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How_to_use_sdk

Possible errors

1.XShell Could not connect to "ip"(port 22):Connection failed.

2.Cannot currently show the desktop

Pack ERROR:Could not start patchelf

System: Raspberry Pi OS with desktop Kernel version:5.10

Board: Raspberry Pi 4 B

Prepare in advance

If you have installed the raspberry pi img, please skip this step,next is Turn on VNC.,

(1) img download url:<https://www.raspberrypi.org/software/operating-systems/>

Raspberry Pi OS with desktop

Release date: May 7th 2021

Kernel version: 5.10

Size: 1,180MB

[Show SHA256 file integrity hash:](#)

[Release notes](#)

Download

[Download torrent](#)

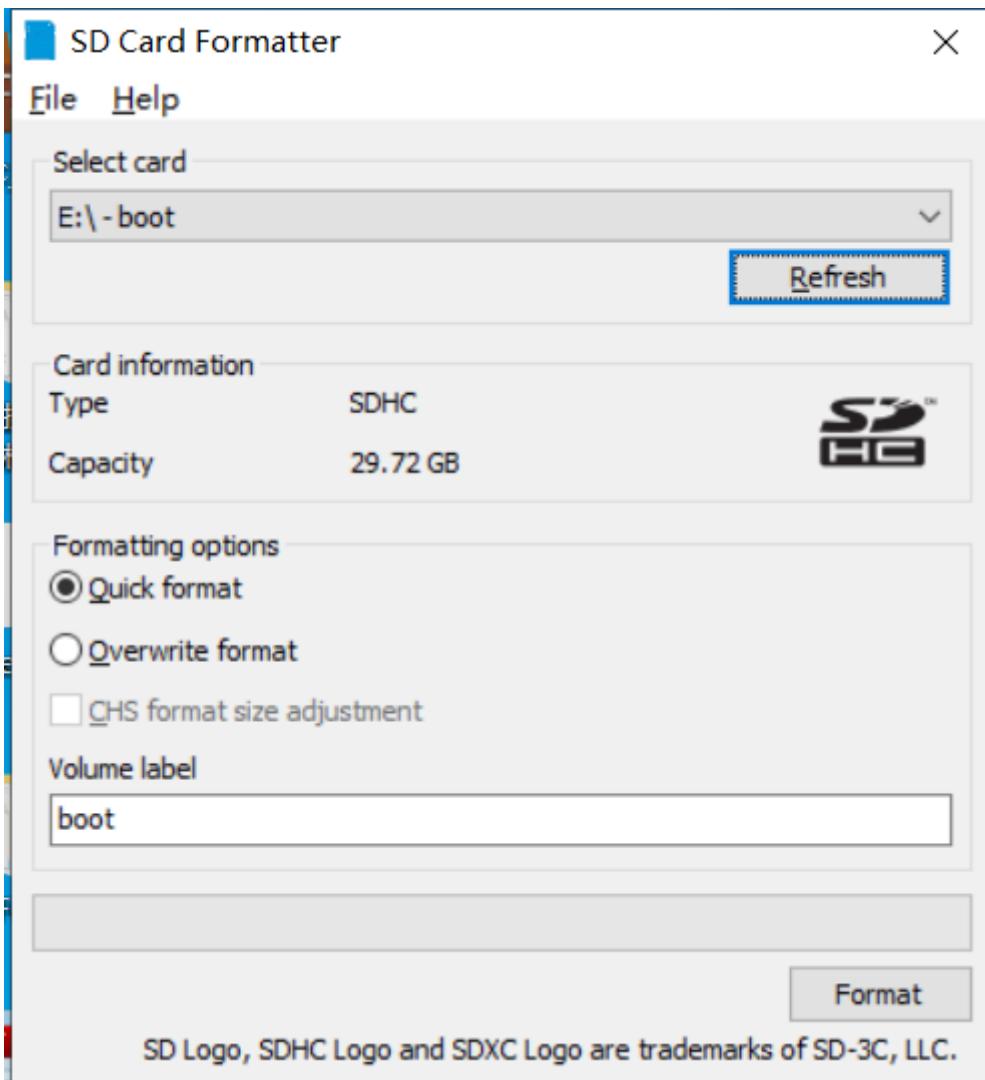
you can also visit https://downloads.raspberrypi.org/raspios_armhf/images/raspios_armhf-2021-05-28/2021-05-07-raspios-buster-armhf.zip

(2) SD Card 32GB and SD Card card reader

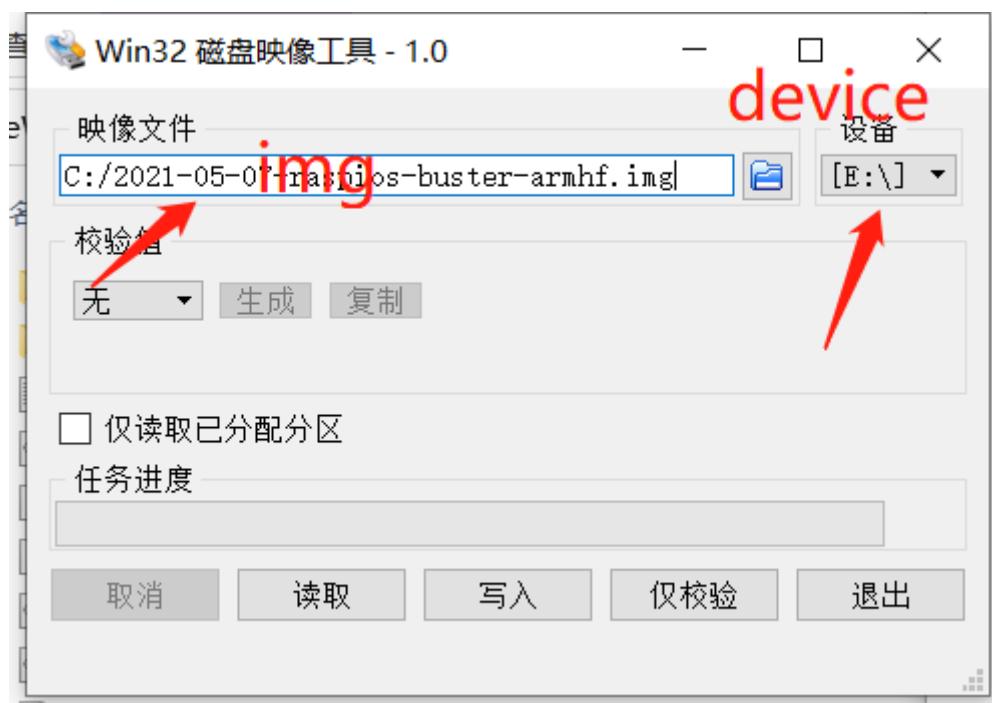
(3) Insert the card into the card reader

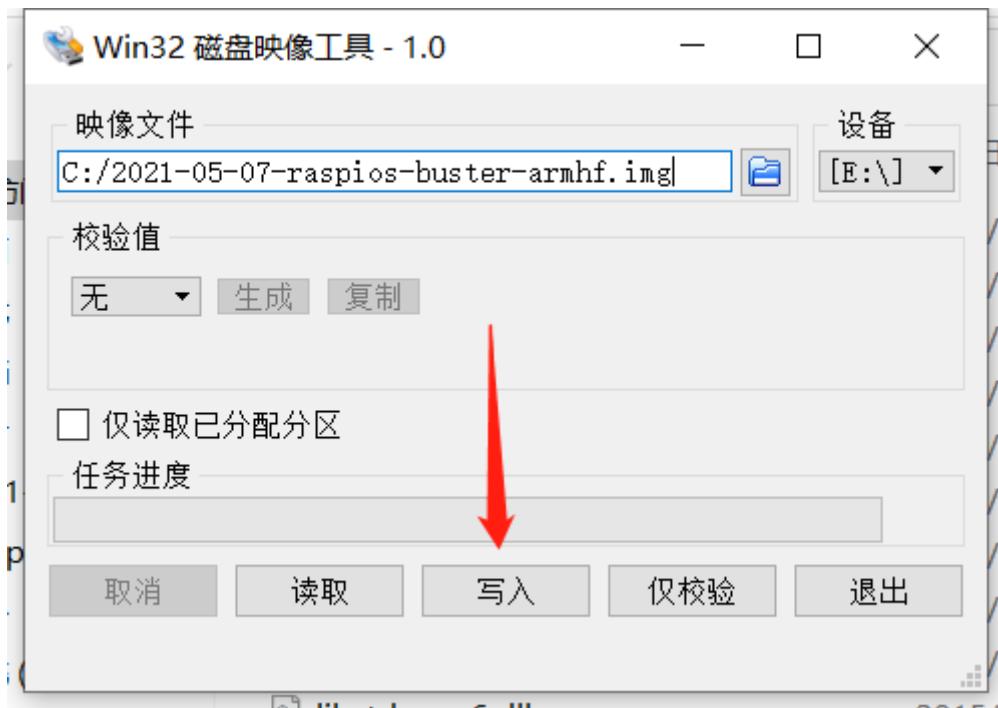
(4) Insert the card reader into the USB port

(5) Using SD Card Formatter select your SD Card and Format it



(6)Using Win32DiskImager,select your img and select your device , then write





(7) Insert SD card into card slot

(8) You can change the password for raspberry pi to login shell or VNC Viewer

```
sudo passwd pi          #modify pi passwd  
sudo passwd root        #set root passwd  
su root                #switch to root  
su pi                  #switch to pi
```

