Raspberry Pi Zero W Headless Setup Guide ---------- Created By Braden C-G

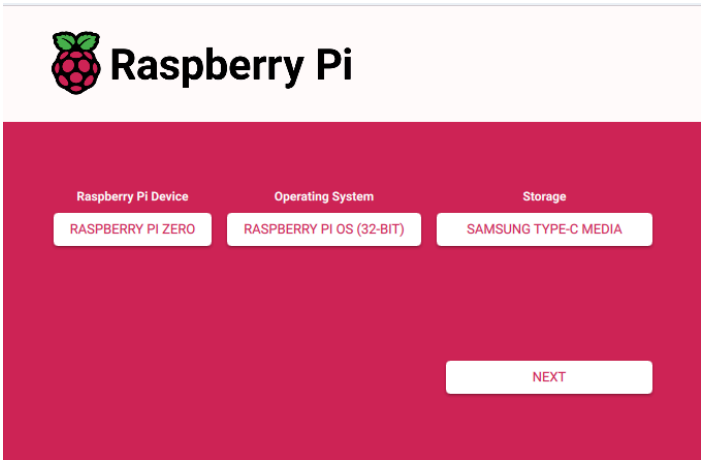
What do you need?

- Raspberry Pi Zero W
- Raspberry Pi Zero power supply
- Blank microSD Card

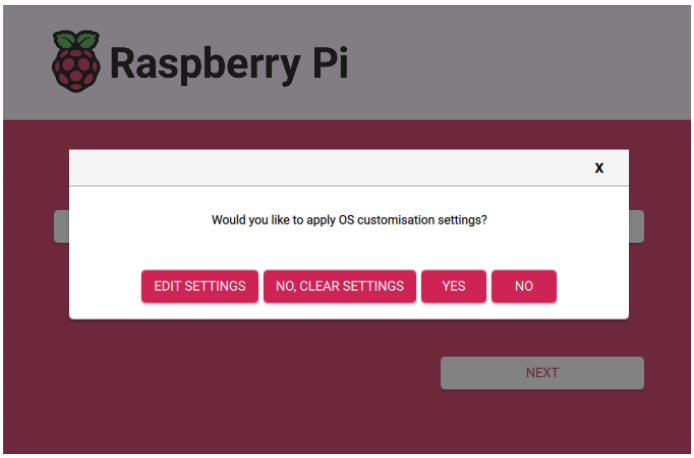
Step 1: Install the Raspberry Pi Imager

Step 2: Insert the microSD card into your computer and then open the imager.

