Rosbag replay simulation tutorial. Localization doesn't seem to work. #2749

Unanswered **gayar-helm** asked this question in **Q&A**

gayar-helm on Jul 20, 2022 edited

Hi all, I'm trying to get this demo simulation - https://autowarefoundation.github.io/... to work but it gives me a error described below.

```
[pose_initializer-17] [INFO] [1658302837.085973552]
[localization.util.pose_initializer]: call NDT Align Server
[ndt_scan_matcher-18] [WARN] [1658302837.086476315]
[localization.pose_estimator.ndt_scan_matcher]: No InputSource
[pose_initializer-17] [INFO] [1658302837.086999067]
[localization.util.pose_initializer]: failed NDT Align Server
[ekf_localizer-20] [WARN] [1658302839.139815745]
[localization.pose_twist_fusion_filter.ekf_localizer]: Twist time
stamp is inappropriate (delay = -0.012036[s]), set delay to 0[s].
[component_container_mt-46] [WARN] [1658302840.913089828]
[planning.scenario_planning.lane_driving.motion_planning.surround_ol
waiting for pointcloud info...
```

which indicates that planning part of the stack isn't getting LiDAR data.

The full log is here - https://gist.github.com/gayar-helm/1d85fa5197ed2a10499a5c297c4f7b7e

The bag downloaded from here - https://autowarefoundation.github.io/... does have LiDAR point clouds for top, left and right lidars:

```
Topic: /sensing/lidar/left/velodyne_packets | Type:
velodyne_msgs/msg/VelodyneScan | Count: 299 | Serialization
Format: cdr
Topic: /sensing/lidar/right/velodyne_packets | Type:
velodyne_msgs/msg/VelodyneScan | Count: 299 | Serialization
Format: cdr
Topic: /sensing/lidar/top/velodyne_packets | Type:
velodyne_msgs/msg/VelodyneScan | Count: 288 | Serialization
Format: cdr
```

I can also see LiDAR data being published when bag is playing:

```
ros2 topic hz /sensing/lidar/top/velodyne_packets
average rate: 9.617
        min: 0.090s max: 0.121s std dev: 0.00915s window: 11
average rate: 9.697
        min: 0.084s max: 0.121s std dev: 0.00926s window: 21
average rate: 9.640
        min: 0.084s max: 0.121s std dev: 0.00856s window: 31
```

Category
Q&A

Labels
component:localiza...

3 participants

```
average rate: 9.652
        min: 0.084s max: 0.121s std dev: 0.00774s window: 41
```

Installation info:

```
Operating system and version:
  Ubuntu 18.04
Autoware installation type:
  From the source in a docker.
Autoware version or commit hash
  commit 2231de9157d2378a187a110b022597f2e84221ba
ROS distribution and version:
  Galactic
```

Possibly related to #2618

↑ 1

9 comments · 15 replies

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gayar-helm on Jul 20, 2022 Author

I found this discussion - #2618 and the difference is that in my case I'm using bag provided in the tutorial.

↑ 1 0 replies

angry-crab on Jul 21, 2022 Maintainer

From the log, it seems that ndt does not receive input point cloud. Were you able to visualize the pointcloud using rviz?

↑ 1 4 replies

gayar-helm on Jul 21, 2022 Author

Xinyu Wang, thanks for replying.

I can see the map but not pointcloud. Is there any specific setting I need to turn on?
I also tried to remap point cloud topic for the top lidar like it's shown here:
`ros2 bag play sample.db3 --remap /localization/util/downsample/pointcloud:=/sensing/lidar/top/velodyne_packets --qos-profile-overrides-path qos.yaml`
but it didn't have any effect.