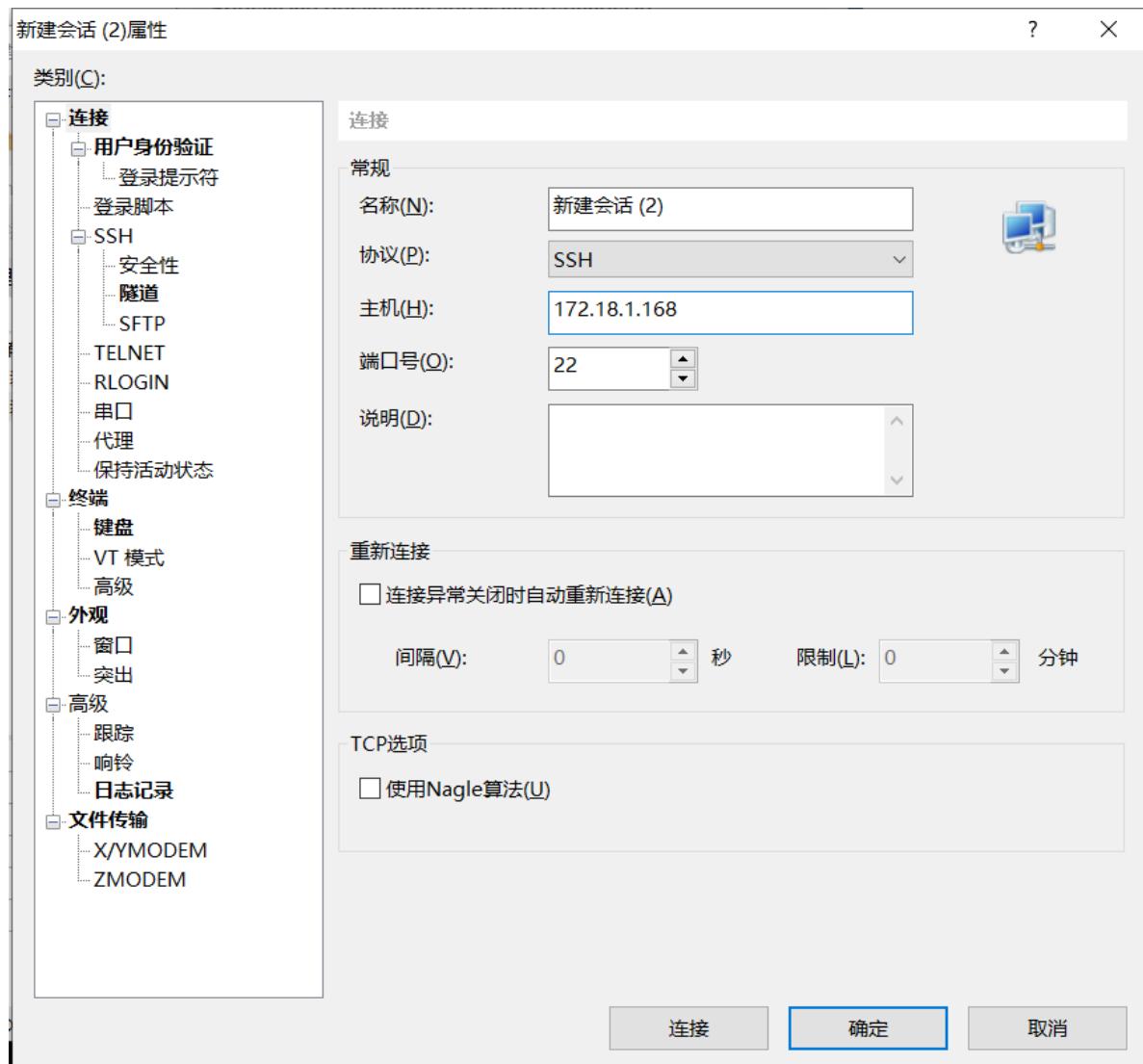
Turn on VNC

1. Get your raspberry Pi IP first, like my IP is

172.18.1.168 0F-27 7 ms raspberrypi.lan

You should make sure that raspberry pi and PC are in the same network segment

2. Using XShell connection (You may encounter a mistake, and can find solutions in this document)



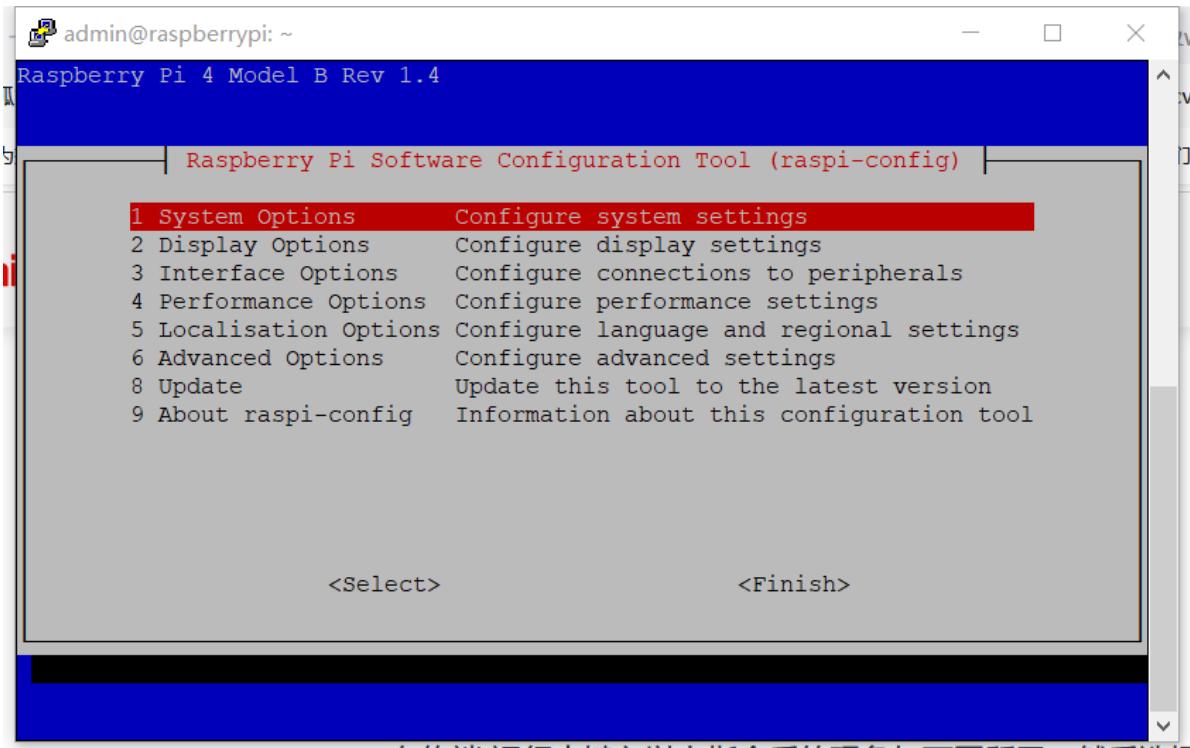
3. Using command `sudo raspi-config`, then you will enter the interface below.

```
Connecting to 172.18.1.168:22...
Connection established.
To escape to local shell, press 'Ctrl+Alt+]'.

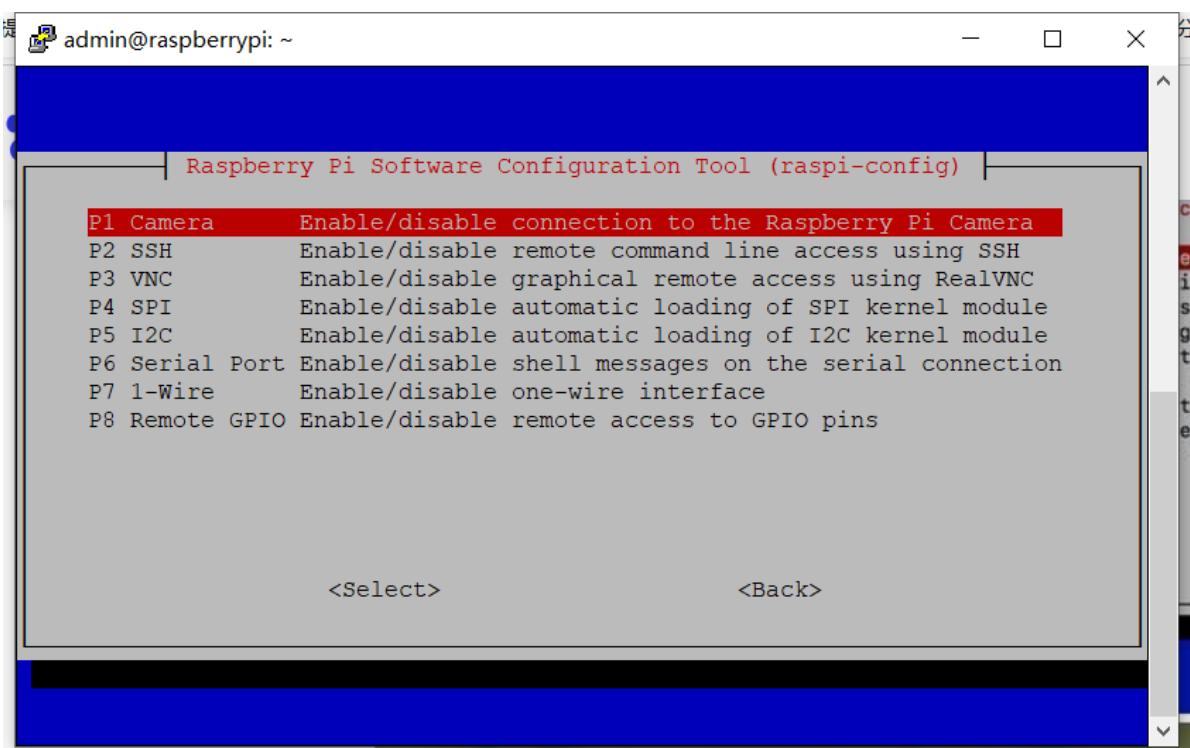
Linux raspberrypi 5.10.17-v7l+ #1414 SMP Fri Apr 30 13:20:47 BST 2021 armv7l

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

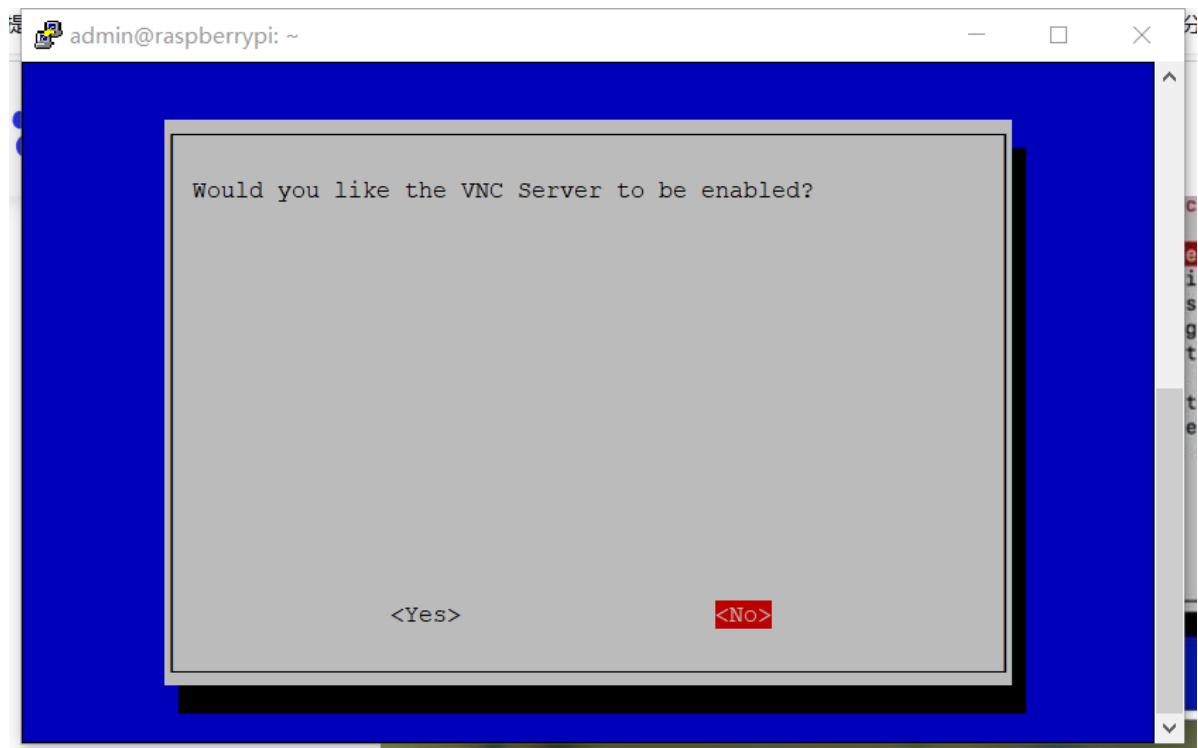
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Wed Jun  9 10:12:58 2021
pi@raspberrypi:~ $ sudo raspi-config
```



