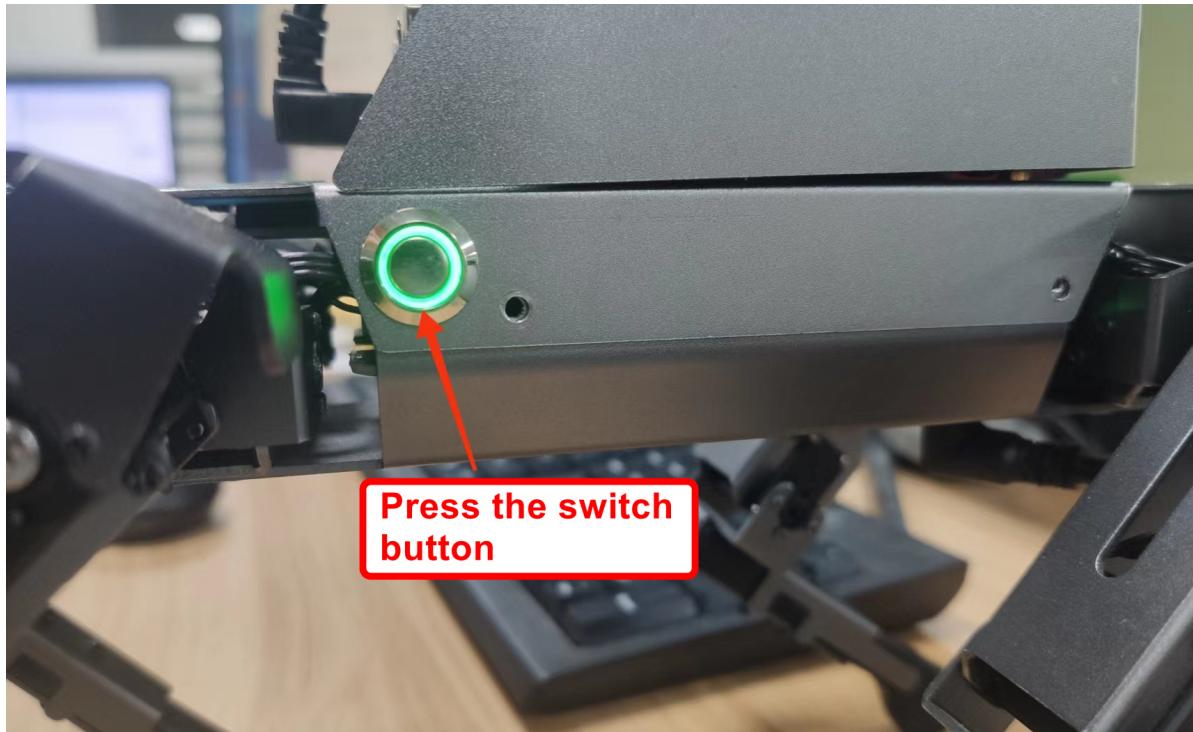


Trot gait leans forward

Quick use

1. Power on DOGZILLA

First, we turn on the switching power supply of the mechanical dog and start the mechanical dog



After starting, we can view the IP address on the small screen of the robot dog.

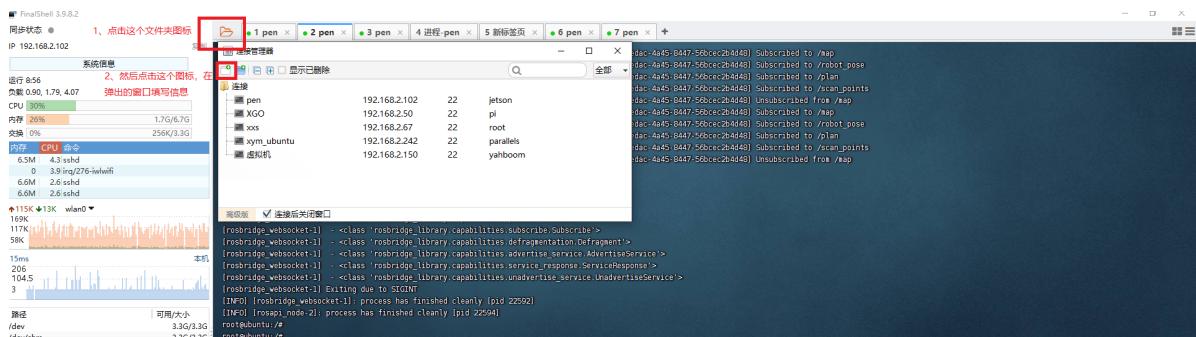
2. Start DOGZILLA chassis

PI4 version steps:

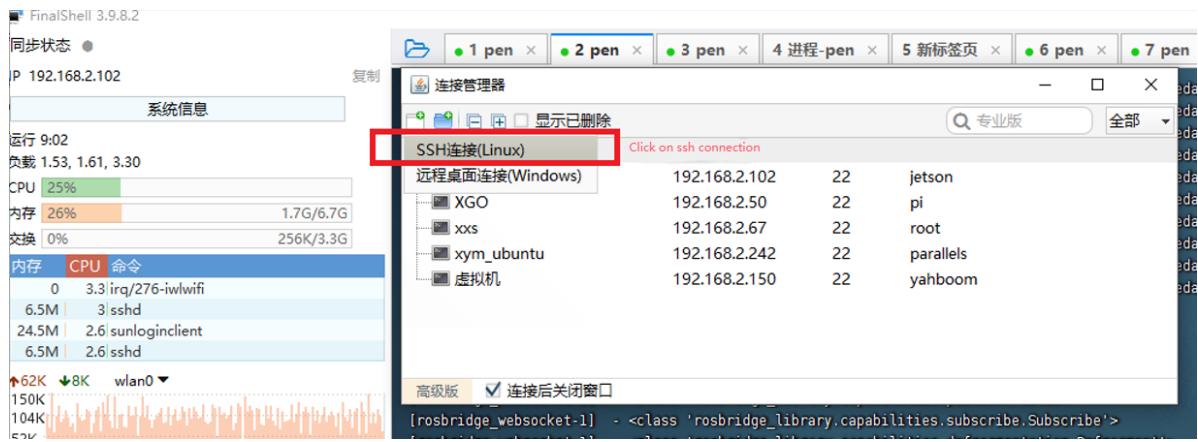
Then use the ssh terminal to connect to the robot dog.

Note: The IP address used when writing this tutorial: 192.168.2.102 User name: pi Password: yahboom The actual IP address shall prevail when used.

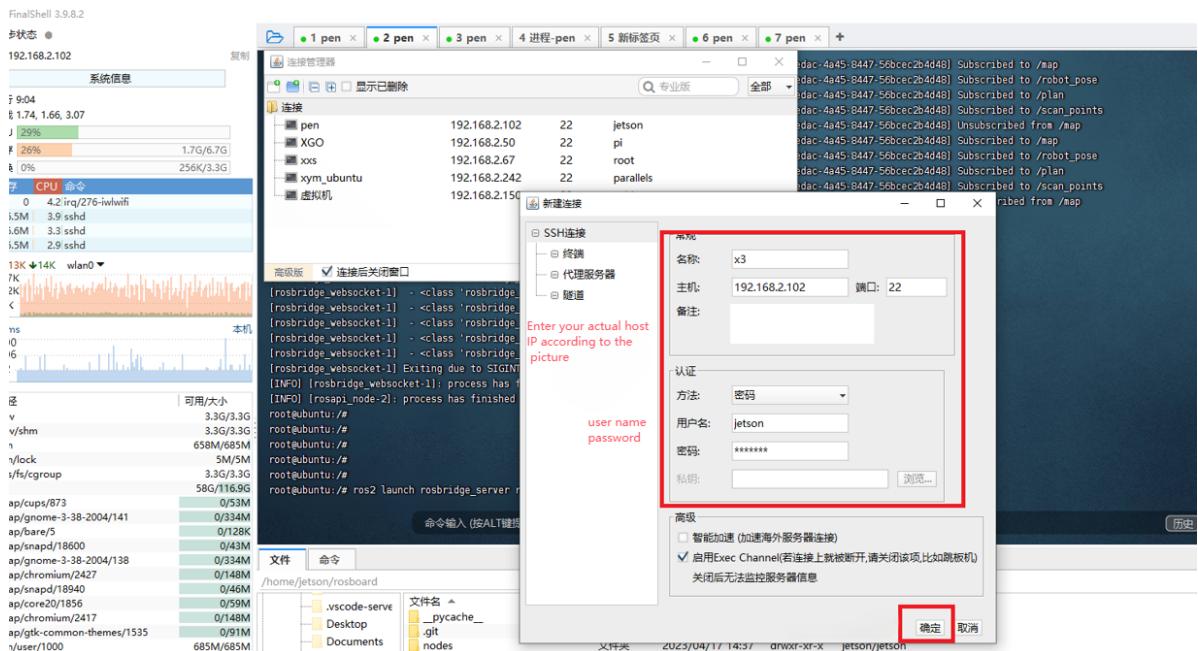
Open the shell tool. The shell tool I use here is FinalShell. Enter username, password, port, connection name and other information.



