Remote Login

This section introduces how to remotely access the development board from a personal computer (PC) via serial port or network (SSH&VNC).

0.Default Login Accounts

The RDK S100 system provides two default accounts for first-time users:

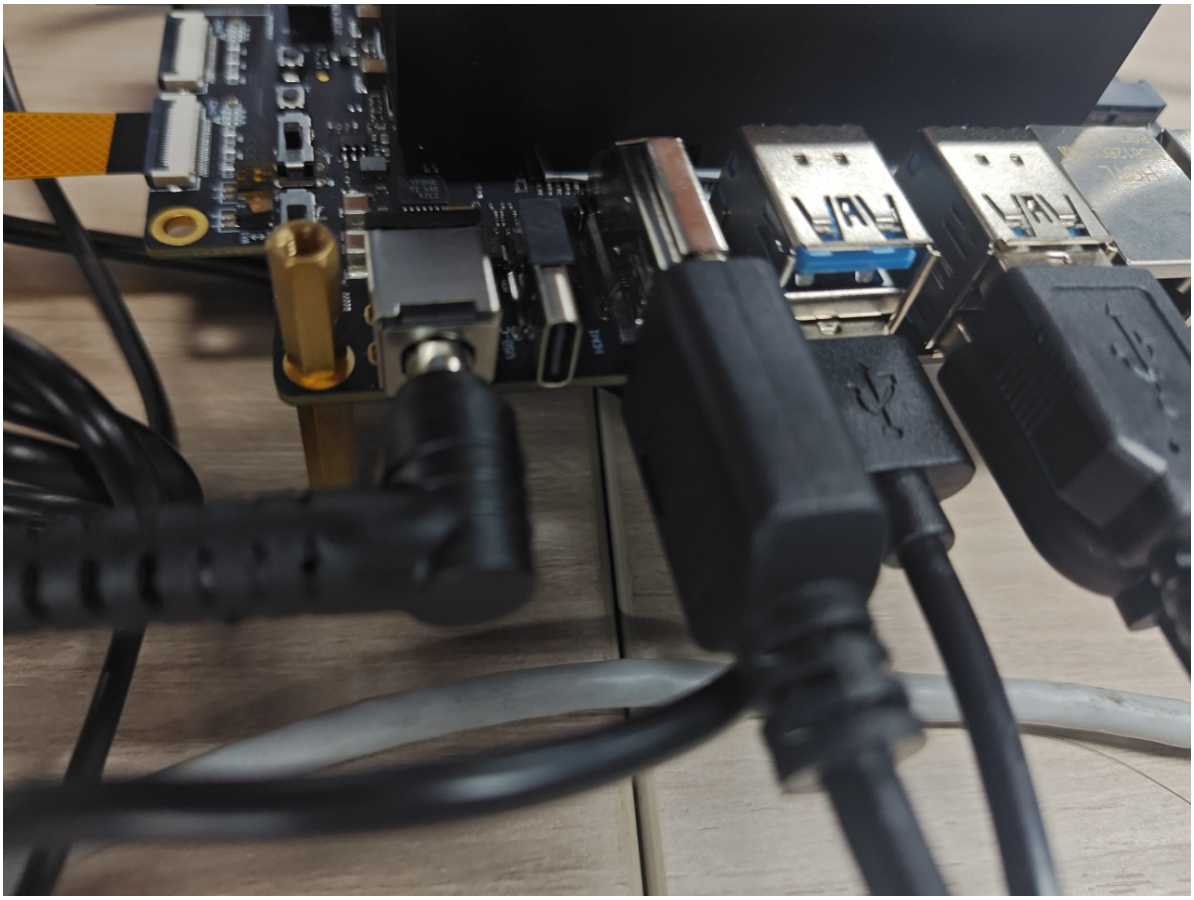
- **Standard user:** Username `sunrise`, password `sunrise`
- **Superuser (root):** Username `root`, password `root`

Before logging in remotely over the network, ensure the development board is connected to the network via wired Ethernet or wireless Wi-Fi, and that its IP address has been properly configured. For IP address information under both connection methods, refer to the descriptions below:

- Wired Ethernet:
  - The development board's eth1 interface uses a static IP by default: IP address `192.168.127.10`, subnet mask `255.255.255.0`, gateway `192.168.127.1`.
  - The eth0 interface uses DHCP by default; its IP address is typically assigned by the router. You can check the eth0 IP address via the `ifconfig` command in the device's command line.
- **Wireless Wi-Fi:** The development board's IP address is usually assigned by the router. You can check the wlan0 IP address using the `ifconfig` command in the device's command line.

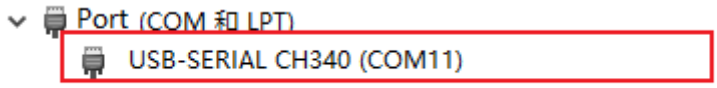
1.Serial Login

Before logging in via serial, ensure the development board's serial cable is correctly connected to your PC.