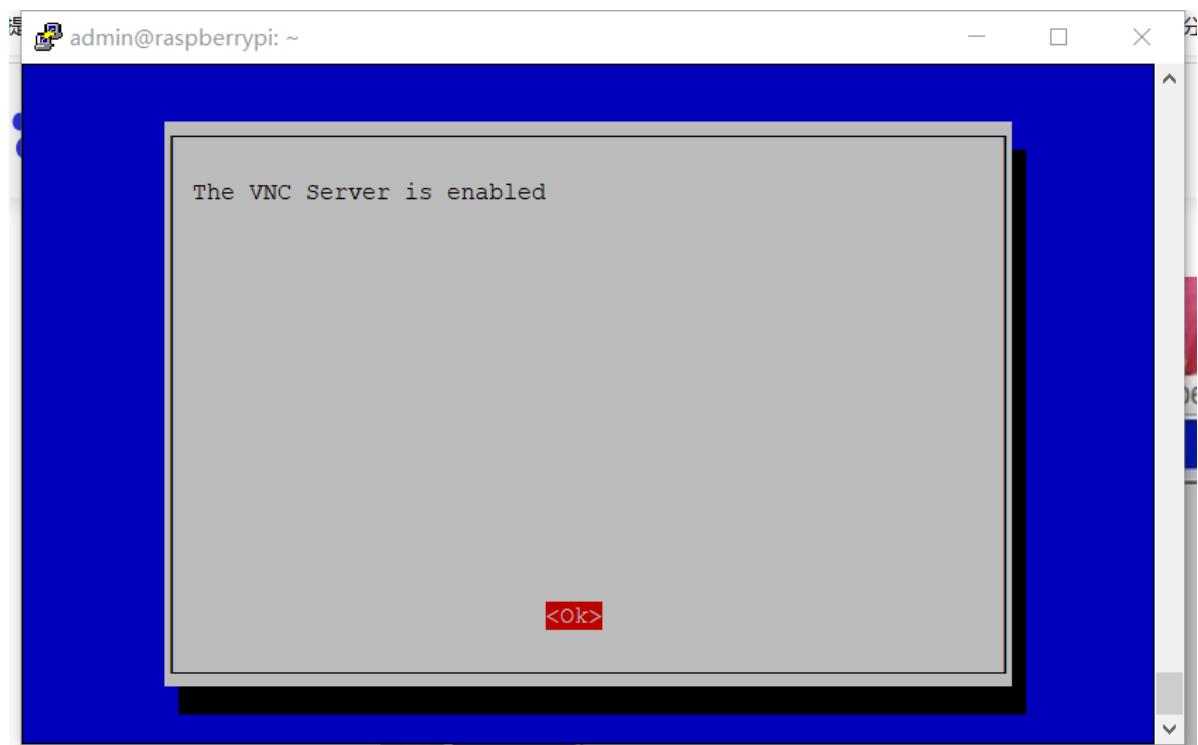
4. select 3 Interface Options



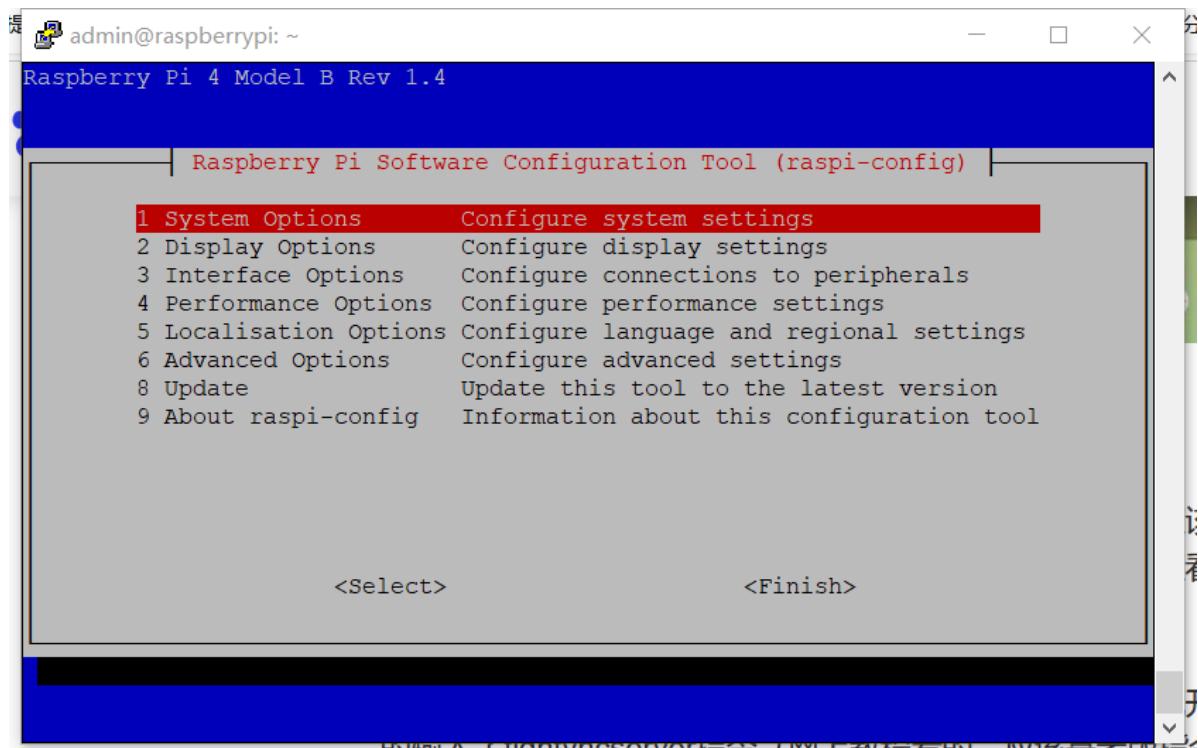
5. select P3 VNC then select Yes



6. After a while, you can see the interface below.



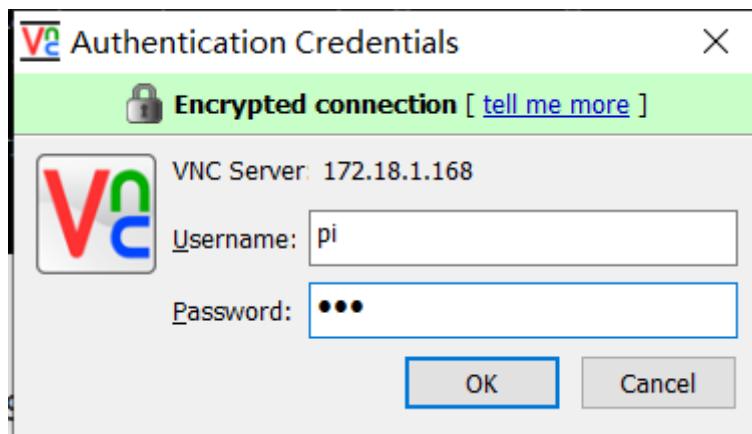
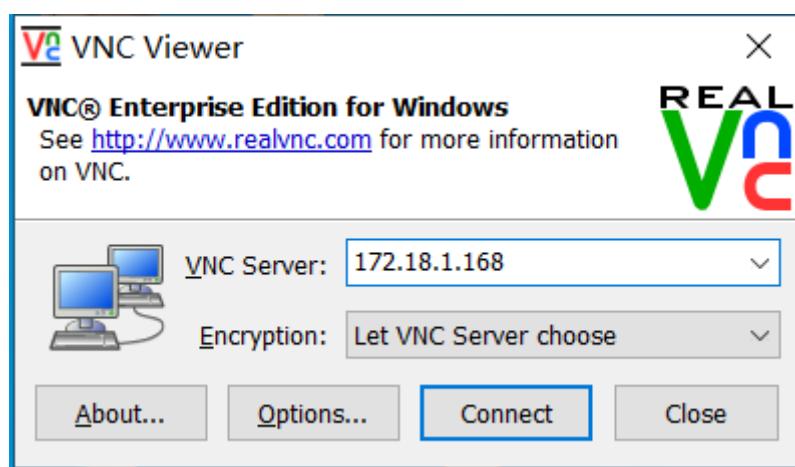
select ok .

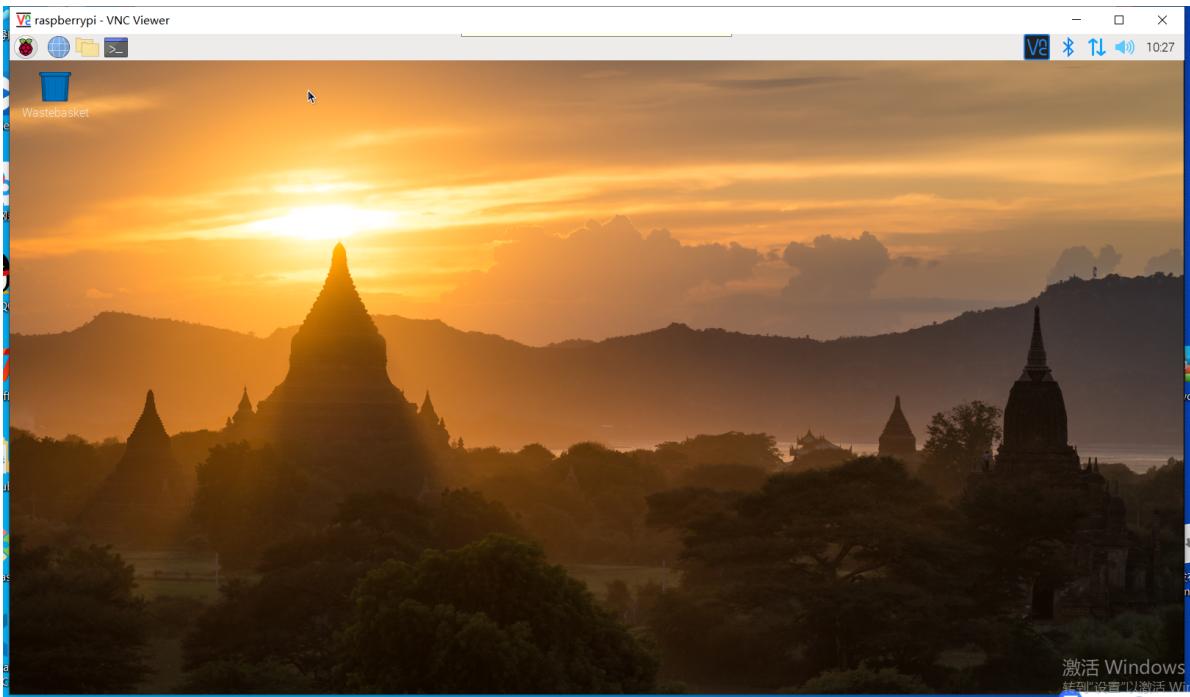


Using right with keyboard select `Finish`.

```
pi@raspberrypi:~ $ sudo raspi-config
Created symlink /etc/systemd/system/multi-user.target.wants/vncserver-x11-service.
service → /lib/systemd/system/vncserver-x11-service.service.
pi@raspberrypi:~ $
```

7. Enter your IP address in VNC viewer.





Environment and compilation

Install Qt5

```
sudo apt-get update  
  
sudo apt-get install qt5-default  
  
sudo apt-get install qtcreator  
  
sudo apt-get install qtmultimedia5-dev  
  
sudo apt-get install libqt5serialport5-dev
```

Install libusb , opencv and ffmpeg

```
sudo apt-get install libopencv-dev  
  
sudo apt-get install libusb-dev  
  
sudo apt-get install libusb-1.0.0-dev  
  
sudo apt-get install ffmpeg
```

Compilation

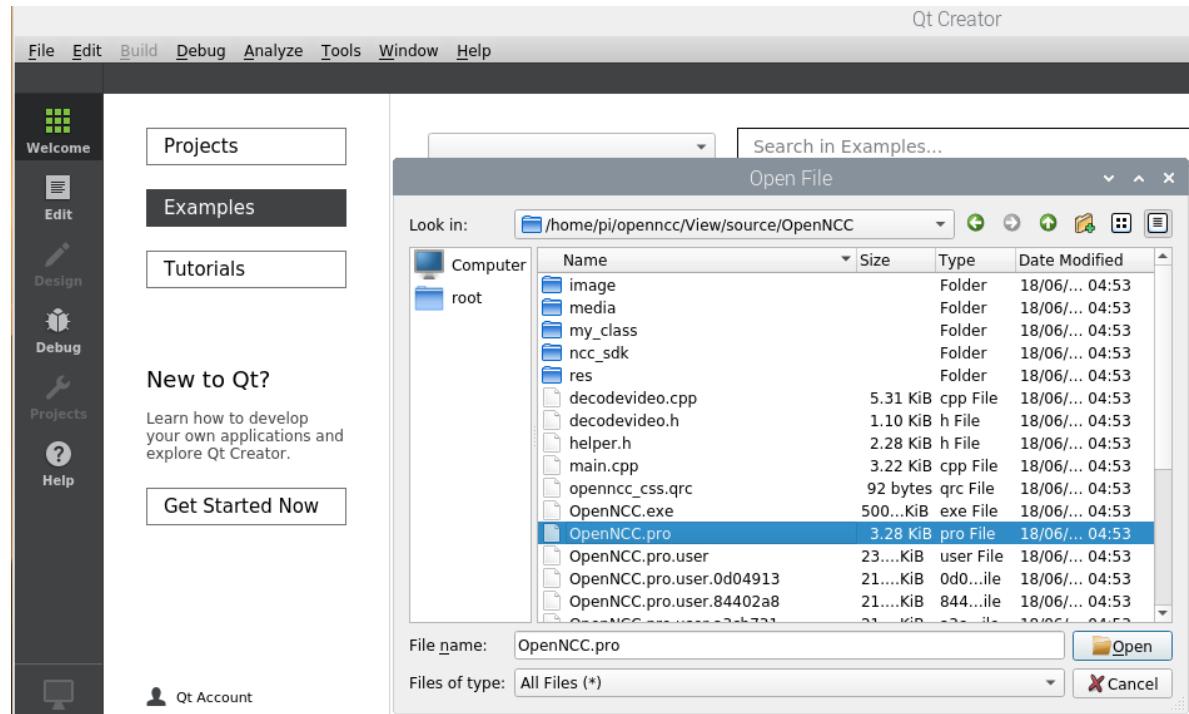
1.git clone openncc from github to your raspberry pi

```
cd /home/pi  
git clone https://github.com/EyecloudAi/openncc.git
```

