

First Use

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1. Connecting the Car

Recommended Operational Procedure: Connect to the car's hotspot/plug in an Ethernet cable to obtain an IP address → Check the OLED screen's IP address → Log in via VNC → Turn off the automatic hotspot and connect to your own WiFi (for later large model functionality) → Check the OLED's updated IP address → Reconnect via VNC

The factory default hotspot name is: ROSMASTER-A1, password: 12345678, default IP: 192.168.1.11.

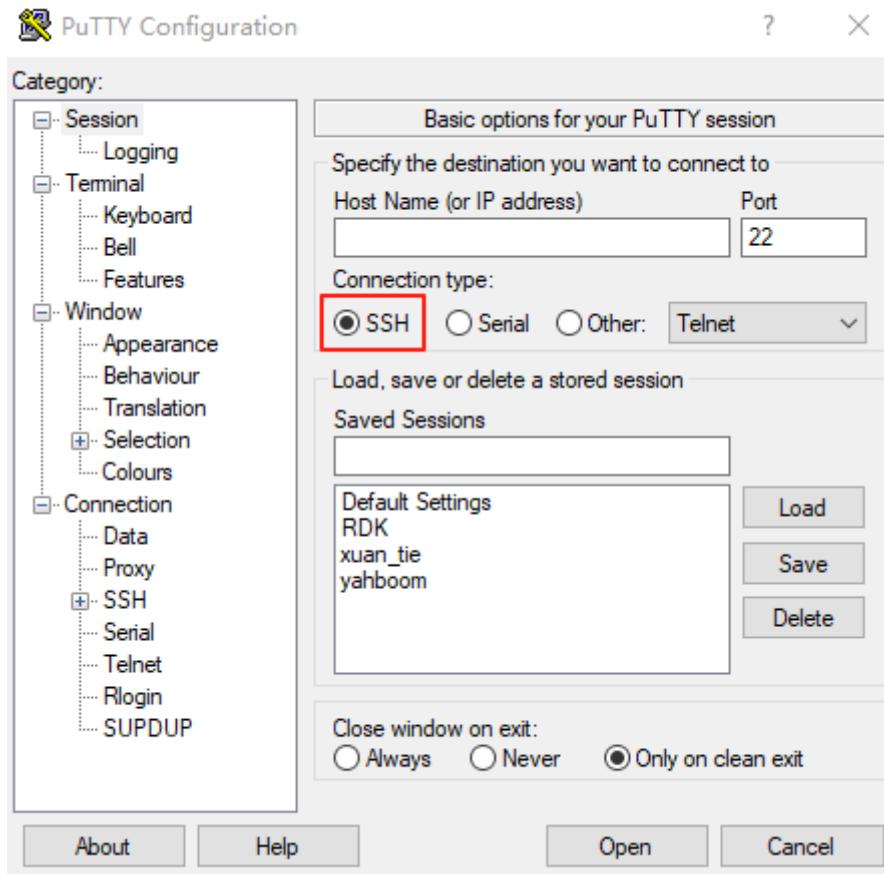
Regardless of the method used to connect to the car, both the computer and the car must be on the same LAN. The simplest requirement is to connect to the same WiFi or hotspot. Once connected, you can log in using the following method.

You can also directly connect the to an Ethernet cable. The OLED screen will automatically update its IP address after connecting to the Ethernet cable. The following instructions will demonstrate the various operations using the IP address after connecting to the Ethernet cable.

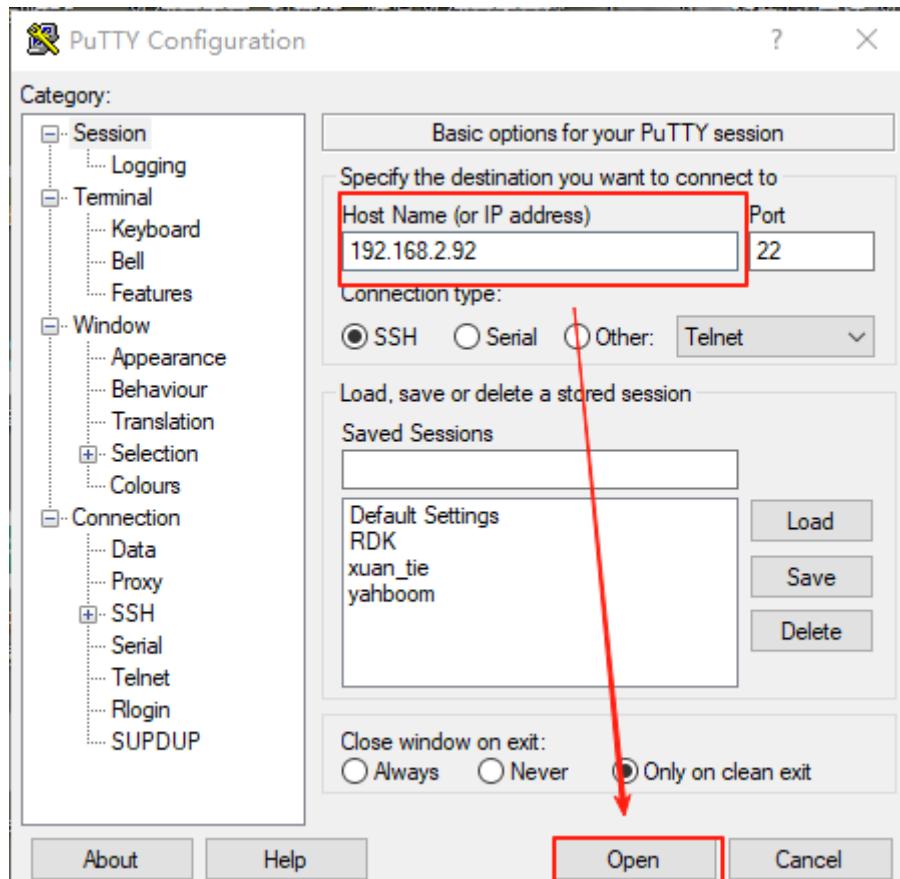
1. SSH Connection

We can use PuTTY, MobaXterm, or other SSH login tools to connect to the car. Here, we'll use PuTTY as an example. The PuTTY installation download address is as follows: [Download PuTTY: latest release \(0.83\)](#)

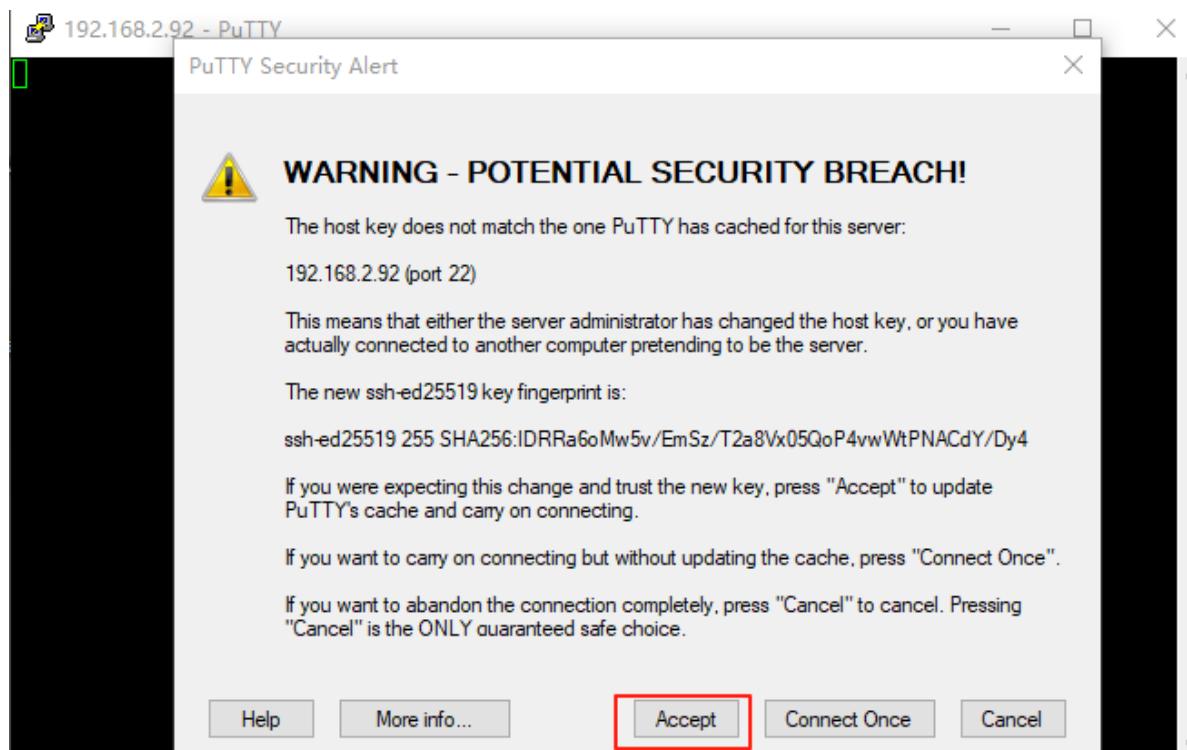
Select the installation version based on your computer. After successful installation, double-click to open the PuTTY interface. The PuTTY interface should look like the image below.