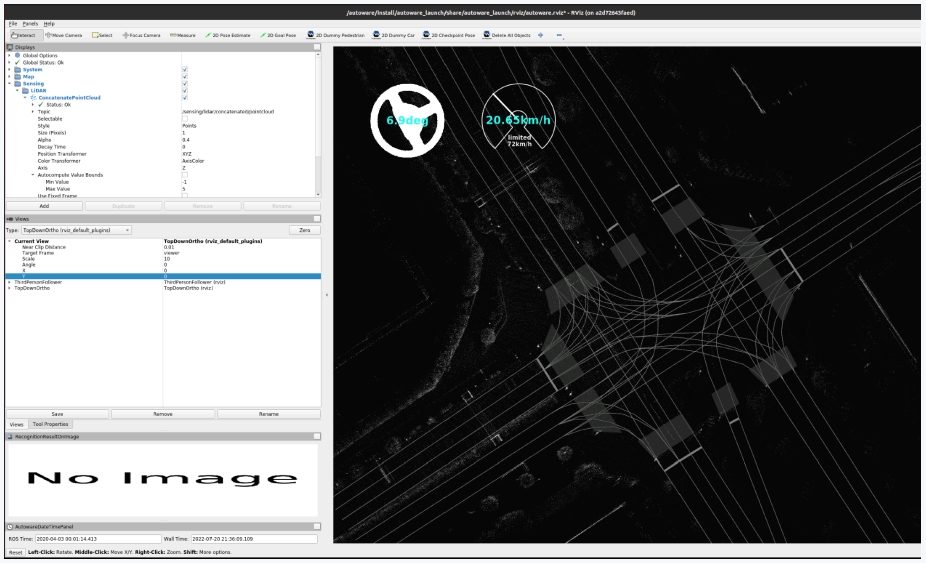
angry-crab on Jul 21, 2022 Maintainer

Please try `ros2 bag play ~/Downloads/sample-rosbag/sample.db3 -r 0.2`

gayar-helm on Jul 21, 2022 Author edited

> Please try ros2 bag play ~/Downloads/sample-rosbag/sample.db3 -r 0.2

That's what I tried to get the original result in the log you saw.
Here is a screenshot:



BTW it is driving somewhere but neither pointcloud nor the car itself show up.

angry-crab on Jul 21, 2022 Maintainer

It seems that the vehicle module is not properly started. Here are some suggestions:

1. Check if localization components are started. There is a pipeline for processing raw point could messages, if any node fails, no output will be received.
2. Check if the vehicle module is started correctly. If so, you should be able to see the vehicle in rviz.
3. Make sure there is no error during building.

gayar-helm on Jul 21, 2022 Author edited

Thanks for the suggestions!

1. The only actual error I see in the log is this:

> [system_error_monitor-6] [ERROR] [1658343645.360010809] [system_error_monitor /autoware/localization/node_alive_monitoring]: [Single Point Fault]: Error
> [system_error_monitor-6] [ERROR] [1658343645.360025404] [system_error_monitor /autoware/localization/node_alive_monitoring/topic_status/ad_service_state_monitor: localization_topic_status]: [Single Point Fault]: Error
> [system_error_monitor-6] [ERROR] [1658343645.360040717] [system_error_monitor /autoware/localization/performance_monitoring/localization_accuracy]: [Single Point Fault]: Error
> [system_error_monitor-6] [ERROR] [1658343645.360063038] [system_error_monitor /autoware/localization/performance_monitoring/localization_accuracy/localization_error_monitor: localization_accuracy]: [Single Point Fault]: ellipse size is over the expected range
> [system_error_monitor-6] [ERROR] [1658343645.360086813] [system_error_monitor /autoware/localization/performance_monitoring/localization_accuracy/localization_error_monitor: localization_accuracy_lateral_direction]: [Single Point Fault]: ellipse size along lateral direction is over the expected range

See https://gist.github.com/gayar-helm/1d85fa5197ed2a10499a5c297c4f7b7e#file-log_rosbag_replay-txt-L1123

There is a warning preceding that error:
[gyro_odometer-19] [WARN] [1658343643.058374960] [localization.twist_estimator.gyro_odometer]: Imu msg is not subscribed

2. The only vehicle related warning I see is this:
   [component_container_mt-52] [WARN] [1658343643.055631366] [autoware_api.external.vehicle_status]: The velocity topic is not subscribed

3. During the build I am getting CMake warnings but not sure how important they are. For example:

> Starting >>> image_projection_based_fusion
> --- stderr: velodyne_pointcloud
> CMake Warning (dev) at CMakeLists.txt:24 (find_package):
> Policy CMP0074 is not set: find_package uses _ROOT variables.
> Run "cmake --help-policy CMP0074" for policy details. Use the cmake_policy
> command to set the policy and suppress this warning.
> CMake variable PCL_ROOT is set to:
> /usr
> For compatibility, CMake is ignoring the variable.
> This warning is for project developers. Use -Wno-dev to suppress it.

Full build log is here: https://gist.github.com/gayar-helm/1d85fa5197ed2a10499a5c297c4f7b7e#file-build-log

↑ 1 0 replies

kminoda on Jul 21, 2022 Collaborator edited

Hi, @gayar-helm!
Thank you for posting the issue. It's weird... 🤔 the sample rosbag should work as long as you set up Autoware as per the official tutorial.

> `[ndt_scan_matcher-18] [WARN] [1658302837.086476315] [localization.pose_estimator.ndt_scan_matcher]: No InputSource`

As @angry-crab mentioned, this warning indicates that the `ndt_scan_matcher` fails to receive the LiDAR measurement input.
In Autoware, given raw LiDAR scan input (`sensing/lidar/top/velodyne_packets`), it performs a sequence of preprocessing before feeding it to `ndt_scan_matcher`. So I assume that somewhere in the preprocessing nodes is failing. I guess some of them are either disconnected or wrongly connected.