2.Open qtcreator

```
sudo qtcreator
```

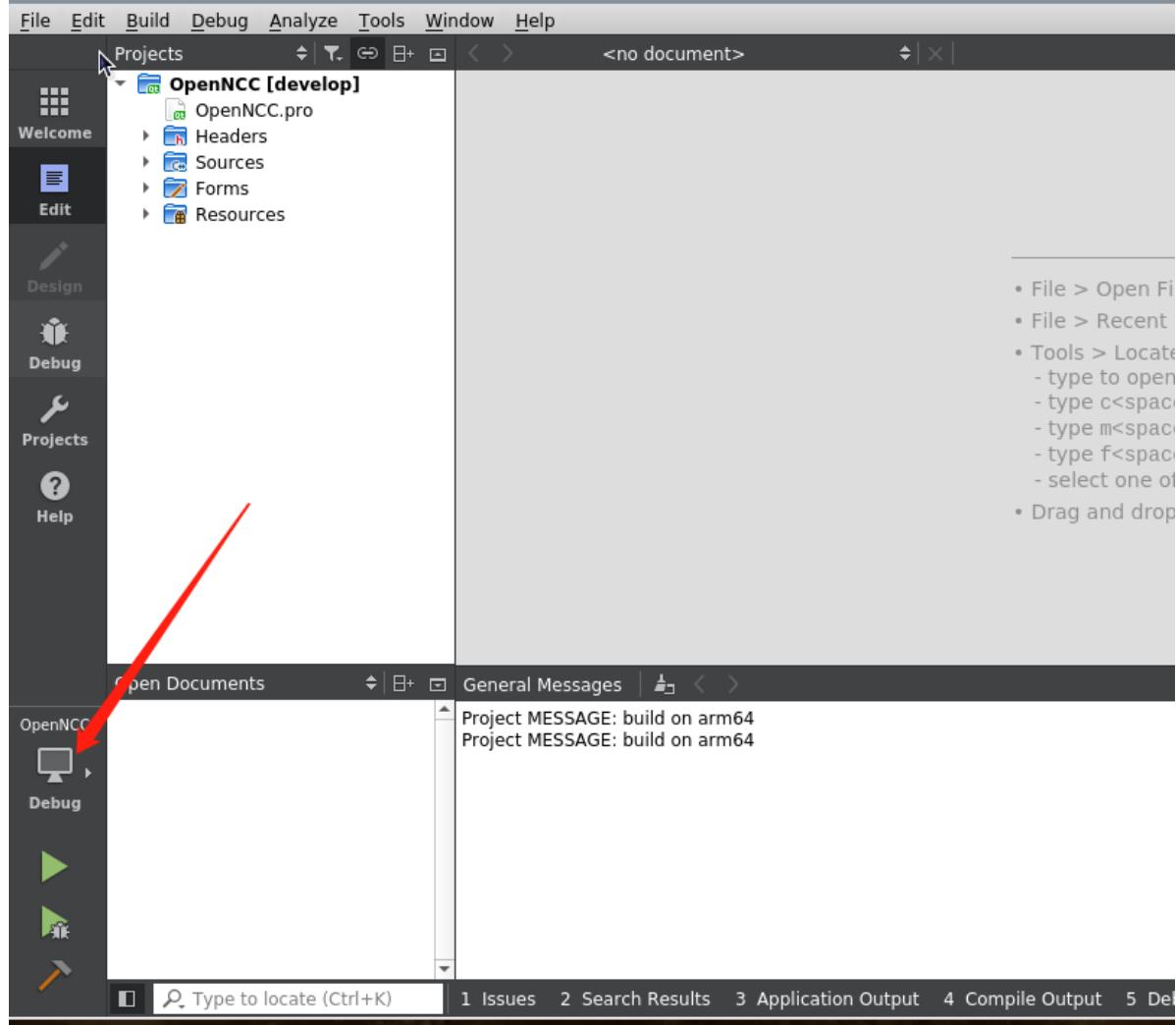
3.File->Open File or Project



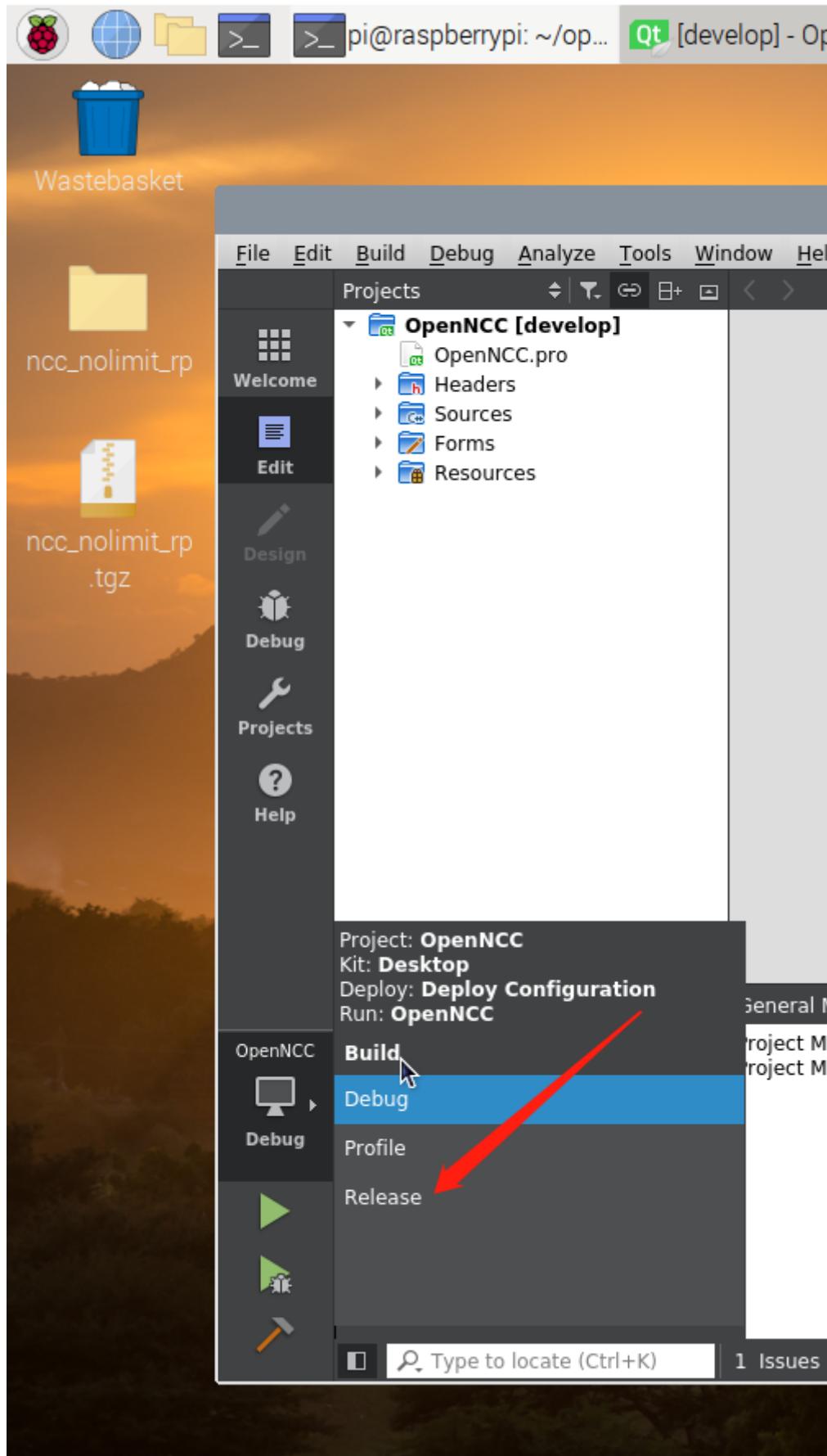
4.Select Kits



5.Select Release



VNC raspberrypi - VNC Viewer



6. `tar zxvf ncc_nolimit_rp.tgz` and copy `libopenNCC.a` to
`/home/pi/openncc/view/source/OpenNCC/ncc_sdk`

```

tar zxvf ncc_nolimit_rp.tgz
cd ncc_nolimit_rp.tgz
sudo cp libopenNCC.a /home/pi/openncc/view/source/OpenNCC/ncc_sdk/

```

- If you can't find the files or library mentioned in the document,you could use the library which your local FAE shared with you. Please contact your local FAE if you don't have one.
- Different embedded platforms need to use the corresponding platform libraries,Please note that the libOpenNCC.a and MoviusBoot tools are platform-specific.
- The default OpenNCC SDK only include X86 based library.

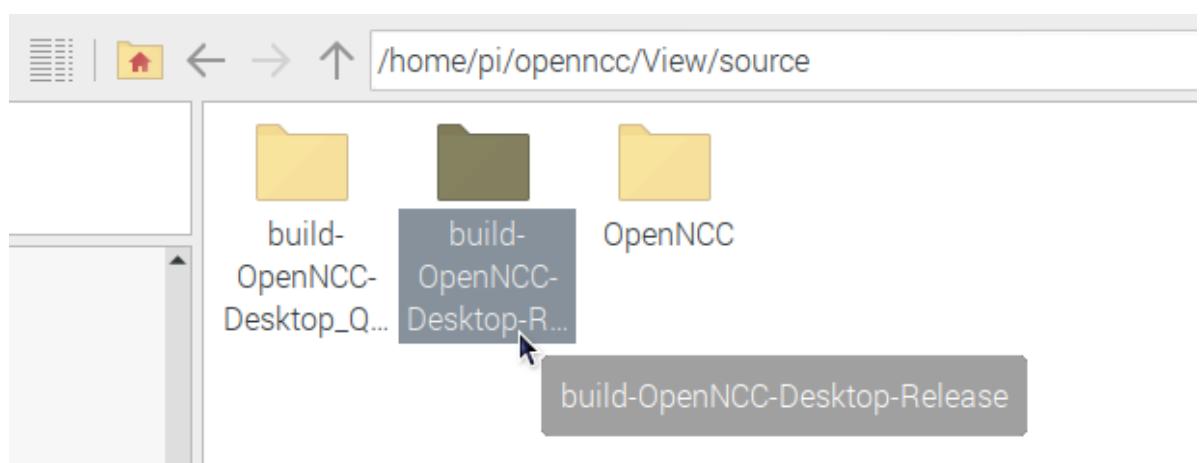
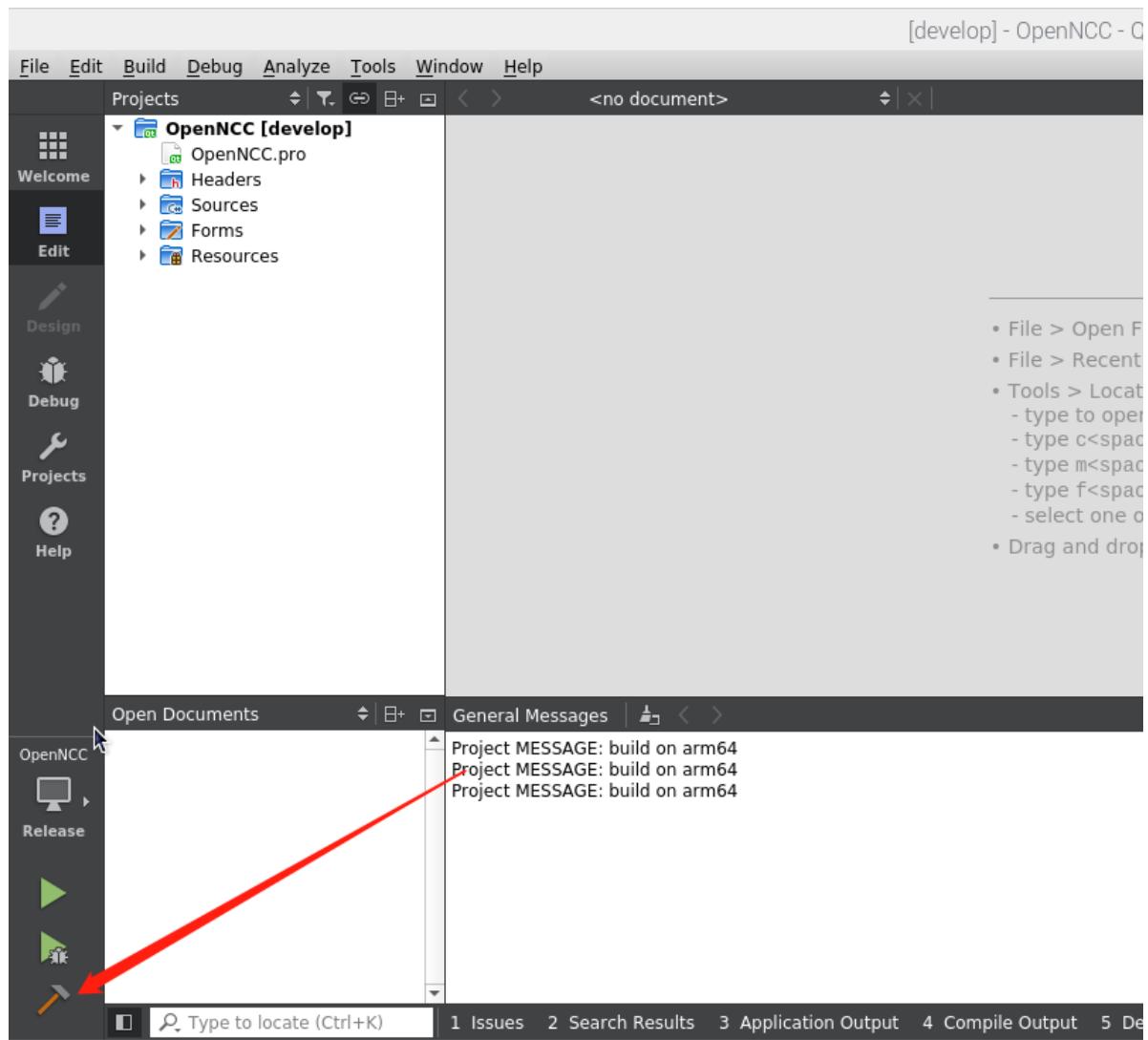
7.Make sure the `openNCC.pro` content is OpenNCC

```

100
101 }
102
103 unix:{ 
104
105     CONFIG += link_pkgconfig
106     PKGCONFIG += opencv
107     PKGCONFIG += libusb-1.0
108
109     contains(QMAKE_HOST.arch, x86_64){
110         message("build on x86")
111         LIBS += \
112             "-L$$PWD/ncc_sdk/ -lOpenNCC -lavutil -lavformat -lavcodec -lswresample -lswscale"
113
114     }else{
115         message("build on arm64")
116         INCLUDEPATH += /usr/include/arm-linux-gnueabihf
117         LIBS += \
118             "-L$$PWD/ncc_sdk/ -lOpenNCC"
119
120         LIBS += -L/usr/lib/arm-linux-gnueabihf/neon/vfp -lavutil -lavformat -lavcodec -lswresample
121
122     }
123 }
124
125

```

8.Build it then you can find `build-openNCC-Desktop-Release` in `/home/pi/openncc/view/source`



9.copy openncc/View/OpenNCC_Linux/Configuration to build-openNCC-Desktop-Release

```
sudo cp -r /home/pi/openncc/View/OpenNCC_Linux/Configuration/
/home/pi/openncc/view/source/build-OpenNCC-Desktop-Release/
```

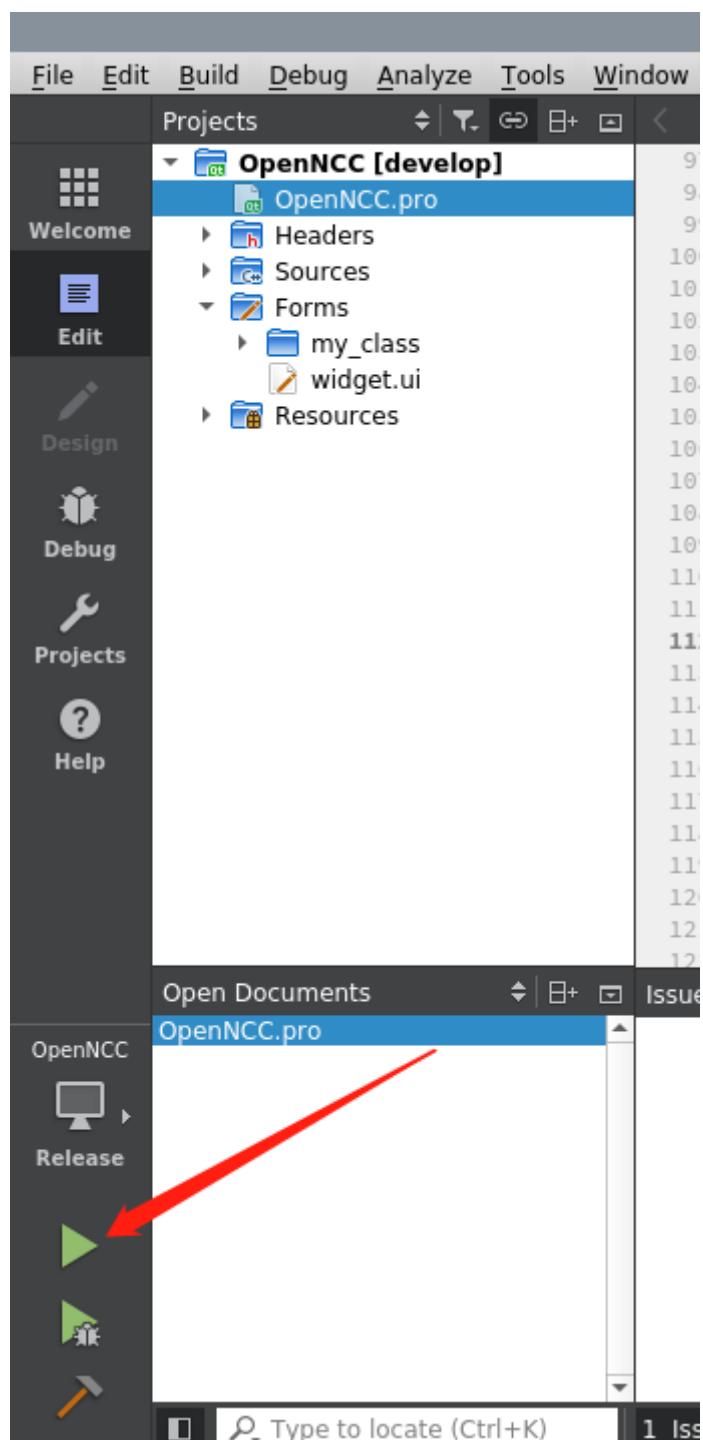
10.copy ncc_nolimit_rp/moviUsbBoot to /build-OpenNCC-Desktop-Release/Configuration/

