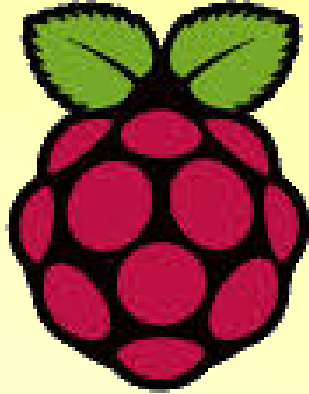


Raspberry Pi



By Declan Fox

Raspberry Pi

As we can't bring flat screen TVs in to CoderDojo with us we have to find another way of controlling our Raspberry Pi.

Headless operation is when log in to one computer from another.

We are going to use SSH and VNC to connect to our Pi.

Headless operation

What you will need

1. Raspberry Pi
2. SD Card (4GB+)
3. Power source (Android charger)
4. Patch cable(Ethernet cable)
5. Laptop/PC and SD card reader

Set up SD card

Step 1.

Download Raspbian Wheezy from

<http://www.raspberrypi.org/downloads/>



Set up SD card

Step2.

Download win32diskimager from

<http://sourceforge.net/projects/win32diskimager/>

Step 3.

Extract the executable from the zip file and run the Win32DiskImager utility

Set up SD card

Step 4.

Select the image file(Raspbian) and unzip it.

Step 5.

Select the drive letter of the SD card in the device box. **Be careful to select the correct drive; if you get the wrong one you can destroy your data on the computer's hard disk!**

Set up SD card

Step 6.

Click Write and wait for the write to complete.

Step 7.

Exit the imager and eject the SD card.

Connect your RPi

Step 1.

Download and install Putty from

<http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>

Step 2.

Download and install Advanced IP

Scanner from <http://www.advanced-ip-scanner.com/>

Connect your RPi

Step 3.

Connect your Patch cable to your laptop and your Raspberry Pi.

Step 4.

Power up your Raspberry Pi.

Connect your RPi

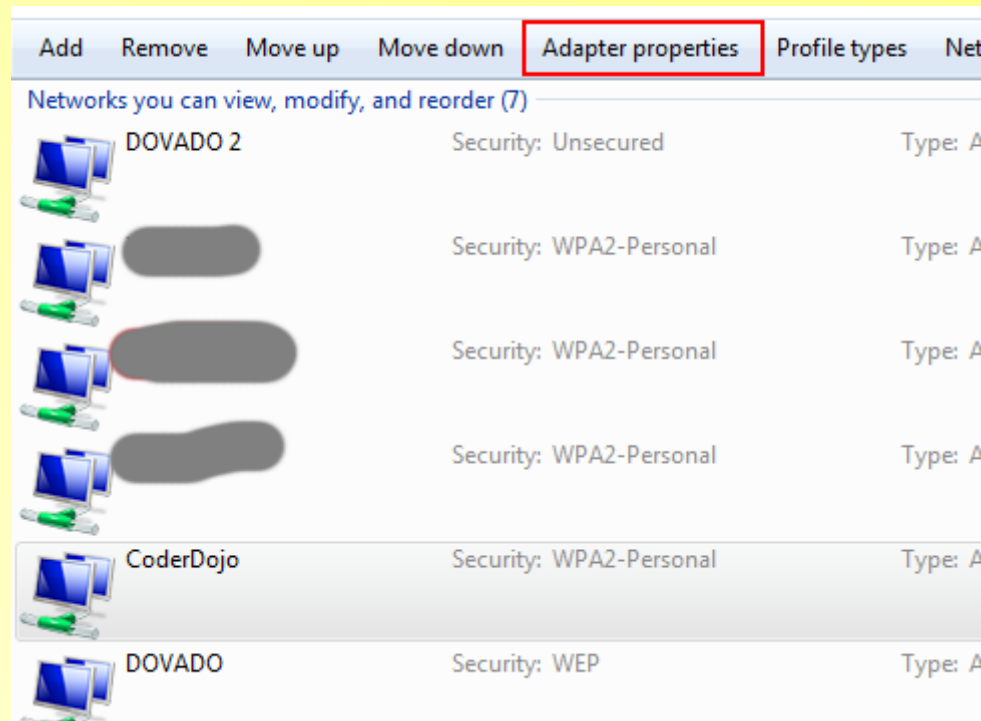
Step 5.