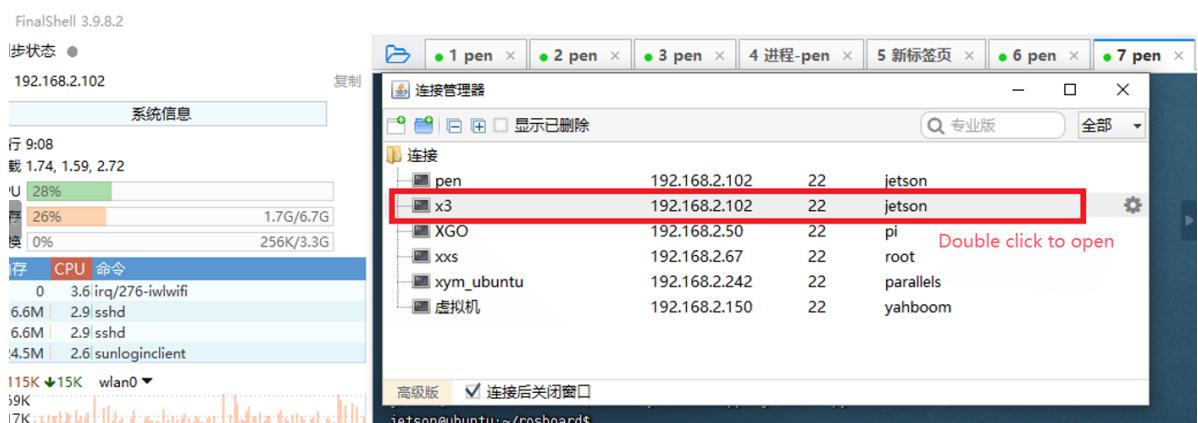
Select ssh connection to create a new ssh connection



Here the username is pi, the password is yahboom, and the ip address is the IP address of the real robot dog.



Select the ssh connection you just created here.