Select **SSH** and enter the IP address displayed on the OLED in the Host Name (or IP address) field. My IP address is 192.168.2.92, so enter the IP address as shown below.



Click **Open**. A terminal interface and a pop-up window will appear. Click **Accept** to accept the request, as shown below.



The terminal will display "**login as.**" Enter the username for the car board and press Enter. You will be prompted to enter your password. Enter your password. The username and password for each board are as follows:

Board	Username	Password
Raspberry Pi 5	Pi	Yahboom
Jetson-Nano	Jetson	Yahboom
Orin-Nano	Jetson	yahboom

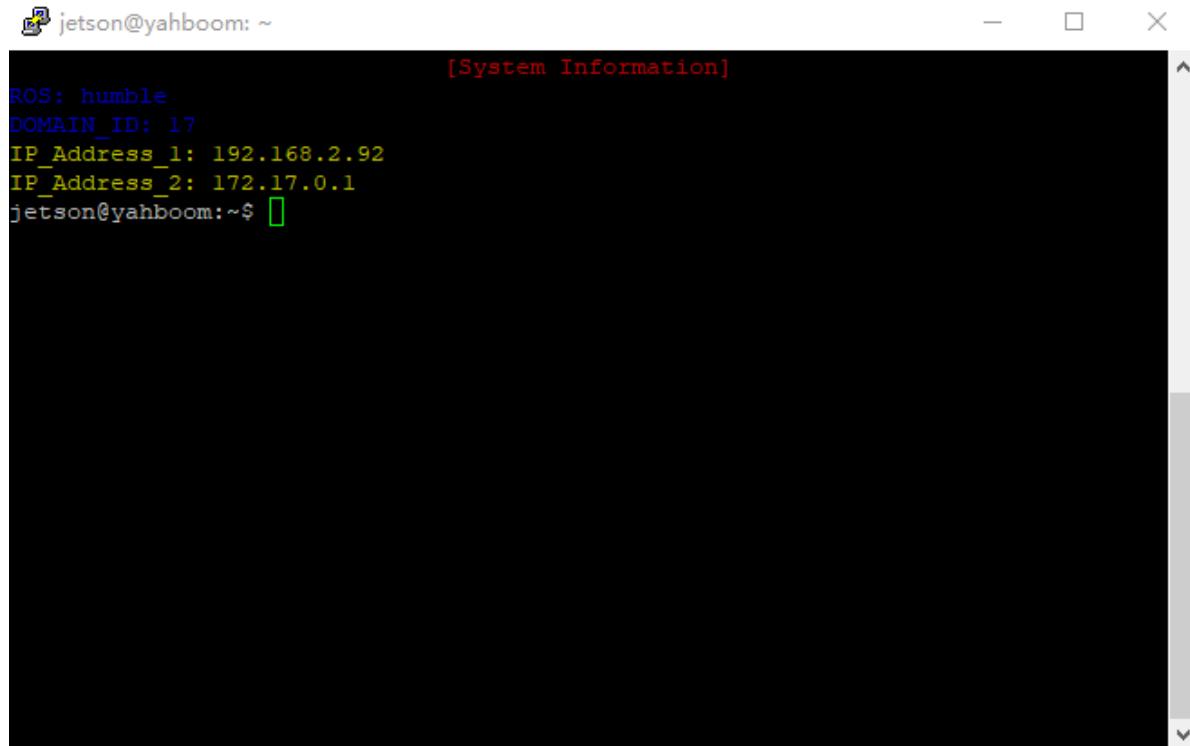
Assuming my is Orin-Nano, enter "jetson" and press Enter. Then enter the password. **Nothing will be displayed when entering the password.** Enter "yahboom" and press Enter.

A screenshot of a PuTTY terminal window titled "192.168.2.92 - PuTTY". The session log shows:

```
[1] 192.168.2.92 - PuTTY
[1] login as: jetson
[1] jetson@192.168.2.92's password: [REDACTED]
```

The password entry field is redacted with a green rectangular box.

The interface for a successful connection to the car is as follows:



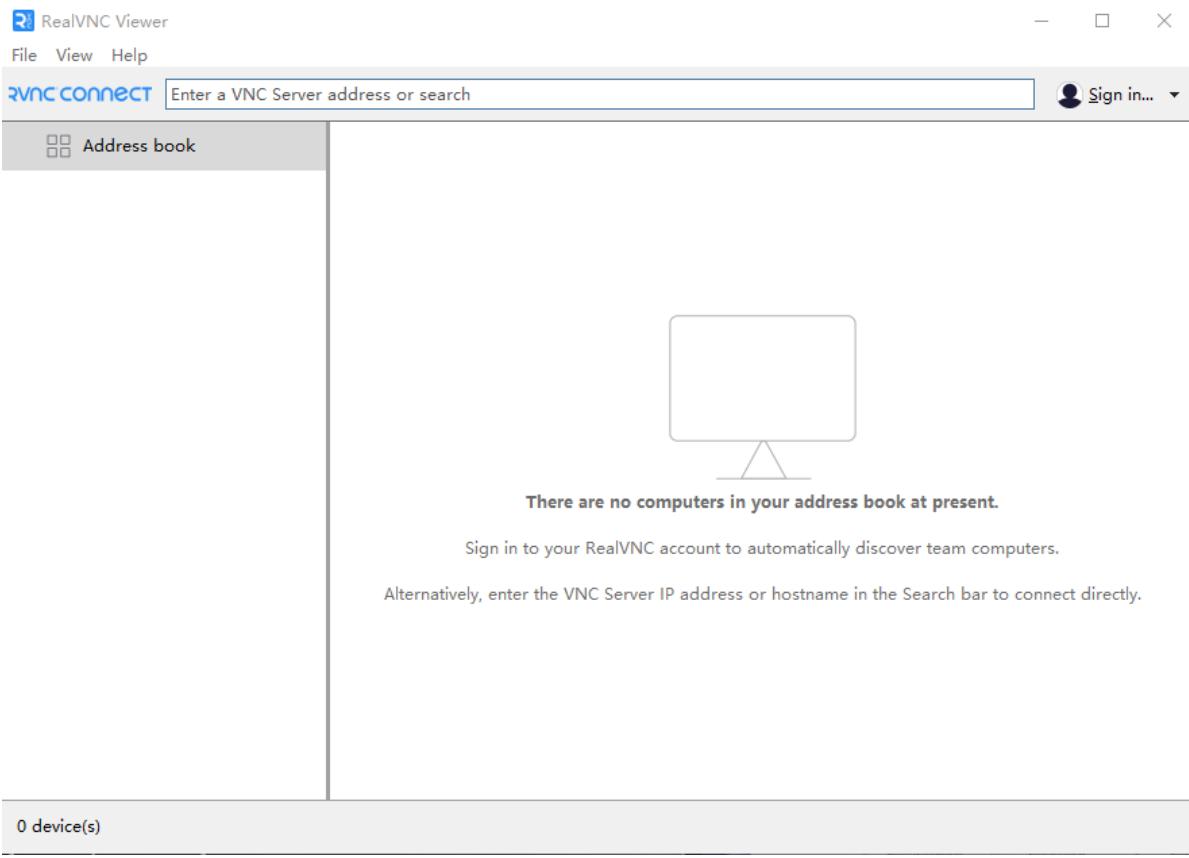
A screenshot of a terminal window titled "[System Information]". The window shows the following text:
ROS: humble
DOMAIN_ID: 17
IP_Address_1: 192.168.2.92
IP_Address_2: 172.17.0.1
jetson@yahboom:~\$

This will only open a terminal; the graphical interface will not be displayed. Therefore, SSH is suitable for logging in when the graphical program is not running.