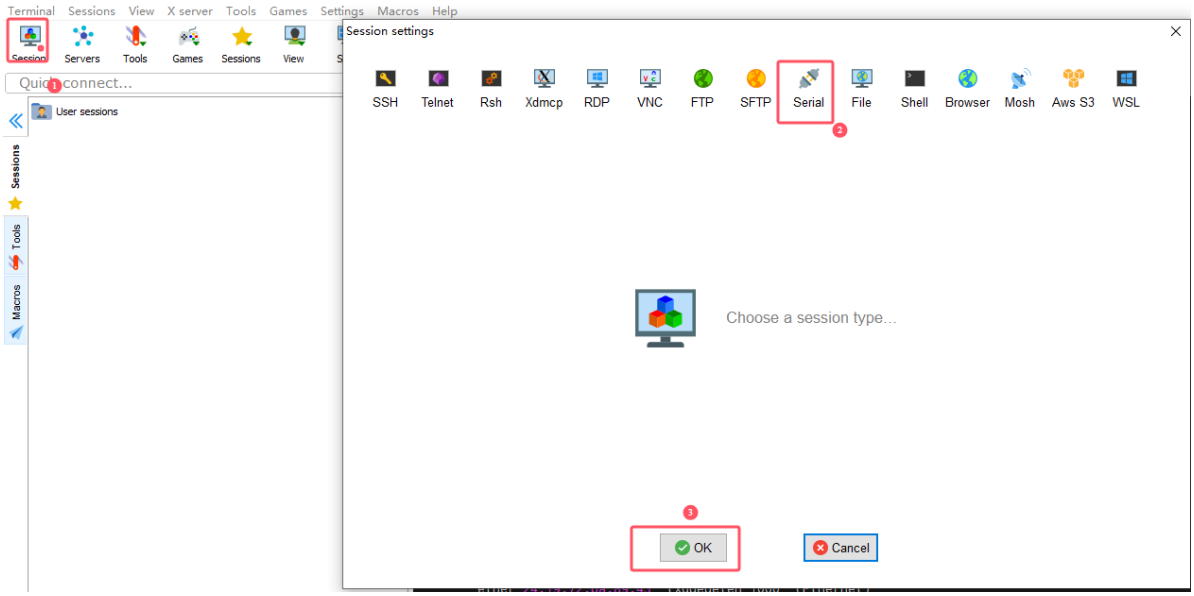
Serial login requires a PC terminal tool. Commonly used tools include `Putty`, `MobaXterm`, etc. Users can choose based on personal preference. The port configuration process is similar across different tools. Below, we use `MobaXterm` as an example to illustrate creating a new serial connection:

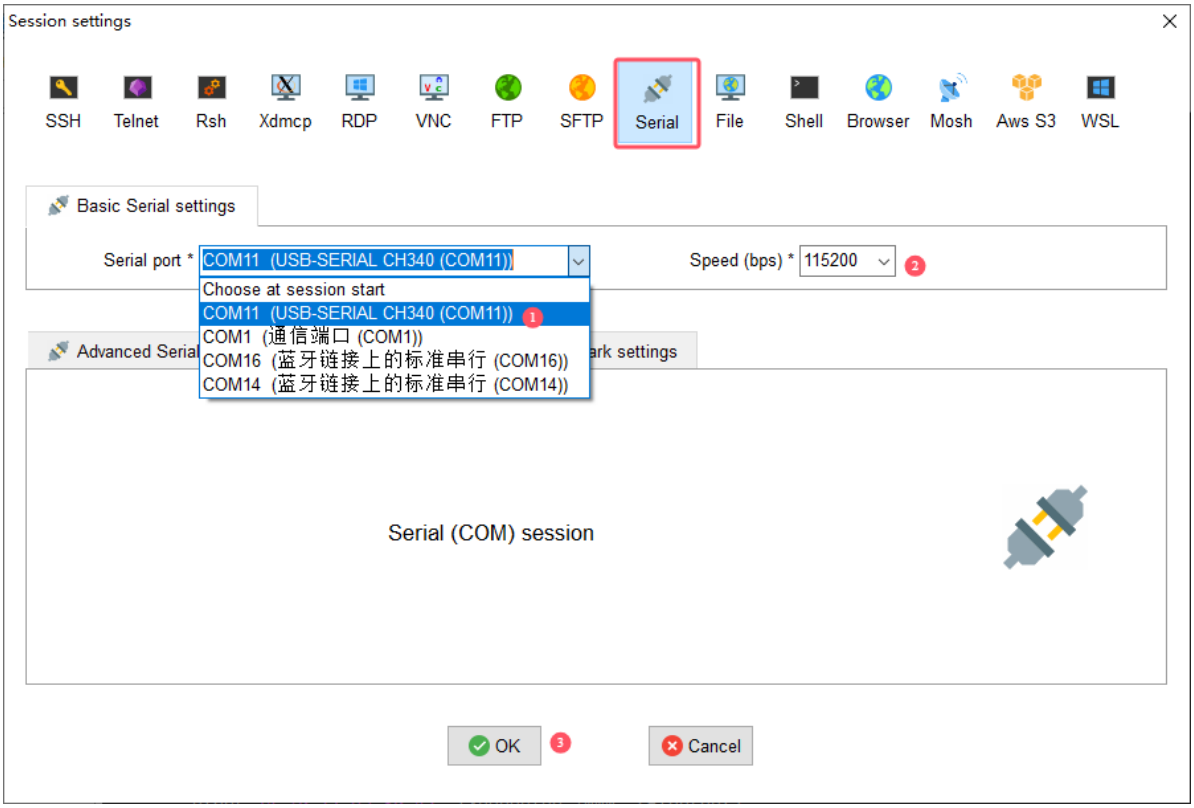
- When the USB-to-serial adapter is plugged into the PC for the first time, install the serial driver. After installation, the Device Manager should correctly recognize the serial port, as shown below:



- Open `MobaXterm`, click `Session`, then select `Serial`.