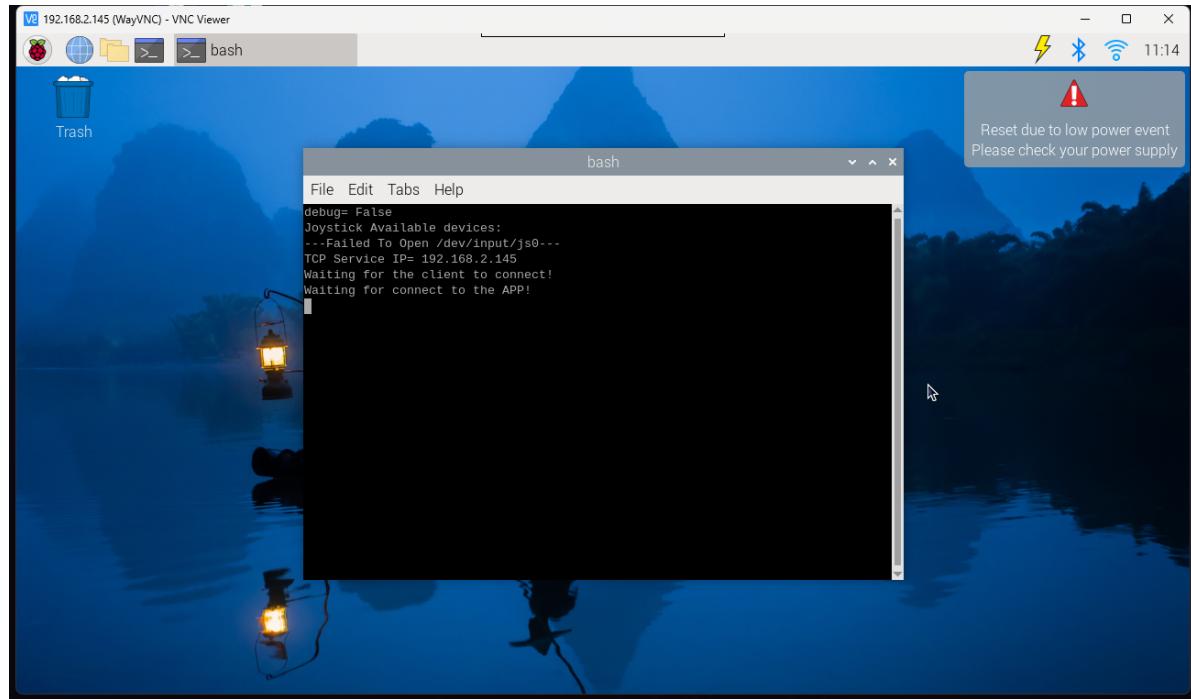
Enter the command in the terminal to start the chassis task.

```
sudo systemctl restart YahboomStart.service
```

```
pi@yahboom:~$ sudo systemctl restart YahboomStart.service
```

PI5 version steps:

After the mechanical dog is started, use the vnc software to remotely connect to the mechanical dog through the IP address on the OLED (**For specific steps, please see "Remote Login Operation"**).



Then `ctrl+c` closes the large program and enter the following command to enter docker:

```
./run_humble.sh
```

```
TCP Service IP= 192.168.2.145
Waiting for the client to connect!
Waiting for connect to the APP!
^CKeyboardInterrupt
2024-04-28T10:17:27Z
-----program end-----
pi@raspberrypi:~ $ ./run_humble.sh
access control disabled, clients can connect from any host
root@raspberrypi:/#
```

Then enter the following commands in the docker terminal to start the car radar, imu, and mechanical dog joint status nodes.

```
ros2 launch bringup Navigation_bringup.launch.py
```

```
root@raspberrypi: /  
File Edit Tabs Help  
at 0x7fff363522f0>  
[yahboomcar_joint_state-3] [13.16, 45.61, 1.34, 10.1, 44.36, -1.09, 10.1, 51.85,  
2.55, 6.53, 51.22, -0.36]  
[yahboomcar_joint_state-3] &&&&&&&&&&&&&&&&&& 0.10927200317382812  
[yahboomcar_joint_state-3] #####  
[yahboomcar_joint_state-3] [-0.17585449218750002, -0.13996582031250002, -9.72702  
63671875, -1.0365853658536586, -0.426829268292683, -0.6097560975609757, 0.010487  
360583411322, -0.02726797640323639, 5.983139933268229]  
[yahboomcar_joint_state-3] ***** <rclpy.timer.Timer object  
at 0x7fff363522f0> ]  
[yahboomcar_joint_state-3] [13.16, 45.61, 1.34, 10.1, 44.36, -1.09, 10.1, 51.85,  
2.55, 6.53, 51.22, -0.36]  
[yahboomcar_joint_state-3] &&&&&&&&&&&&&&&&& 0.10969948768615723  
[yahboomcar_joint_state-3] #####  
[yahboomcar_joint_state-3] [-0.14475097656250002, -0.131591796875, -9.7401855468  
75, -1.0975609756097562, -0.3658536585365854, -0.6097560975609757, 0.01022947788  
9007993, -0.02749979310565525, 5.983139933268229]  
[yahboomcar_joint_state-3] ***** <rclpy.timer.Timer object  
at 0x7fff363522f0>  
[yahboomcar_joint_state-3] [13.16, 45.61, 1.34, 10.1, 44.36, -1.09, 10.1, 51.85,  
2.55, 6.53, 51.22, -0.36]  
[yahboomcar_joint_state-3] &&&&&&&&&&&&&&&&& 0.10920882225036621  
[yahboomcar_joint_state-3] #####
```

