

AutoWare compilation

1、 Install dependencies

ROS(ubuntu 18.04 melodic)

2、 Source code path

Auroware.ai:

```
#This is the code for x86 motherboard  
src/
```

```
#This is the code for the Jetson control panel, with some slight modifications.  
(Mainly affected by different opencv versions)  
src_jetson/
```

autoware_share is the official test file and rviz configuration file

3、 Compile

Take a laptop or host with Ubuntu 18.04 system, 1050ti graphics card, and CUDA 10.0 as an example. The graphics driver has been installed by default and the CUDA environment variable configuration has been completed. At the same time, the ros melodic environment has been installed. **Remember that tensorrt is version 7.2 and opencv version is 3.2.**

Compile under this premise

If there is no source code, enter the following command in the terminal:

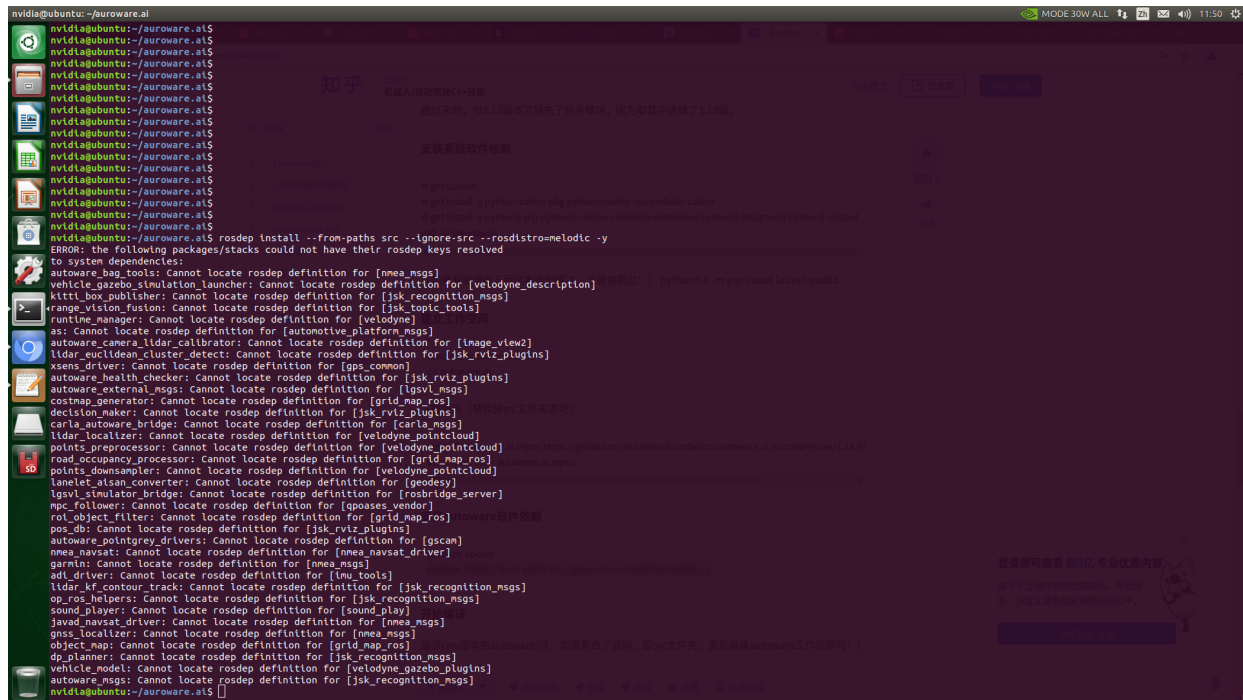
```
mkdir -p autoware.ai/src  
cd autoware.ai  
wget -O autoware.ai.repos "https://raw.githubusercontent.com/Autoware-AI/autoware.ai/1.12.0/autoware.ai.repos"  
vcs import src < autoware.ai.repos
```

If you don't want to download the source code, you can directly use the source code of the tutorial. The source code is located in autoware/src. You can copy the src folder directly to the newly created autoware.ai folder above.

