# 3. Remote control



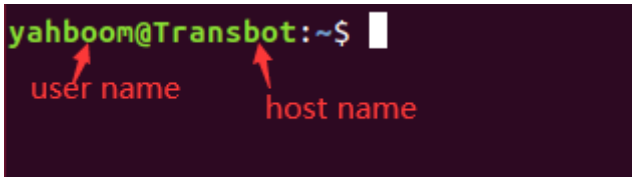
putty： https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html

VNC： https://www.realvnc.com/en/connect/download/viewer/

WinSCP： https://winscp.net/eng/download.php

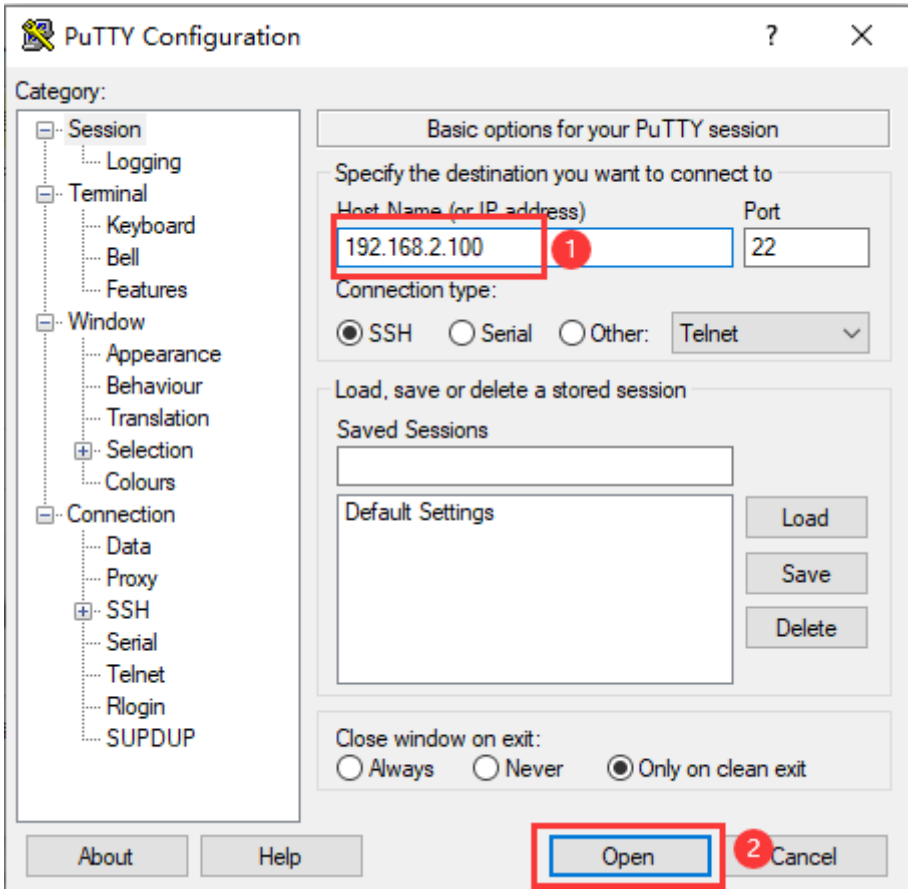
**Note: Before logging in remotely, you must know the IP of the robot, which can be displayed on an external monitor or OLED.**

For example, the following figure: Username [jetson], hostname [Transbot].