3. Start the mechanical dog attitude adjustment node

Enter the following command in the terminal

```
#pi4  
cd cartographer_ws2/  
source install/setup.bash
```

```
pi@yahboom:~$ cd cartographer_ws2/  
pi@yahboom:~/cartographer_ws2$  
pi@yahboom:~/cartographer_ws2$  
pi@yahboom:~/cartographer_ws2$ source install/setup.bash  
pi@yahboom:~/cartographer_ws2$
```

Then enter the following command

```
#pi4  
ros2 launch yahboom_set_height yahboomSetHeightLaunch.launch.py xGoHeight:=95:q  
attitude_p:=10 move_x:=0 move_y:=0  
#pi5 (need to enter the same docker terminal)  
ros2 launch yahboom_set_height yahboomSetHeightLaunch.launch.py xGoHeight:=95  
attitude_p:=10 move_x:=0 move_y:=0
```

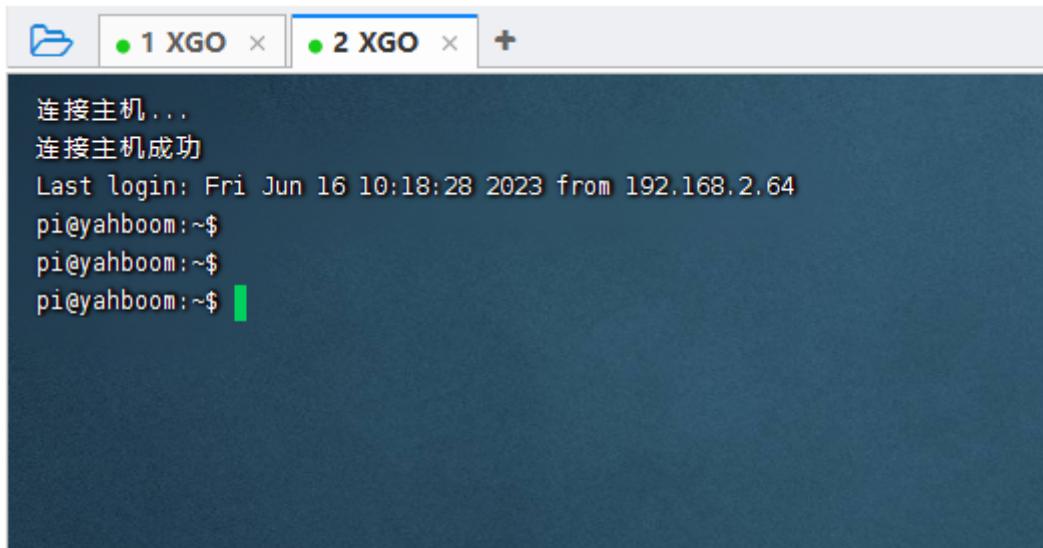
Note: The parameter attitude_p is to set the leaning angle of the mechanical dog. A positive number means leaning down, a negative number means leaning up, and the range is -15 to 15. The parameter xGoHeight is the height of the mechanical dog, ranging from 75 to 115

```

pi@yahboom:~/cartographer_ws2$ 
pi@yahboom:~/cartographer_ws2$ ros2 launch yahboom_set_height yahboomSetHeightLaunch.launch.py xGoHeight:=95 attitude_p:=10 move_x:=0 move_y:=0
[INFO] [launch]: All log files can be found below /home/pi/.ros/log/2023-08-03-20-34-58-942657-yahboom-32821
[INFO] [launch]: Default logging verbosity is set to INFO
<launch.substitutions.launch_configuration.LaunchConfiguration object at 0xfffff84acee50>
[INFO] [yahboom_set_height-1]: process started with pid [32975]
[yahboom_set_height-1] [INFO] [1691066104.582500697] [yahboom_set_height]: xGoHeight_value: 95
[yahboom_set_height-1] [INFO] [1691066104.588612796] [yahboom_set_height]: attitude_p_value: 10!
[yahboom_set_height-1] [INFO] [1691066104.594274636] [yahboom_set_height]: move_x_value: 0!
[yahboom_set_height-1] [INFO] [1691066104.600045653] [yahboom_set_height]: move_y_value: 0!
[yahboom_set_height-1] 95
[yahboom_set_height-1] 10
[yahboom_set_height-1] 0
[yahboom_set_height-1] 0

```

Restart a terminal in the same way as in item 2.