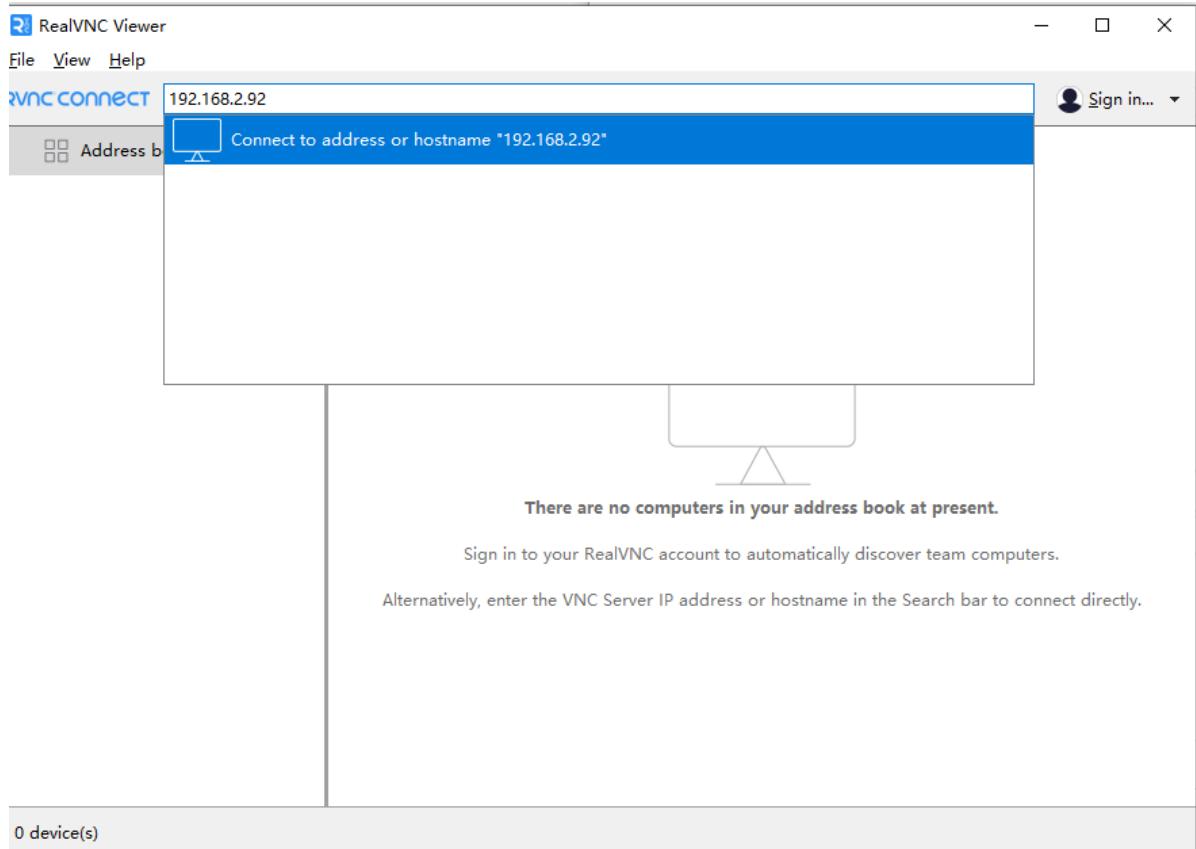
2. VNC Login

VNC allows users to remotely access and control another computer's desktop environment over a network. Therefore, if we need to access the desktop environment of the car, such as when we want to start the image display, we can use VNC to connect and log in to the car. The VNC download link is as follows: [Download VNC Viewer by RealVNC®](#)

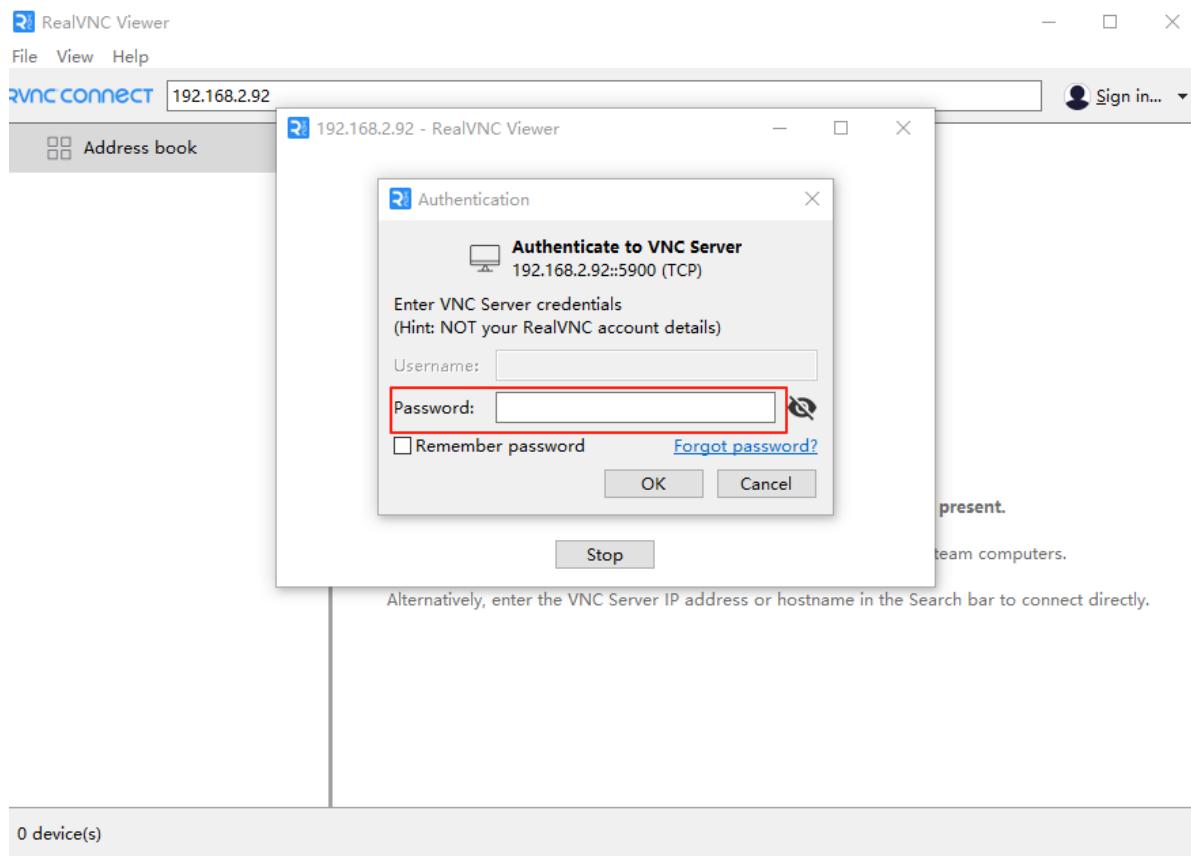
Download and install according to your computer version. After successful installation, double-click to open it. The following screen will be displayed.



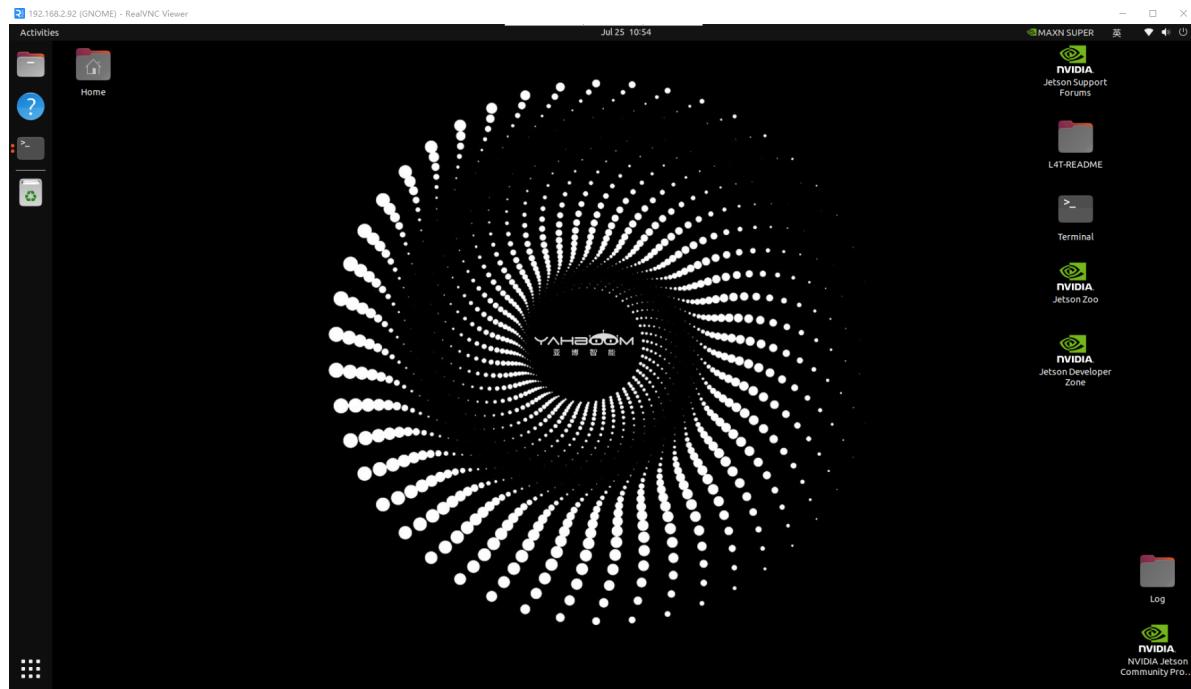
Enter the IP address of your car. Mine is 192.168.2.92, as shown below.



