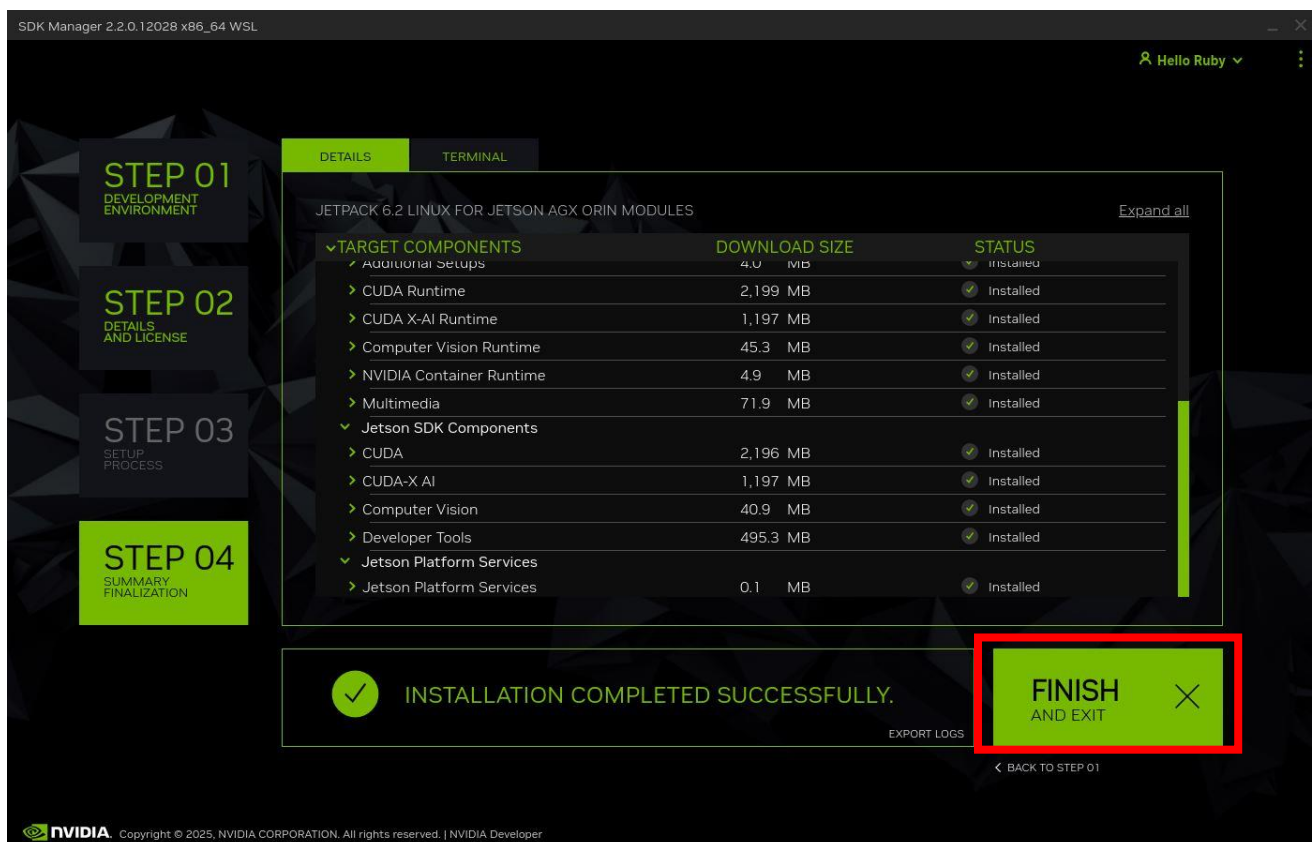
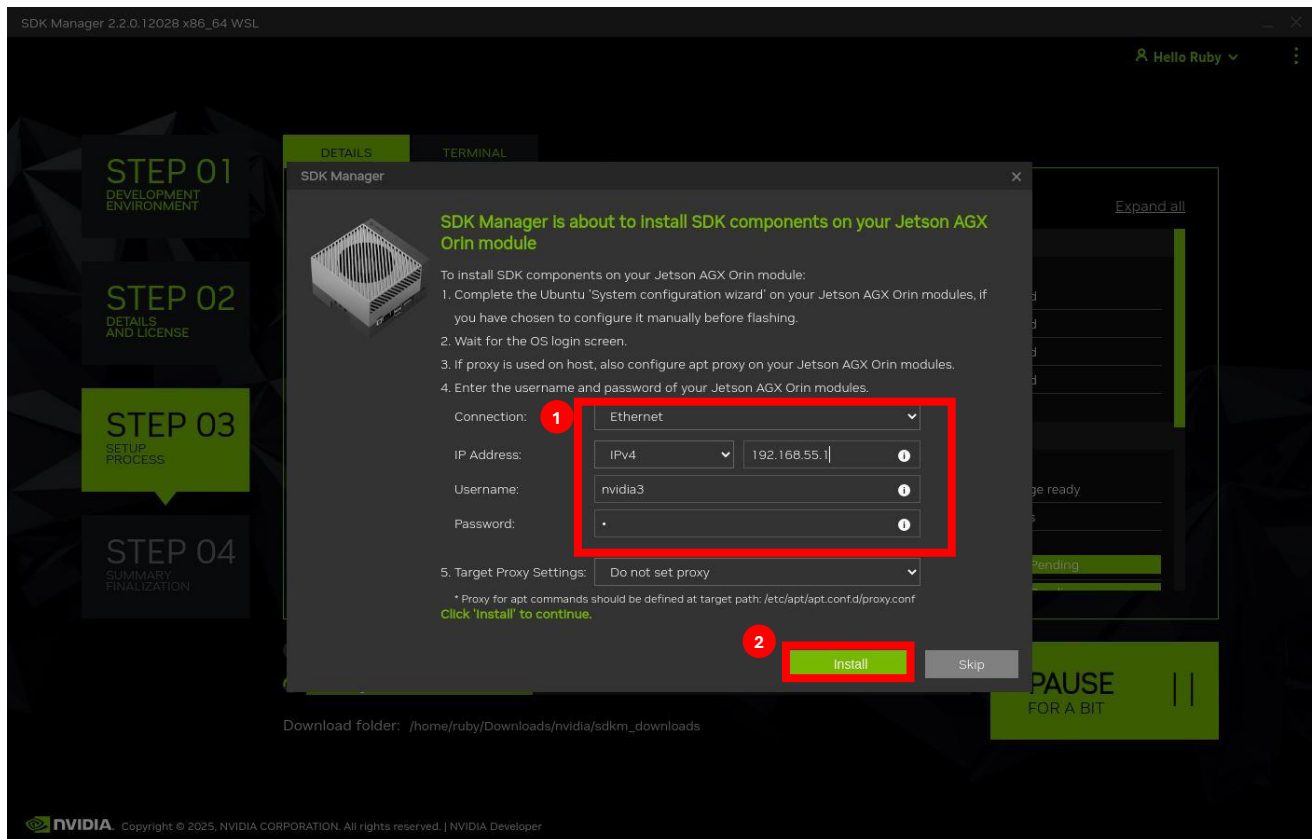