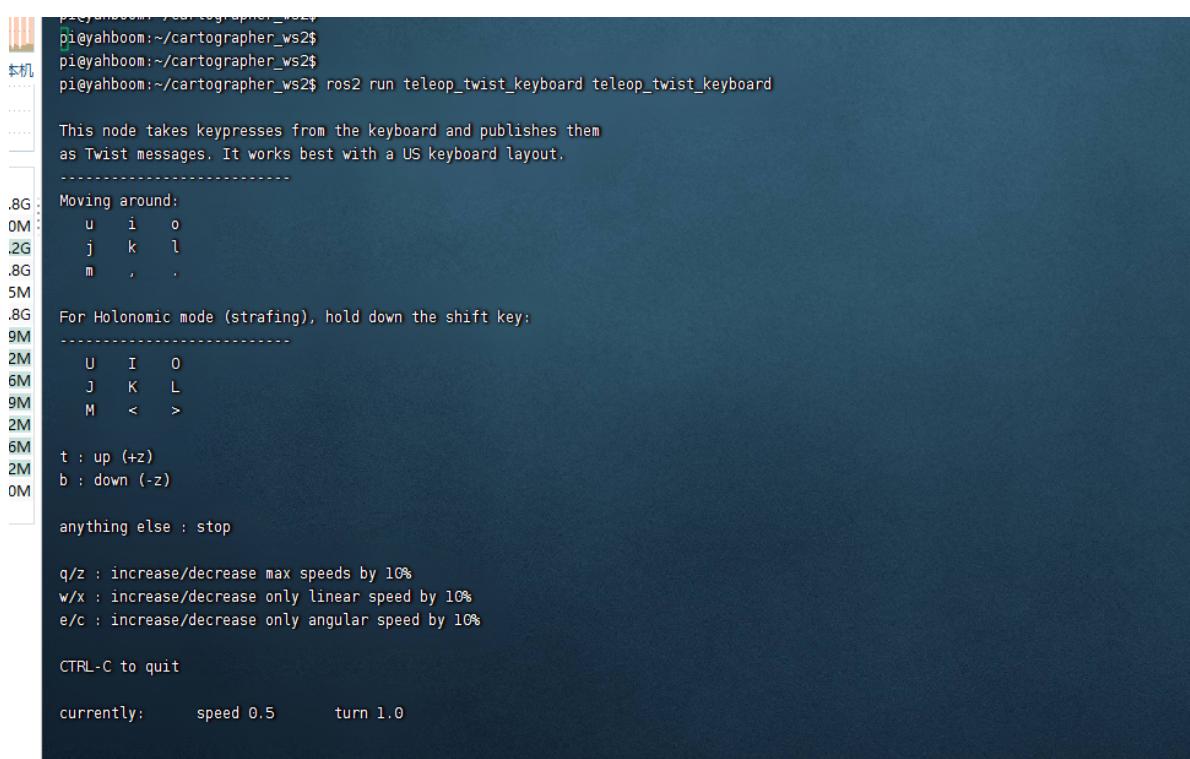


Enter the following command in a new terminal

```

#pi4
cd cartographer_ws2/
source install/setup.bash
ros2 run teleop_twist_keyboard teleop_twist_keyboard
#pi5 (need to enter the same docker terminal)
ros2 run teleop_twist_keyboard teleop_twist_keyboard

```



The mechanical dog can be controlled through the keyboard to bend over and walk. Among them, the keys i are for forward, k is for stop, , is for back, j is for turning left on the spot, and l is for turning right on the spot.