Would you check if `/localization/util/downsample/pointcloud` (an input topic to `ndt_scan_matcher`) is properly published?

- If it is published, check if `ndt_scan_matcher` subscribes that node by checking `ros2 node info /localization/pose_estimator/ndt_scan_matcher`.
- If it is not published, then seek where the cause is among the preprocessing nodes, e.g. by using `ros2 node info ...` and `ros2 topic info -v ...`.

↑ 1 0 replies

gayar-helm on Jul 22, 2022 Author

Hi, @kminoda!

Thank you for your reply.
The topic `/localization/util/downsample/pointcloud` is not published at all, see:

> ros2 node list | grep /localization
> /localization/localization_error_monitor
> /localization/pose_estimator/ndt_scan_matcher
> /localization/pose_estimator/transform_listener_impl_55652148c1e8
> /localization/pose_twist_fusion_filter/ekf_localizer
> /localization/pose_twist_fusion_filter/stop_filter
> /localization/pose_twist_fusion_filter/twist2accel
> /localization/twist_estimator/gyro_odometer
> /localization/twist_estimator/transform_listener_impl_55d192014d08
> /localization/util/pose_initializer
> /localization/util/transform_listener_impl_5590123c5e68

Further investigation showed that `/sensing/lidar/top/velodyne_packets` is consumed by `velodyne_convert_node` node:

> ros2 topic info -v /sensing/lidar/top/velodyne_packets
> Type: velodyne_msgs/msg/VelodyneScan
> Publisher count: 1
> Node name: rosbag2_player
> Node namespace: /
> Topic type: velodyne_msgs/msg/VelodyneScan
> Endpoint type: PUBLISHER
> GID:
> 79.a1.10.01.22.cb.b6.7e.82.e0.6a.d3.00.00.1c.03.00.00.00.00.00.00.00.0
> 0
> QoS profile:
> Reliability: RELIABLE
> Durability: VOLATILE
> Lifespan: 9223372036854775807 nanoseconds
> Deadline: 9223372036854775807 nanoseconds
> Liveliness: AUTOMATIC
> Liveliness lease duration: 9223372036854775807 nanoseconds
> Subscription count: 1
> ***Node name: velodyne_convert_node***
> ***Node namespace: /sensing/lidar/top***
> Topic type: velodyne_msgs/msg/VelodyneScan
> Endpoint type: SUBSCRIPTION
> GID:
> dc.96.10.01.90.46.e7.35.3f.71.8e.e9.00.00.24.04.00.00.00.00.00.00.00.0
> 0
> QoS profile:
> Reliability: BEST_EFFORT
> Durability: VOLATILE
> Lifespan: 9223372036854775807 nanoseconds
> Deadline: 9223372036854775807 nanoseconds
> Liveliness: AUTOMATIC
> Liveliness lease duration: 9223372036854775807 nanoseconds

but I don't have `/sensing/lidar/top/velodyne_convert_node` running, see:

> ros2 node list | grep velodyne_convert_node
> /sensing/lidar/left/velodyne_convert_node
> /sensing/lidar/rear/velodyne_convert_node
> /sensing/lidar/right/velodyne_convert_node

↑ 1 3 replies

gayar-helm on Jul 22, 2022 Author

Here is a error happening when `/sensing/lidar/top/velodyne_convert_node` starts:

[component_container_mt-10] [INFO] [1658461227.695406819] [sensing.lidar.top.velodyne_convert_node]: Number of lasers: 128.
[component_container_mt-10] [INFO] [1658461227.711969817] [sensing.lidar.top.pointcloud_preprocessor.velodyne_node_container]: Load Library: /autoware/install/pointcloud_preprocessor/lib/libpointcloud_preprocessor_filter.so
[component_container-8] [INFO] [1658461227.713979495] [map.map_container]: Load Library: /autoware/install/map_loader/lib/liblanelet2_map_loader_node.so
[component_container-8] [INFO] [1658461227.732650253] [map.map_container]: Found class: rclcpp_components::NodeFactoryTemplate
[component_container-8] [INFO] [1658461227.732715665] [map.map_container]: Instantiate class: rclcpp_components::NodeFactoryTemplate
[component_container-13] [INFO] [1658461227.736567506] [sensing.lidar.rear.pointcloud_preprocessor.velodyne_node_container]: Load Library: /autoware/install/velodyne_pointcloud/lib/libcloud_nodelet.so
[INFO] [launch_ros.actions.load_composable_nodes]: Loaded node '/system/system_monitor/cpu_monitor' in container '/system/system_monitor/system_monitor/system_monitor_container'
[component_container-13] [INFO] [1658461227.745926938] [sensing.lidar.rear.pointcloud_preprocessor.velodyne_node_container]: Found class: rclcpp_components::NodeFactoryTemplate<velodyne_pointcloud::Convert>
[component_container-13] [INFO] [1658461227.745982467] [sensing.lidar.rear.pointcloud_preprocessor.velodyne_node_container]: Instantiate class: rclcpp_components::NodeFactoryTemplate<velodyne_pointcloud::Convert>