1.4.2. Login into Jetson Orin and Initialize the OS. Connect Jetson to a Wi-Fi / Ethernet.

- Connect Jetson Orin with a monitor, mouse and keyboard. Login in and initialize the Ubuntu system.
- Connect Jetson Orin to the internet.

1.4.3. Install Jetson SDK Components through Ethernet using SDK Manager

1. Default IP for installed system is 192.168.55.1



1.5. Check if Jetpack OS is successfully installed

For Jetpack6.2, **L4T36.4.3** is installed as shown below.


```
nvidia3@ubuntu: ~  
nvidia3@ubuntu:~$ cat /etc/nv_tegra_release  
# R36 (release), REVISION: 4.3 GCID: 38968081, BOARD: generic, EABI: aarch64, DATE  
: Wed Jan 8 01:49:37 UTC 2025  
# KERNEL_VARIANT: oot  
TARGET_USERSPACE_LIB_DIR=nvidia  
TARGET_USERSPACE_LIB_DIR_PATH=usr/lib/aarch64-linux-gnu/nvidia  
nvidia3@ubuntu:~$
```

1.6. Check if Jetpack SDK Components are successfully installed

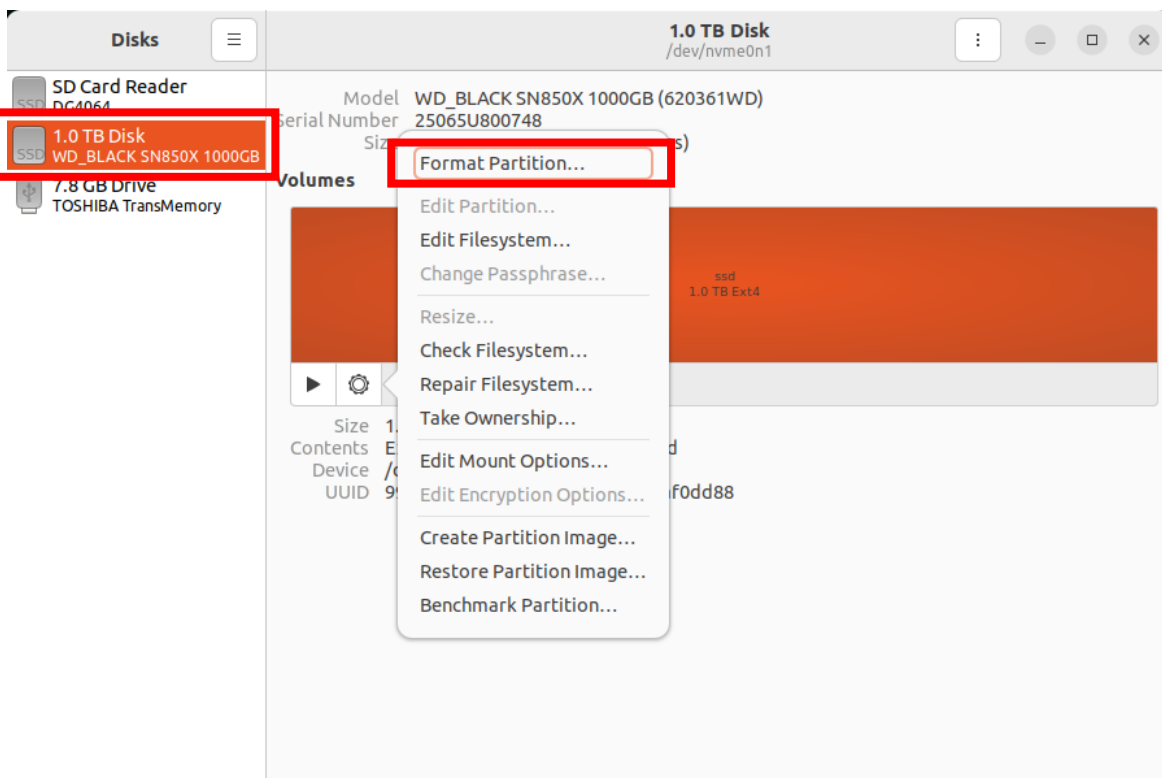
For Jetpack6.2, **Cuda 12.6** is installed as shown.

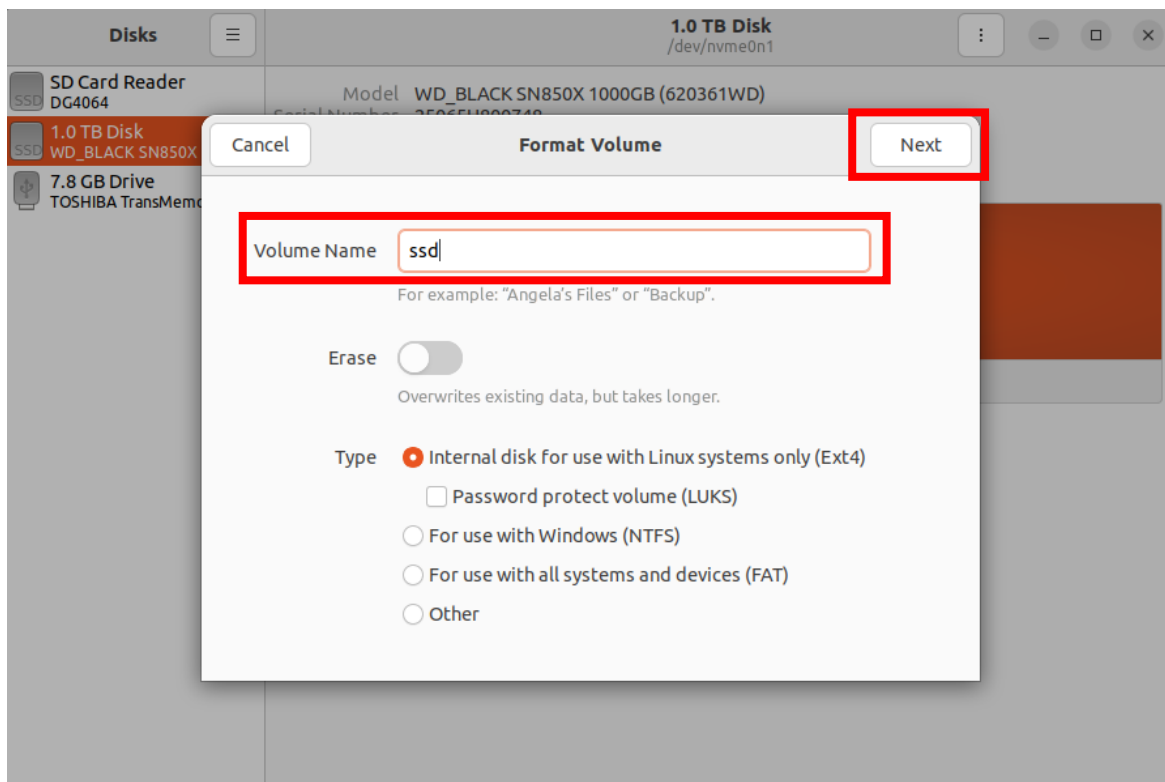
```
nvidia2@ubuntu: ~  
nvidia2@ubuntu:~$ nvcc --version  
nvcc: NVIDIA (R) Cuda compiler driver  
Copyright (c) 2005-2024 NVIDIA Corporation  
Built on Wed_Aug_14_10:14:07 PDT_2024  
Cuda compilation tools, release 12.6, V12.6.68  
Build cuda_12.6.r12.6/compiler.34714021_0  
nvidia2@ubuntu:~$
```