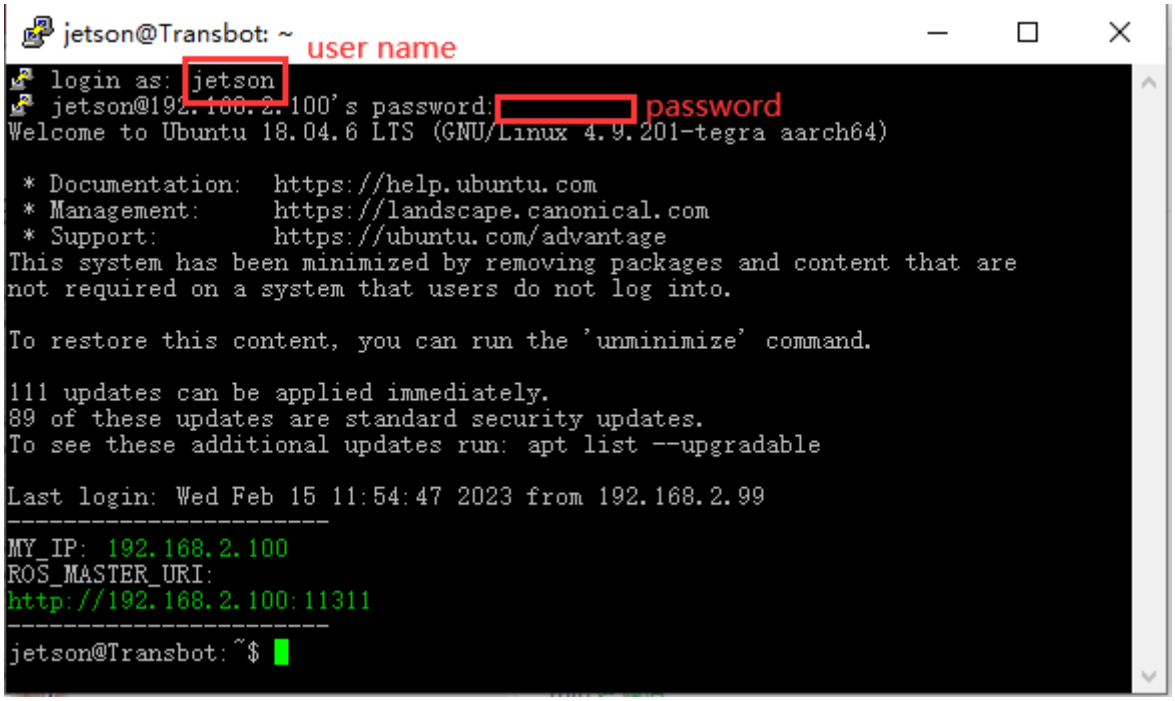



## 3.1. PuTTY login

Enter the relevant link at the top, download the installation file, and double-click the [.exe] file to install.




After entering the IP address of the robot, click [open];




Enter the username [jetson] and password [yahboom], and press Enter to confirm.

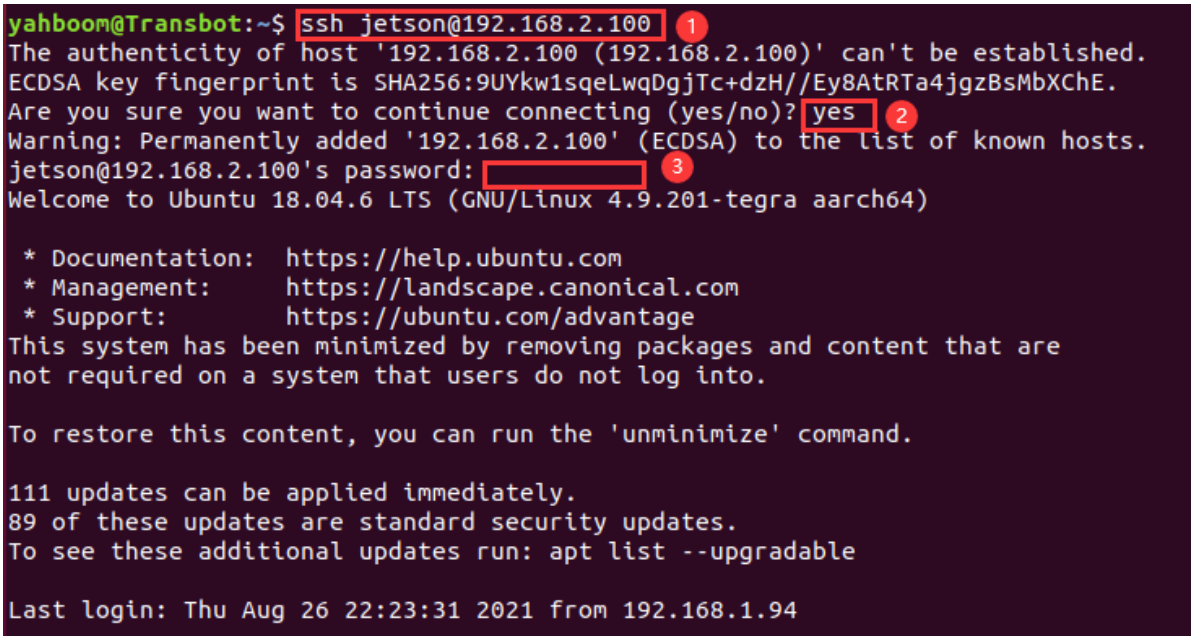
The sign of successful login appears as shown below

