

Robots Móviles

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Práctica No.3

Uso del *navigation stack* para navegación en 2D.

Entregables:

Ejecutar los comandos

`roslaunch bringup robotino simul.launch`

`roslaunch bringup navigation move_base.launch`

En el cuadro Displays de Rviz agregar los tópicos:

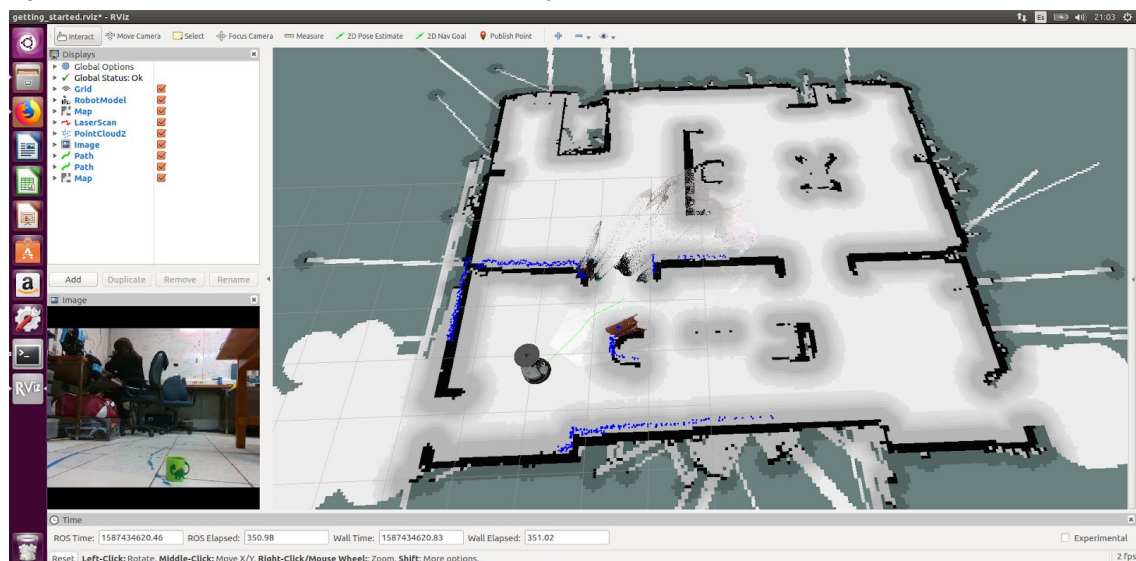