[motion_velocity_smoother-42] [WARN] [1658461227.751030908] [planning.scenario_planning.motion_velocity_smoother]: failed to get transform from map to base_link: "map" passed to lookupTransform argument target_frame does not exist.

[motion_velocity_smoother-42] [INFO] [1658461227.751156428] [planning.scenario_planning.motion_velocity_smoother]: waiting for self pose...

So it looks like post processing node for the top lidar fails to start but same nodes for left/right/rear lidars start fine, at least I don't see the same error for them.

kminoda on Jul 22, 2022 Collaborator

Hmm, ok, thank you for sharing the results!

Here's my results:

```
$ ros2 node list | grep lidar/top
WARNING: Be aware that are nodes in the graph that share an
exact name, this can have unintended side effects.
/sensing/lidar/top/crop_box_filter_mirror
/sensing/lidar/top/crop_box_filter_self
/sensing/lidar/top/pointcloud_preprocessor/transform_listener_
/sensing/lidar/top/pointcloud_preprocessor/transform_listener_
/sensing/lidar/top/pointcloud_preprocessor/transform_listener_
/sensing/lidar/top/pointcloud_preprocessor/transform_listener_
/sensing/lidar/top/pointcloud_preprocessor/transform_listener_
/sensing/lidar/top/pointcloud_preprocessor/transform_listener_
/sensing/lidar/top/pointcloud_preprocessor/transform_listener_
/sensing/lidar/top/pointcloud_preprocessor/velodyne_node_conta
/sensing/lidar/top/ring_outlier_filter
/sensing/lidar/top/velodyne_convert_node
/sensing/lidar/top/velodyne_driver
/sensing/lidar/top/velodyne_interpolate_node
/sensing/lidar/top/velodyne_monitor
```

```
$ ros2 topic list | grep lidar/top
/sensing/lidar/top/crop_box_filter_mirror/crop_box_polygon
/sensing/lidar/top/crop_box_filter_self/crop_box_polygon
/sensing/lidar/top/mirror_cropped/pointcloud_ex
/sensing/lidar/top/outlier_filtered/pointcloud
/sensing/lidar/top/pointcloud_raw
/sensing/lidar/top/pointcloud_raw_ex
/sensing/lidar/top/rectified/pointcloud
/sensing/lidar/top/rectified/pointcloud_ex
/sensing/lidar/top/self_cropped/pointcloud_ex
/sensing/lidar/top/velodyne_model_marker
/sensing/lidar/top/velodyne_packets
/sensing/lidar/top/velodyne_points_combined_ex
/sensing/lidar/top/velodyne_points_invalid_near
```

kminoda on Jul 22, 2022 Collaborator

Would you double check your launch command?
FYI here's the command I used:
`ros2 launch autoware_launch autoware.launch.xml vehicle_model:=sample_vehicle sensor_model:=sample_sensor_kit map_path:=/home/minoda/data/maps/sample-map-rosbag`

Maybe you can do the following to isolate your problem on sensing modules:
`ros2 launch autoware_launch autoware.launch.xml vehicle_model:=sample_vehicle sensor_model:=sample_sensor_kit map_path:=/home/minoda/data/maps/sample-map-rosbag perception:=false localization:=false planning:=false control:=false ...`

gayar-helm on Jul 22, 2022 Author edited

@kminoda thanks fir suggestions.
This is interesting, the tutorial suggest to run 'logging_simulator.launch.xml `while you are running` autoware.launch.xml`.
When I run your command I do see all the nodes and topics you see:

> root@8e387a5e890d:/autoware# ros2 node list | grep lidar/top
> /sensing/lidar/top/crop_box_filter_mirror
> /sensing/lidar/top/crop_box_filter_self
> /sensing/lidar/top/pointcloud_preprocessor/transform_listener_impl_7f5210062760
> /sensing/lidar/top/pointcloud_preprocessor/transform_listener_impl_7f5248069420
> /sensing/lidar/top/pointcloud_preprocessor/transform_listener_impl_7f52605e7290
> /sensing/lidar/top/pointcloud_preprocessor/transform_listener_impl_7f52b006da80
> /sensing/lidar/top/pointcloud_preprocessor/transform_listener_impl_7f5344005258
> /sensing/lidar/top/pointcloud_preprocessor/transform_listener_impl_7f5398083870
> /sensing/lidar/top/pointcloud_preprocessor/transform_listener_impl_7f53c8082020
> /sensing/lidar/top/pointcloud_preprocessor/velodyne_node_container
> /sensing/lidar/top/ring_outlier_filter
> /sensing/lidar/top/velodyne_convert_node
> /sensing/lidar/top/velodyne_driver
> /sensing/lidar/top/velodyne_interpolate_node
> /sensing/lidar/top/velodyne_monitor

> root@8e387a5e890d:/autoware# ros2 topic list | grep lidar/top
> /sensing/lidar/top/crop_box_filter/debug/cyclic_time_ms
> /sensing/lidar/top/crop_box_filter/debug/processing_time_ms
> /sensing/lidar/top/crop_box_filter_mirror/crop_box_polygon
> /sensing/lidar/top/crop_box_filter_self/crop_box_polygon
> /sensing/lidar/top/mirror_cropped/pointcloud_ex
> /sensing/lidar/top/outlier_filtered/pointcloud
> /sensing/lidar/top/pointcloud_raw
> /sensing/lidar/top/pointcloud_raw_ex
> /sensing/lidar/top/rectified/pointcloud
> /sensing/lidar/top/rectified/pointcloud_ex
> /sensing/lidar/top/ring_outlier_filter/debug/cyclic_time_ms
> /sensing/lidar/top/ring_outlier_filter/debug/processing_time_ms
> /sensing/lidar/top/self_cropped/pointcloud_ex
> /sensing/lidar/top/velodyne_model_marker
> /sensing/lidar/top/velodyne_packets
> /sensing/lidar/top/velodyne_points_combined_ex
> /sensing/lidar/top/velodyne_points_invalid_near

And finally I'm seeing the car and some lidar poitns:

However the car isn't moving. The new error I'm seeing is this:

[ndt_scan_matcher-24] [WARN] [1658538045.295612413] [localization.pose_estimator.ndt_scan_matcher]: Validation error. The reference time is 1585897267.550600[sec], but the target time is 0.000000[sec]. The difference is 1585897267.550600[sec] (the tolerance is 1.000000[sec]).
[ndt_scan_matcher-24] [WARN] [1658538045.295718900] [localization.pose_estimator.ndt_scan_matcher]: Validation error. The reference time is 1585897267.550600[sec], but the target time is 1658537937.566759[sec]. The difference is 72640670.016159[sec] (the tolerance is 1.000000[sec]).
[ndt_scan_matcher-24] [WARN] [1658538045.295763441] [localization.pose_estimator.ndt_scan_matcher]: Validation error.
[ublox_gps_node-20] terminate called after throwing an instance of 'std::runtime_error'

Full log is here https://gist.githubusercontent.com/gayar-helm/1d85fa5197ed2a10499a5c297c4f7b7e/raw/cf244b35b71a7b4db08b202420c56c7fc03834b1/runtime_log_2022_07_22.txt

↑ 1 2 replies

kminoda on Jul 23, 2022 Collaborator edited

Sorry, my bad. I meant `logging_simulator.launch.xml`. So the correct executing command is `ros2 launch autoware_launch autoware.launch.xml vehicle_model:=sample_vehicle sensor_model:=sample_sensor_kit map_path:=/home/minoda/data/maps/sample-map-rosbag` (as per the tutorial).

And it seems `/sensing/lidar/top/velodyne_convert_node` appears now with `autoware.launch.xml` 🤔

How about the results for this?

```
ros2 launch autoware_launch logging_simulator.launch.xml
vehicle_model:=sample_vehicle sensor_model:=sample_sensor_kit
map_path:=/home/minoda/data/maps/sample-map-rosbag
perception:=false localization:=false planning:=false
control:=false system:=false rviz:=false map:=false
```


gayar-helm on Jul 24, 2022 Author

When I run it with `autoware.launch.xml` like this:

```
ros2 launch autoware_launch autoware.launch.xml
map_path:=/autoware/sample-map-rosbag
vehicle_model:=sample_vehicle sensor_model:=sample_sensor_kit
perception:=false localization:=false planning:=false
control:=false system:=false rviz:=false map:=false
```

All the nodes and topics show up:

> root@8e387a5e890d:/autoware# ros2 node list | grep lidar/top
> /sensing/lidar/top/crop_box_filter_mirror
> /sensing/lidar/top/crop_box_filter_self
> /sensing/lidar/top/pointcloud_preprocessor/transform_listener_impl_7f60ec0786e0
> /sensing/lidar/top/pointcloud_preprocessor/transform_listener_impl_7f6128069f80
> /sensing/lidar/top/pointcloud_preprocessor/transform_listener_impl_7f61600619f0
> /sensing/lidar/top/pointcloud_preprocessor/transform_listener_impl_7f61745e1b60
> /sensing/lidar/top/pointcloud_preprocessor/transform_listener_impl_7f61f8070110
> /sensing/lidar/top/pointcloud_preprocessor/transform_listener_impl_7f623007d8d0
> /sensing/lidar/top/pointcloud_preprocessor/transform_listener_impl_7f62740051e8
> /sensing/lidar/top/pointcloud_preprocessor/velodyne_node_container
> /sensing/lidar/top/ring_outlier_filter
> /sensing/lidar/top/velodyne_convert_node
> /sensing/lidar/top/velodyne_driver
> /sensing/lidar/top/velodyne_interpolate_node
> /sensing/lidar/top/velodyne_monitor

> root@8e387a5e890d:/autoware# ros2 topic list | grep lidar/top
> /sensing/lidar/top/crop_box_filter/debug/cyclic_time_ms
> /sensing/lidar/top/crop_box_filter/debug/processing_time_ms
> /sensing/lidar/top/crop_box_filter_mirror/crop_box_polygon
> /sensing/lidar/top/crop_box_filter_self/crop_box_polygon
> /sensing/lidar/top/mirror_cropped/pointcloud_ex
> /sensing/lidar/top/outlier_filtered/pointcloud
> /sensing/lidar/top/pointcloud_raw
> /sensing/lidar/top/pointcloud_raw_ex
> /sensing/lidar/top/rectified/pointcloud
> /sensing/lidar/top/rectified/pointcloud_ex
> /sensing/lidar/top/ring_outlier_filter/debug/cyclic_time_ms
> /sensing/lidar/top/ring_outlier_filter/debug/processing_time_ms
> /sensing/lidar/top/self_cropped/pointcloud_ex
> /sensing/lidar/top/velodyne_model_marker
> /sensing/lidar/top/velodyne_packets
> /sensing/lidar/top/velodyne_points_combined_ex
> /sensing/lidar/top/velodyne_points_invalid_near

but if I changed it to `logging_simulator` like this:
`ros2 launch autoware_launch logging_simulator.launch.xml map_path:=/autoware/sample-map-rosbag vehicle_model:=sample_vehicle sensor_model:=sample_sensor_kit perception:=false localization:=false planning:=false control:=false system:=false rviz:=false map:=false`

I get only this:

> root@8e387a5e890d:/autoware# ros2 node list | grep lidar/top
> root@8e387a5e890d:/autoware# ros2 topic list | grep lidar/top
> /sensing/lidar/top/outlier_filtered/pointcloud
> /sensing/lidar/top/velodyne_packets

full log for the ***second command*** is here

kminoda on Jul 25, 2022 Collaborator edited

Thanks! Then it seems that `tier4_sensing_launch` causes the issue. But I still don't have any idea what the cause is...

BTW did you try updating your autoware workspace? Since the sub-repositories of Autoware are frequently updated, updating the whole workspace often solves the issues.

```
cd WORKSPACE
vcs import src < autoware.repos
vcs pull src
# if necessary: rosdep install -iry --from-paths src --rosdistro
$ROS_DISTRO
# if necessary: rm -rf install && rm -rf build
colcon build --symlink-install --cmake-args -
```

```
DCMAKE_BUILD_TYPE=Release
source install/setup.bash
```

↑ 1 0 replies

gayar-helm on Jul 25, 2022 Author

Thanks for suggestion!
I updated the workspace and rebuild everything from scratch but the issue remains the same.

After the build I see this at the end:

> Summary: 242 packages finished [10min 18s]
> 29 packages had stderr output: behavior_tree_plugin elevation_map_loader grid_map_pcl image_projection_based_fusion initial_pose_button_panel lidar_apollo_instance_segmentation lidar_centerpoint livox_tag_filter map_loader map_tf_generator ndt_omp neural_networks_provider openscenario_utility polar_grid pose_initializer scenario_test_runner simple_sensor_simulator simulator_compatibility_test tier4_control_rviz_plugin tier4_datetime_rviz_plugin tier4_localization_rviz_plugin tier4_perception_rviz_plugin tier4_planning_rviz_plugin tier4_screen_capture_rviz_plugin tier4_simulated_clock_rviz_plugin tier4_state_rviz_plugin tier4_traffic_light_rviz_plugin tier4_vehicle_rviz_plugin velodyne_pointcloud

Is this something to worry about?
Full build log is here build.log

↑ 1 1 reply

kminoda on Jul 25, 2022 Collaborator

I guess that build log has nothing to do with the issue.