Then enter the following command in the terminal.

```
cd autoware.ai  
sudo rosdep init  
rosdep update  
rosdep install -y --from-paths src --ignore-src --rosdistro melodic
```

The above step will detect the dependencies required by our installation package and automatically install some dependencies.



```
nvidia@ubuntu: ~/auroware.ai$ rosdep install --from-paths src --ignore-src --rosdistro melodic -y
ERROR: the following packages/stacks could not have their rosdep keys resolved
to system dependencies:
auroware_bag_tools: Cannot locate rosdep definition for [nmea_msgs]
vehicle_gazebo_simulation_launcher: Cannot locate rosdep definition for [velodyne_description]
kitti_box_publisher: Cannot locate rosdep definition for [jsk_recognition_msgs]
range_vision_fusion: Cannot locate rosdep definition for [jsk_topic_tools]
runtime_manager: Cannot locate rosdep definition for [velodyne]
as: Cannot locate rosdep definition for [automotive_platform_msgs]
auroware_camera_lidar_calibrator: Cannot locate rosdep definition for [image_view2]
lidar_euclidean_cluster_detect: Cannot locate rosdep definition for [jsk_rviz_plugins]
xsens_driver: Cannot locate rosdep definition for [gps_common]
auroware_health_checker: Cannot locate rosdep definition for [jsk_rviz_plugins]
auroware_external_msgs: Cannot locate rosdep definition for [lgsvl_msgs]
costmap_generator: Cannot locate rosdep definition for [grid_map_ros]
decision_maker: Cannot locate rosdep definition for [jsk_rviz_plugins]
carla_auroware_bridge: Cannot locate rosdep definition for [carla_msgs]
lidar_localizer: Cannot locate rosdep definition for [velodyne_pointcloud]
points_preprocessor: Cannot locate rosdep definition for [velodyne_pointcloud]
road_occupancy_processor: Cannot locate rosdep definition for [grid_map_ros]
points_downsampler: Cannot locate rosdep definition for [velodyne_pointcloud]
lanelet_alsen_converter: Cannot locate rosdep definition for [geodesy]
lgsvl_simulator_bridge: Cannot locate rosdep definition for [rosbridge_server]
npc_follower: Cannot locate rosdep definition for [qpoases_vendor]
rol_object_filter: Cannot locate rosdep definition for [grid_map_ros]
pos_db: Cannot locate rosdep definition for [jsk_rviz_plugins]
auroware_pointgrey_drivers: Cannot locate rosdep definition for [gscam]
nmea_navsat: Cannot locate rosdep definition for [nmea_navsat_driver]
garmin: Cannot locate rosdep definition for [nmea_msgs]
adi_driver: Cannot locate rosdep definition for [imu_tools]
lidar_kf_contour_track: Cannot locate rosdep definition for [jsk_recognition_msgs]
op_ros_helpers: Cannot locate rosdep definition for [jsk_recognition_msgs]
sound_player: Cannot locate rosdep definition for [sound_play]
javad_navsat_driver: Cannot locate rosdep definition for [nmea_msgs]
gnss_localizer: Cannot locate rosdep definition for [nmea_msgs]
object_map: Cannot locate rosdep definition for [grid_map_ros]
dp_planner: Cannot locate rosdep definition for [jsk_recognition_msgs]
vehicle_model: Cannot locate rosdep definition for [velodyne_gazebo_plugins]
auroware_msgs: Cannot locate rosdep definition for [jsk_recognition_msgs]
```

If the above problem occurs, it is because some packages are not installed. You can use the following command to install it.

```
sudo apt install ros-melodic-nmea-msgs ros-melodic-velodyne-description ros-melodic-jsk-recognition-msgs ros-melodic-jsk-topic-tools ros-melodic-velodyne ros-melodic-automotive-platform-msgs ros-melodic-image-view2 ros-melodic-jsk-rviz-plugins ros-melodic-gps-common ros-melodic-jsk-rviz-plugins ros-melodic-lgsvl-msgs ros-melodic-grid-map-ros ros-melodic-carla-msgs ros-melodic-velodyne-pointcloud ros-melodic-geodesy ros-melodic-rosbridge-server ros-melodic-qpoases-vendor ros-melodic-gscam ros-melodic-nmea-navsat-driver ros-melodic-imu-tools ros-melodic-jsk-recognition-msgs ros-melodic-velodyne-gazebo-plugins ros-melodic-automotive-navigation-msgs ros-melodic-velocity-controllers ros-melodic-uvc-camera ros-melodic-effort-controllers ros-melodic-image-transport-plugins
```

After the installation is complete, enter the following command again

```
rosdep install -y --from-paths src --ignore-src --rosdistro melodic
```

If the following phenomenon occurs, it means that the dependencies required for compilation are completely installed.

[illegible]

Then enter the following command.

```
#If you have a graphics card, use the following command:
AUTOWARE_COMPILE_WITH_CUDA=1 colcon build --cmake-args -DCMAKE_BUILD_TYPE=Release
#If you don't have a graphics card, use the following command:
colcon build --cmake-args -DCMAKE_BUILD_TYPE=Release
```