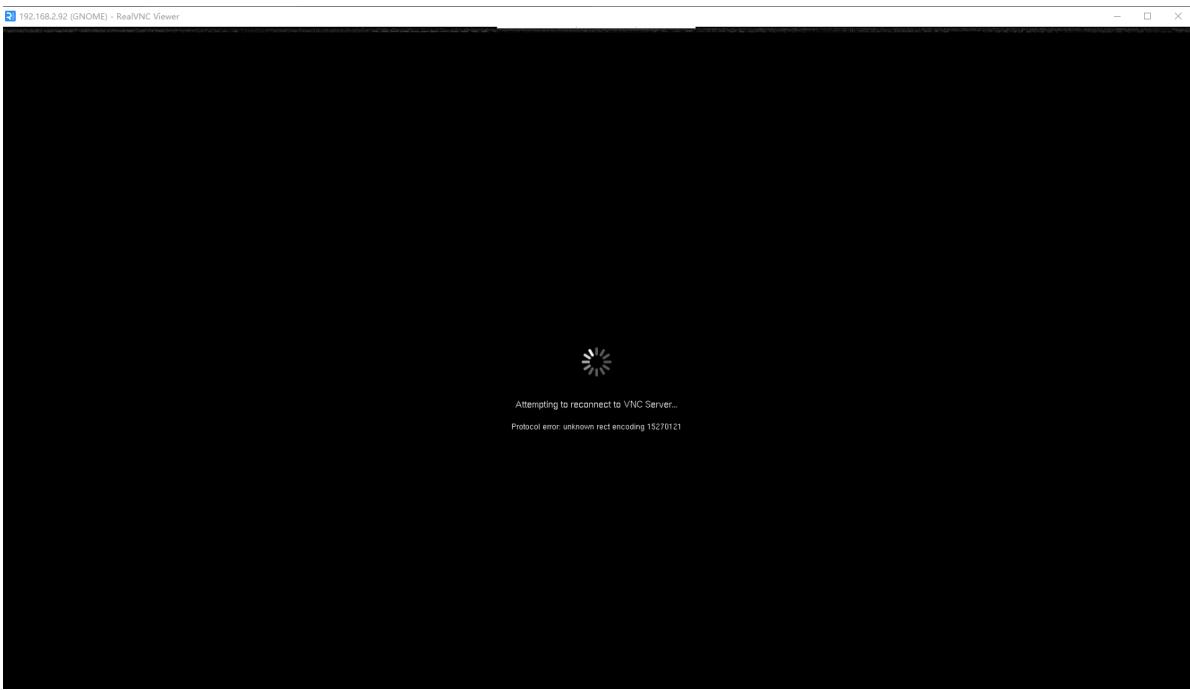
Then press Enter.



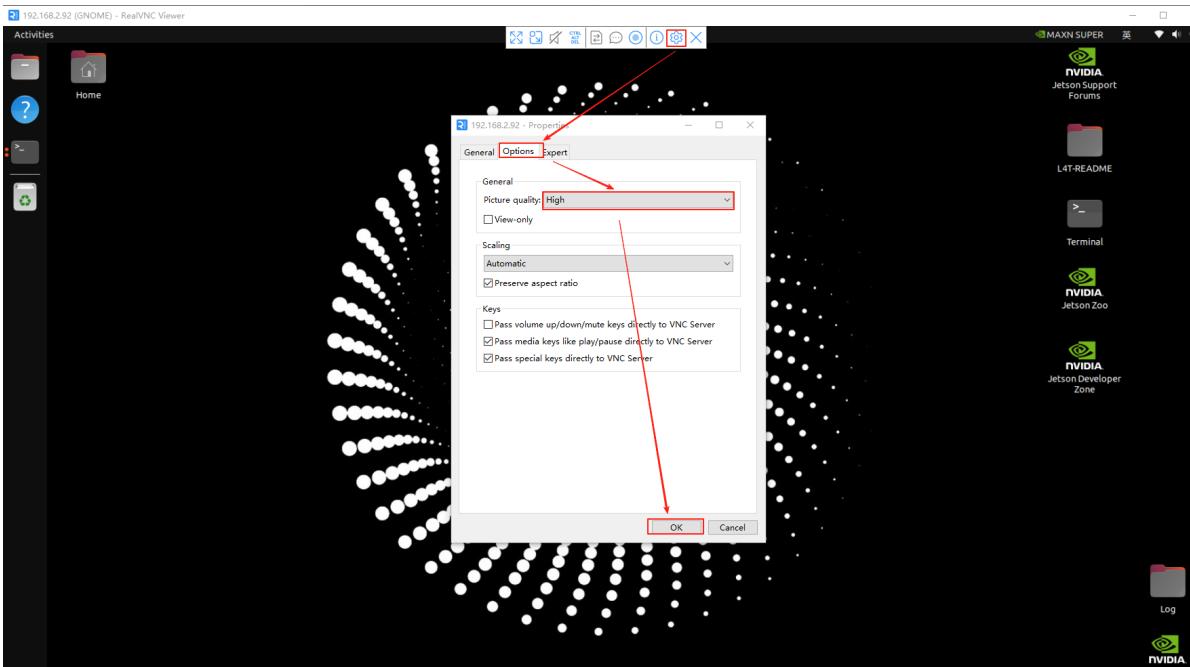
Enter your username in the Username field and your password in the Password field. Refer to the table in 1.1. The password for all s is "yahboom." Click OK to access the desktop, as shown below.



If an abnormal screen displays, such as the one below,



and the system keeps crashing, you need to configure the settings as shown below.



Then reconnect. The Orin can only connect to one remote desktop at a time. If the connection fails, check whether the remote desktop is already connected.

After connecting, since large AI models require an internet connection, and the hotspot is only on the local area network and does not contain actual data, you will need to switch networks to facilitate the use of large AI models later.

2. Network Switching

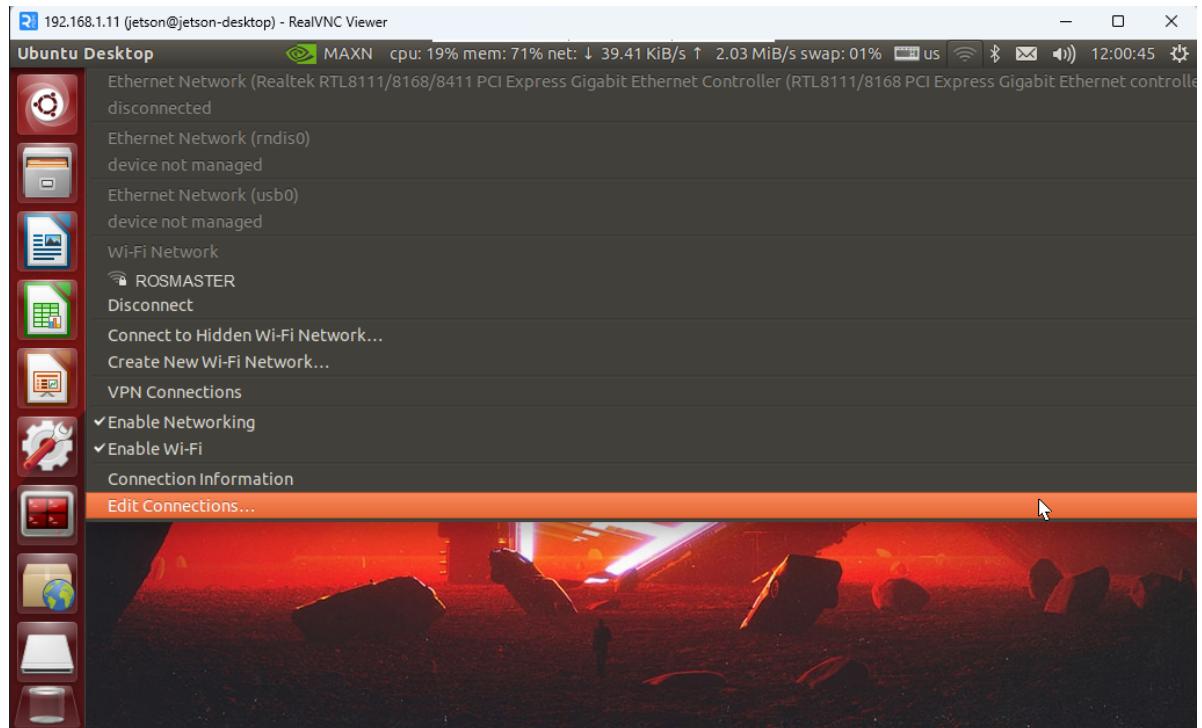
Jetson

After successfully connecting remotely via VNC, switch to the new network.