How about trying launching `lidar.launch.xml` in `sample_sensor_kit_launch`? This is the very launch file that launches the `velodyne_convert_node`. (Note that you need to provide appropriate arguments when launching the file directly)

gayar-helm on Jul 25, 2022 Author edited

Hmm, not sure if I ran it correctly but this is what I got:

```
root@eb1379420f7e:/autoware# ros2 launch sample_sensor_kit_launch
sensing.launch.xml map_path:=/autoware/sample-map-rosbag
vehicle_model:=sample_vehicle sensor_model:=sample_sensor_kit
perception:=false loca
lization:=false planning:=false control:=false system:=false rviz:=false
map:=false
[INFO] [launch]: All log files can be found below /root/.ros/log/2022-07-
25-00-31-56-641982-eb1379420f7e-187781
[INFO] [launch]: Default logging verbosity is set to INFO
Task exception was never retrieved
future: <Task finished name='Task-2' coro=
<LaunchService._process_one_event() done, defined at
/opt/ros/galactic/lib/python3.8/site-
packages/launch/launch_service.py:226>
exception=RuntimeError("Included launch description missing required
argument 'vehicle_mirror_param_file' (description: 'path to the file of
vehicle mirror position yaml'), given: [map_path, vehicle_model,
sensor_model, perception, localization, planning, control, system, rviz,
map]")>
Traceback (most recent call last):
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/launch_service.py", line 228, in _process_one_event
await self.__process_event(next_event)
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/launch_service.py", line 248, in __process_event
visit_all_entities_and_collect_futures(entity, self.__context))
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/utilities/visit_all_entities_and_collect_futures_impl.py",
line 45, in visit_all_entities_and_collect_futures
futures_to_return += visit_all_entities_and_collect_futures(sub_entity,
context)
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/utilities/visit_all_entities_and_collect_futures_impl.py",
line 45, in visit_all_entities_and_collect_futures
futures_to_return += visit_all_entities_and_collect_futures(sub_entity,
context)
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/utilities/visit_all_entities_and_collect_futures_impl.py",
line 38, in visit_all_entities_and_collect_futures
sub_entities = entity.visit(context)
File "/opt/ros/galactic/lib/python3.8/site-packages/launch/action.py",
line 108, in visit
return self.execute(context)
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/actions/include_launch_description.py", line 150, in
execute
raise RuntimeError(
RuntimeError: Included launch description missing required argument
'vehicle_mirror_param_file' (description: 'path to the file of vehicle
mirror position yaml'), given: [map_path, vehicle_model, sensor_model,
perception, localization, planning, control, system, rviz, map]
```

I added parameter `vehicle_mirror_param_file:=./install/vehicle_info_util/share/vehicle_info_util/config/vehicle_mirror.param.yaml` and got this:

```
root@eb1379420f7e:/autoware# ros2 launch sample_sensor_kit_launch
sensing.launch.xml map_path:=/autoware/sample-map-rosbag
vehicle_model:=sample_vehicle sensor_model:=sample_sensor_kit
perception:=false localization:=false planning:=false control:=false
system:=false rviz:=false map:=false
vehicle_mirror_param_file:=./install/vehicle_info_util/share/vehicle_info_
util/config/vehicle_mirror.param.yaml
[INFO] [launch]: All log files can be found below /root/.ros/log/2022-07-
25-00-35-22-158557-eb1379420f7e-187785
[INFO] [launch]: Default logging verbosity is set to INFO
Task exception was never retrieved
future: <Task finished name='Task-2' coro=
<LaunchService._process_one_event() done, defined at
/opt/ros/galactic/lib/python3.8/site-
packages/launch/launch_service.py:226>
exception=KeyError('front_overhang')>
Traceback (most recent call last):
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/launch_service.py", line 228, in _process_one_event
await self.__process_event(next_event)
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/launch_service.py", line 248, in __process_event
visit_all_entities_and_collect_futures(entity, self.__context))
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/utilities/visit_all_entities_and_collect_futures_impl.py",
line 45, in visit_all_entities_and_collect_futures
futures_to_return += visit_all_entities_and_collect_futures(sub_entity,
context)
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/utilities/visit_all_entities_and_collect_futures_impl.py",
line 45, in visit_all_entities_and_collect_futures
futures_to_return += visit_all_entities_and_collect_futures(sub_entity,
context)
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/utilities/visit_all_entities_and_collect_futures_impl.py",
line 45, in visit_all_entities_and_collect_futures
futures_to_return += visit_all_entities_and_collect_futures(sub_entity,
context)
[Previous line repeated 10 more times]
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/utilities/visit_all_entities_and_collect_futures_impl.py",
line 38, in visit_all_entities_and_collect_futures
sub_entities = entity.visit(context)
File "/opt/ros/galactic/lib/python3.8/site-packages/launch/action.py",
line 108, in visit
return self.execute(context)
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/actions/opaque_function.py", line 75, in execute
return self.__function(context, *self.__args, **self.__kwargs)
File
"/autoware/install/common_sensor_launch/share/common_sensor_launc
h/launch/velodyne_node_container.launch.py", line 95, in launch_setup
vehicle_info = get_vehicle_info(context)
```

