BananaPro/Pi:How to login to the system

From BananaPro/Pi

Contents

Using the HDMI cable

1. First, get the basic things you need: a Banana Pi with a prepared SD card containing an OS, an HDMI cable with Type A plug (13.9mm wide) for the B-Pi end, an HD-ready monitor, a micro USB power adapter, a keyboard and a mouse.

We'll be using the HDMI cable in the photo below.
 HDMI Cable

2. Connect the Banana Pi and the monitor using the HDMI cable as shown here:.
 HDMI Connection

3. Power on the Banana Pi by plugging in the mains adapter. You will then see the boot screen and eventually get to the desktop of the Banana Pi. (Remember, the first boot with a new OS on a card takes longer than usual - subsequent boots are quicker.) The photos below show first the Linux code scrolling up as it boots, and then the next screenshot shows the final main screen of the Raspbian OS (a variant of Debian 7 'Wheezy') for the Raspberry Pi which has been adapted for the Banana Pi.

Boot Screen Desktop of RP

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The AV cable is usually yellow and of the RCA connector/phono type – it normally comes bundled with similar red and white versions. Plug the yellow* one into the AV port (also yellow) of the Banana Pi, and the other end into the corresponding socket on your TV.

Power on the Banana Pi. If there is no display in the monitor, you may need check the script.bin file.

Please see here Here (https://web.archive.org/web/20221103002105/http://wiki.lemaker.org/index.php?title=Kernel_drivers_porting_and_configuration#Porting_AV_driver).

[* Only use the cable with the yellow plugs as it has a 75 ohm resistor built in – the white and red ones don't. **Please, someone correct or update this if it is inaccurate.**]

Edit by roses on 12/09/14 – I just tried both white and red cables direct into my TV while running an Android image and could see no difference – no advantage, no disadvantage. Could it make a difference if I was plugging them into a RCA-SCART adapter?? Answers on a postcard please.....

Using SSH

Using SSH to log in to the Banana Pi for remote operation is very convenient, safe and highly efficient. In addition, it is not necessary to even use a monitor linked to the Banana Pi via HDMI cable in some situations, for example, if the Banana Pi is acting as a home server. The SSH server is installed by default and starts during boot up on the 'Raspbian for Banana Pi' and 'Lubuntu for Banana Pi' operating systems. So in general, you don't need to install SSH on your Banana Pi.

1. If the SSH is not installed, you can install it using this command.

```
sudo apt-get install openssh-server
```

2. Check whether the SSH has started.

```
ps -e | grep ssh
```

If sshd is in the output, the SSH sever has started. If not, you should start it with your own command:

```
```

To stop the SSH server:

```
sudo /etc/init.d/ssh stop
```

Restart the SSH server:

```
sudo /etc/init.d/ssh restart
```

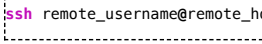
3. Configure the rc.local file so that you can set the SSH server to start during boot:

```
sudo nano /etc/rc.local
```

Add

```
/etc/init.d ssh start
```

before exit 0.
Now you need to make sure your Banana Pi and your computer are connected to the same local internet.

4. Log in to your Banana Pi.
4.1 In Windows, download a free SSH client such as PuTTY for remote login to the Banana Pi. Start PuTTY on your computer and then enter the IP address of your Banana Pi. Then click Open to connect to your Banana Pi. Finally, enter the user name and password to complete verification.
 Putty Configuration.png  Putty log in.png
4.2 In Ubuntu, it is easier to log in to your Banana Pi using the ssh command only::

```
ssh remote_username@remote_host
```

The remote username is the same user name that you use to log in to the Banana Pi such as pi. The remote_host is the Banana Pi's IP address.

Using VNC

In the previous section, we saw how SSH can be used to control remotely your Banana Pi without an HDMI display, as well as being safe, convenient and efficient. Another way you can try this is by using VNC to display the Banana Pi's desktop on your PC through its IP address.

When the VNC service is on, a .vnc file will be generated. This file contains the information about the VNC service. The location and path of .vnc is generally to be found at either ***/home/username*** or ***/root*** according to the user's permissions. The following steps will guide you in configuring VNC if you are the root user.

