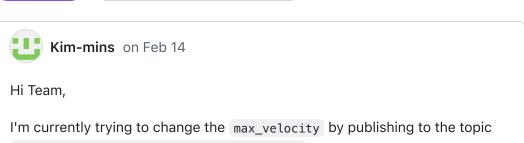


Question on max_velocity #4178





/planning/scenario_planning/max_velocity, and I have a question on how Autoware handles the max velocity.

When I changed the max velocity to 30, Autoware sometimes over the limit(can be 31). Is the max velocity a hard constraint?





Answered by TZECHIN6 on Feb 15

the velocity unit used in autoware should be $\,$ m/s $\,$. Instead of publishing the max_velocity via CLI, you might also try publishing it via the RViz GUI (should be located at somewhere bottom left, please make sure to press the button to activate it). Another indicator is the max velocity under the velocity gauge,

I believe you have already noticed that

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TZECHIN6 on Feb 15

How do you confirm the value is over 30? Do you reading from status or reading from the raw publish?



5 replies



Kim-mins on Feb 15 Author

Thank you for the response @TZECHIN6!

I'm sorry that I did not note whether the scale is km/h or m/s. I set the maximum km/h of Autoware to 30 km/h, which is 8.3333... m/s. So I publish the message to the topic

/planning/scenario_planning/max_velocity with 8.3333....

Category



Q&A

Labels

None yet

2 participants



I confirmed that the value is over 30 km/h by checking RViz. During the driving, the velocity(km/h) of the ego vehicle sometimes goes over 30 km/h, even though the maximum velocity is set to 30 km/h (I could check the maximum velocity(km/h) by checking the number below the current velocity).

I wonder if Autoware intentionally goes over the maximum velocity sometimes, since going over 1 or 2 km/h sometimes is ok (at least in my country).

This may happen since I'm using old version of Autoware now. So I'll check it with the planning simulation of latest version.

Thank you!



TZECHIN6 on Feb 15

the velocity unit used in autoware should be m/s. Instead of publishing the max_velocity via CLI, you might also try publishing it via the RViz GUI (should be located at somewhere bottom left, please make sure to press the button to activate it). Another indicator is the max velocity under the velocity gauge, I believe you have already noticed that.

The max velocity is a limiter to the target velocity that autoware could publish, but the vehicle speed are controlled by the PID longitudinal controller and the raw command converter which have a lookup table for pedal position.

I am not sure will the planning simulator consider this as well... should be not (means it's perfectly ideal). But in real situation, you should tune the performance parameter, other even set a margin buffer to tackle the constant error or overshoot.



Marked as answer

Answer selected by Kim-mins



Kim-mins on Feb 15 (Author)

Thank you for the detailed answer @TZECHIN6!

In my understanding, maybe you mean the speed of Autoware could be over the limit sometimes by the PID longitudinal controller, even though the planning module published the target velocity below the max velocity.

Also, I guess you mean the testing with the planning simulator does not make sense for this question.

Thank you for the answer! I think the question is resolved now!



TZECHIN6 on Feb 16

Autoware could be over the limit sometimes by the PID longitudinal controller, even though the planning module published the target velocity below the max velocity.

Yes, that's what I want to say. More detail can be found in here.

I guess you mean the testing with the planning simulator does not make sense for this question.

I believe so, first of all I am not sure whether you are testing on planning sim or on a real ego-car. For the planning simulator, the vehicle feedback status is a mirror of autoware control output, which is a very ideal situation. Under this condition, I believe there are no overshoot in planning sim.





Kim-mins on Feb 16 (Author)

I got your point. Thank you for the kind response!