On your laptop click on the

Start orb >> Control panel >> Network
and Internet >> Network and Sharing
Centre >> Manage wireless networks

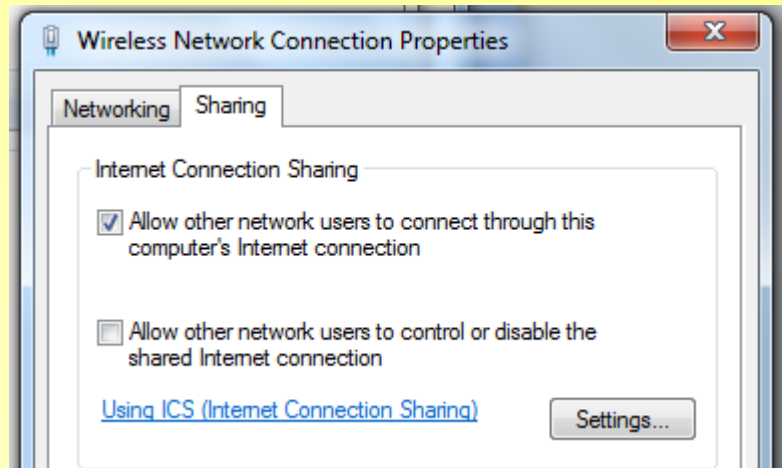
Select your Wi Fi connection and click on
adapter Properties.

Connect your RPi



Connect your RPi

On the pop up window click on the sharing tab.



Tick Allow other network users to connect through this computer's internet connection.

Connect your RPi

Step 6.

Start Advanced IP scanner and click the Scan button.

Your Raspberry Pi should show up on the list of connected devices.

If your Raspberry Pi doesn't show up you may set up a network bridge.

Connect your RPi

Setting up a [network bridge](#)

Make sure that you untick the check box for sharing your connection then follow the instructions [here](#)

Then use the ip scanner as before.

Important

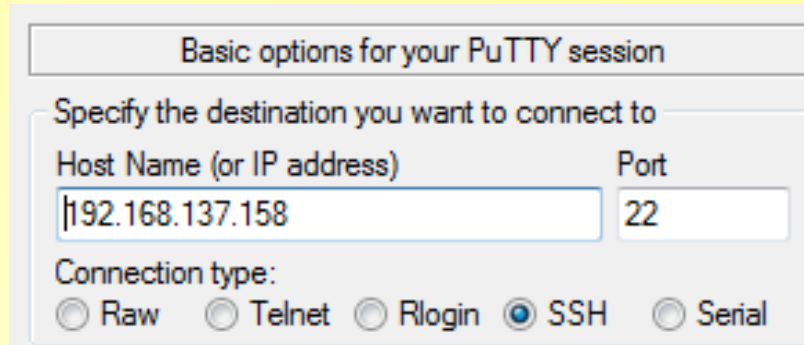
Make sure you delete the bridge when you're finished as it's a big security risk.

Raspberry Pi

Step 7.

Start Putty

Type in your Rpi's IP address and click open



Basic options for your PuTTY session

Specify the destination you want to connect to

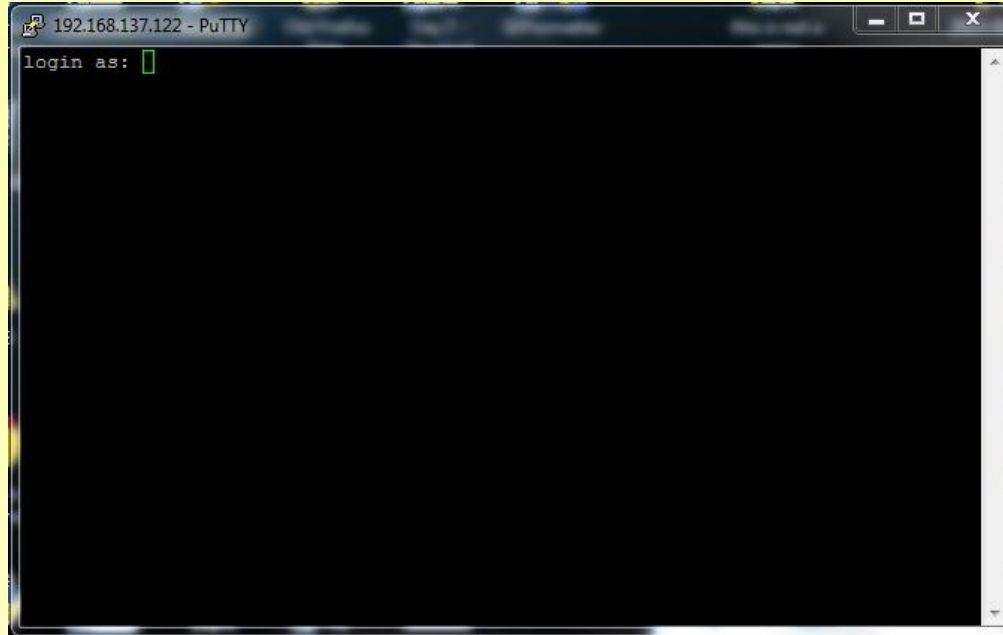
Host Name (or IP address)	Port
192.168.137.158	22