2. Configure Additional SSD

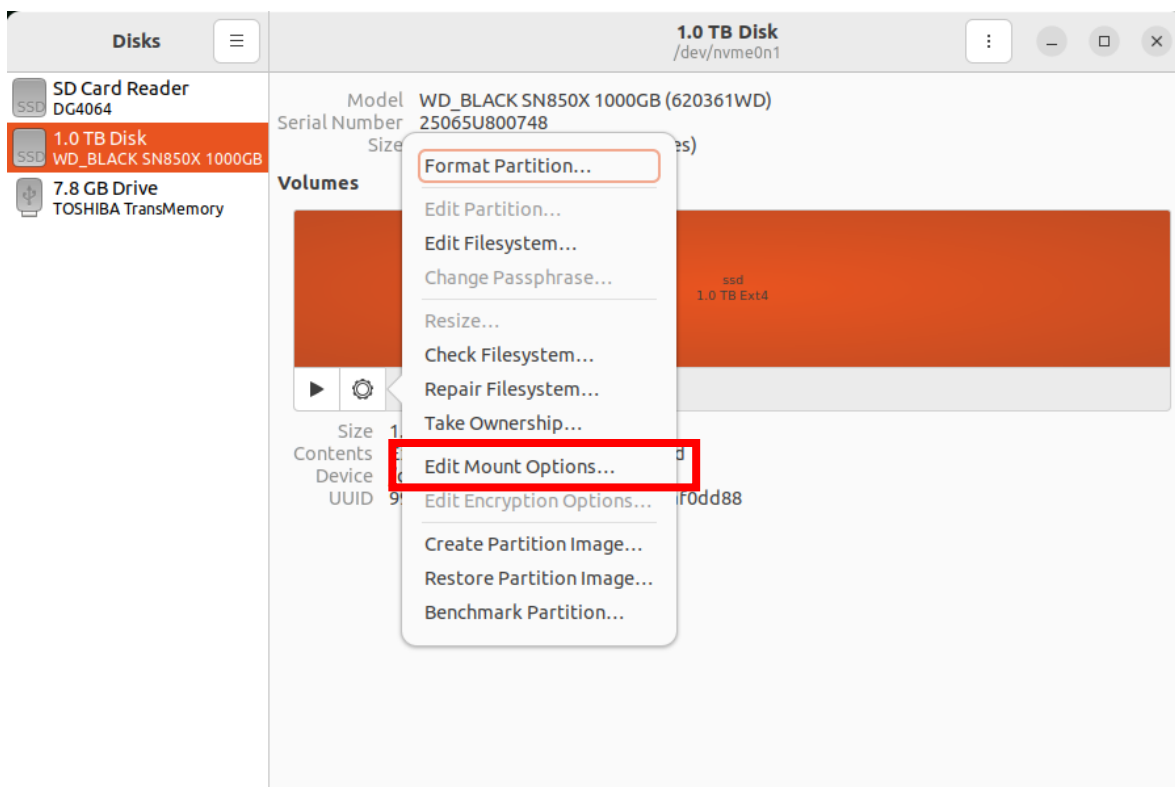
Open Disks from Ubuntu Applications and follow instructions below.