- Configure the port number (e.g., `COM11`). Use the actual COM port recognized by your PC.
- Set the serial port parameters as follows:

Parameter	Value
Baud rate	921600
Data bits	8
Parity	None
Stop bits	1
Flow Control	None





Press Enter to activate login. Enter username: root Password: root Log in

```
ubuntu login:
ubuntu login:
ubuntu login: root
Password:
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.1.83 aarch64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

Expanded Security Maintenance for Applications is not enabled.

36 updates can be applied immediately.
15 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

62 additional security updates can be applied with ESM Apps.
Learn more about enabling ESM Apps service at https://ubuntu.com/esm


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.

root@ubuntu:~#
```

At this point, you can use the `ifconfig` command to check the development board's IP addresses. Interfaces eth0/eth1 and wlan0 represent wired and wireless networks, respectively:

```
eth0: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        ether c8:30:76:63:2d:93  txqueuelen 1000  (Ethernet)
        RX packets 7547  bytes 2230733 (2.2 MB)
        RX errors 0  dropped 2  overruns 0  frame 0
        TX packets 1126  bytes 108615 (108.6 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
        device interrupt 93

eth1: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.127.10  netmask 255.255.255.0  broadcast 192.168.127.255
        inet6 fe80::e0b2:71ff:fea0:6ba7  prefixlen 64  scopeid 0x20<link>
        ether e2:b2:71:a0:6b:a7  txqueuelen 1000  (Ethernet)
        RX packets 43  bytes 3882 (3.8 KB)
        RX errors 0  dropped 1  overruns 0  frame 0
        TX packets 46  bytes 6234 (6.2 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
        device interrupt 99

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 46  bytes 6342 (6.3 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 46  bytes 6342 (6.3 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

wlan0: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        ether 28:d0:43:83:63:57  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
```

```
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

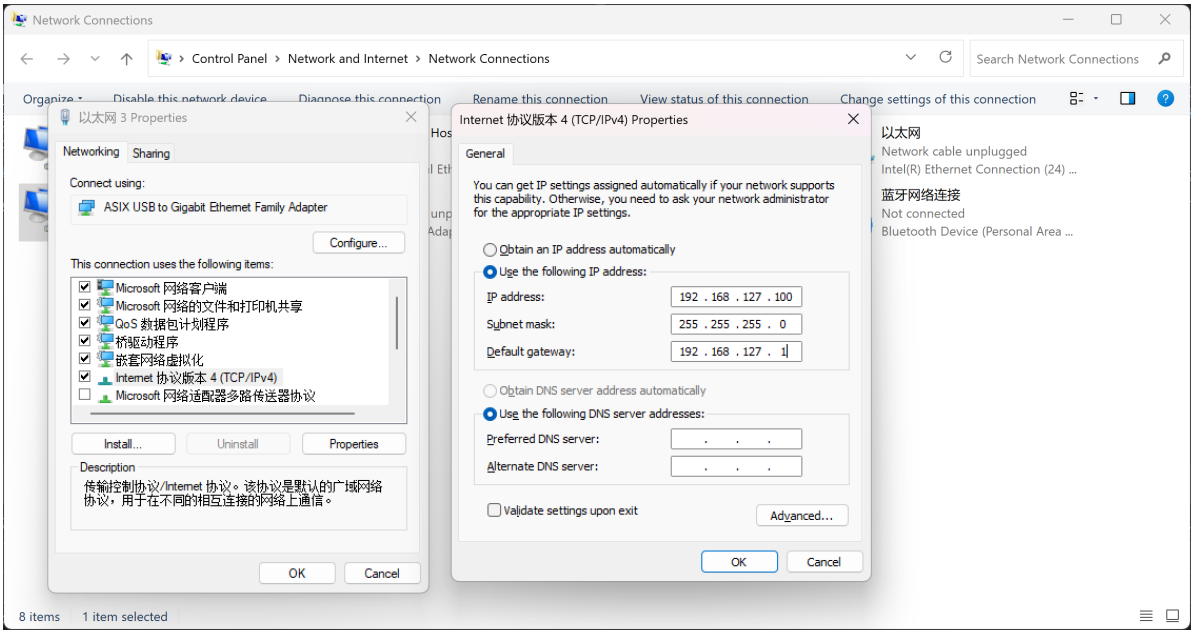
2.Network Status Verification

Before remote login, ensure network communication between your PC and the development board is functional. If you cannot `ping` the board, follow these steps to verify:

- Confirm that the IP addresses of both the development board and PC share the same first three octets (e.g., board: `192.168.127.10`, PC: `192.168.127.100`).