Server

1. Install the VNC Server

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2. Start the VNC Server and set the password

```
vncserver
```

```
You will require a password to access your desktops.

Password:
Verify:
Would you like to enter a view-only password (y/n)? n

New 'X' desktop is raspberrypi:1

Creating default startup script /home/pi/.vnc/xstartup
Starting applications specified in /home/pi/.vnc/xstartup
Log file is /home/pi/.vnc/raspberrypi:1.
```


This will require you to enter a VNC password (at least 6 characters) for the first time, and then it asks you if you would like to enter a view-only password (y/n), enter n to skip this step. You can check whether the VNC service is set up successfully.

```
root@cubieboard2:/# cd /root/.vnc/
root@cubieboard2:~/.vnc# ll
total 36
drwx------  2 root root 4096 Apr  4 03:12 ./
drwxr-xr-x 17 root root 4096 Apr  4 03:13 ../
-rw-r--r--  1 root root 5063 Apr  4 03:47 cubieboard2:1.log
-rw-r--r--  1 root root    4 Apr  4 03:12 cubieboard2:1.pid
-rw-r--r--  1 root root 8118 Apr  4 03:09 cubieboard2:2.log
-rw-------  1 root root    8 Apr  3 15:12 passwd
-rwxr-xr-x  1 root root  256 Apr  4 03:08 xstartup
```


The default port is 5901.

3. Configure the .vnc/xstartup script

You should configure the xstartup script to display the desk in VNC client. You can choose which desktop system session to use.
Edit the xstartup script to enable different desktop sessions.The location and path of .vnc is generally to be found at either ***/home/username*** or ***/root*** according to the user's permissions.

```
sudo nano /root/.vnc/xstartup
```

3.1 Gnome. The most powerful desktop session.

```
#!/bin/sh

xrdb $HOME/.Xresources
xsetroot -solid grey
x-terminal-emulator -geometry 80x24+10+10 -ls -title "$VNCDESKTOP Desktop" &
#x-window-manager &
#xfce4-session &
gome-session &
# Fix to make GNOME work
export XKL_XMODMAP_DISABLE=1
/etc/X11/Xsession
```


3.2 X-Window. The simplest desktop session.

```
xsetroot -solid grey
x-terminal-emulator -geometry 80x24+10+10 -ls -title "$VNCDESKTOP Desktop" &
x-window-manager &
#xfce4-session &
#gome-session &
# Fix to make GNOME work
#export XKL_XMODMAP_DISABLE=1
#/etc/X11/Xsession
```


3.3 Xfce 4. Linux like desktop session.

```
#!/bin/sh

xrdb $HOME/.Xresources
xsetroot -solid grey
x-terminal-emulator -geometry 80x24+10+10 -ls -title "$VNCDESKTOP Desktop" &
#x-window-manager &
xfce4-session &
#gome-session &
# Fix to make GNOME work
#export XKL_XMODMAP_DISABLE=1
#/etc/X11/Xsession
```


After modifying the xstartup script you should restart the VNC service to make the modification work. First kill the current VNC service.

```
vncserver -kill :1
```

```
root@cubieboard2:/# vncserver -kill :1
Killing Xtightvnc process ID 1665
```

And restart the modified vnc service.

```
vncserver :1
```

```
root@cubieboard2:/# vncserver :1

New 'X' desktop is cubieboard2:1

Starting applications specified in /root/.vnc/xstartup
Log file is /root/.vnc/cubieboard2:1.lo
```


Client

you can load the VNC-View from the website http://www.realvnc.com/download/viewer. In my Linux system computer,Use VNC-View on your computer to log in to your Banana Pi. Enter the Banana Pi's IP and port. The port of desktop 1 is 5901, desk 2 is 5902 and so on. You can use ifconfig command to get the IP address.

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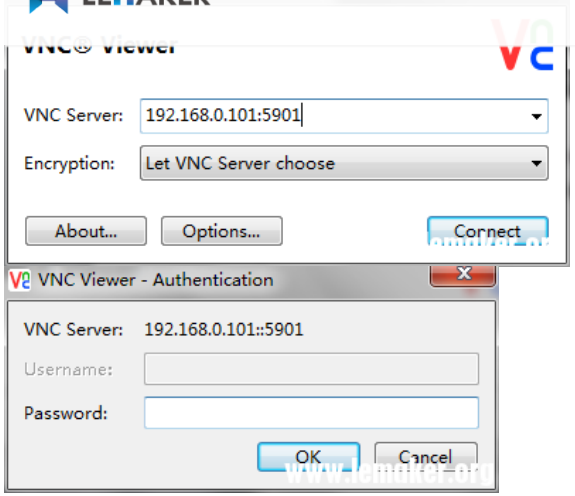


This is an X-Window display.