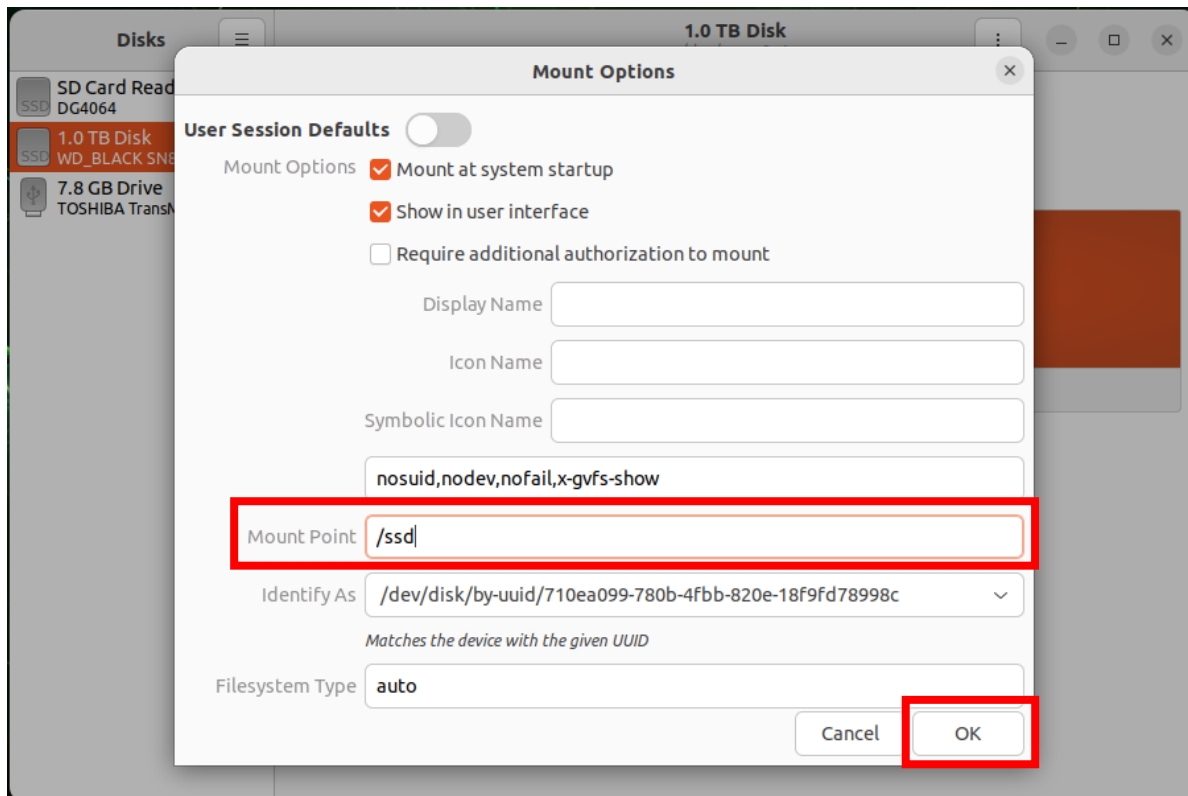
2.1. Formula the SSD