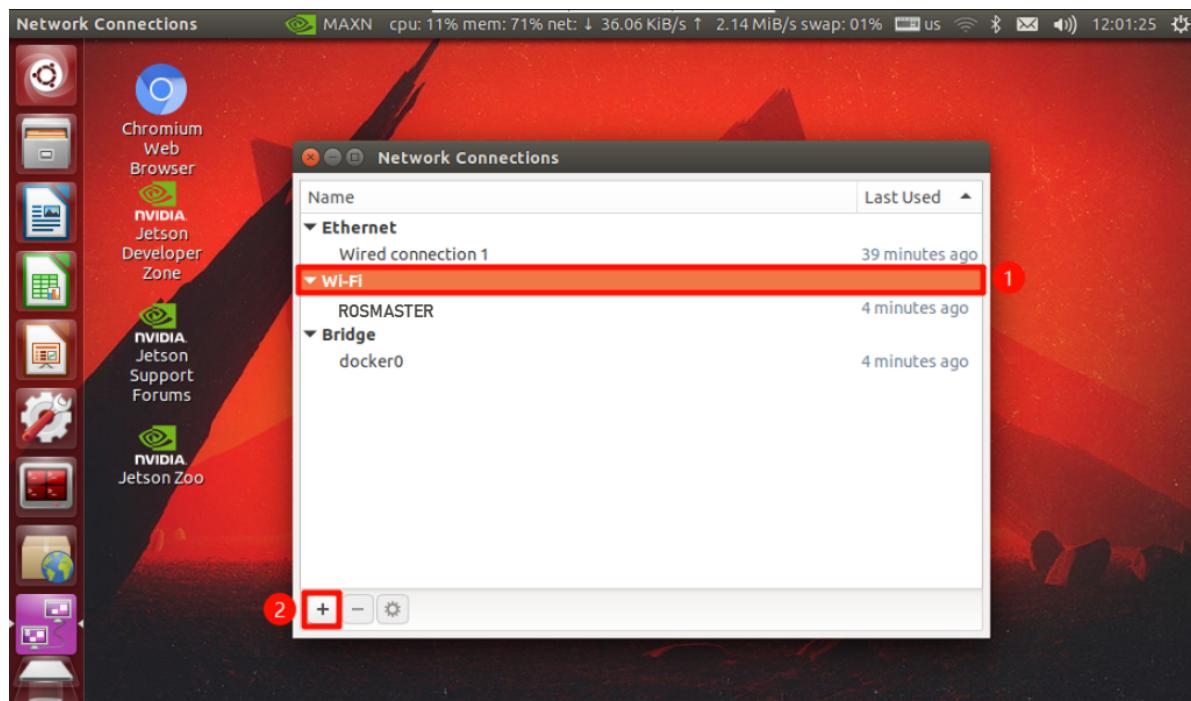
Creating WiFi

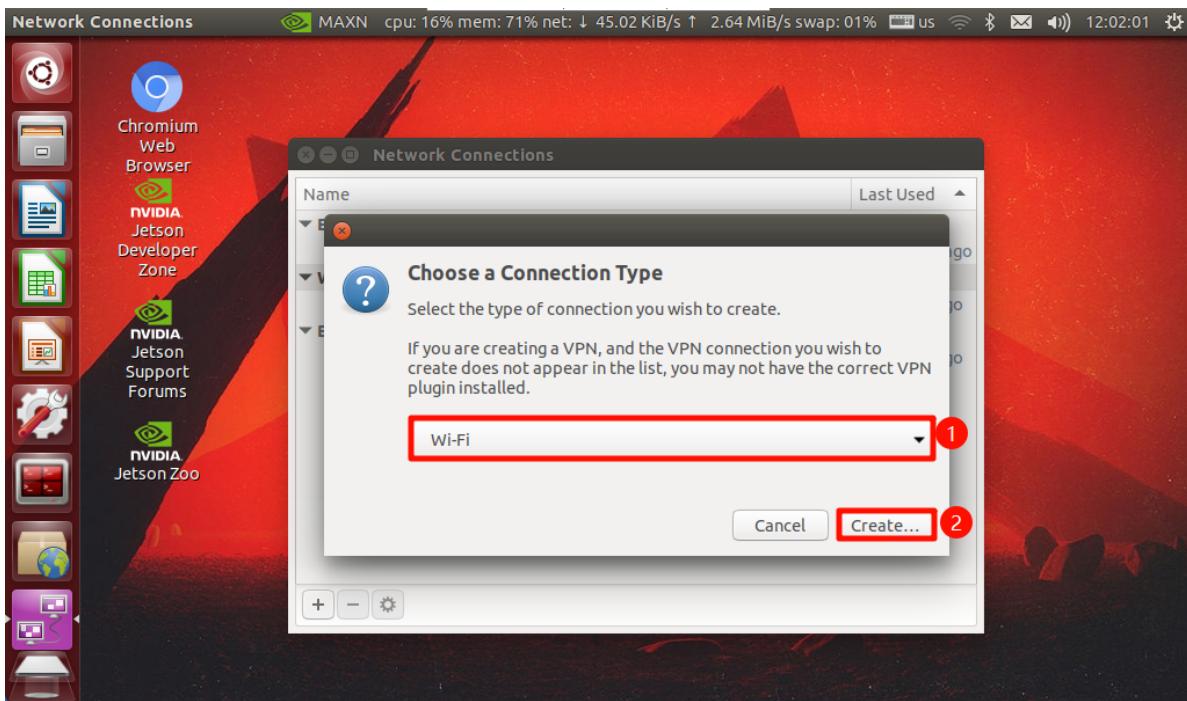
ORIN users, open a terminal and enter the command: `nm-connection-editor` to open the network connection panel.

Jetson nano users, click the "WiFi icon" → "Edit Connections."



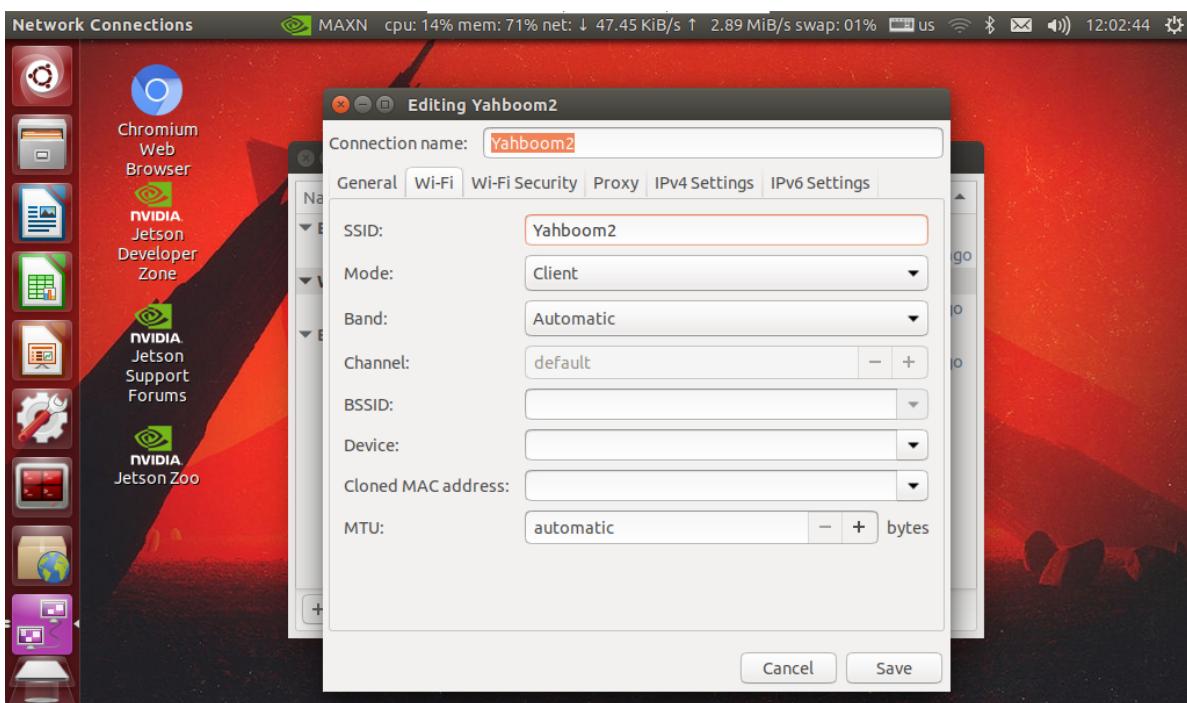
Select "WiFi" → "+" in the lower left corner.

