

泰山派配置

刚刚下载完镜像，用ABD进入泰山派的根文件下，顺便设置了密码

```
C:\Users\覃>adb shell
root@localhost:/# su
root@localhost:/# passwd
New password:
Retype new password:
passwd: password updated successfully
```

更新apt

发现报错，有可能是没连接网络，先连接网络先

网络配置

搜寻WIFI

```
sudo nmcli dev wifi list # 查看可用 Wi-Fi
```

这里会搜不到手机热点，是因为我手机热点是5G频段，输入

```
iw list
```

查看有关频段支持的信息，发现了只有Band 1，也就是只支持2.4GHz 频段

```
* P2P-device
Band 1:
  Capabilities: 0x1020
                HT20
                Static SM Power Save
                RX HT20 SGI
                No RX STBC
                Max AMSDU length: 3839 bytes
                DSSS/CCK HT40
  Maximum RX AMPDU length 65535 bytes (exponent: 0x003)
  Minimum RX AMPDU time spacing: 16 usec (0x07)
  HT RX MCS rate indexes supported: 0-7
  HT TX MCS rate indexes are undefined
  Bitrates (non-HT):
    * 1.0 Mbps
    * 2.0 Mbps (short preamble supported)
    * 5.5 Mbps (short preamble supported)
    * 11.0 Mbps (short preamble supported)
    * 6.0 Mbps
    * 9.0 Mbps
    * 12.0 Mbps
    * 18.0 Mbps
    * 24.0 Mbps
    * 36.0 Mbps
    * 48.0 Mbps
    * 54.0 Mbps
  Frequencies:
```

设置好2.4GHz频段后，重新查看WIFI

```
root@localhost:/# sudo nmcli dev wifi list
IN-USE  BSSID          SSID          MODE  CHAN  RATE      SIGNAL
66:37:BD:CF:5E:32  Redmi K50      Infra  4     130 Mbit/s 100
00:5C:C2:72:9F:98  桥本有菜      Infra  12    270 Mbit/s 100
7E:B5:66:C8:7A:E4  DIRECT-GUYSTONG-HANDSOMEsAR  Infra  12    130 Mbit/s 75
9A:D0:F5:FE:68:9A  stu.gpnu.edu.cn  Infra  5     130 Mbit/s 70
9A:D0:F5:FE:68:9B  GPNU.ZHMS      Infra  5     130 Mbit/s 69
FA:D0:F5:FE:71:31  GPNU.ZHMS      Infra  9     130 Mbit/s 57
FA:D0:F5:FE:71:30  stu.gpnu.edu.cn  Infra  9     130 Mbit/s 54
--More--|
```

这次出现了手机热点Redmi K50的名字开始连接WIFI

```
sudo nmcli dev wifi connect "RedmiK50" password "1234567890"
```

如果不行就重启一下开发板就行

```
<i dev wifi connect "RedmiK50" password "1234567890"
Device 'wlan0' successfully activated with 'b67362af-7326-4f29-b4a9-2161d01ea2d1'.
root@localhost:/# ifconfig
```

连接SSH

安装SSH

```
sudo apt update
sudo apt install openssh-client
sudo apt install openssh-server
```

配置SSH

```
sudo systemctl enable ssh
sudo systemctl start ssh
```

查看SSH状态

```
systemctl status sshd
```

查看开发板地址

```
ifconfig
```

```
Setting up openssh-client (1:8.2p1-4ubuntu0.11) ...
root@localhost:/# ifconfig
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 1242 bytes 101745 (101.7 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 1242 bytes 101745 (101.7 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

wlan0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.136.219 netmask 255.255.255.0 broadcast 192.168.136.255
    inet6 240e:47e:849:dada:c4d7:38dc:12ec:37a1 prefixlen 64 scopeid 0x0<global>
    inet6 240e:47e:849:dada:81f4:1755:eea6:dd07 prefixlen 64 scopeid 0x0<global>
    inet6 fe80::7775:def9:6798:efa2 prefixlen 64 scopeid 0x20<link>
    ether c0:f5:35:38:b3:06 txqueuelen 1000 (Ethernet)
    RX packets 11332 bytes 15615178 (15.6 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 7163 bytes 549711 (549.7 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

地址是192.168.136.219 在开发板先创建用户qin

```
sudo useradd -m qin
```

给qin用户sudo权限

```
usermod -sG sudo qin
```

切换到root用户给qin设置密码qwe 然后打开Xshell，ssh连接qin

```
The programs included with the Ubuntu system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.  
  
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by  
applicable law.  
  