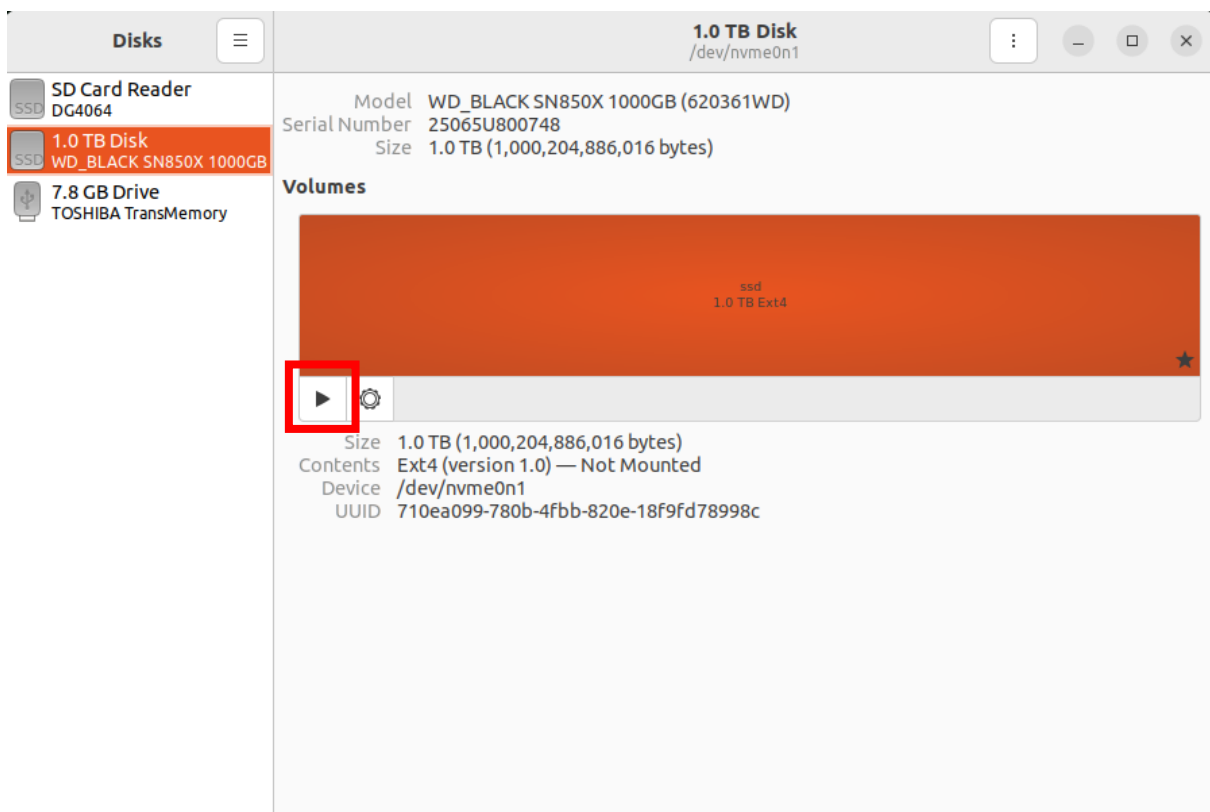


2.2. Change Mount Point