Connection type:

☐ Raw ☐ Telnet ☐ Rlogin ☒ SSH ☐ Serial

Raspberry Pi

Step 8.

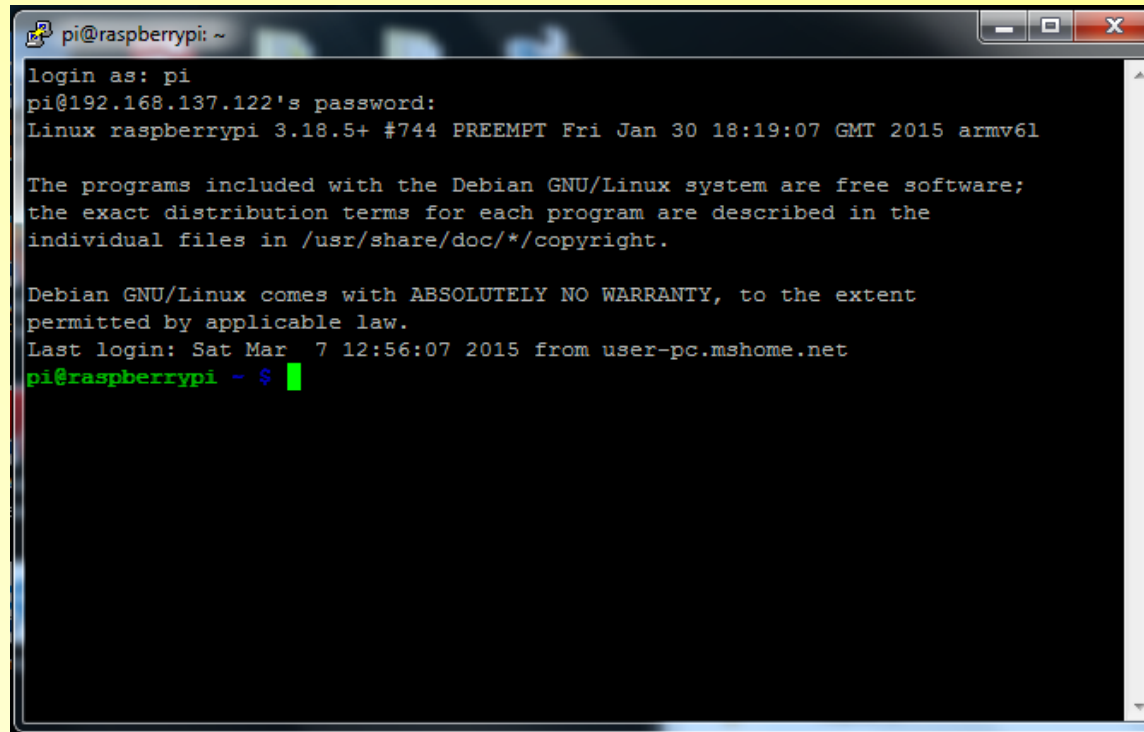


The default login is pi

The default password is raspberry

Raspberry Pi

You should now be logged into your Raspberry Pi

A terminal window titled 'pi@raspberrypi: ~' with standard window controls. The terminal text shows a successful login for user 'pi' at IP '192.168.137.122'. It displays the Linux version '3.18.5+', kernel 'PREEMPT', and date/time 'Fri Jan 30 18:19:07 GMT 2015 armv6l'. It also shows the Debian GNU/Linux license notice and the last login time 'Sat Mar 7 12:56:07 2015 from user-pc.mshome.net'. The prompt is 'pi@raspberrypi ~ \$' with a green cursor.

```
pi@raspberrypi: ~
login as: pi
pi@192.168.137.122's password:
Linux raspberrypi 3.18.5+ #744 PREEMPT Fri Jan 30 18:19:07 GMT 2015 armv6l

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: Sat Mar  7 12:56:07 2015 from user-pc.mshome.net
pi@raspberrypi ~ $
```

Raspberry Pi

Next we're going to set up, and log in to, a remote desktop.