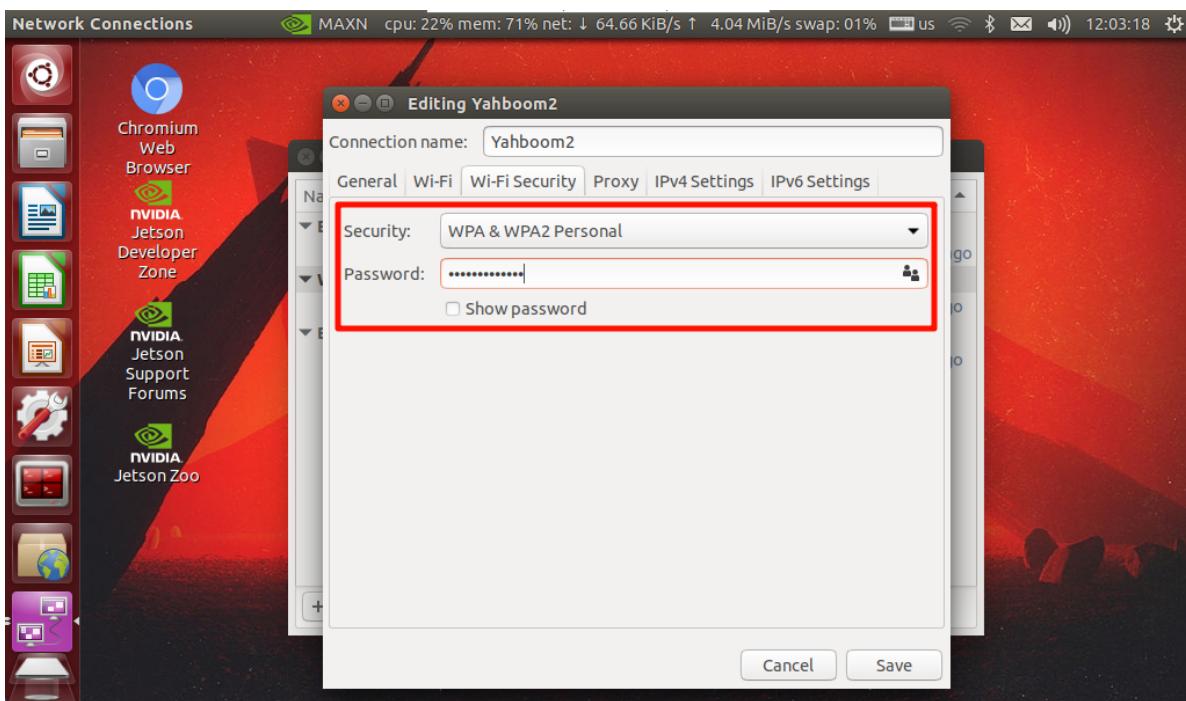




Fill in your WiFi information

This demonstrates connecting to the following WiFi: Yahboom2

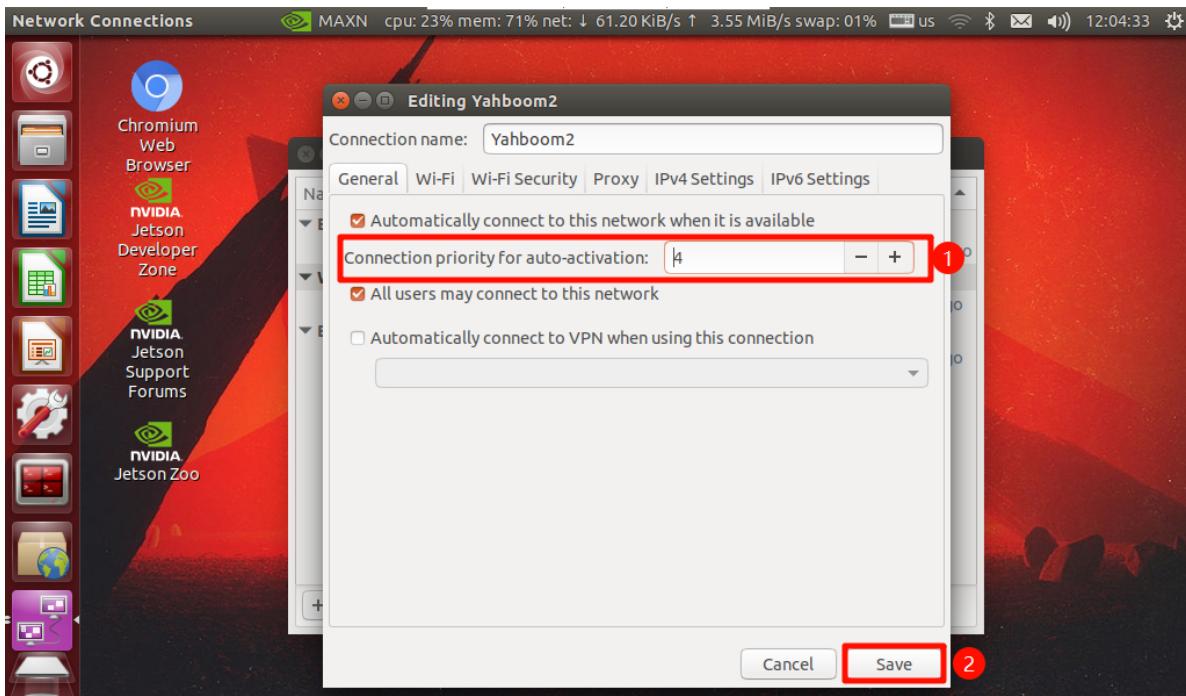




Set the priority

The priority determines the order in which the system prioritizes networks when booting. A higher number indicates a higher priority, and this method is preferred for booting!

The ROSMASTER-A1's priority is 3. Therefore, to automatically connect to WiFi upon startup, the WiFi priority must be greater than 3.



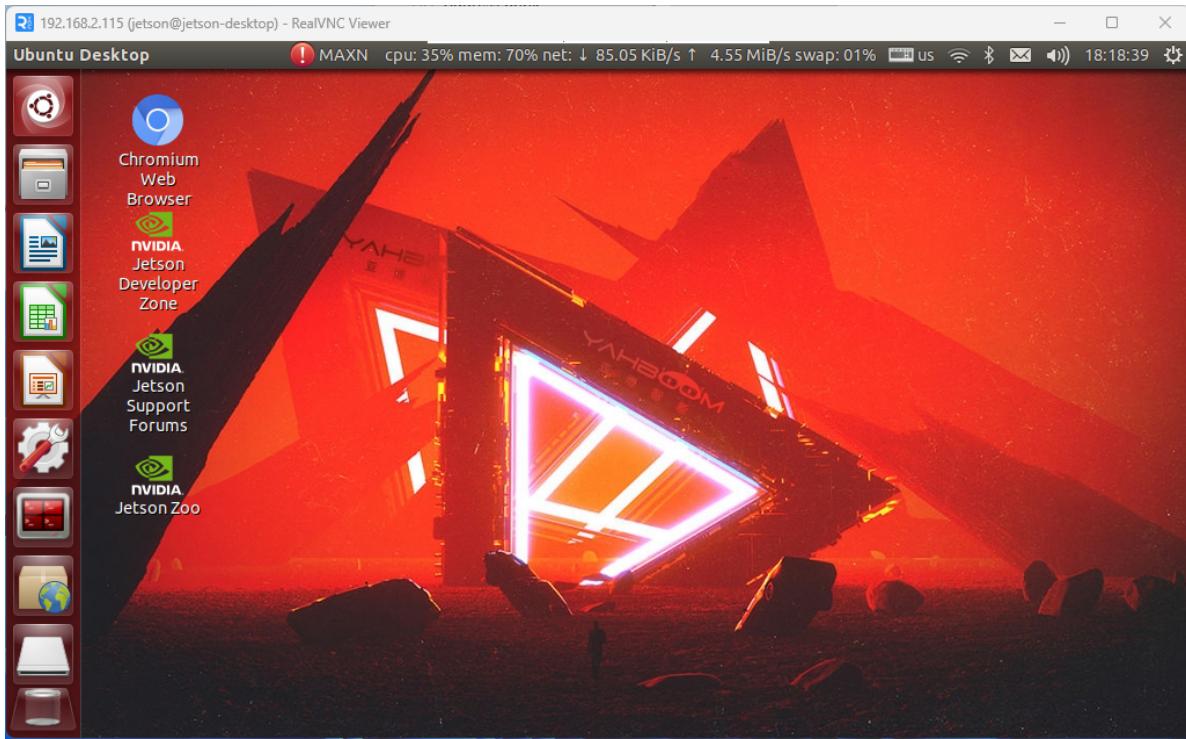
Reboot to take effect

After completing the settings, restart the Jetson and observe the IP address on the OLED display. If it changes, the connection is successful!

If the IP address displayed on the OLED remains unchanged and the hotspot persists, it means that one of the WiFi name or passwords you entered was incorrect.

VNC Connection

Connect according to the OLED display's IP address; this will not be demonstrated here.