`/move_base/DWAPlanerROS/global plan`

`/move_base/DWAPlanerROS/local plan`

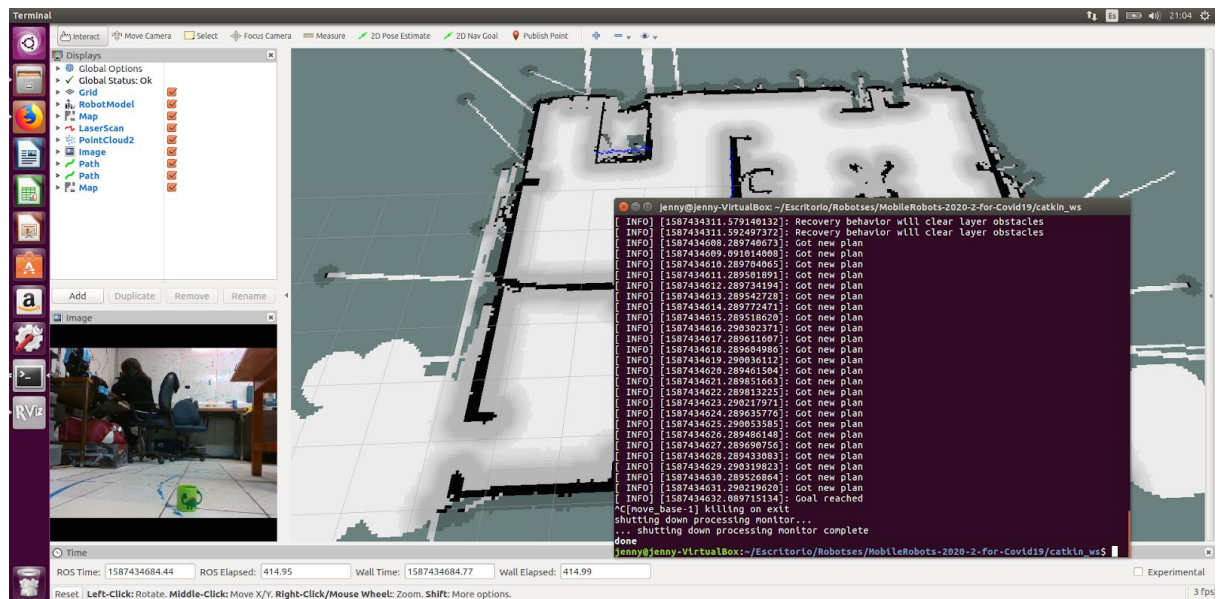
`/move_base/global costmap/costmap`



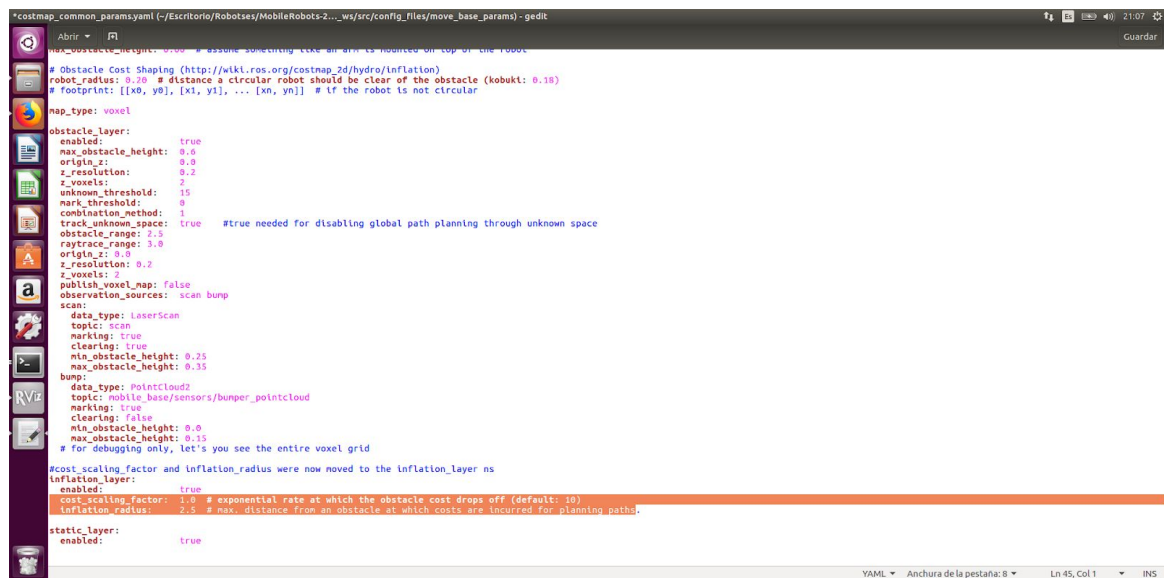
Fijar una meta con el botón 2D Nav Goal y observar el comportamiento.



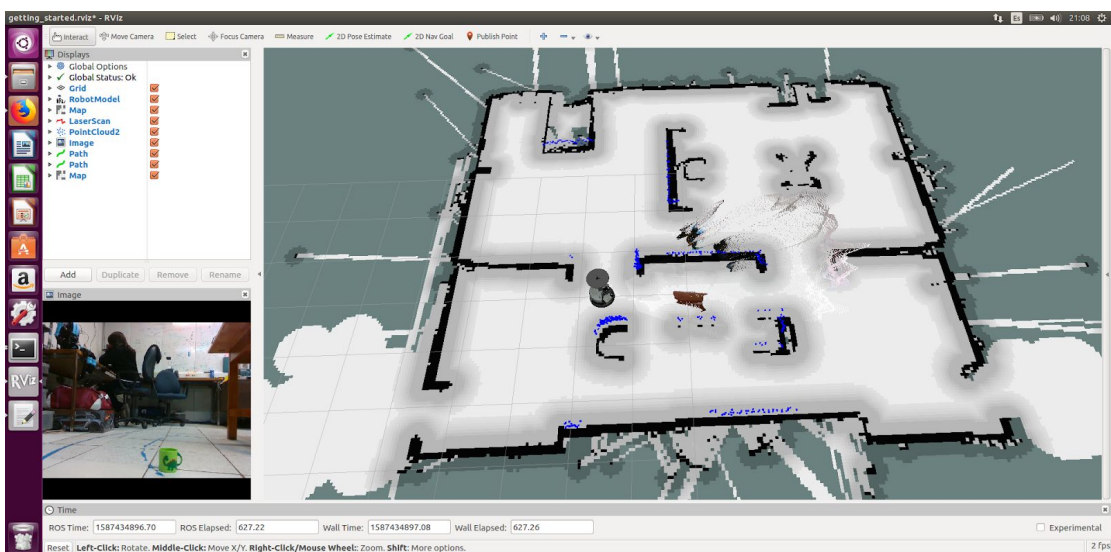
Detener la ejecución de navigation move base.launch.