- Verify that subnet masks and gateway configurations match on both devices.
- Ensure the PC's firewall is disabled.

The outer Ethernet port (eth1) on the development board uses a static IP by default: `192.168.127.10`. For direct connection between the board and PC, configure the PC with a static IP in the same subnet. On Windows 10, follow these steps to set a static IP:

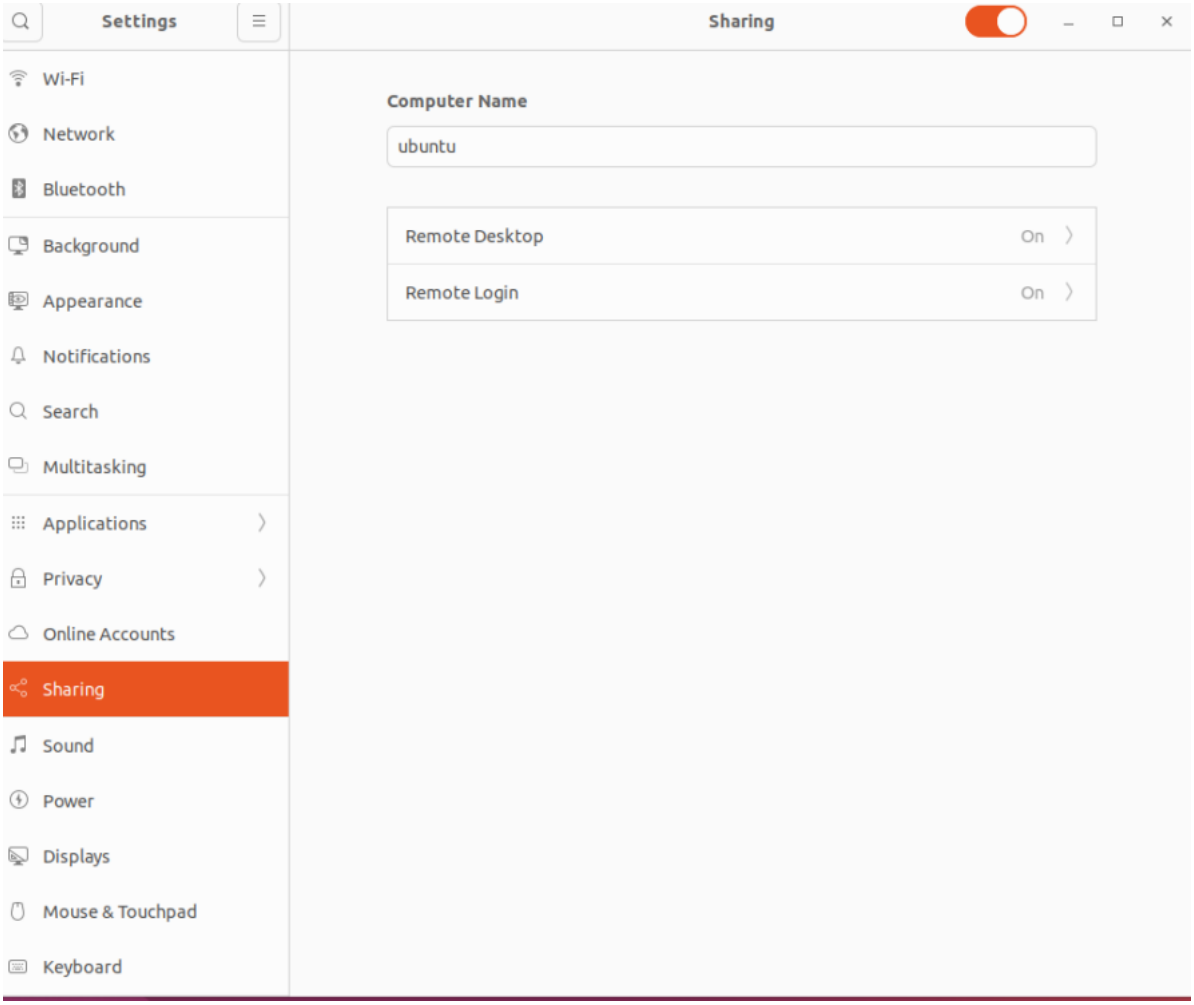
- In Network Connections, locate and double-click the relevant Ethernet adapter.
