

Unable to use GPU via docker(Open AD Kit) #5432

Unanswered KTKTKT0401 asked this question in Q&A



KTKTKT0401 last week

I'm having trouble with the performance of rosbag simulation using docker 'devel' image. And I think the this happens because my GPU is not working correctly.

Through the following workflow, I arrived at the hypothesis that the GPU is not functioning properly.

Does anyone have the same issue, or could you please give me some advice?

---Workflow1 -planning simulation---

I tried the planning simulation in the docker 'devel' image.

The simulation looks fine, but below are the results of nvidia-smi and nvcc -V. It looks like the GPU is not working.

```

+-----+
| NVIDIA-SMI 550.120                Driver Version: 550.120          CUDA Version: 12.4          |
+-----+-----+-----+-----+-----+-----+
| GPU   Name                             Persistence-M | Bus-Id        Disp.A | Volatile Uncorr. ECC |
| Fan   Temp   Perf                      Pwr:Usage/Cap |      Memory-Usage | GPU-Util  Compute M. |
|                                           |              | MIG M. |
+-----+-----+-----+-----+-----+-----+
| 0     Quadro RTX 4000                   Off          | 00000000:01:00.0 Off |          N/A |
| N/A   54C    P8                        9W / 110W | 6MiB / 8192MiB |      0%   Default |
+-----+-----+-----+-----+-----+-----+
|
+-----+-----+-----+-----+-----+-----+
| Processes:
| GPU   GI    CI          PID    Type    Process name                        GPU Memory
|      ID    ID              |              | Usage |
+-----+-----+-----+-----+-----+-----+
| 0     N/A   N/A         1413     G     ..._adaptors/initial_pose_adaptor_node  4MiB |
+-----+-----+-----+-----+-----+-----+

```

```

nvcc: NVIDIA (R) Cuda compiler driver
Copyright (c) 2005-2023 NVIDIA Corporation
Built on Wed_Nov_22_10:17:15_PST_2023
Cuda compilation tools, release 12.3, V12.3.107
Build cuda_12.3.r12.3/compiler.33567101_0

```

---Workflow2 -rosbag simulation---

When trying to use 'rosbag simulation' at docker 'devel' image, an error occurred that '~/autoware_data' does not exists.

I checked inside the docker container, and I could check 'autoware_map' is mounted but 'autoware_data' is not mounted.

Category



Q&A

Labels

None yet

2 participants



So inside the /docker/run.sh, I added a script at docker run command to mount 'autoware_data'({\$AUTOWARE_DATA})is the script I added(Path to my autoware_data in my host.)).

```
docker run -it --rm --net=host ${GPU_FLAG} ${USER_ID} ${MOUNT_X} --device /dev/dri \
-e XAUTHORITY=${XAUTHORITY} -e XDG_RUNTIME_DIR=${XDG_RUNTIME_DIR} -e
NVIDIA_DRIVER_CAPABILITIES=all -v /etc/localtime:/etc/localtime:ro \
${WORKSPACE} ${MAP} ${AUTOWARE_DATA} ${IMAGE} \
${LAUNCH_CMD}
}
```

The simulation has large latency visualizing lidar pointcloud.

The vehicles and pedestrians are not recognized.

Below are the results of nvidia-smi and nvcc -V.

It looks like the GPU is not working.

```
+-----+
| NVIDIA-SMI 550.120                Driver Version: 550.120          CUDA Version: 12.4          |
+-----+-----+-----+-----+-----+-----+
| GPU   Name                               Persistence-M | Bus-Id        Disp.A | Volatile Uncorr. ECC | |
| Fan   Temp   Perf              Pwr:Usage/Cap |      Memory-Usage | GPU-Util  Compute M. |
|               |                    |                      |        MIG M.       |
+-----+-----+-----+-----+-----+-----+
|  0  Quadro RTX 4000                     Off | 00000000:01:00.0 Off |                  N/A | |
| N/A   54C    P8              9W / 110W |  6MiB /  8192MiB |      0%      Default  |
|               |                    |                      |                      |
+-----+-----+-----+-----+-----+-----+
| Processes:
| GPU   GI    CI          PID    Type   Process name                        GPU Memory
|               |               |                    |           | Usage |
+-----+-----+-----+-----+-----+-----+
|  0   N/A   N/A         1413     G     ..._adaptors/initial_pose_adaptor_node  4MiB |
+-----+-----+-----+-----+-----+-----+
```

```
nvcc: NVIDIA (R) Cuda compiler driver
Copyright (c) 2005-2023 NVIDIA Corporation
Built on Wed_Nov_22_10:17:15_PST_2023
Cuda compilation tools, release 12.3, V12.3.107
Build cuda_12.3.r12.3/compiler.33567101_0
```

PS)

I could activate rosbag simulation without mounting 'autoware_data' when using the launch command discussed in the URL below.

<https://github.com/orgs/autowarefoundation/discussions/4775#discussion-6731288>

↑ 1

2 comments · 1 reply

Oldest

Newest

Top



sasakiasaki last week

Collaborator

edited ▼

@KTKTKT0401 Hello! I had the similar issue before: not only the pointcloud topic has huge delay and also the other topics are the same. Perhaps following the Cyclonedds configuration might be needed inside of the docker container.

```
export ROS_LOCALHOST_ONLY=1
export RMW_IMPLEMENTATION=rmw_cyclonedds_cpp
sysctl -w net.core.rmem_max=2147483647
ip link set lo multicast on
```



Ref. <https://autowarefoundation.github.io/autoware-documentation/main/installation/additional-settings-for-developers/network-configuration/dds-settings/>

Personally the most effective one was `export RMW_IMPLEMENTATION=rmw_cyclonedds_cpp` which enables the CycloneDDS. Hopefully this provides some hints for your debug.

↑ 1

0 replies



sasakiasaki last week Collaborator

edited ▼

Sorry, there was one missing information in my message.

My proposal ~~would~~ might be effective for the following issue, but not be effective for the issue why the CUDA is not used.

The simulation has large latency visualizing lidar pointcloud.

↑ 1

1 reply



KTKTKT0401 yesterday Author

@sasakiasaki

Hello!

Thank you for giving me advice.

I've checked the dds-settings, but looks like its fine.

I think I need to look further about the cuda related issues to fix my environment.