> File "/autoware/install/common_sensor_launch/share/common_sensor_launch/launch/velodyne_node_container.launch.py", line 35, in get_vehicle_info
> p["vehicle_length"] = gp["front_overhang"] + gp["wheel_base"] + gp["rear_overhang"]
> KeyError: 'front_overhang'

↑ 1 5 replies

kminoda on Jul 26, 2022 Collaborator edited

It seems that the vehicle parameters should be loaded as well as the sensor parameters.
Insert the following in `sample_sensor_kit_launch/lidar.launch.xml`

```
  <include file="$(find-pkg-share
global_parameter_loader)/launch/global_params.launch.py">
    <arg name="use_sim_time" value="true"/>
    <arg name="vehicle_model" value="sample_vehicle"/>
  </include>
```

and then execute the following command:

```
ros2 launch sample_sensor_kit_launch sensing.launch.xml
vehicle_mirror_param_file:=./install/vehicle_info_util/s
```


gayar-helm on Jul 26, 2022 Author

Thanks for the reply!

I am still getting this error:

```
root@ff4ea03ce768:/autoware# ros2 launch
sample_sensor_kit_launch sensing.launch.xml
vehicle_mirror_param_file:=./install/vehicle_info_util/share/vehicle
_info_util/config/vehicle_mirror.param.yaml
[INFO] [launch]: All log files can be found below
/root/.ros/log/2022-07-26-00-51-29-536867-ff4ea03ce768-
48183
[INFO] [launch]: Default logging verbosity is set to INFO
Task exception was never retrieved
future: <Task finished name='Task-2' coro=
<LaunchService._process_one_event() done, defined at
/opt/ros/galactic/lib/python3.8/site-
packages/launch/launch_service.py:226>
exception=KeyError('front_overhang')>
Traceback (most recent call last):
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/launch_service.py", line 228, in
_process_one_event
await self.__process_event(next_event)
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/launch_service.py", line 248, in __process_event
visit_all_entities_and_collect_futures(entity, self.__context))
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/utilities/visit_all_entities_and_collect_futures_im
pl.py", line 45, in visit_all_entities_and_collect_futures
futures_to_return +=
visit_all_entities_and_collect_futures(sub_entity, context)
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/utilities/visit_all_entities_and_collect_futures_im
pl.py", line 45, in visit_all_entities_and_collect_futures
futures_to_return +=
visit_all_entities_and_collect_futures(sub_entity, context)
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/utilities/visit_all_entities_and_collect_futures_im
pl.py", line 45, in visit_all_entities_and_collect_futures
futures_to_return +=
visit_all_entities_and_collect_futures(sub_entity, context)
[Previous line repeated 10 more times]
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/utilities/visit_all_entities_and_collect_futures_im
pl.py", line 38, in visit_all_entities_and_collect_futures
sub_entities = entity.visit(context)
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/action.py", line 108, in visit
return self.execute(context)
File "/opt/ros/galactic/lib/python3.8/site-
packages/launch/actions/opaque_function.py", line 75, in execute
return self.__function(context, *self.__args, **self.__kwargs)
File
"/autoware/install/common_sensor_launch/share/common_sensor
_launch/launch/velodyne_node_container.launch.py", line 95, in
launch_setup
vehicle_info = get_vehicle_info(context)
```

> File "/autoware/install/common_sensor_launch/share/common_sensor_launch/launch/velodyne_node_container.launch.py", line 35, in get_vehicle_info
> p["vehicle_length"] = gp["front_overhang"] + gp["wheel_base"] + gp["rear_overhang"]
> KeyError: 'front_overhang'

This is how my lidar.launch.xml looks like.

kminoda on Jul 27, 2022 Collaborator

Would you try launching this one? lidar.launch.xml

gayar-helm on Aug 18, 2022 Author

Hi **@kminoda** ,
Sorry for delayed response. We figured out that there was some issue with Nvidia driver on the test machine and the simulation works now.
Thanks a lot for you help!

👍 1

kminoda on Aug 18, 2022 Collaborator edited

Good to hear that!
But that's kind of weird... the sensing module in the original autoware.universe does not depend on NVIDIA GPUs.