- Double-click "Internet Protocol Version 4 (TCP/IPv4)".
- Enter the network parameters in the fields highlighted in red below, then click OK.



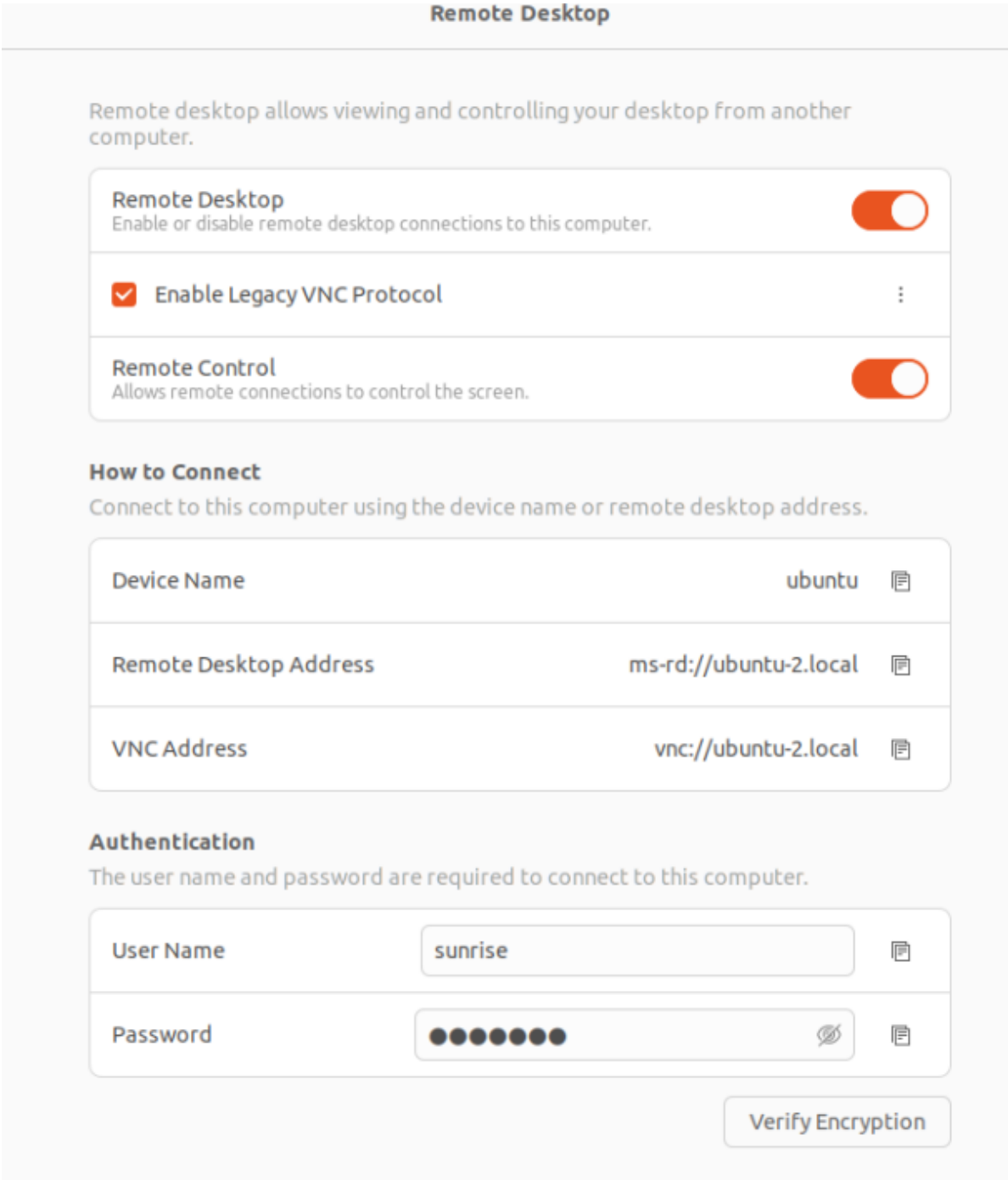
To configure the development board's wired network to use DHCP instead, refer to the [2.1 Network Configuration]

3.Enabling the VNC Service

Locate the RDK Configuration item in the menu bar and click to open it.