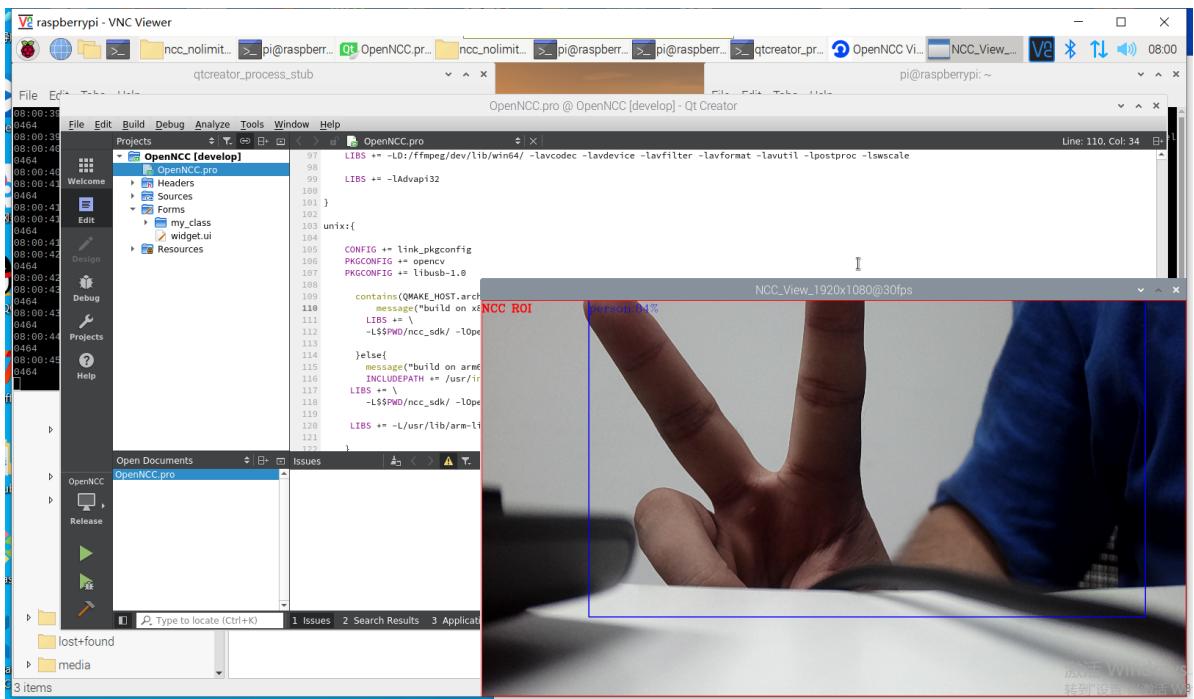
```
pi@raspberrypi:~/openncc/View/source/build-OpenNCC-Desktop-Release/Configuration
$ sudo cp ~/Desktop/ncc_nolimit_rp/moviUsbBoot .
```

11.copy ncc_nolimit_rp/flicRefApp.mvcmd to /build-OpenNCC-Desktop-Release/Configuration/fw/

```
pi@raspberrypi:~ $ sudo cp ~/Desktop/ncc_nolimit_rp/flicRefApp.mvcmd /home/pi/openncc/View/source/build-OpenNCC-Desktop-Release/Configuration/fw/
pi@raspberrypi:~ $
```

12. Make sure you connect the device and run





Package QT program you run

1. Put your QT program in a folder

```
cd ~/Desktop/
mkdir openncc_view
cd openncc_view
cp ~/openncc/view/source/build-OpenNCC-Desktop-Release/OpenNCC .
cp -r ~/openncc/view/source/build-OpenNCC-Desktop-Release/Configuration/ .
```

2. Put `linuxdeployqt` in `/usr/local/bin` (`linuxdeployqt` in `ncc_nolimit_rp.tgz`)

```
sudo cp linuxdeployqt /usr/local/bin
```

3. Package QT

```
linuxdeployqt openNCC -appimage
```

```
pi@raspberrypi:~/Desktop/openncc_view $ linuxdeployqt OpenNCC -appimage
linuxdeployqt (commit ), build <local dev build> built on 2021-03-10 01:25:27 UTC
Not using FHS-like mode
app-binary: "/home/pi/Desktop/openncc_view/OpenNCC"
appDirPath: "/home/pi/Desktop/openncc_view"
relativeBinPath: "OpenNCC"
ERROR: Desktop file missing, creating a default one (you will probably want to edit it)
ERROR: Icon file missing, creating a default one (you will probably want to edit it)
```

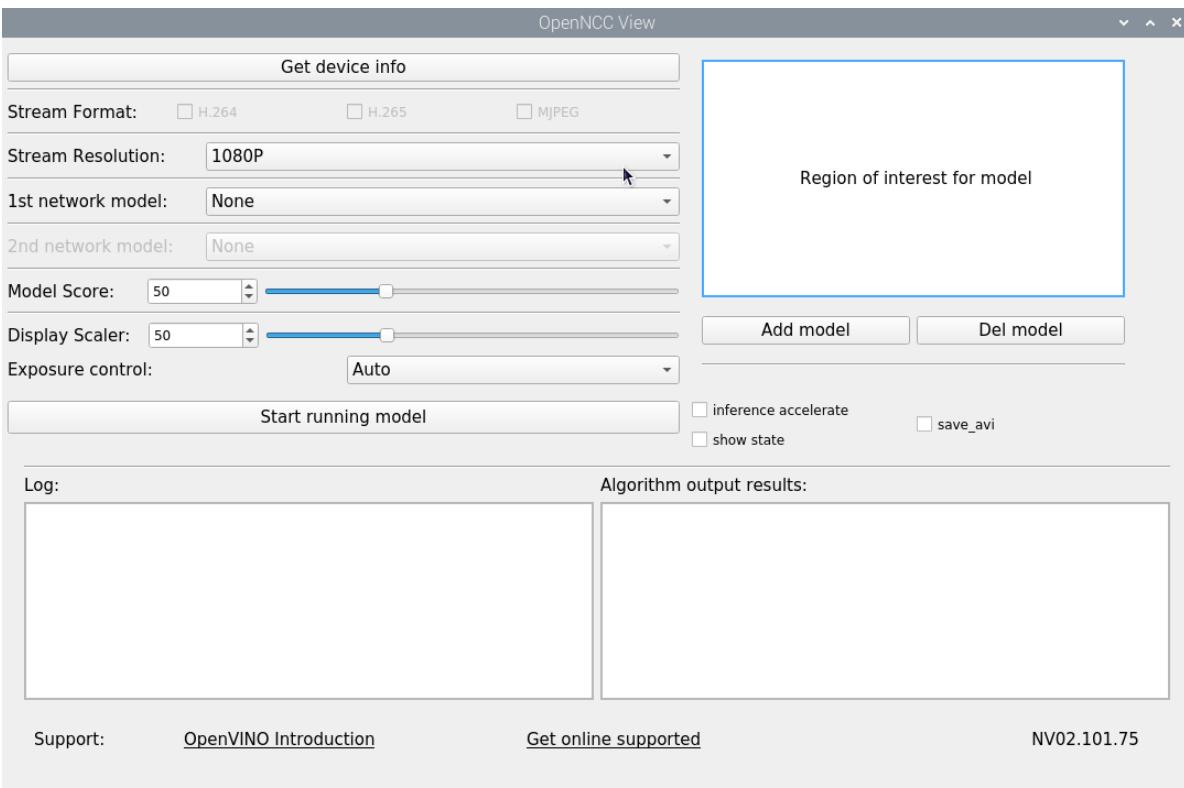
```

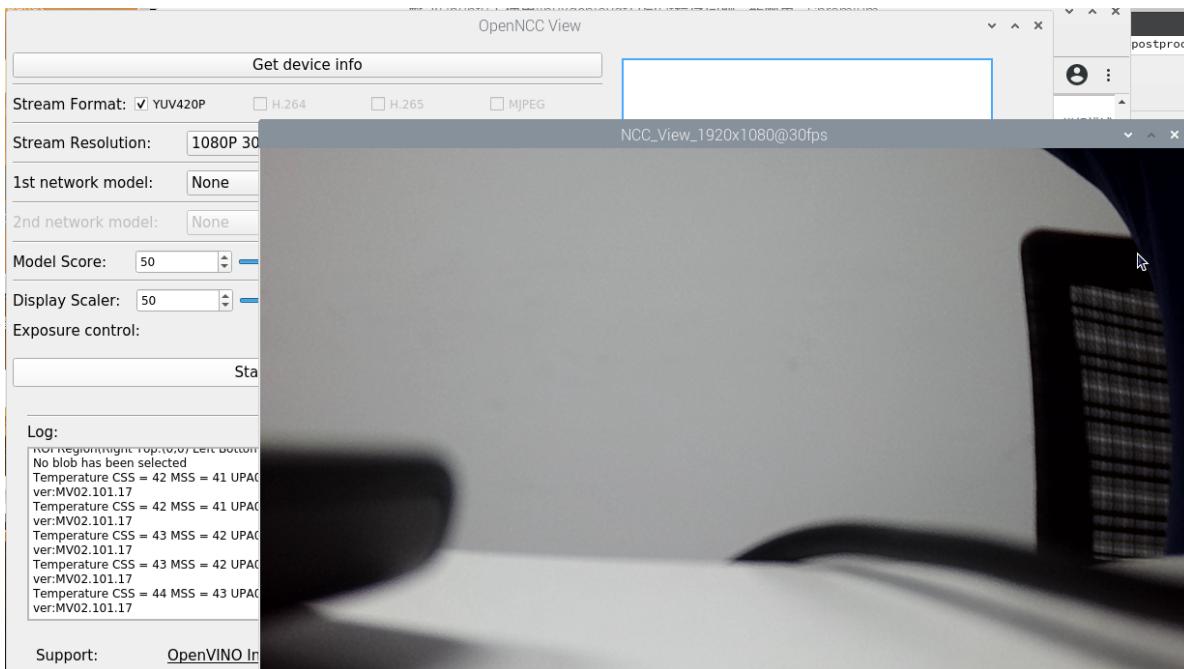
pi@raspberrypi: ~/Desktop/openncc_view
File Edit Tabs Help
appDirPath: "/home/pi/Desktop/openncc_view"
relativeBinPath: "OpenNCC"
Keeping existing AppRun
^C
pi@raspberrypi:~/Desktop/openncc_view $ ls
AppRun default.desktop default.png doc lib OpenNCC
pi@raspberrypi:~/Desktop/openncc_view $ rm -rf AppRun default.* doc/ lib
pi@raspberrypi:~/Desktop/openncc_view $ ls
OpenNCC
pi@raspberrypi:~/Desktop/openncc_view $ cp -r ~/openncc/View/source/build-OpenNC
C-Desktop-Release/Configuration/
pi@raspberrypi:~/Desktop/openncc_view $ linuxdeployqt OpenNCC -appimage
linuxdeployqt (commit ), build <local dev build> built on 2021-03-10 01:25:27 U
TC
Not using FHS-like mode
app-binary: "/home/pi/Desktop/openncc_view/OpenNCC"
appDirPath: "/home/pi/Desktop/openncc_view"
relativeBinPath: "OpenNCC"
ERROR: Desktop file missing, creating a default one (you will probably want to e
dit it)
ERROR: Icon file missing, creating a default one (you will probably want to edit
it)
sh: 1: appimagetool: not found
pi@raspberrypi:~/Desktop/openncc_view $