## 3.2. SSH

**Note: The interface cannot be displayed.**

- Log in

operate under ubuntu system




1. Enter the following command in the terminal

```
ssh jetson@192.168.2.100
```

2. Then enter [yes], 3) Enter the password [yahboom]

- copy file

If jetson's IP is 192.168.2.100, username: jetson; virtual machine username: yahboom

```
scp jetson@192.168.2.103:/home/jetson/xxx.tar.gz /home/yahboom/  # Copy files
from remote to local (file)
scp /home/yahboom/xxx.png jetson@192.168.2.103:/home/jetson/     # from local to
remote (file)
scp -r jetson@192.168.2.103:/home/jetson/test /home/yahboom/     # from remote to
local -r (folder)
scp -r /home/yahboom/test jetson@192.168.2.103:/home/jetson/     # from local to
remote (folder)
```

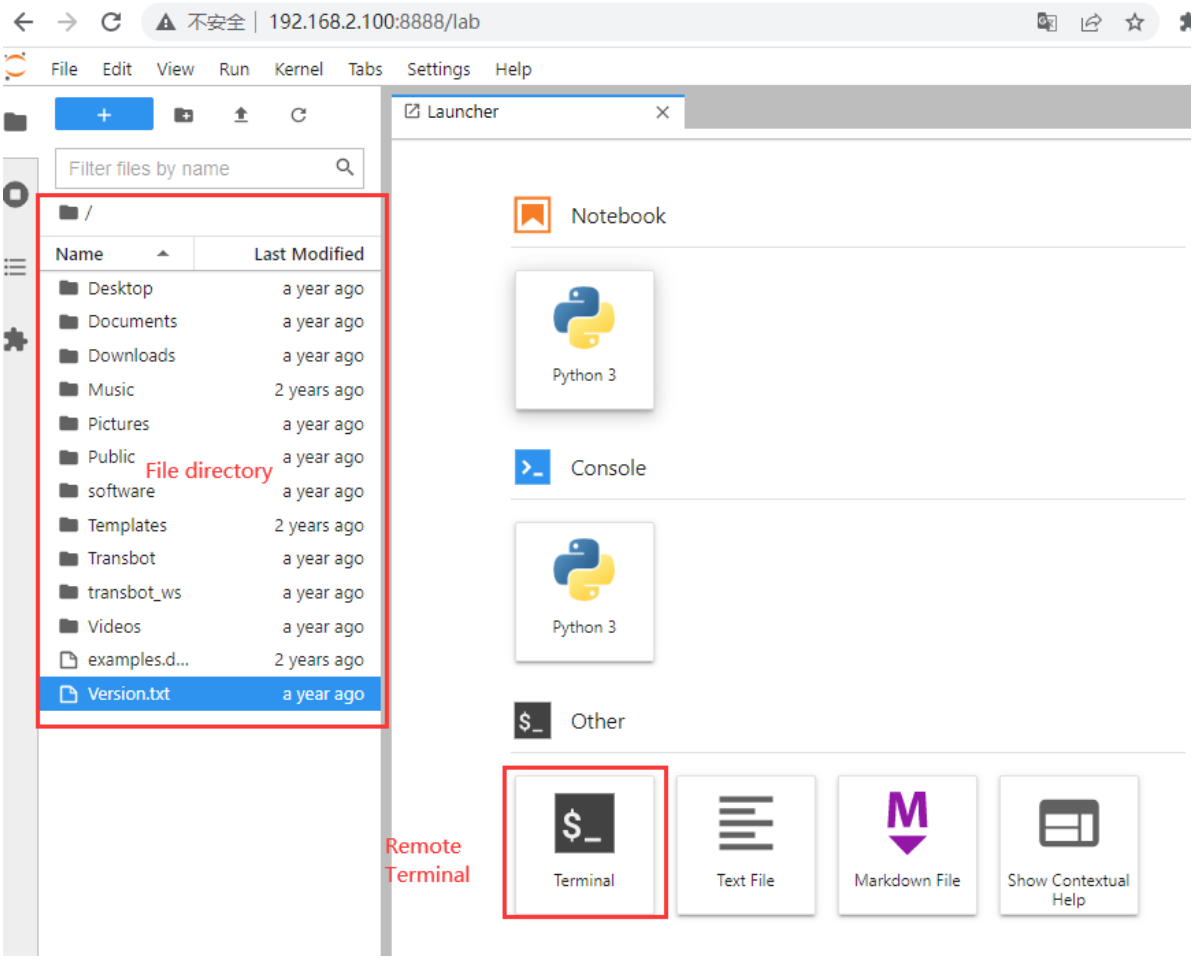
## 3.3. jupyter lab

**Note: The interface cannot be displayed.**


English input method, enter the following command, press Enter, enter the password [yahboom], and click [Log in].

```
http://192.168.2.100:8888
```

after login



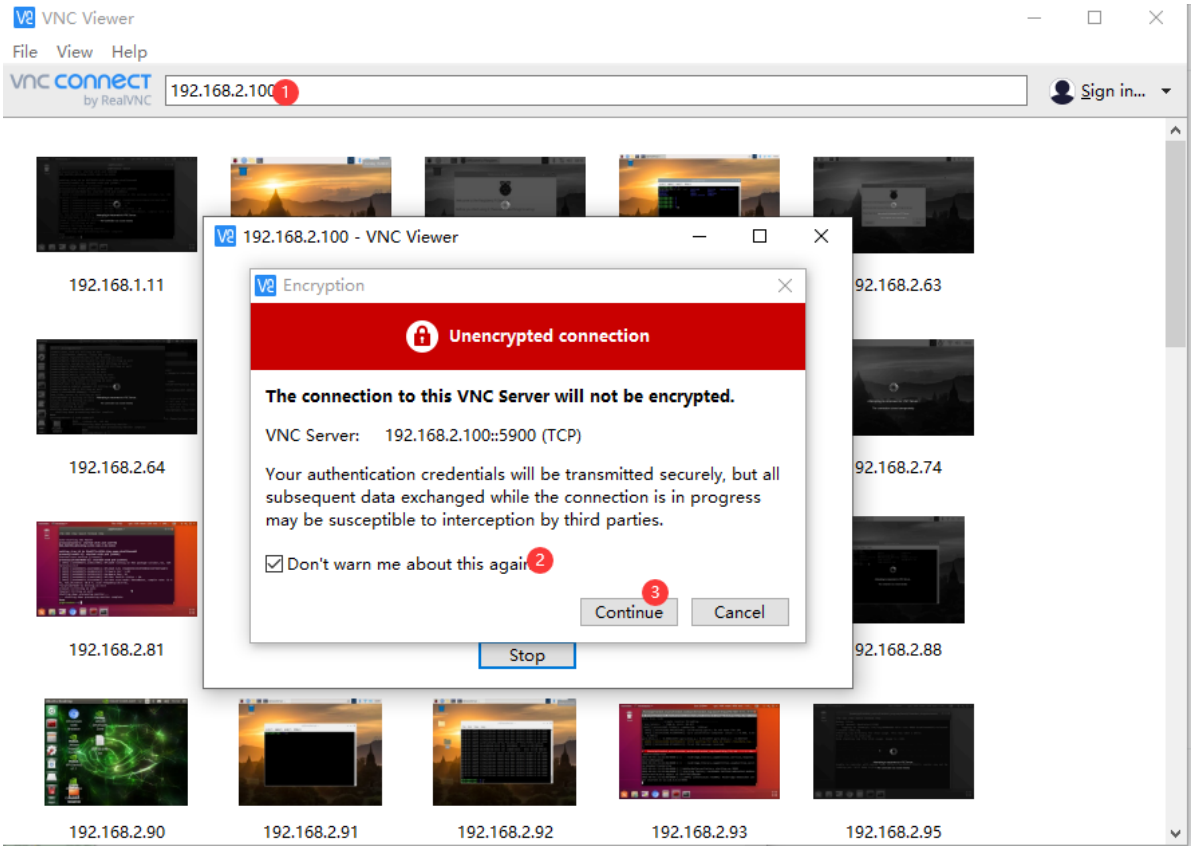

You can enter the folder, modify the contents of the file directly, click [Terminal] under [Other], enter the terminal, and execute the required command.