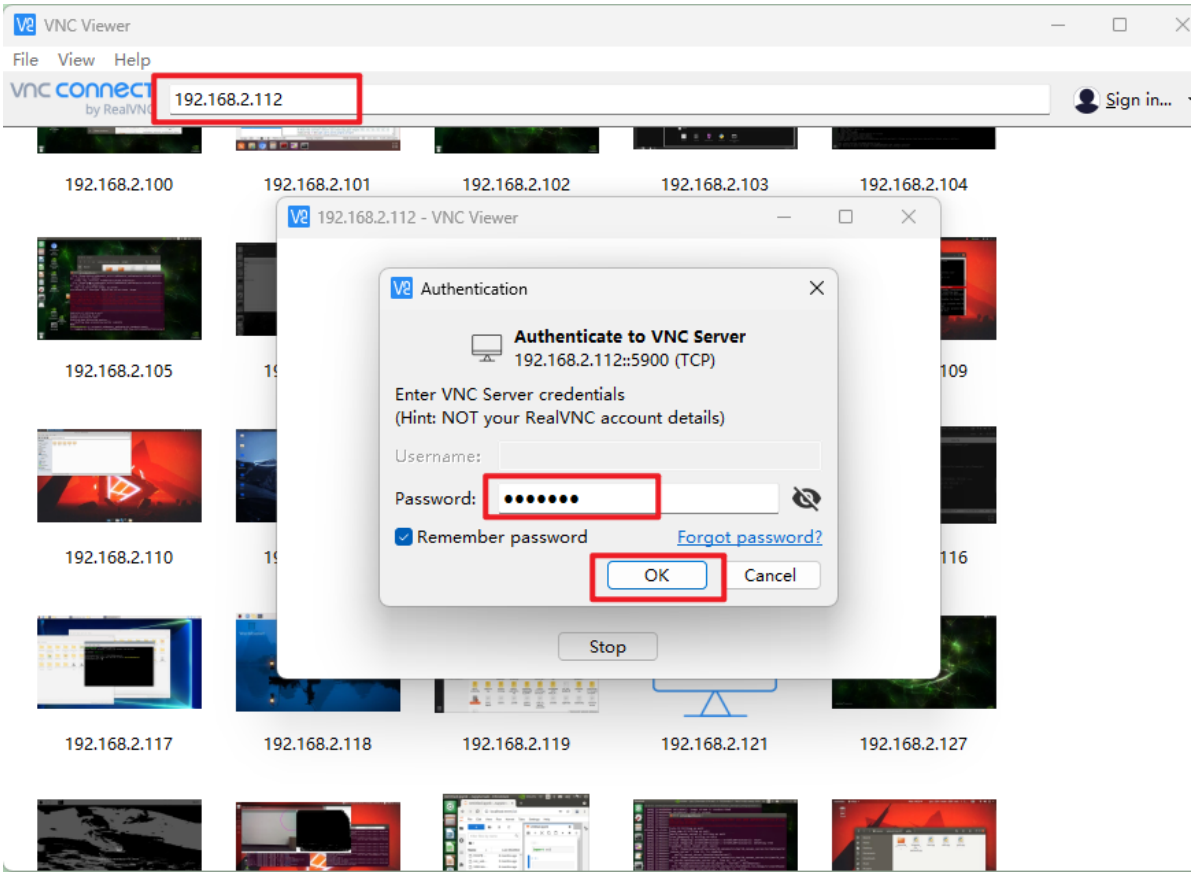
Select Interface Options -> VNC, and follow the prompts to enable or disable the VNC service. When enabling VNC, you will need to set a login password. The password must be an 8-character string consisting of numbers and letters.

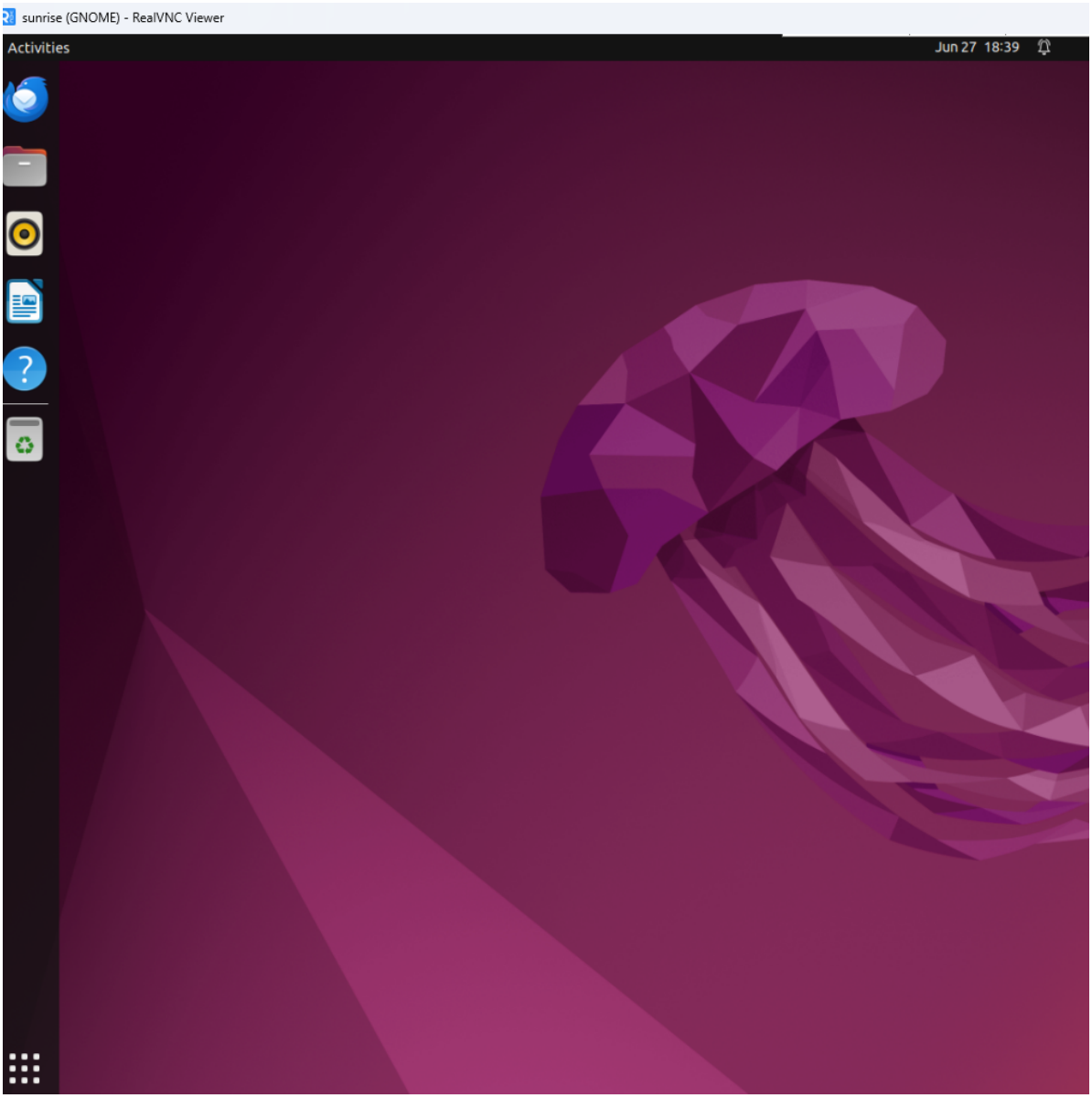


4.VNC Login

This section is for users of the Ubuntu Desktop system and describes how to log in remotely using `VNC Viewer`. `VNC Viewer` is a graphical desktop sharing software that allows you to remotely log in to and control the desktop of a device from your computer. This software allows you to view the development board's system desktop on your computer monitor and use your computer's mouse and keyboard for remote operation.