/usr/bin/xauth: file /home/qin/.Xauthority does not exist  
$
```

连接成

功，开始安装ROS2

安装ROS2

创建工作空间

```
mkdir -p dev_ws/src
```

查看可下载版本

然后先看看自己的ubuntu版本，根据ROS2版本对应表来下载对应ROS2版本

```
cat /etc/issue
```

ROS2 版本对应表

ROS2 版本	版本代号	发布时间	维护截止时间	Ubuntu 版本
Ardent Apalone	ardent	2017.12	2018.12	Ubuntu 16.04 (Xenial Xerus)
Bouncy Bolson	bouncy	2018.7	2019.7	Ubuntu 16.04 (Xenial Xerus) 、 Ubuntu 18.04 (Bionic Beaver)
Crystal Clemmys	crystal	2018.12	2019.12	Ubuntu 18.04 (Bionic Beaver)
Dashing Diademata	dashing	2019.5	2021.5	Ubuntu 18.04 (Bionic Beaver)
Eloquent Elusor	eloquent	2019.11	2020.11	Ubuntu 18.04 (Bionic Beaver)
Foxy Fitzroy	foxy	2020.6	2023.5	Ubuntu 20.04 (Focal Fossa)
Galactic Geochelone	galactic	2021.5	2022.11	Ubuntu 20.04 (Focal Fossa)
Humble Hawksbill	humble	2022.5	2027.5	Ubuntu 22.04 (Jammy Jellyfish)

```
$ cat /etc/issue
Ubuntu 20.04.6 LTS \n \l
```

我们要下载的是foxy版本

```
wget http://fishros.com/install -O fishros && . fishros
```

之后一键安装即可，记得查看信息

```
命令提示符 - adb shell
[~][0.01s] CMD Result:successp.bash
3
4 欢迎使用一键配置ROS开发环境,本工具由作者小鱼提供
5 Run_CMD Task:[ls /opt/ros/*/setup.bash]
6 [~][0.01s] CMD Result:successp.bash
7
8 正在准备配置用户目录:/home/lckfb/.bashrc
9 当前系统包含1个ROS,已为您完成启动终端自动激活ROS环境,修改/home/lckfb/.bashrc可关闭
10
11 正在准备配置用户目录:/home/qin/.bashrc
12 当前系统包含1个ROS,已为您完成启动终端自动激活ROS环境,修改/home/qin/.bashrc可关闭
13
14 正在准备配置用户目录:/root/.bashrc
15 当前系统包含1个ROS,已为您完成启动终端自动激活ROS环境,修改/root/.bashrc可关闭
16
17 恭喜你,安装成功了,再附赠你机器人学习宝藏网站:鱼香社区:https://fishros.org.cn/forum
18 Run_CMD Task:[ls /opt/ros/foxy/setup.bash]
19 [~][0.01s] CMD Result:successp.bash
20
21 小鱼:黄黄的提示:您安装的是ROS2,ROS2是没有roscore的,请打开新终端输入ros2测试!小鱼制作了ROS2课程,关注公众号《鱼香ROS》即可获得~
22 欢迎加入机器人学习交流QQ群:438144612(入群口令:一键安装)
23 鱼香小铺正式开业,最低499可入手一台能建图会导航的移动机器人,淘宝搜店:鱼香ROS 或打开链接查看:https://item.taobao.com/item.htm?id=696573635888
24 如在使用过程中遇到问题,请打开:https://fishros.org.cn/forum 进行反馈
25
26 检测到本次运行出现失败命令,直接退出按Ctrl+C,按任意键上传日志并退出
27
28 错误日志上传成功,反馈码:1734952013
29 root@localhost:/home/qin/dev_ws#
30 root@localhost:/home/qin/dev_ws#
```

```
root@localhost: /home/qin  ×  +  ∨

root@localhost:/home/qin# ros2
usage: ros2
      [-h]
      Call
      `ros2
      <command>
      -h`
      for
      more
      detailed
      usage.
      ...

ros2 is an extensible command-line tool for ROS 2.

optional arguments:
  -h, --help
      show this
      help
      message and
      exit

Commands:
  action      Various action related sub-commands
  bag         Various rosbag related sub-commands
  component   Various component related sub-commands
  daemon      Various daemon related sub-commands
  doctor      Check ROS setup and other potential issues
  interface   Show information about ROS interfaces
  launch      Run a launch file
```

安装成功!!!

测试ROS2

安装示例包

```
sudo apt update
sudo apt install ros-foxy-demo-nodes-cpp ros-foxy-demo-nodes-py
```

配置ROS2环境

```
cd /home/qin/dev_ws/src # 进入src目录
ros2 pkg create demo_nodes_cpp --build-type ament_cmake # 创建包
ros2 pkg ros-foxy-demo-nodes-py --build-type ament_cmake # 创建包
cd /home/qin/dev_ws # 返回工作区根目录
colcon build # 构建工作区
export ROS_LOG_DIR=/tmp/ros_logs
```

目录结构

```
/home/qin/dev_ws/ ├── build/ ├── install/ ├── log/ └── src/ └── demo_nodes_cpp/ ├── CMakeLists.txt
└── package.xml └── src/ (源代码目录)
```

运行节点

```
ros2 run demo_nodes_cpp talker
```

![alt text](image-12.png)
运行成功!!!