En el archivo catkinws/src/config files/move base params/costmap common params.yaml:
Cambiar cost scaling factor a 1.0
Cambiar inflation radius a 2.5



Relanzar navigation move base.launch y observar qué sucede.



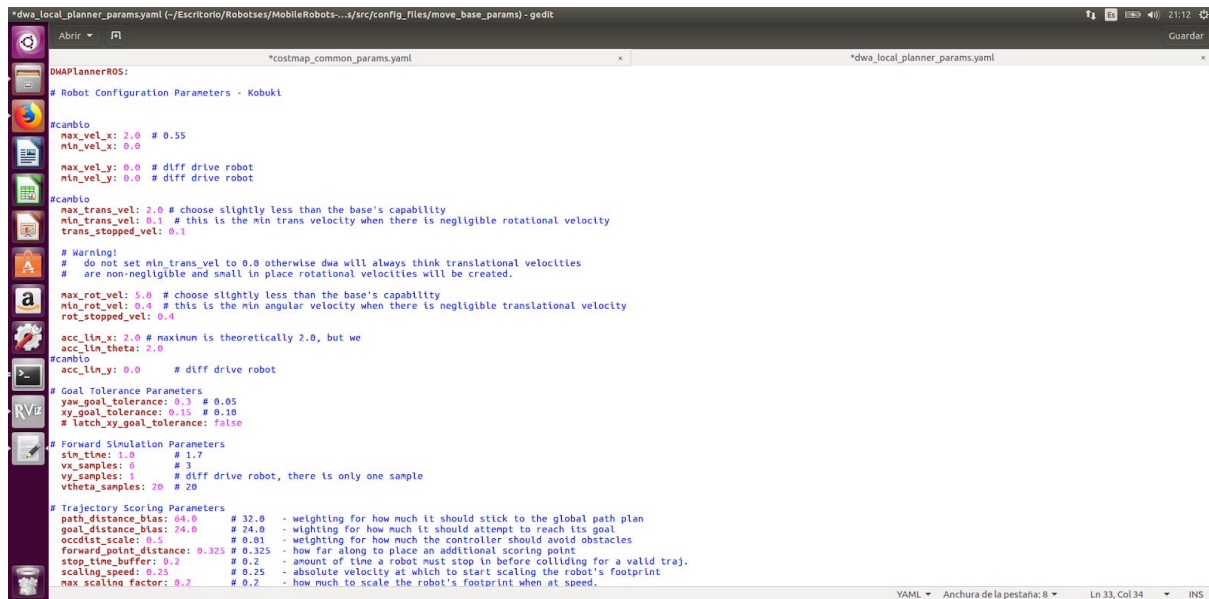
Detener la ejecución de navigation move base.launch.

En el archivo catkin_ws/src/config files/move base params/dwa local planner params.yaml:

Cambiar max vel x a 2.0

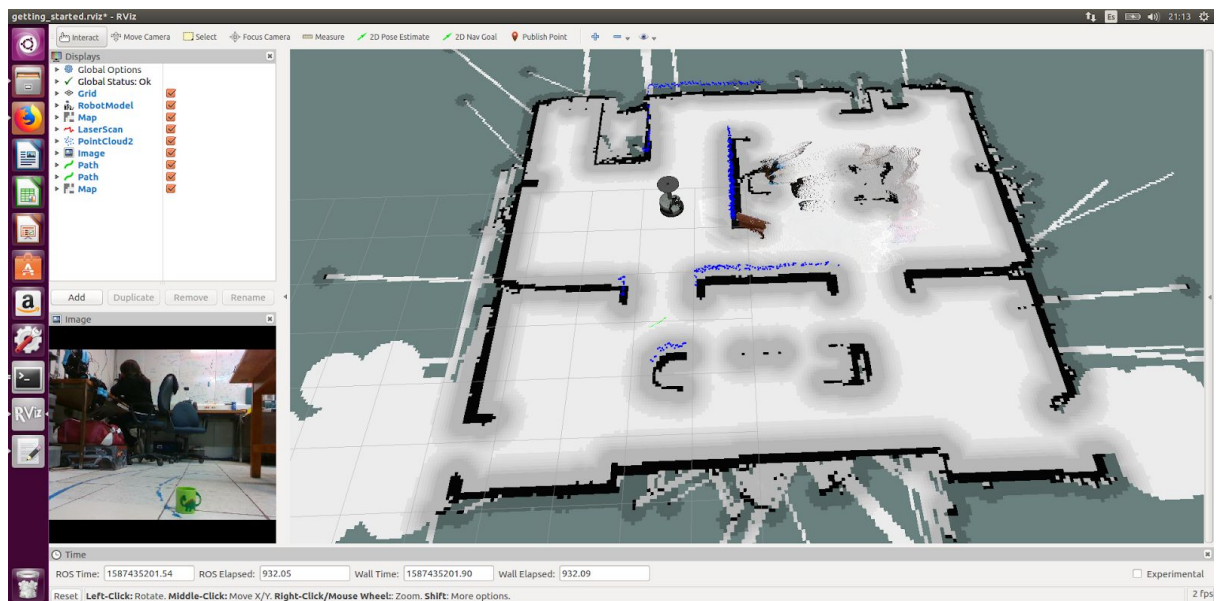
Cambiar max trans vel a 2.0

Cambiar acc lim x a 2.0



```
#dwa_local_planner_params.yaml (-/Escritorio/Robotses/MobileRobots...s/src/config_files/move_base_params) - gedit
# Robot Configuration Parameters - Kobuki
#canblo
max_vel_x: 2.0 # 0.55
min_vel_x: 0.0
max_vel_y: 0.0 # diff drive robot
min_vel_y: 0.0 # diff drive robot
#canblo
max_trans_vel: 2.0 # choose slightly less than the base's capability
min_trans_vel: 0.1 # this is the min trans velocity when there is negligible rotational velocity
trans_stopped_vel: 0.1
# Warning!
# do not set min_trans_vel to 0.0 otherwise dwa will always think translational velocities
# are non-negligible and small in place rotational velocities will be created.
max_rot_vel: 5.0 # choose slightly less than the base's capability
min_rot_vel: 0.4 # this is the min angular velocity when there is negligible translational velocity
rot_stopped_vel: 0.4
acc_lim_x: 2.0 # maximum is theoretically 2.0, but we
acc_lim_theta: 2.0
#canblo
acc_lim_y: 0.0 # diff drive robot
# Goal Tolerance Parameters
yaw_goal_tolerance: 0.3 # 0.05
xy_goal_tolerance: 0.15 # 0.10
# latch_xy_goal_tolerance: false
# Forward Simulation Parameters
sim_time: 1.0 # 1.7
vs_samples: 6 # 3
vy_samples: 1 # diff drive robot, there is only one sample
vtheta_samples: 20 # 20
# Trajectory Scoring Parameters
path_distance_bias: 0.4 # 32.0 - weighting for how much it should stick to the global path plan
goal_distance_bias: 24.0 # 24.0 - weighting for how much it should attempt to reach its goal
occdist_scale: 0.5 # 0.01 - weighting for how much the controller should avoid obstacles
forward_point_distance: 0.325 # 0.325 - how far along to place an additional scoring point
stop_time_buffer: 0.2 # 0.2 - amount of time a robot must stop in before colliding for a valid traj.
scaling_speed: 0.25 # 0.25 - absolute velocity at which to start scaling the robot's footprint
max_scaling_factor: 0.2 # 0.2 - how much to scale the robot's footprint when at speed.
```

Relanzar navigation move base.launch y observar qué sucede.



Conclusión:

Esta practica ayudó mucho a complementar la explicación de la presentación y a seguir obteniendo un mayor conocimiento sobre los archivos que se usan y las variables que controlan el entorno.