```

4. Run AppRun

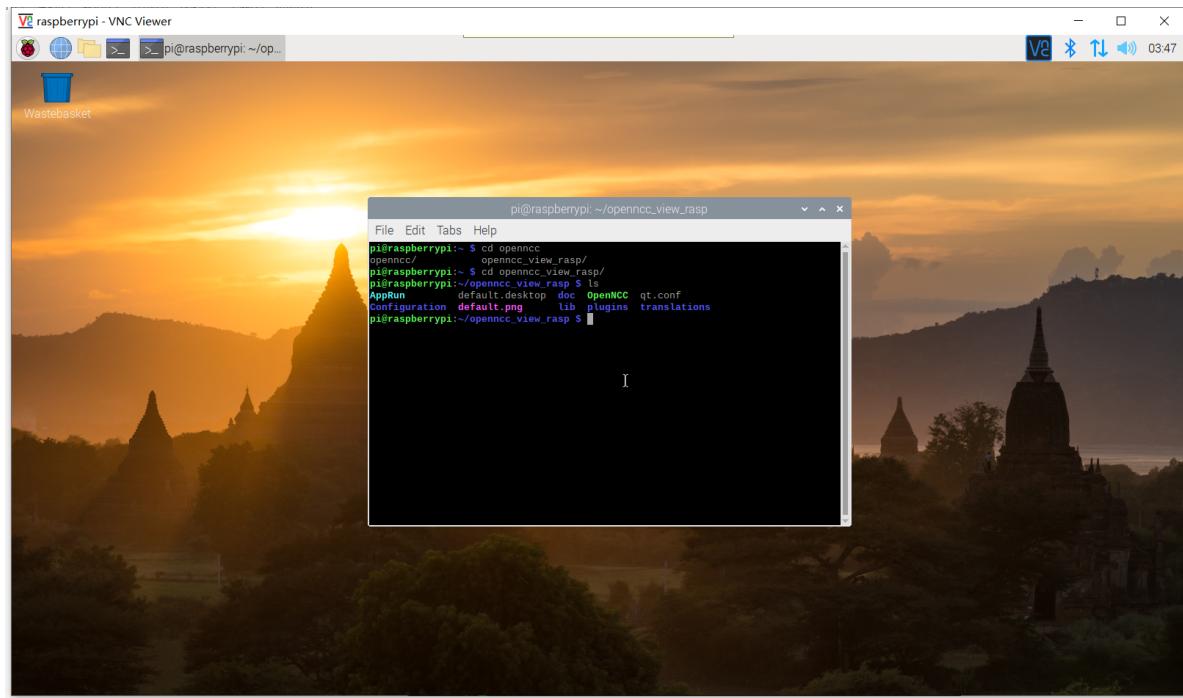
```
sudo ./AppRun
```



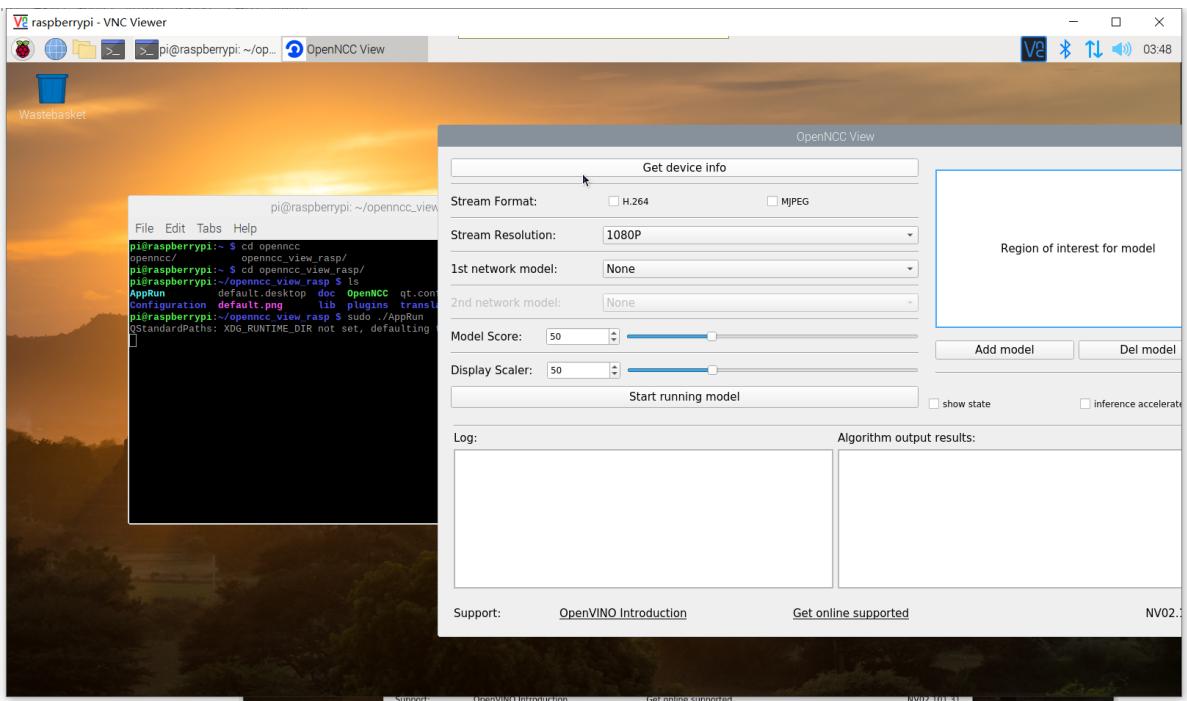


Start the program

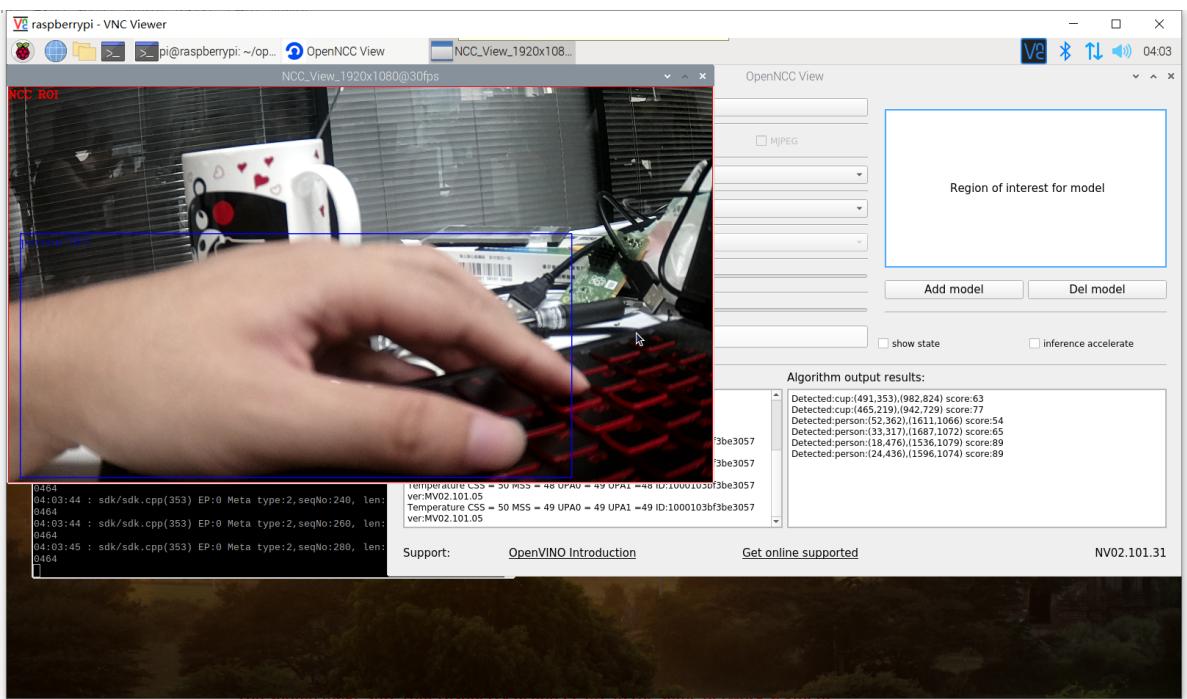
1. Connect the NCC device to the raspberry pi
2. Enter the program directory



3. Using command `sudo ./AppRun`



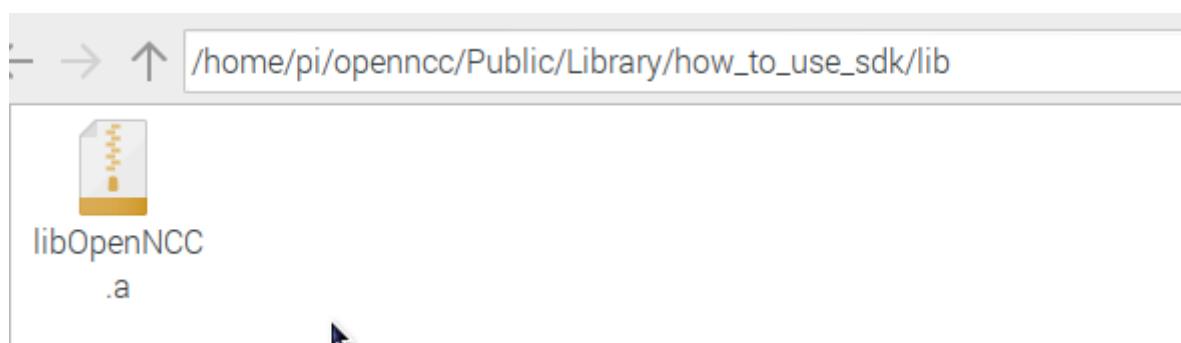
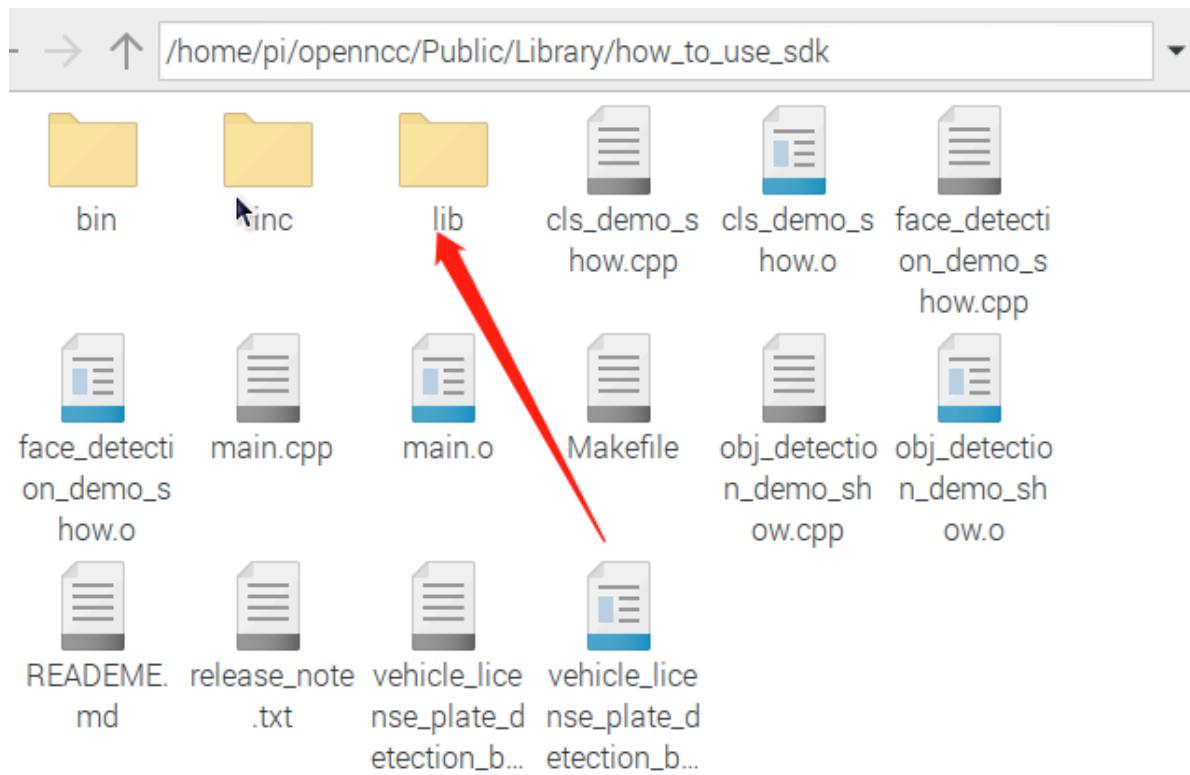
Then you can use the program.



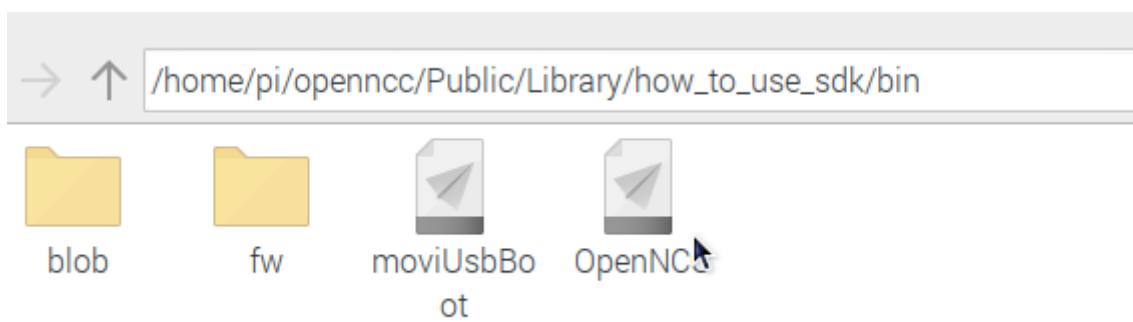
How_to_use_sdk

- If you can't find the files or library mentioned in the document,you could use the library which your local FAE shared with you. Please contact your local FAE if you don't have one.
- Different embedded platforms need to use the corresponding platform libraries,Please note that the libOpenNCC.a and MoviusBoot tools are platform-specific.
- The default OpenNCC SDK only include X86 based library.

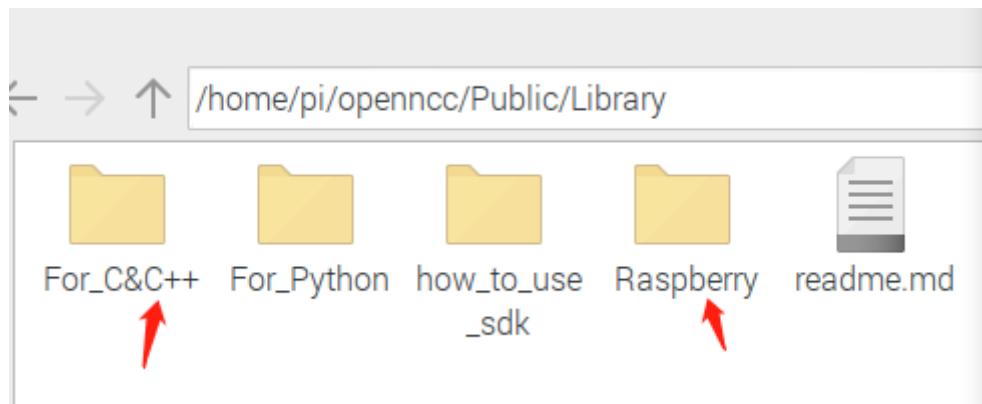
Each platform has its own library, and you need to put the library of the current platform in the Lib folder.



You need to put `moviusboot` of different platforms in bin folder.



You can find them in the `Library`



Possible errors

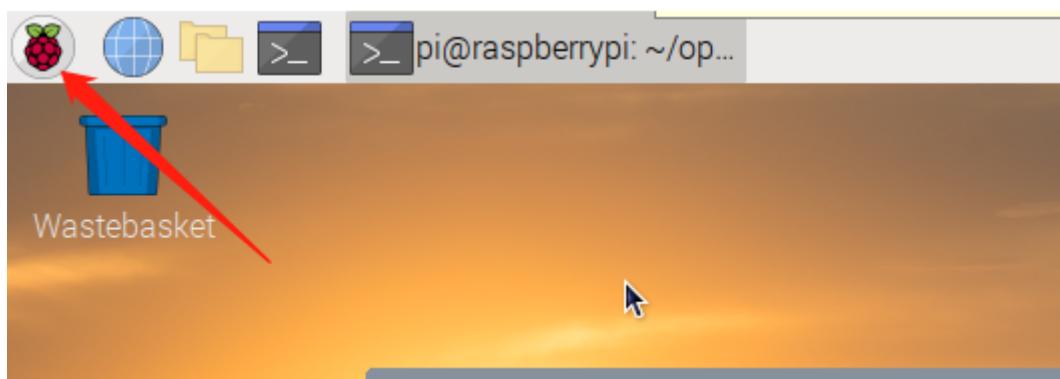
1.XShell Could not connect to "ip"(port 22):Connection failed.