## 3.4. VNC

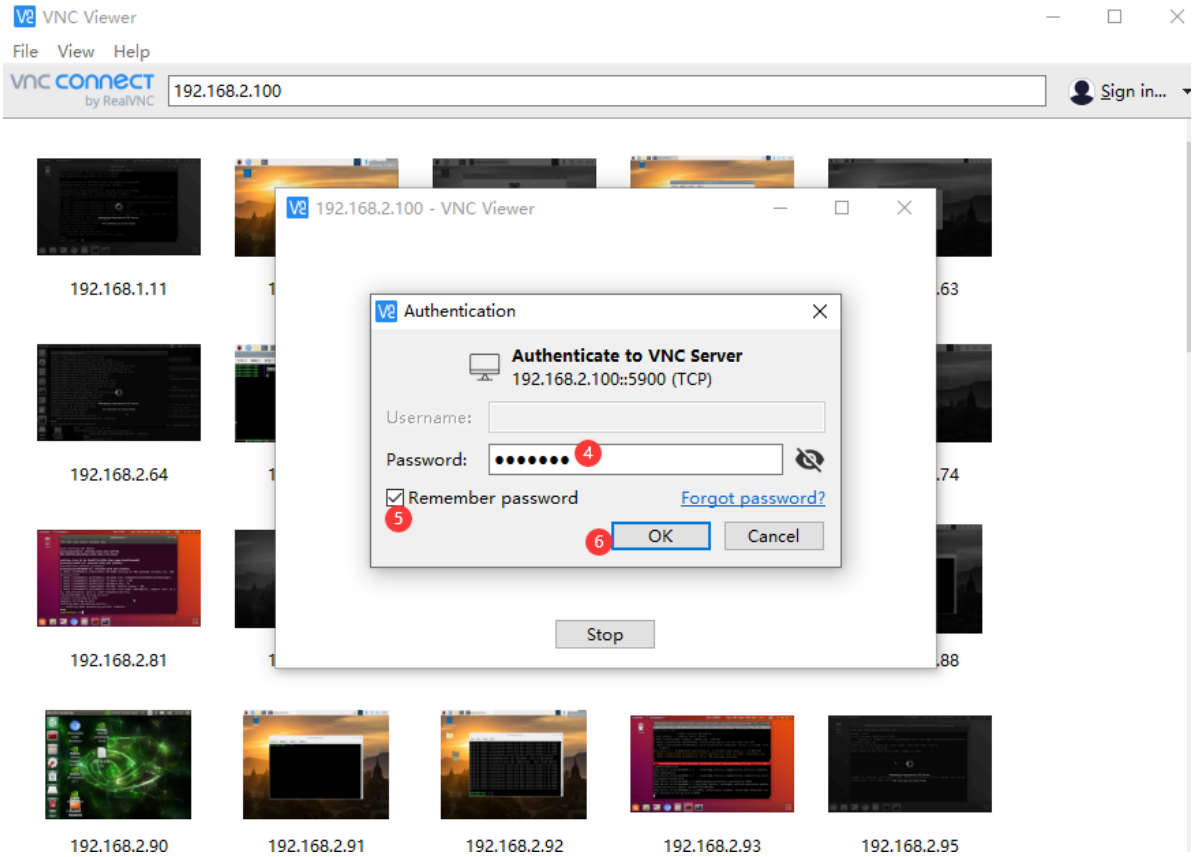
**Note: The interface can be displayed.**

Enter the relevant link at the top, download the installation file, and double-click the [.exe] file to install.

The login steps are as shown in the picture. To use the vnc viewer software for VNC connection, you first need to query the IP address. What I found here is [192.168.2.103]. After entering the IP address, click [Enter] on the keyboard.




Enter the corresponding VNC user and enter the password [yahboom], select Remember password, and click [OK] to enter the VNC interface. The next time the IP remains unchanged, you do not need to enter the password again.