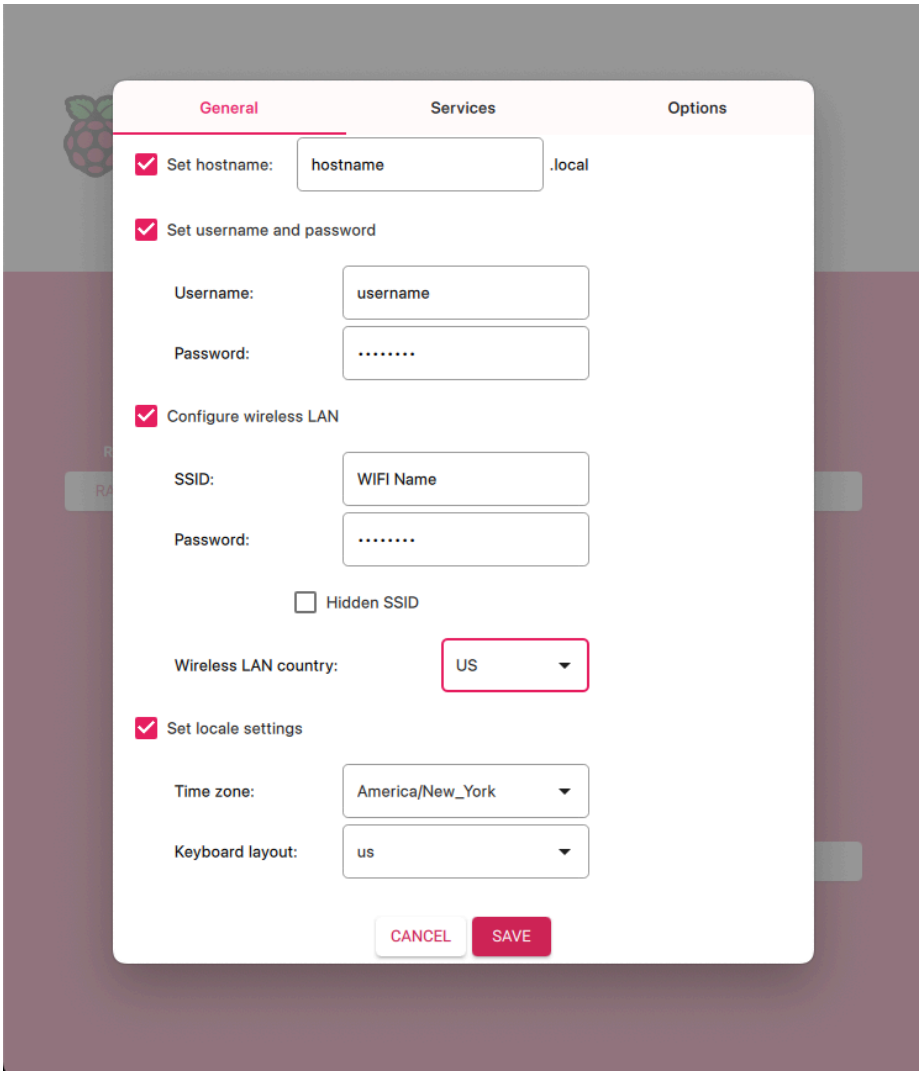
Step 3: Set the Raspberry Pi Zero as your device, choose the most recent version of Raspberry Pi OS, and select your blank micro SD card as the storage space.



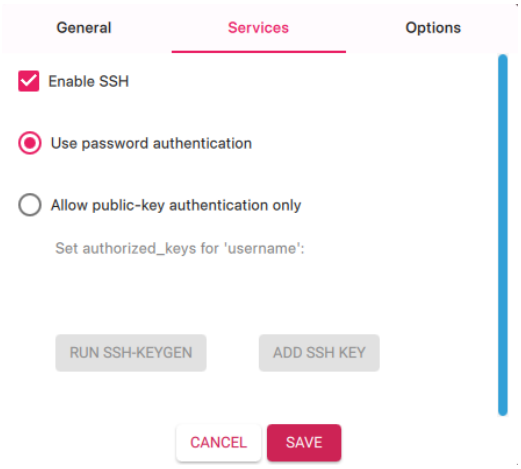
Step 4: After hitting “Next” you will receive this prompt where you will click “Edit Settings”:



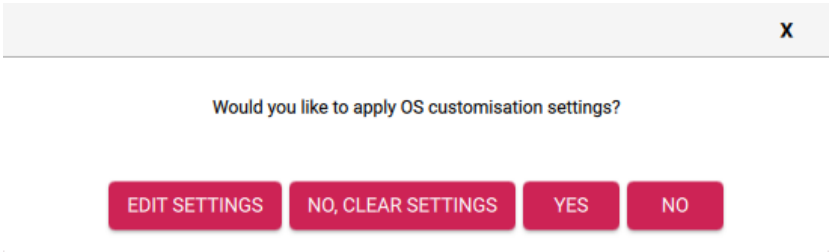
Step 5: In the General tab, check “Set hostname”, “Set username and password”, “Configure wireless LAN”, and “Set locale settings”. Hostname, username, and password can be anything you want just remember them for later. WIFI Name should be the name of your WIFI network and make sure the Wireless country is properly set. The Pi defaults to GB and if you live elsewhere the WIFI setup will not work otherwise.



Step 6: In the Services tab check “Enable SSH” and “Use password authentication”. Hit save.



Step 7: Now press Yes to apply the customisation settings and wait for the SD card to be formatted and for the OS to install.



