

Autware Planning Simulator

Approximate Time Investment: 1 hour

We have installed Autware but we are far from operating our Autonomous Lincoln MKZ research vehicle, however we can experiment with the planning simulator using a sample vehicle, sample sensor kit, and sample map provided by Autware as a preview and to familiarize ourselves with what is to come.

Resource: [Autware Planning Simulation Guide](#)

1. Download the sample map from Autware's planning simulation guide page, linked above. You can simply download it manually and place it in a folder called autware_map somewhere you can easily reference.
2. Check that in our autware_data folder inside our Autware workspace that we have the 'artifacts' library packages in the Figure 1. These packages should exist if the Autware installation procedure was followed correctly. If they do not exist, backtrack to the installation document and follow the steps where we run the Ansible script and respond "y" to the prompt asking if we want the artifacts library.

Preparation

Download and unpack a sample map.

- You can also download [the map](#) manually.

```
gdown -O ~/autware_map/ 'https://docs.google.com/uc?export=download&id=1499_nsbUbIe'
unzip -d ~/autware_map ~/autware_map/sample-map-planning.zip
```

 **Note**

Sample map: Copyright 2020 TIER IV, Inc.

Check if you have ~/autware_data folder and files in it.

```
$ cd ~/autware_data
$ ls -C -w 30
image_projection_based_fusion
lidar_apollo_instance_segmentation
lidar_centerpoint
tensorrt_yolo
tensorrt_yolox
traffic_light_classifier
traffic_light_fine_detector
traffic_light_ssd_fine_detector
yabloc_pose_initializer
```

If not, please, follow [Manual downloading of artifacts](#).

Change the [maximum velocity](#), that is 15km/h by default.

Figure 1: Preparation steps for downloading the sample map and checking for 'artifacts' library

3. Launch the basic lane driving scenario using the following command:

```
ros2 launch autoware_launch planning_simulator.launch.xml \ map_path:=$HOME/autoware_map/sample-map-planning vehicle_model:=sample_vehicle \ sensor_model:=sample_sensor_kit
```

You may need to change the directory of the map for the map_path parameter to wherever you downloaded and saved your map to.

4. Experiment with basic autonomous driving simulation. Follow the directions in Autoware's documentation for basic driving, parking, pull out and over, lane changing, etc.

The results of the planning simulation should look like the following video: [Autoware Planning Simulator with Sample Vehicle](#)