Adjust resolution

- Jetson nano

Use the command line to adjust as needed, it is only valid for this startup. Open a terminal and enter the following command

```
xrandr --fb 1920x1080
```

- raspberry pie

Modify the [config.txt] file to be permanently valid. Open a terminal and enter the following command

```
sudo vim /boot/firmware/config.txt
```

For example, add it at the bottom (set the resolution to 1920x1080)

```
hdmi_force_hotplug = 1
config_hdmi_boost = 4
hdmi_group = 2
hdmi_mode = 82
hdmi_drive = 2
hdmi_ignore_edid = 0xa5000080
disable_overscan = 1
```

```
device_tree_address=0x03000000

# The following settings are "defaults" expected to be overridden by th
e
# included configuration. The only reason they are included is, again,
to
# support old firmwares which don't understand the "include" command.

enable_uart=1
cmdline=nobtcmd.txt

include syscfg.txt
include usercfg.txt

hdmi_force_hotplug=1
config_hdmi_boost=4
hdmi_group=2
hdmi_mode=82
hdmi_drive=2
hdmi_ignore_edid=0xa5000080
disable_overscan=1
```

For the introduction of configuration parameters, please refer to the blog: https://blog.csdn.net/coolwriter/article/details/77719003

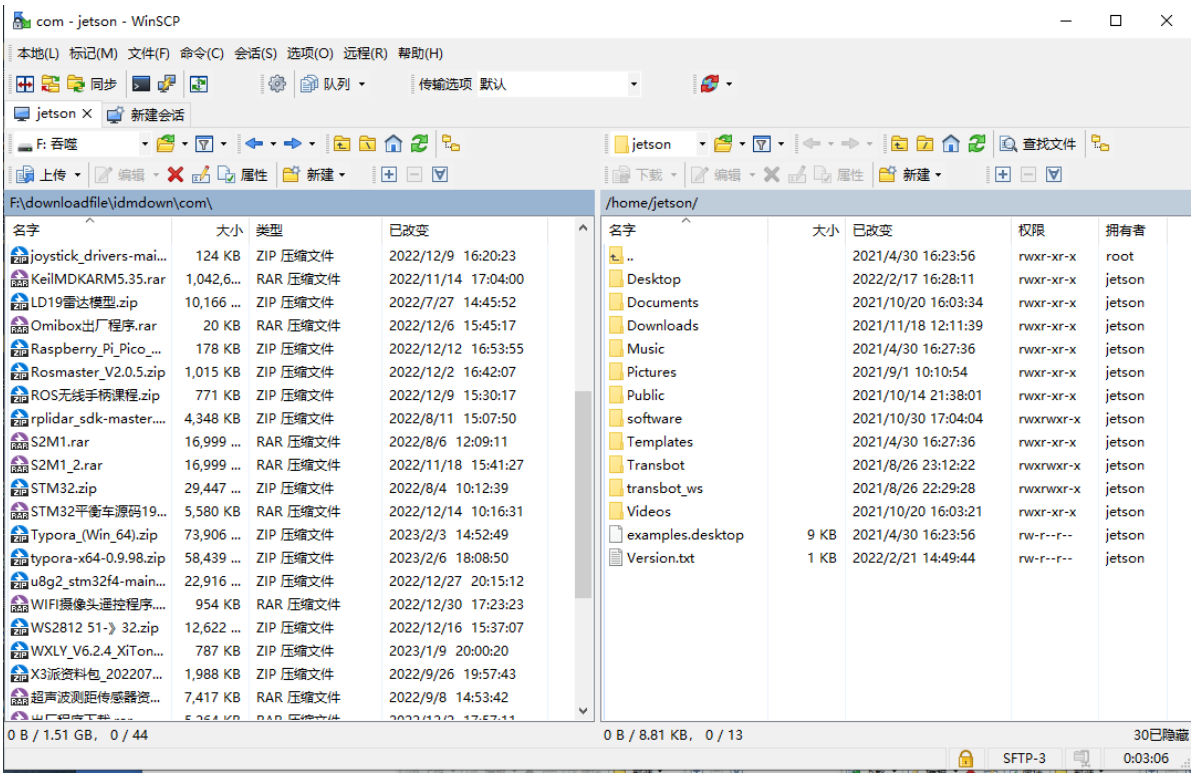
## 3.5. WinSCP

Go to the top related link, download the installation file, and double-click the [.exe] file to install. Double-click the icon below to open the WinSCP software

This time the robot IP [192.168.2.93], username [jetson], password [yahboom].

If the login dialog box does not pop up, click [New Session] in the upper left part, enter the host name (H), user name, and password in turn, and click Login.

An example of a successful login is as follows




- Transfer files from computer to robot [jetson nano]

Just select the file (folder) that needs to be transferred and drag it to the right, then the column of [/home/jetson],

- Robot【jetson nano】transfer files to computer

Just select the file (folder) that needs to be transferred and drag it to the left, the column of [C:], or drag it directly to the desktop.