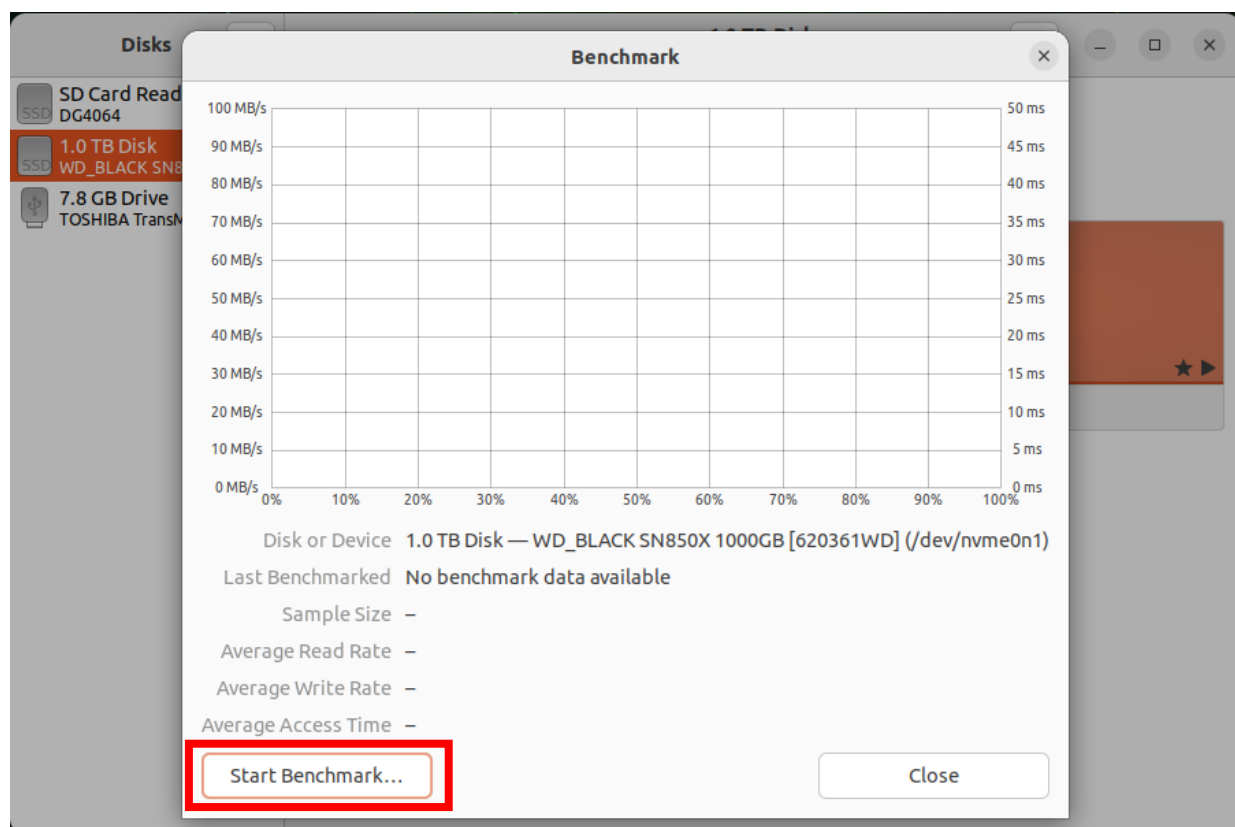
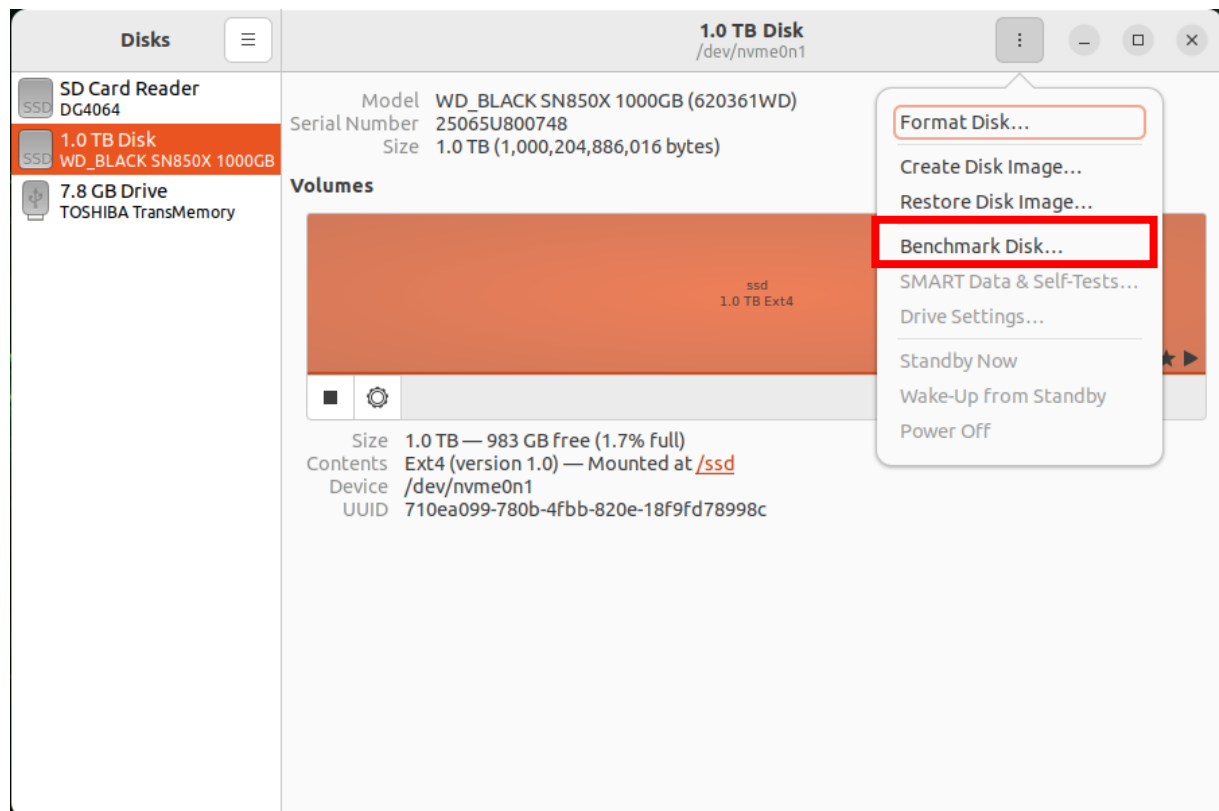