Step 8: Eject the SD card and put it in the Raspberry Pi Zero W. After inserting the SD card plug in the power supply in the USB port labeled PWR IN. The Pi should start blinking green at this point and if it doesn't that's a problem. (Google or search elsewhere for fixing)

Step 9: Make sure your computer is connected to the same network as you put in the Pi Imager and open Terminal and wait a minute or two. The Pi takes a little bit to connect to the internet especially on the first boot up

Step 10: Let's first ping our Pi to make sure that it is connected to the internet properly. We can do this by typing the command:

```
ping hostname.local
```

You should receive an answer like this:

```
PING hostname.local (DEVICE IP HERE): 56 data bytes
```

Remember what the device IP address is for later.

Step 11: Now that we have made contact with our Pi through the Terminal let's open a new window and actually begin to control the Pi over SSH. To do this enter:

```
ssh username@hostname.local
```

There may be some prompts given about asking if you want to connect to the Pi and if you trust it just answer yes.
There is also a possibility on this step that it will ask you to type in the Pi's password and you are asked, just provide it. If not, it makes no difference. For some reason the Pi only sometimes asks for the password when accessing through Terminal over the network.

You will know that you are successfully connected to the Pi if this shows up:

```
username@hostname:~ $
```

Step 12: Now we need to update the Pi's software. To do this we need access to the root folder so we type:

```
sudo su -
```

If this is successful you should be returned with the prompt:

```
root@hostname:~#
```

Now that we are in the root folder we are going to write out these two commands and run each: *These are slow and will take a while to complete*

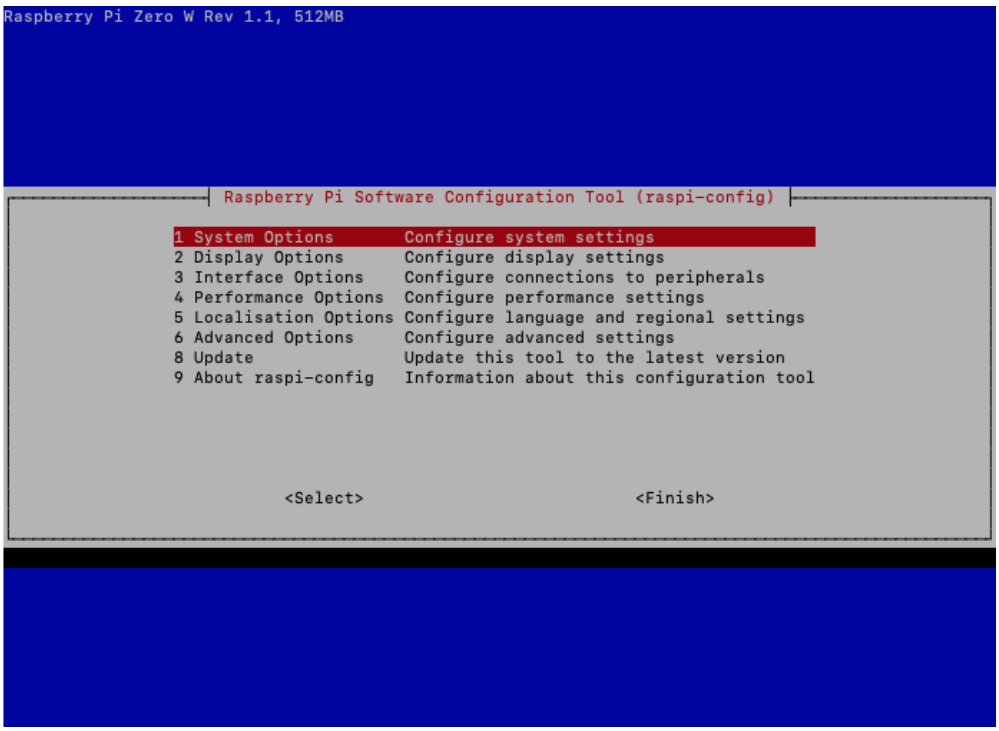
```
apt-get update
```

```
apt-get upgrade
```