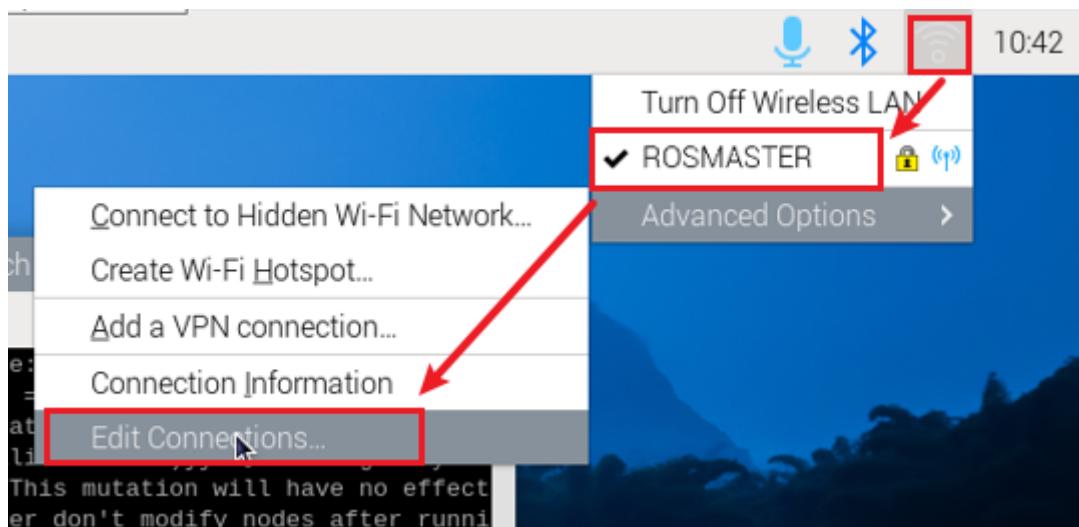


Raspberry Pi

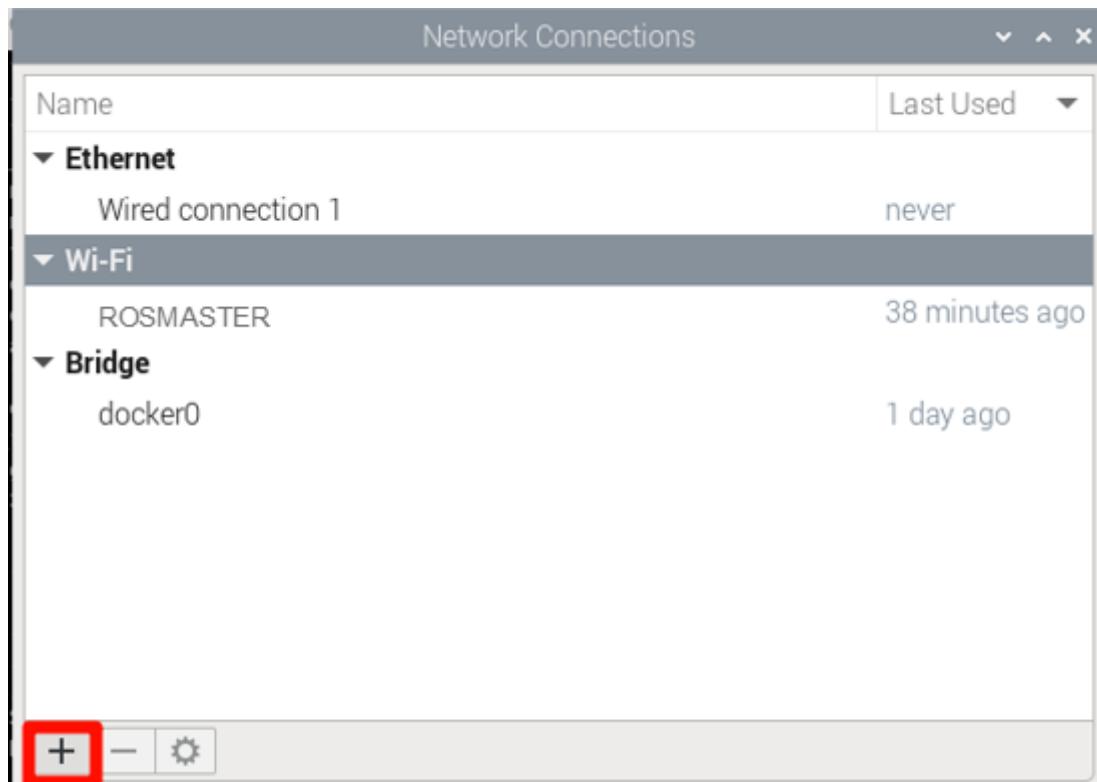
Switching to a different network after a successful VNC remote connection.