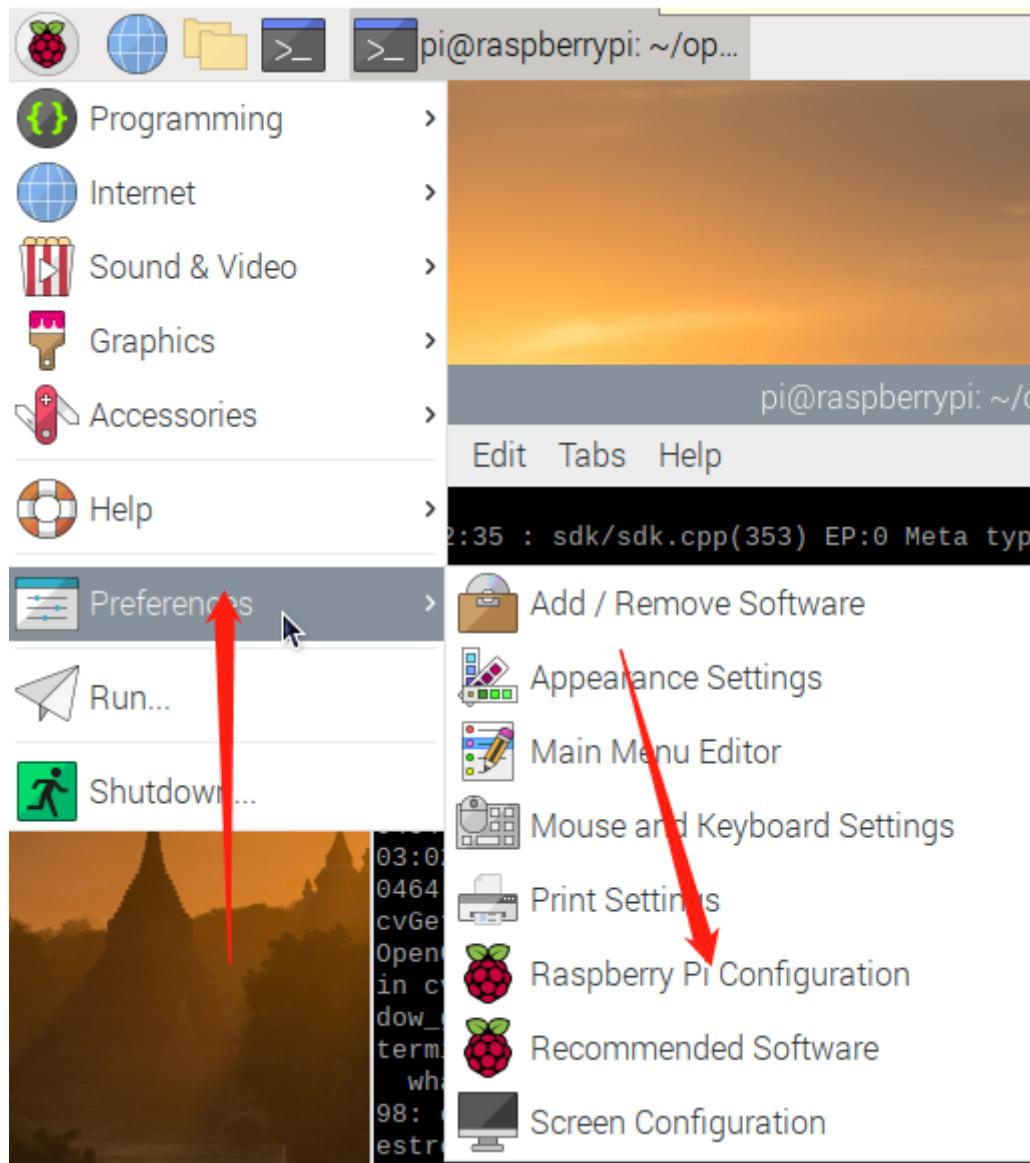
```
Connecting to 172.18.1.168:22...
Could not connect to '172.18.1.168' (port 22): Connection failed.

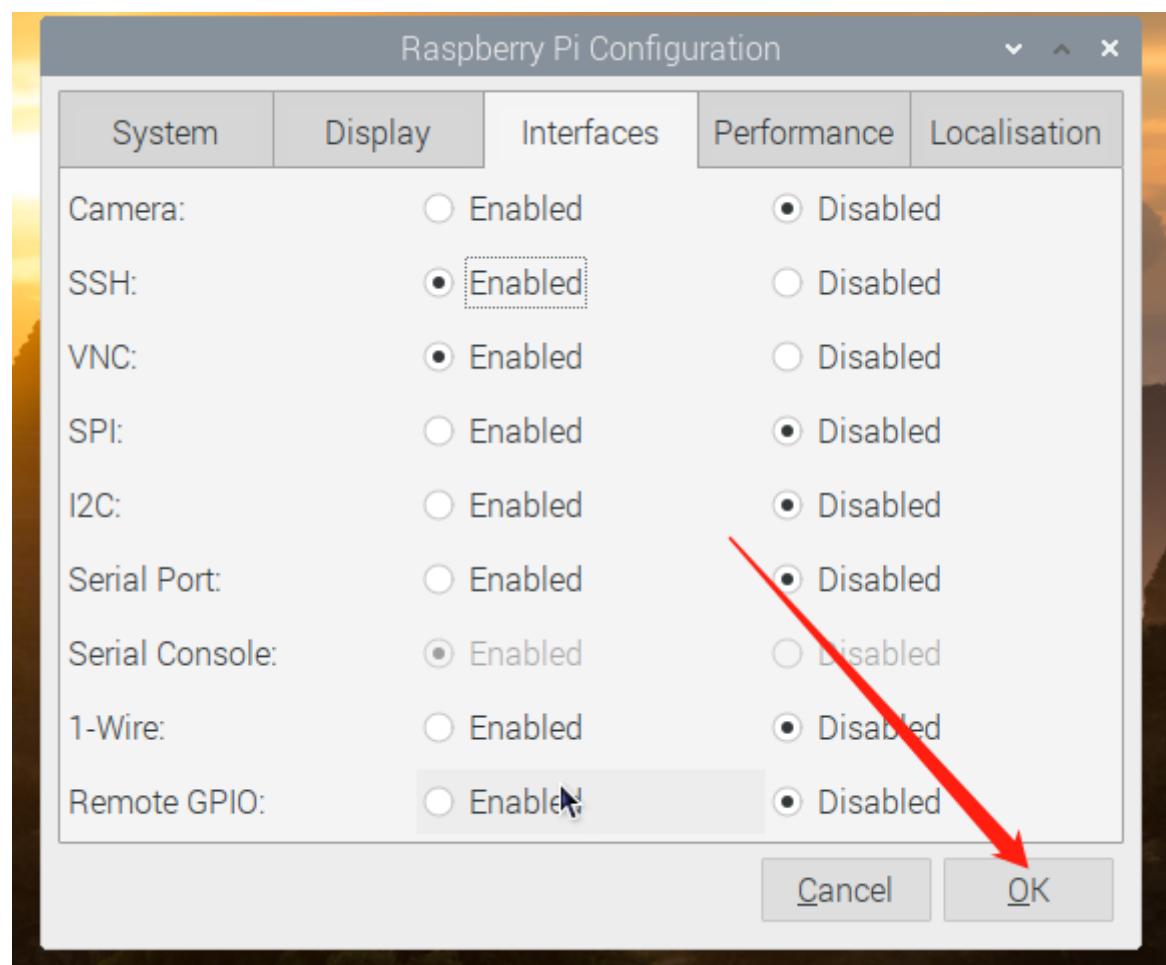
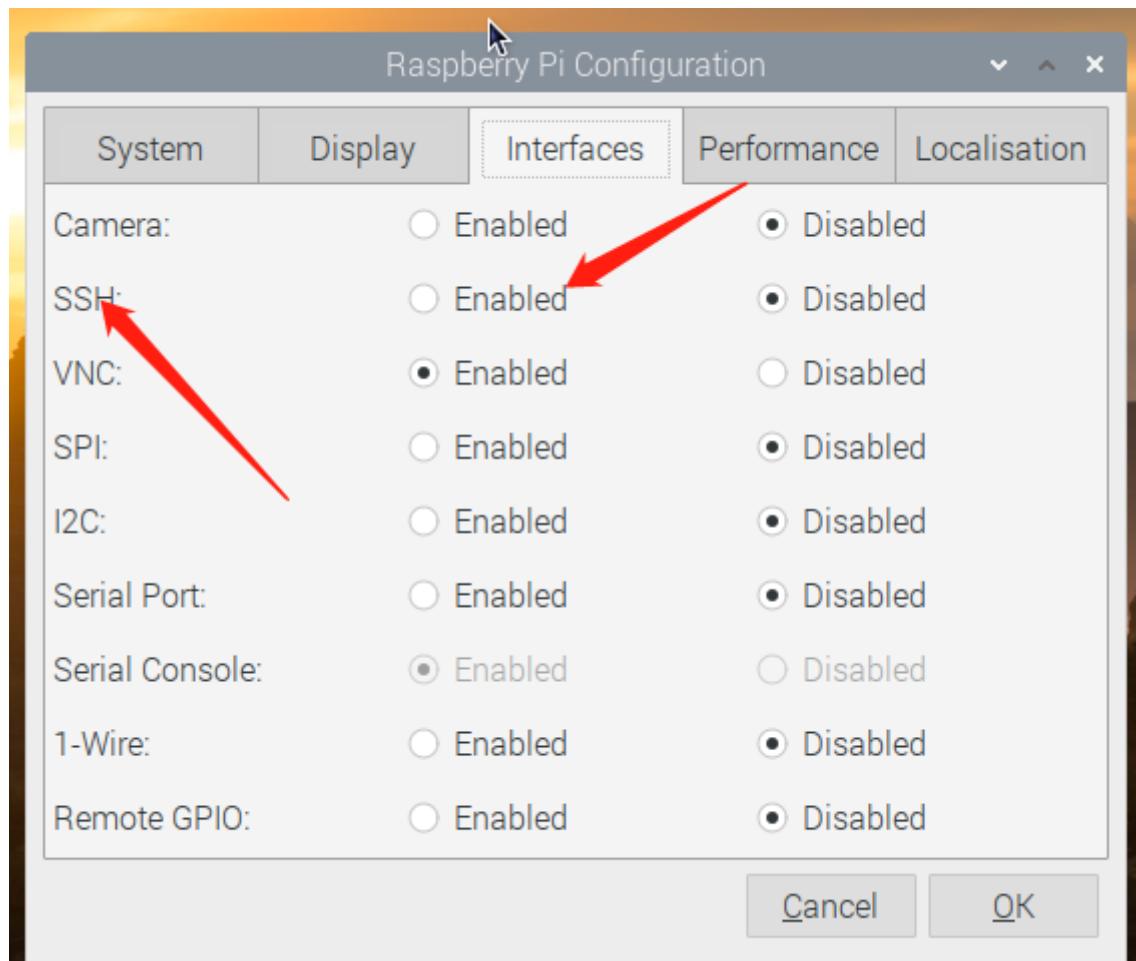
Type `help` to learn how to use Xshell prompt.
```

You need to turn on SSH for raspberry pi

(1) Graphical interface





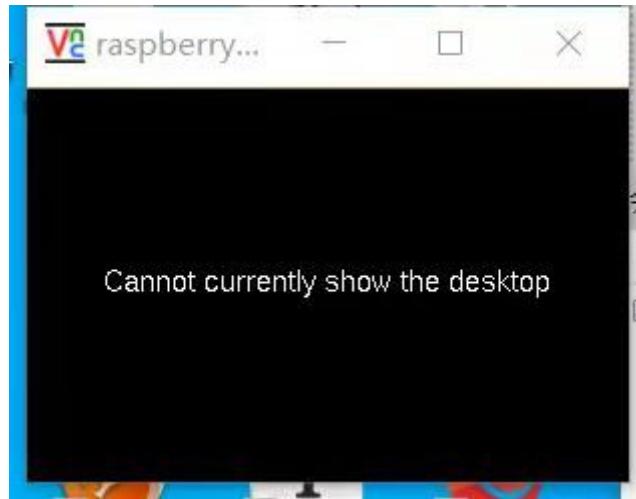


(2) Command Line

1. sudo raspi-config

2. Select 3 Interface Options

2.Cannot currently show the desktop



solution:

1. Using command `sudo raspi-config`

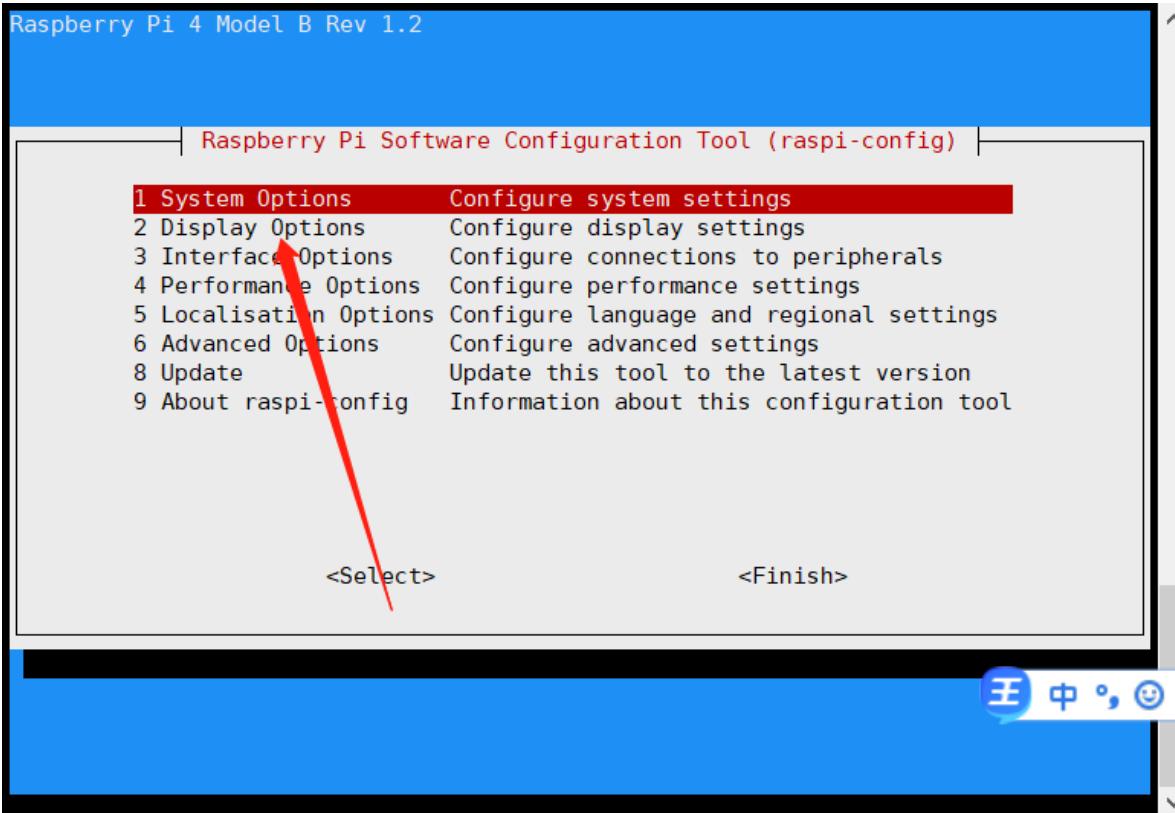
```
Connecting to 192.168.10.31:22...
Connection established.
To escape to local shell, press 'Ctrl+Alt+]'.

Linux raspberrypi 5.10.17-v7l+ #1414 SMP Fri Apr 30 13:20:47 BST 2021 armv7l

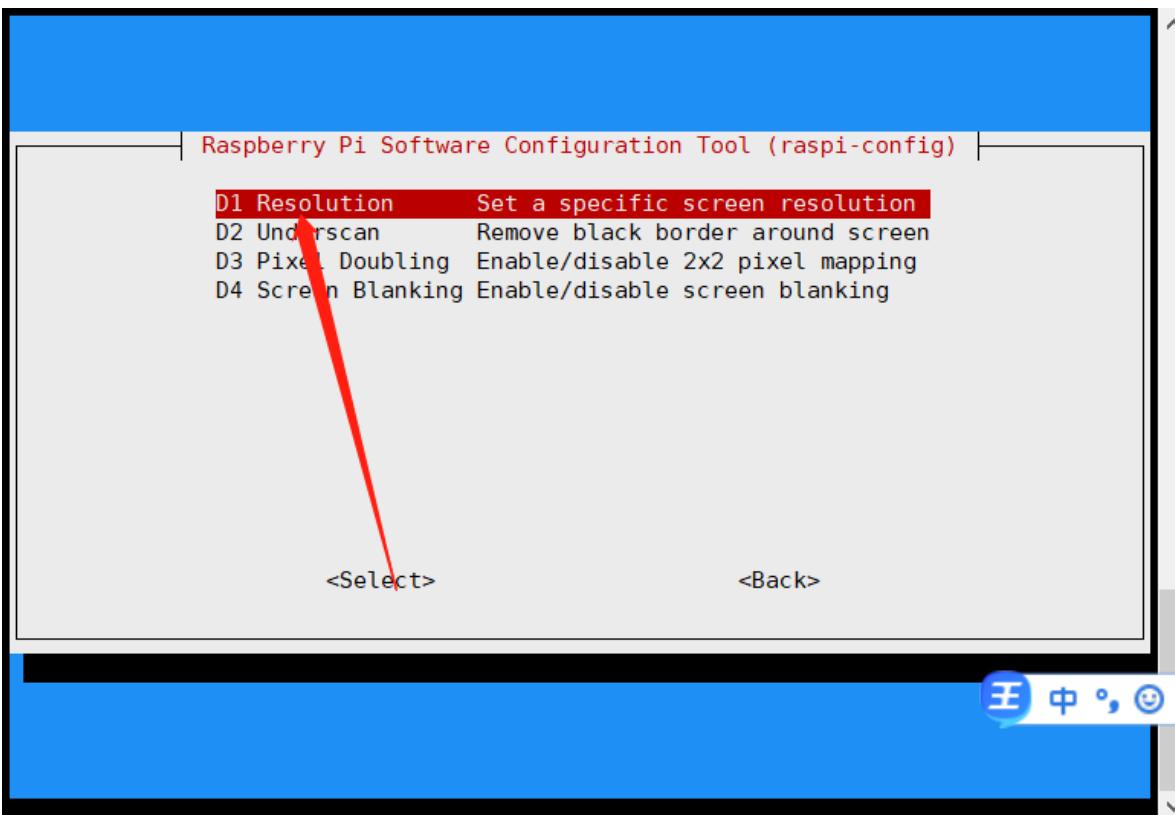
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Wed Jun  9 14:05:34 2021
pi@raspberrypi:~ $ sudo raspi-config
```

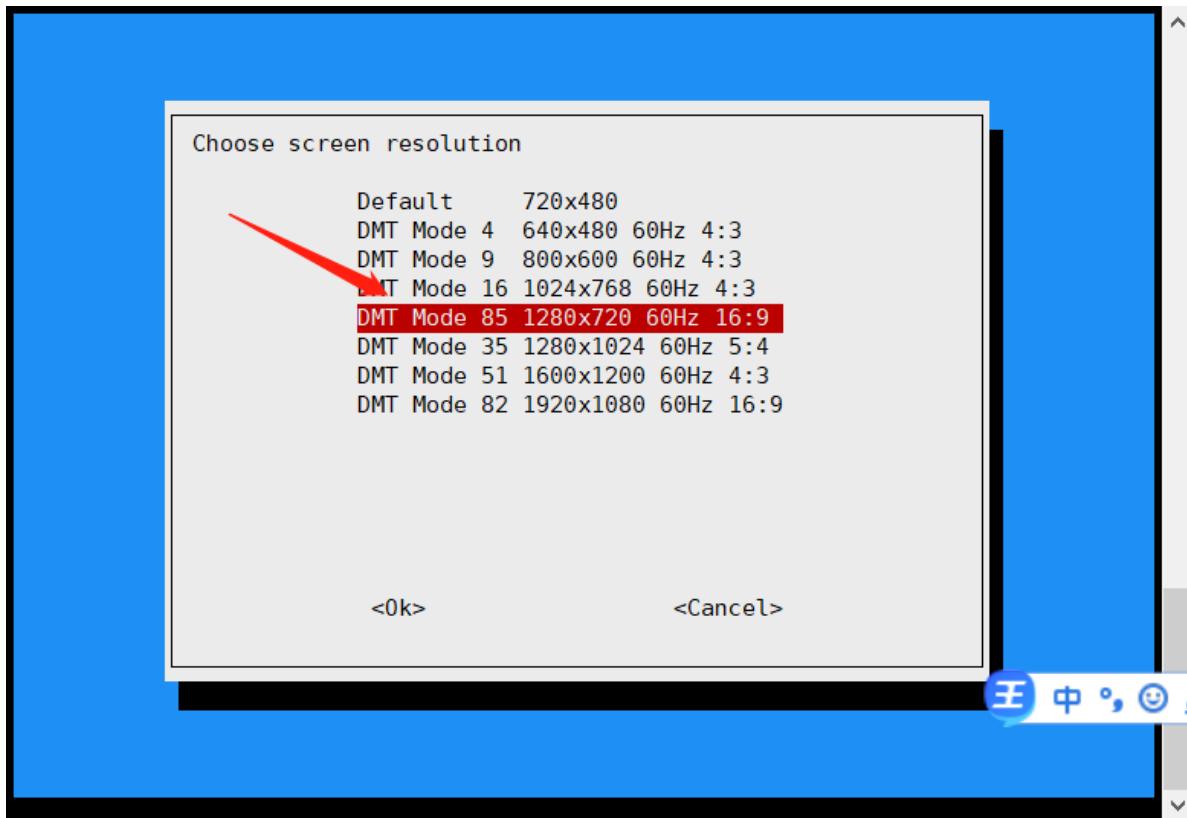
2. Select 2 Display Options



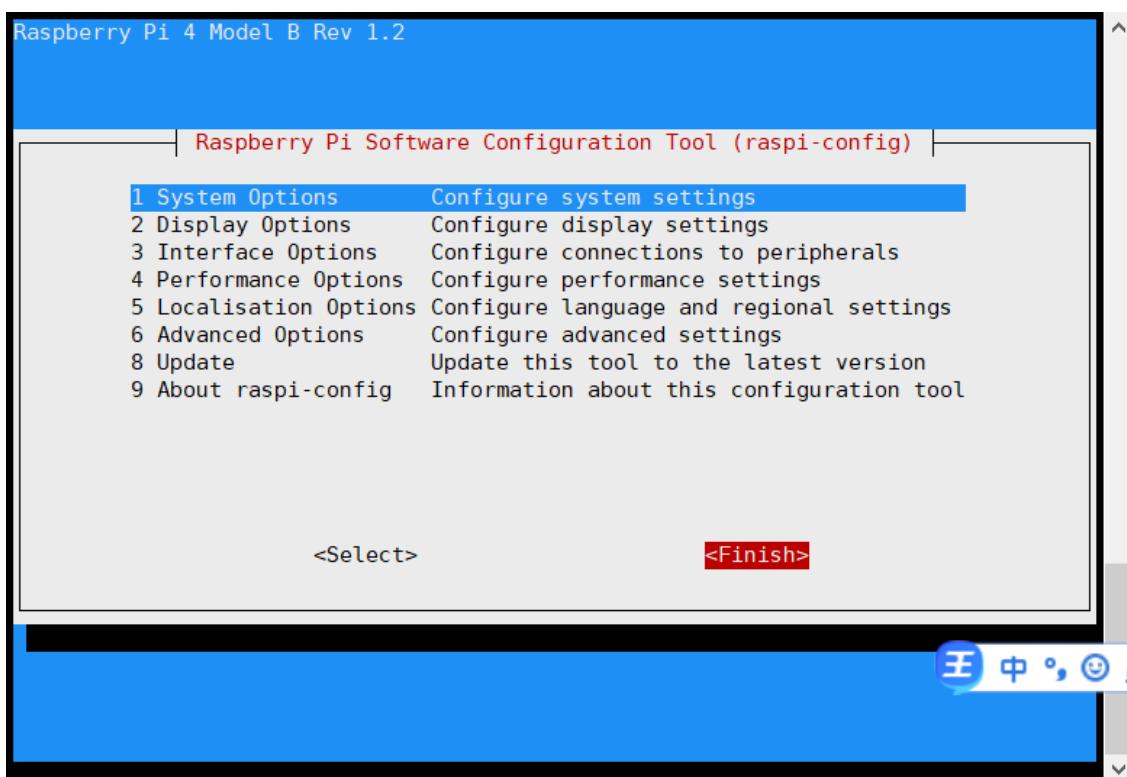
3. Select `D1 Resolution`

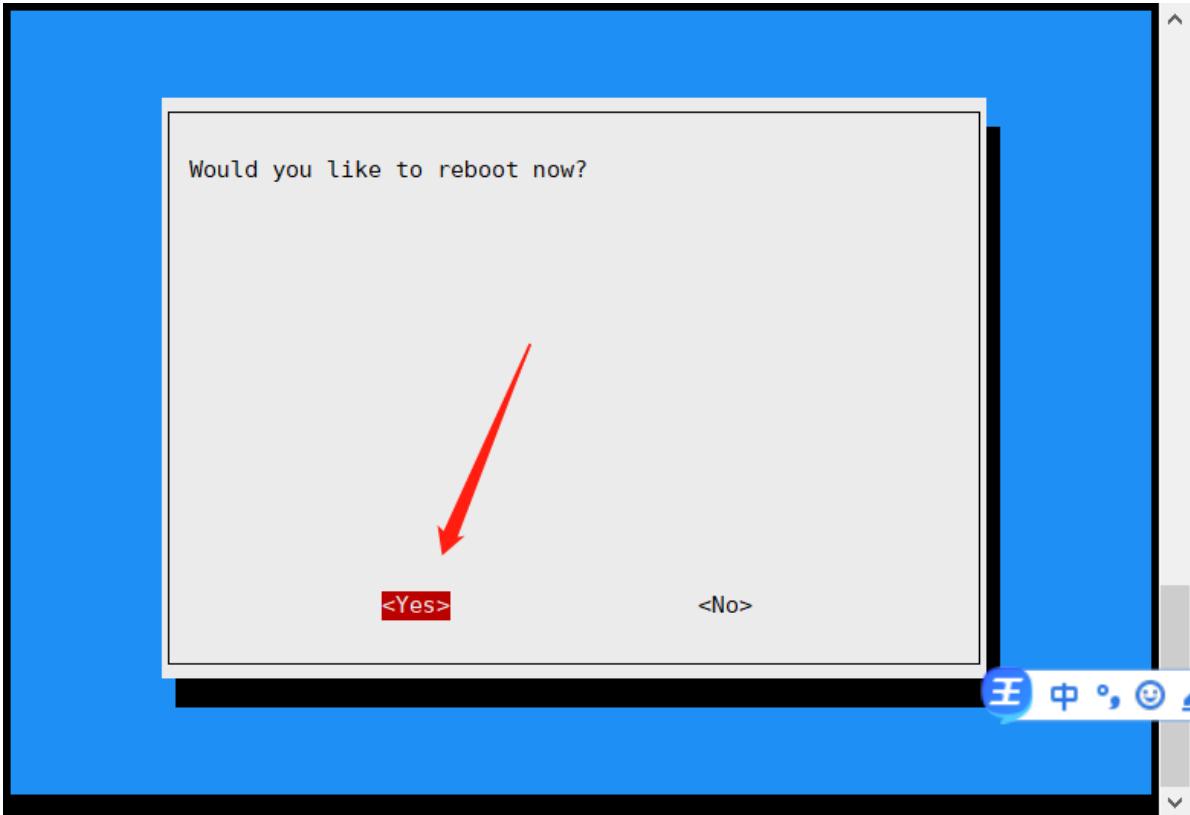


4. You can choose all but the default then `ok`



5. Select Finish then reboot





Pack ERROR: Could not start patchelf

```
pi@raspberrypi:~/Desktop/openncc_view $ linuxdeployqt OpenNCC -appimage
linuxdeployqt (commit ), build <local dev build> built on 2021-03-10 01:25:27 UTC
Not using FHS-like mode
app-binary: "/home/pi/Desktop/openncc_view/OpenNCC"
appDirPath: "/home/pi/Desktop/openncc_view"
relativeBinPath: "OpenNCC"
Keeping existing AppRun
ERROR: Could not start patchelf.
ERROR: Make sure it is installed on your $PATH.
ERROR: Error reading rpath with patchelf "libarmmem-v7l" : ""
ERROR: Error reading rpath with patchelf "libarmmem-v7l" : ""
```

Slove:

```
sudo apt-get install patchelf
```