VNC9.png

On X-Window, if using the Chromium web browser, you should start the VNC service under a normal user and then use VNC-View to log in to the Banana Pi. Don't use the root user to start the VNC service.

Summary of Commands

The commands to start the VNC service:

```
vncserver
vncserver :1
tightvncserver
```

The commands to stop the VNC service:

```
vncserver -kill :1
tightvncserver -kill :1
```

The command to change the password:

```
ps -axjf | grep vnc
```

Using the TTL serial port

Server

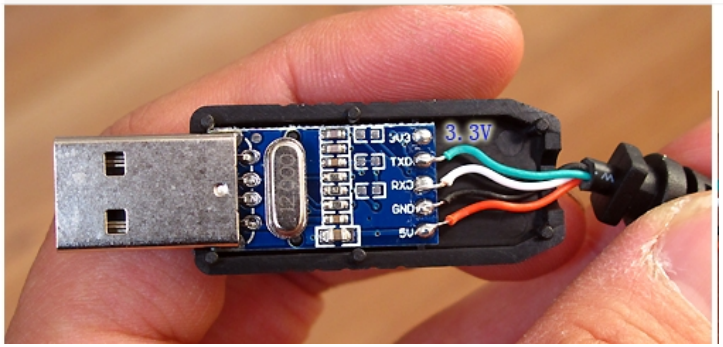
This section will introduce you to using the TTL serial port to log in to the Banana Pi/Pro.

1. Familiarise yourself with the pin assignments of the UART interface on the Banana Pi/Pro.

UART port Definition.png

2. Use the PL2303 to connect the Banana Pi/Pro and the computer.

The PL2303 operates as a bridge between a USB port and a standard RS232 serial port. There are pins for 3.3V,



The table below shows the connections between the Banana Pi/Pro and the PL2303..

The connection between Banana Pi/Pro and PL2303	
Pin on Banana Pi/Pro	Pin on PL2303
GND port	GND
TX port	RXD
RX port	TXD

Attention: 1.**TX** on one device is connected to **RX** on the other and vice versa. 2. The power line(red one, 5V) is **NOT** connected. The connection between Banana Pi/Pro and PL2303 is shown below.
PL2303connection.jpg

Client

Linux OS

In Linux, the driver for PL2303 is already in the system.
Install the minicom software.

```
sudo apt-get install minicom
```

When the installation has finished, setup the minicom:

```
sudo minicom -s
```

Sudominicom-s.png
Select the "Serial port setup" option
Aserialdevice.png
Modify the parameters :

```
A -   Serial Device:   /dev/ttyUSB0
F -   Hardware Flow Control:   No
```

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Savesetupasdfl.png
Save the setting and select "Exit from Minicom" to exit
Exitfromminicom.png
Then you input the command:

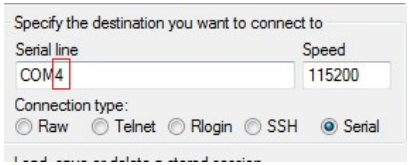
```
minicom
```

The screeshot of the shell become the shell interface of the BananaPi/Pro

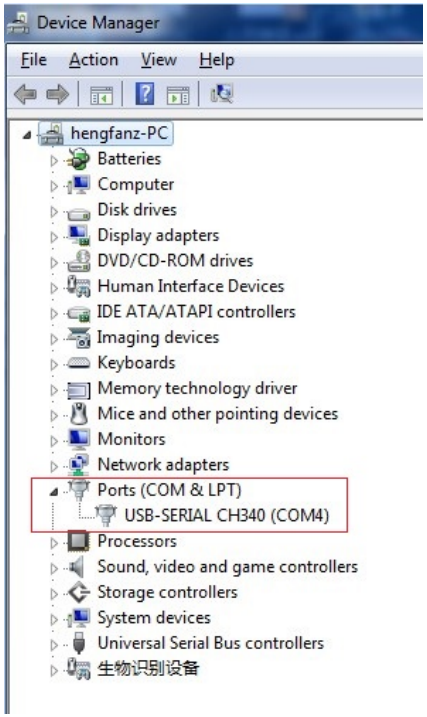
Windows OS

In Windows, the driver may already have been automatically installed. If not, you can install it yourself. You can try TeraTerm or Putty to use the TTL serial port.

(With thanks to native speaker “roses” for checking and upgrading this document)
For example,in the Putty Software,the configuration interface like as below:



but how to confirm which COM is connected with TTL,you can search in **DeviceManager**



the red box show that the connected COM is the COM4.