Create a WiFi connection

Click the WiFi icon → Advanced options → Edit connections



Select WiFi → Click the "+" icon in the lower left corner



Fill in your WiFi information

This demonstrates connecting to the following WiFi: Yahboom2

Editing Yahboom2

Connection name

General Wi-Fi Wi-Fi Security Proxy IPv4 Settings IPv6 Settings

SSID

Mode Client

Band Automatic

Channel default

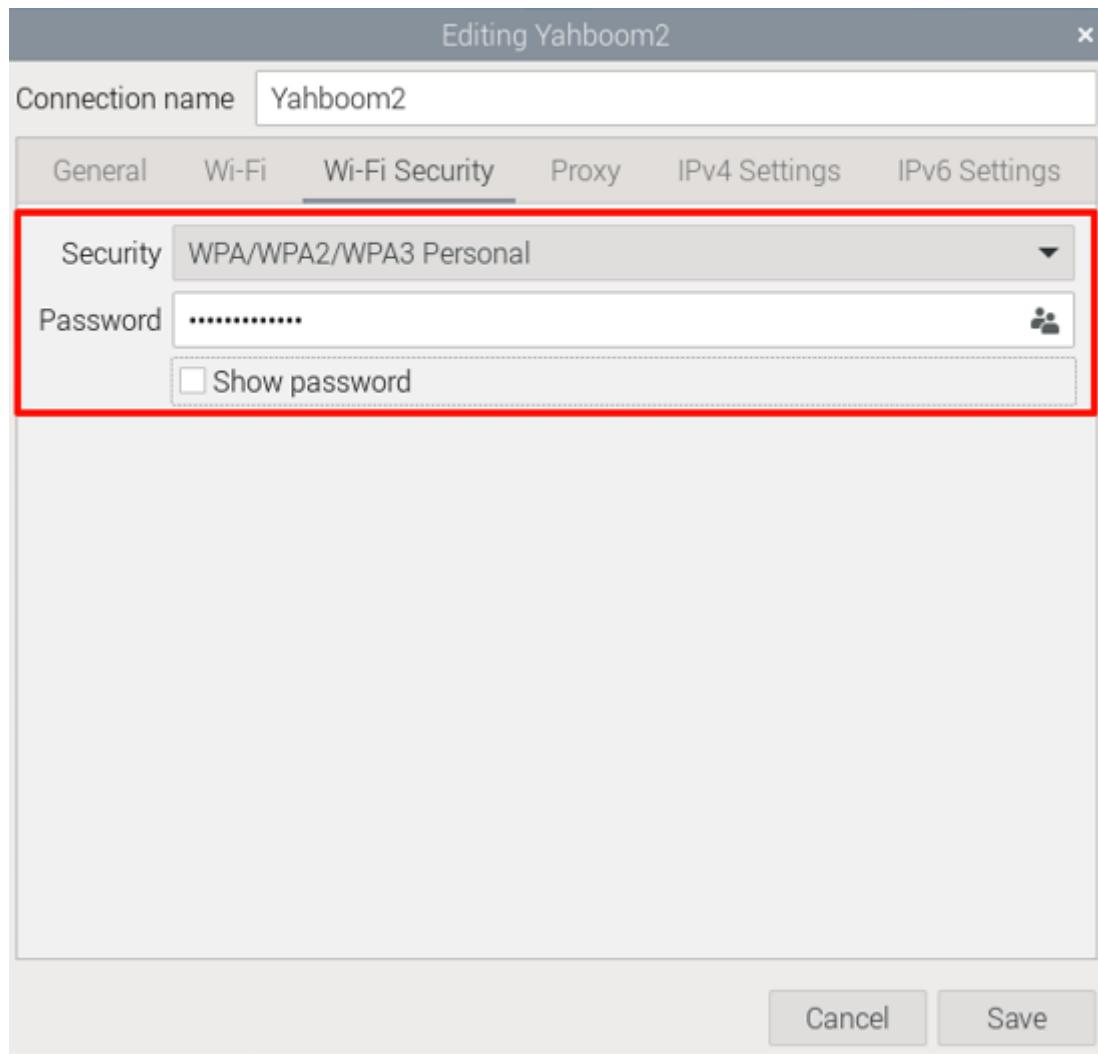
BSSID

Device

Cloned MAC address

MTU automatic bytes

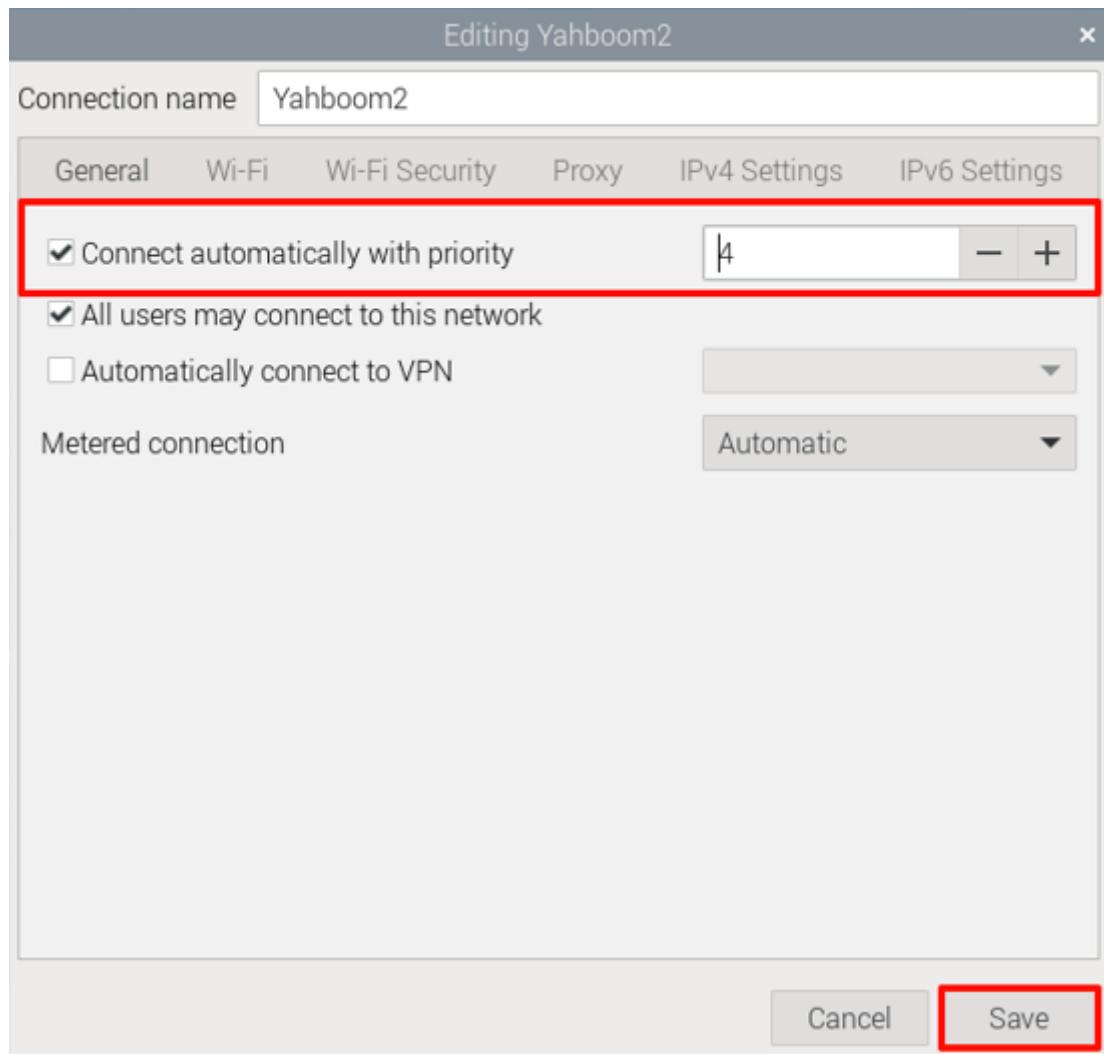
Cancel Save



Set the priority

The priority determines the order in which the system prioritizes networks when booting. A higher number indicates a higher priority, and this method is preferred for booting!

The ROSMASTER-A1's priority is 3. Therefore, to automatically connect to WiFi upon startup, the WiFi priority must be greater than 3.



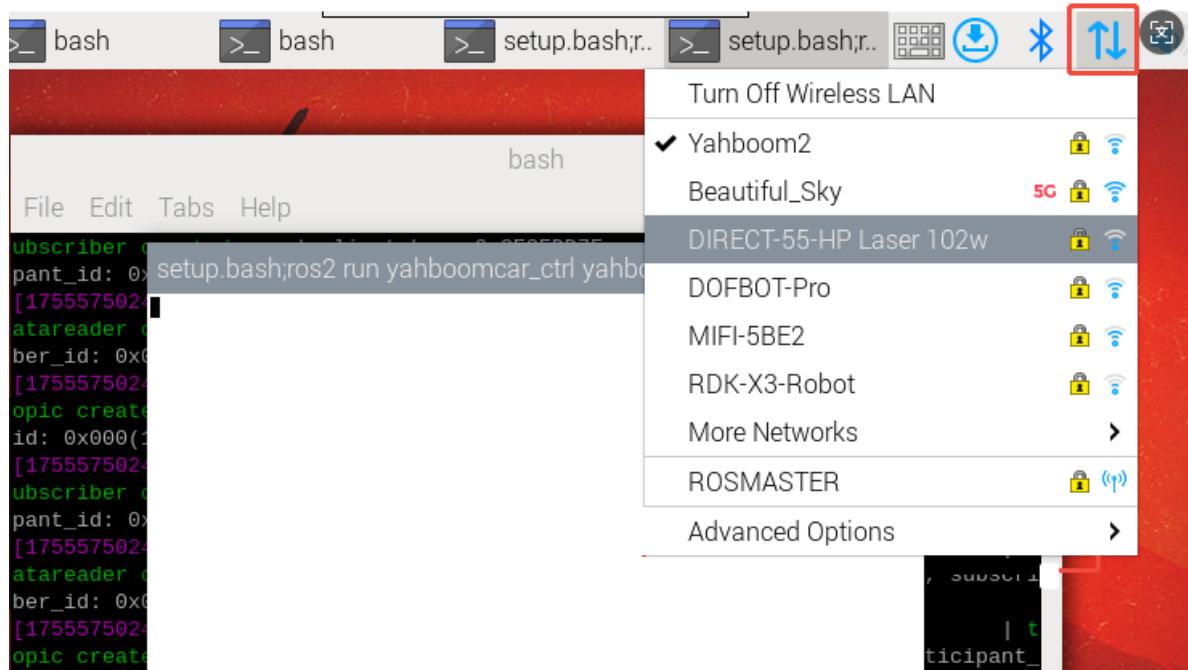
Reboot to take effect

After completing the settings, reboot the Raspberry Pi and observe the IP address on the OLED display. If it changes, the connection is successful!

If the IP address displayed on the OLED remains unchanged and the hotspot persists, it means that one of the WiFi name or passwords you entered was incorrect.

VNC Connection

Connect according to the OLED display's IP address; this will not be demonstrated here.



3. Modify the camera and lidar models in the ROS environment

Note: Since the ROSMASTER-A1 robot has two cameras and two lidars, the factory system is configured with routines for multiple devices. However, since it cannot automatically identify the product, you need to manually set the camera type and lidar model.



USB CAM+YDLIDAR(T-MINI-PLUS)



ASCAMERA+RPLIDAR(C1)

1. Open the robot system terminal

```
# The Raspberry Pi 5 controller must first enter Docker. Repeat this step.
# If running the script to enter Docker fails, refer to the ROS/07, Docker Tutorial.
~/run_docker.sh
```

2. Set the camera and lidar models. Select the command to run based on the selected devices.

If you are using the optional NUWA-HP60C depth camera and c1_lidar, please follow the settings below.

```
#orin  
sh ~/Rosmaster/RobotType/set_A1_nuwa_c1.sh  
#Raspberry Pi, Jetson Nano  
sh ~/yahboomcar_ros2_ws/software/RobotType/set_A1_nuwa_c1.sh
```

If you are using the optional `NUWA-HP60C Depth Camera` and `Tmini lidar`, please follow the settings below.

```
#orin  
sh ~/Rosmaster/RobotType/set_A1_nuwa_tmini.sh  
#Raspberry Pi, Jetson Nano  
sh ~/yahboomcar_ros2_ws/software/RobotType/set_A1_nuwa_tmini.sh
```

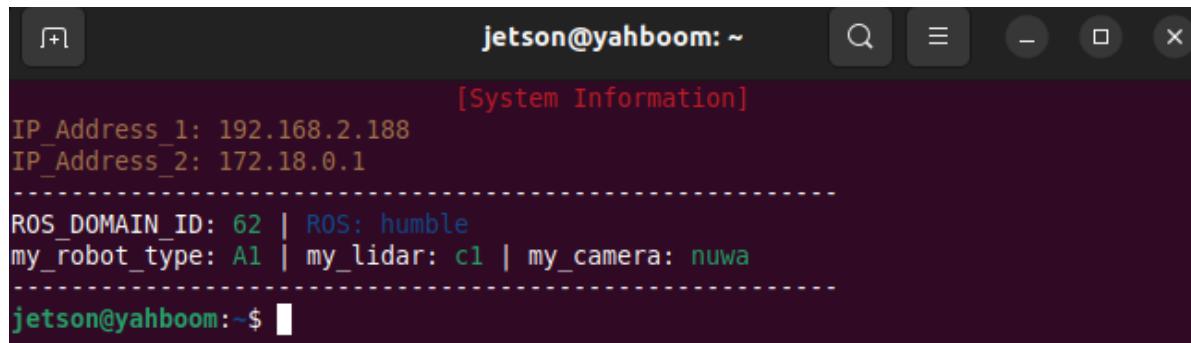
If you are using the optional `USB Camera` and `c1 lidar`, please follow the settings below.

```
#orin  
sh ~/Rosmaster/RobotType/set_A1_usb_c1.sh  
#Raspberry Pi, Jetson Nano  
sh ~/yahboomcar_ros2_ws/software/RobotType/set_A1_usb_c1.sh
```

If you are using the optional `USB camera` + `Tmini lidar`, please follow the settings below.

```
#orin  
sh ~/Rosmaster/RobotType/set_A1_usb_tmini.sh  
#Raspberry Pi, Jetson Nano  
sh ~/yahboomcar_ros2_ws/software/RobotType/set_A1_usb_tmini.sh
```

3. Check if the command has taken effect. Close the terminal, reopen it, and see if the corresponding product model is printed.



The screenshot shows a terminal window titled "jetson@yahboom: ~". The title bar also includes a search icon and window control buttons. The window content displays "System Information" in red text. It lists several system parameters: IP_Address_1: 192.168.2.188, IP_Address_2: 172.18.0.1, ROS_DOMAIN_ID: 62 | ROS: humble, my_robot_type: A1 | my_lidar: c1 | my_camera: nuwa. The text is color-coded in green, blue, and red. The prompt at the bottom is jetson@yahboom:~\$.