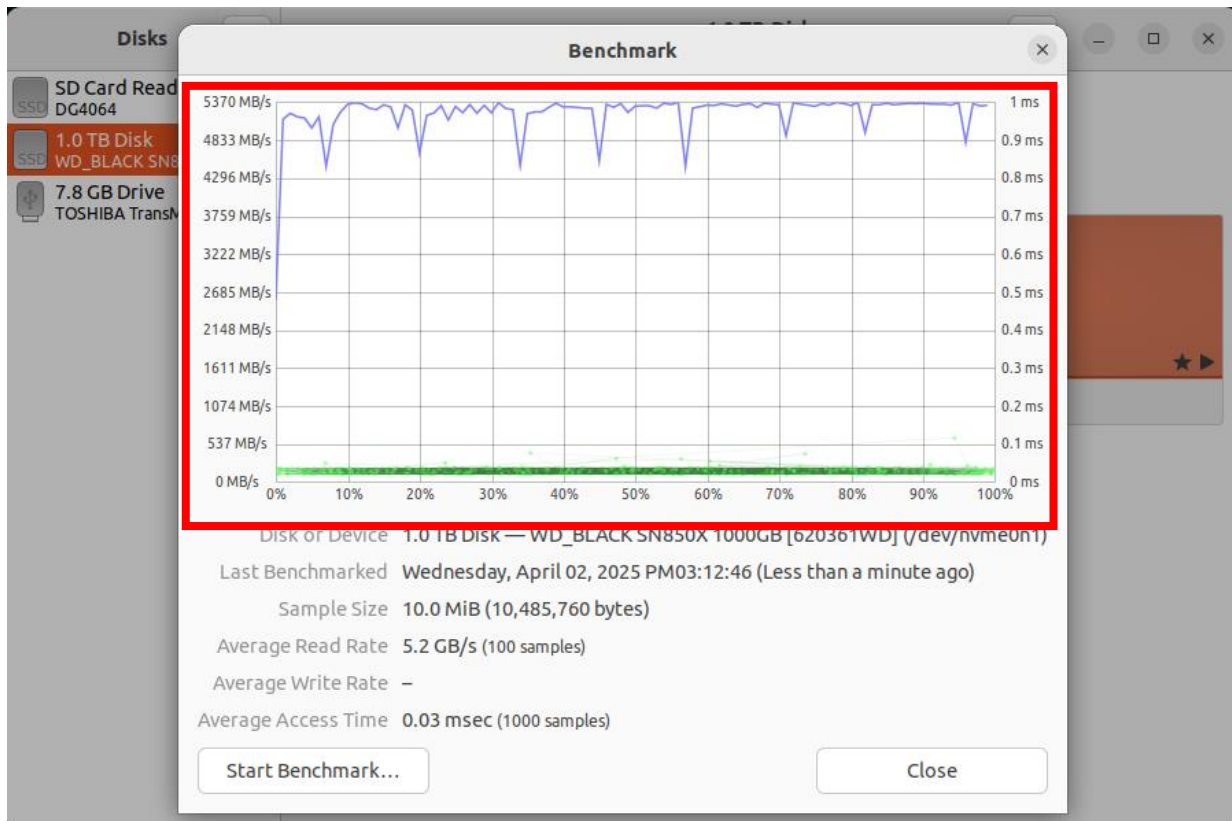


2.3. Start the SSD



2.4. Verify SSD Performance





2.5. Access SSD

```
nvidia3@ubuntu: /ssd
nvidia3@ubuntu:~$ cd /ssd
nvidia3@ubuntu:/ssd$
```

3. Install RT-Kernel

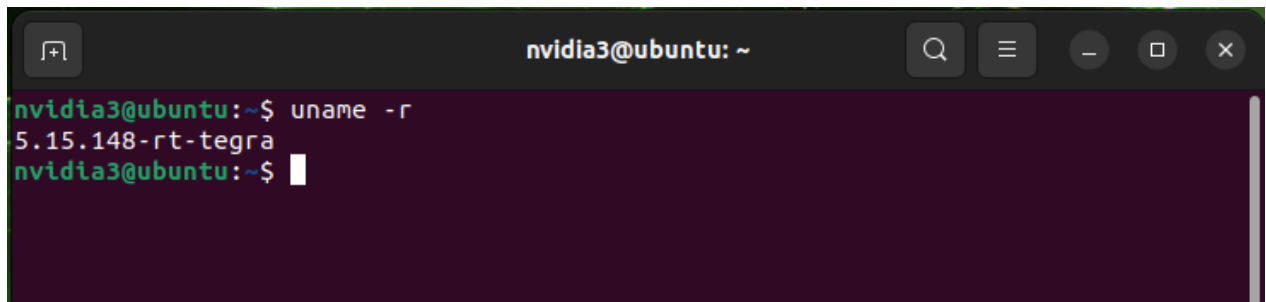
Install RT Kernel using OTA update from [here](#). Be aware of the release version (i.e. r36.4) in the link.

3.1. Verify if RT-Kernel is installed

3.1.1. Before installation

```
nvidia3@ubuntu: ~
nvidia3@ubuntu:~$ uname -r
5.15.148-tegra
nvidia3@ubuntu:~$
```

3.1.2. After installation



```
nvidia3@ubuntu: ~  
nvidia3@ubuntu:~$ uname -r  
5.15.148-rt-tegra  
nvidia3@ubuntu:~$
```

A terminal window titled 'nvidia3@ubuntu: ~' with standard window controls. The prompt is 'nvidia3@ubuntu:~\$'. The command 'uname -r' has been entered and executed, resulting in the output '5.15.148-rt-tegra'. A new prompt 'nvidia3@ubuntu:~\$' is shown on the next line with a cursor.