VNC is a graphical desktop sharing system that allows you to remotely control the desktop interface of one computer from another. It transmits the keyboard and mouse events from the controller, and receives updates to the screen over the network from the remote host.

Raspberry Pi

Step 1.

Install TightVNC on your Raspberry Pi

```
pi@raspberrypi ~ $ sudo apt-get update
```

```
pi@raspberrypi ~ $ sudo apt-get install tightvncserver
```

Raspberry Pi

Step 2.

To install TightVNC Viewer on your laptop go to <http://www.tightvnc.com/> , download and install the version for your computer.

You just need to install the Viewer only

Raspberry Pi

Step 3.

Start TightVNC on your Raspberry Pi

```
pi@raspberrypi ~ $ /usr/bin/tightvncserver
```

```
New 'X' desktop is raspberrypi:1
```

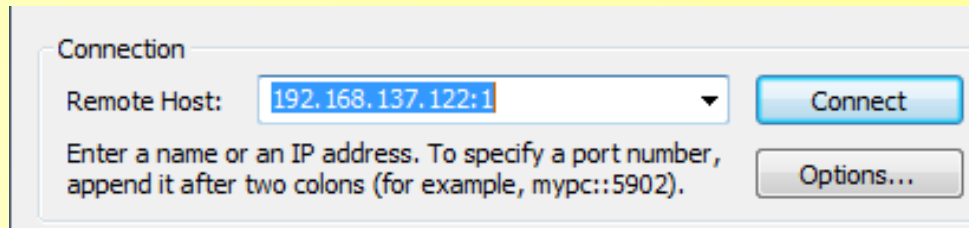
```
Starting applications specified in /home/pi/.vnc/xstartup  
Log file is /home/pi/.vnc/raspberrypi:1.log
```

Take note of the number following raspberrypi this is the number of the desktop, you'll need this to connect. Set up a password

Raspberry Pi

Step 4.

Start TightVNC on your laptop

A screenshot of the TightVNC Connection dialog box. The dialog has a title bar that says "Connection". Inside, there is a label "Remote Host:" followed by a text input field containing the IP address "192.168.137.122:1". To the right of the input field is a blue "Connect" button. Below the input field is a line of instructional text: "Enter a name or an IP address. To specify a port number, append it after two colons (for example, mypc::5902)." To the right of this text is a grey "Options..." button.

Connection

Remote Host: 192.168.137.122:1

Enter a name or an IP address. To specify a port number, append it after two colons (for example, mypc::5902).

Connect

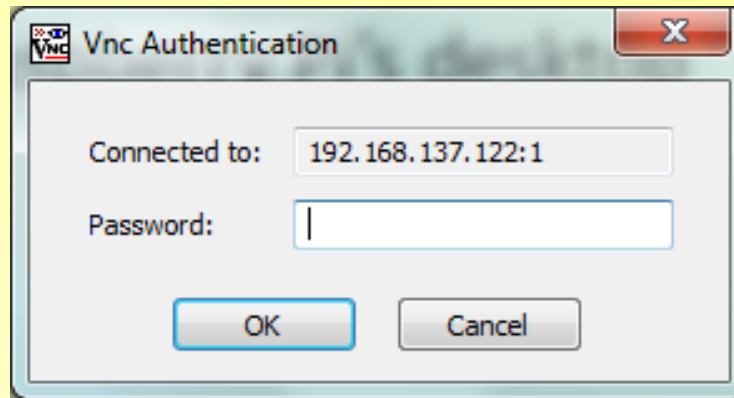
Options...

Enter your ip address followed by your desktop number and click connect.

Raspberry Pi

Step 5.

Enter your password and click OK



You should now be connected to your Raspberry Pi's desktop