- Open `VNC Viewer`, enter the development board's IP address, enter the VNC login password you set in the previous section [Enabling VNC Service], and click OK to log in.


VNC Viewer
File View Help
192.168.2.112
Sign in...
192.168.2.100
192.168.2.101
192.168.2.102
192.168.2.103
192.168.2.104
192.168.2.105
192.168.2.112 - VNC Viewer
Authentication
Authenticate to VNC Server
192.168.2.112::5900 (TCP)
Enter VNC Server credentials
(Hint: NOT your RealVNC account details)
Username:
Password:
Remember password
Forgot password?
OK
Cancel
Stop
192.168.2.110
192.168.2.117
192.168.2.118
192.168.2.119
192.168.2.121
192.168.2.127

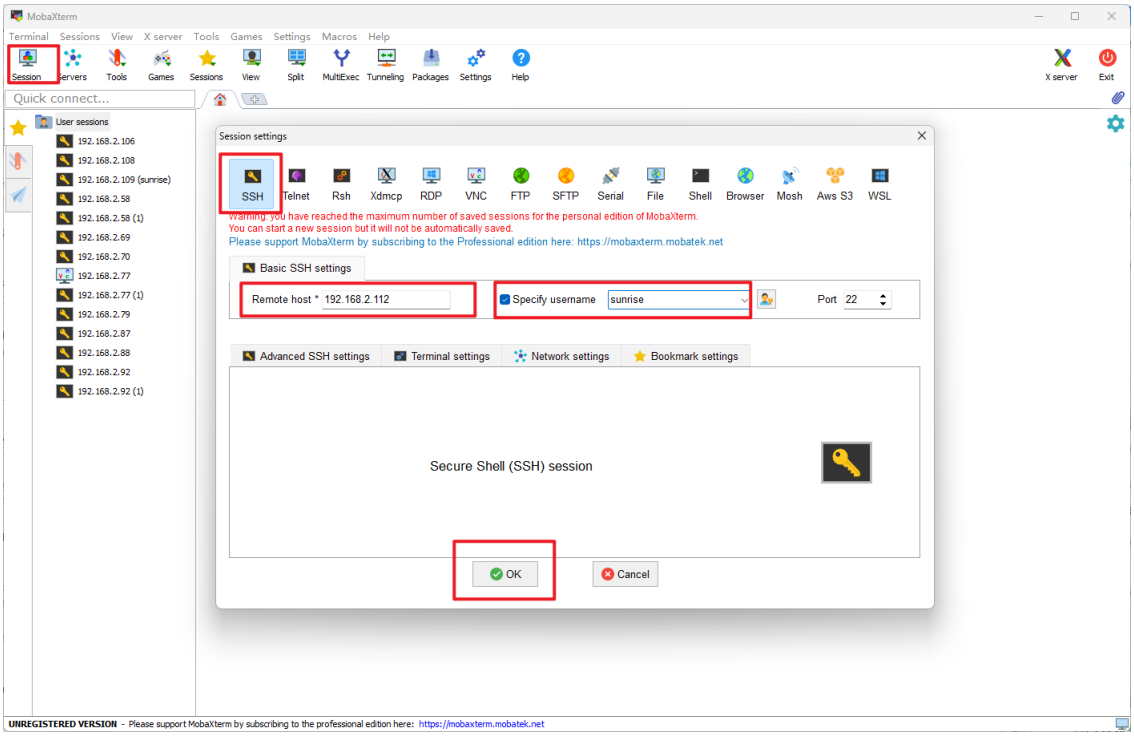

sunrise (GNOME) - RealVNC Viewer
Activities
Jun 27 18:39

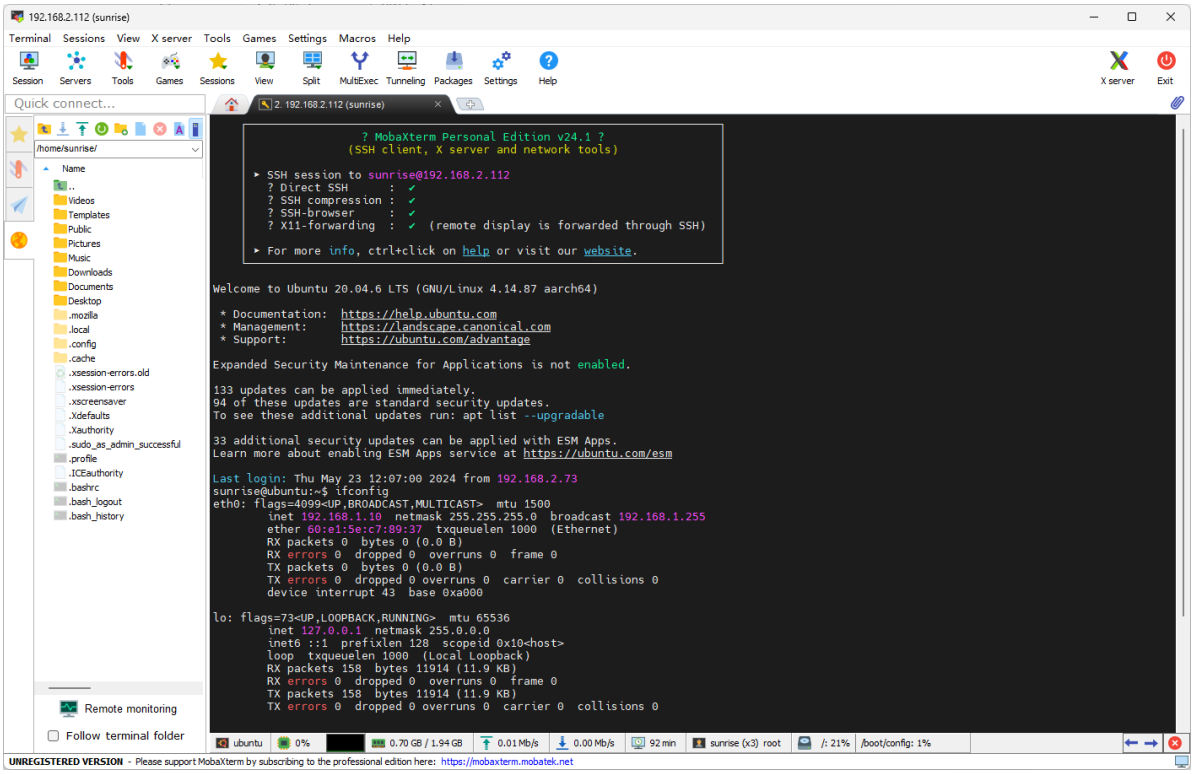
5.SSH Login

Terminal Software

In addition to logging in to the remote desktop via VNC, you can also log in to the development board via SSH. Below, we will use `MobaXterm` as an example to illustrate the process of creating a new SSH connection:

- Open `MobaXterm`, click `Session`, then select `SSH`.
- Enter the development board's IP address (e.g., `192.168.2.112`).
- Check `specify username` and enter `sunrise`.
- Click OK, then enter the username (`sunrise`) and password (`sunrise`) to log in.





Command Line

You can also log in via SSH from the command line:

1. Open a terminal window and enter the SSH command, e.g., `ssh sunrise@192.168.2.112`.
2. When prompted to confirm the connection, type `YES`.
3. Enter the password (`sunrise`) to complete login.