Step 13: While still in the root folder we want to access the Raspberry Pi System Configuration Tool which can be done by typing:

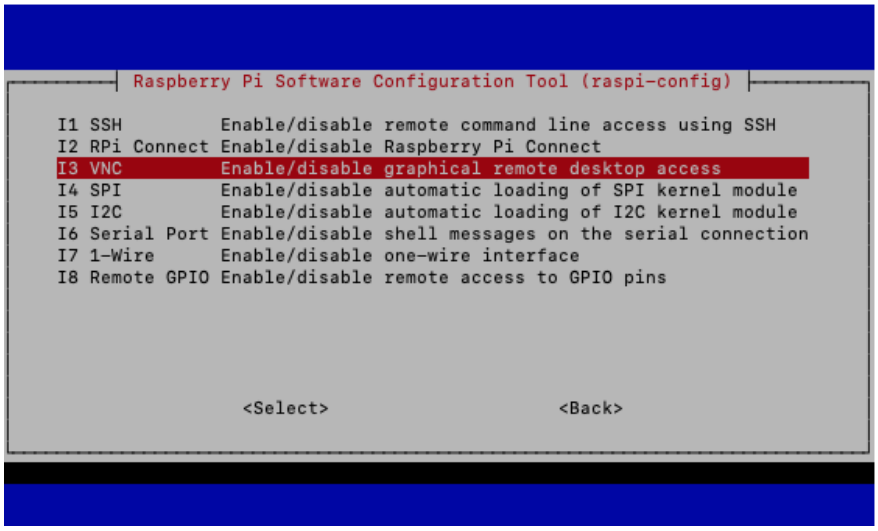
```
raspi-config
```

This should open a window that looks like this:

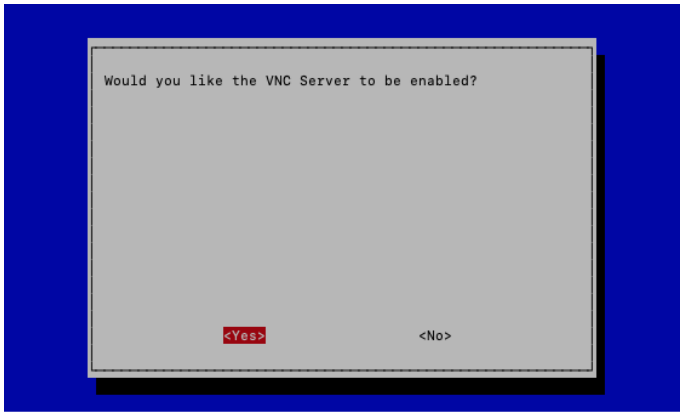


From here use the arrow keys to navigate down to "Interface Options" and press enter to continue to the next screen.

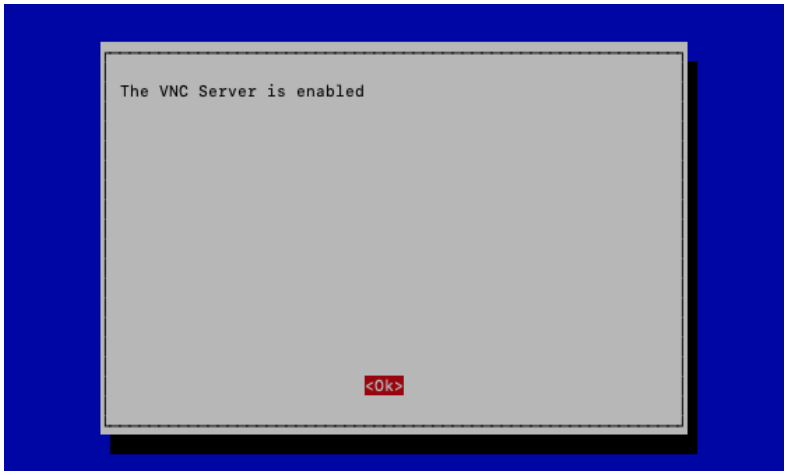
Step 14: From here navigate down and select the option labeled VNC.



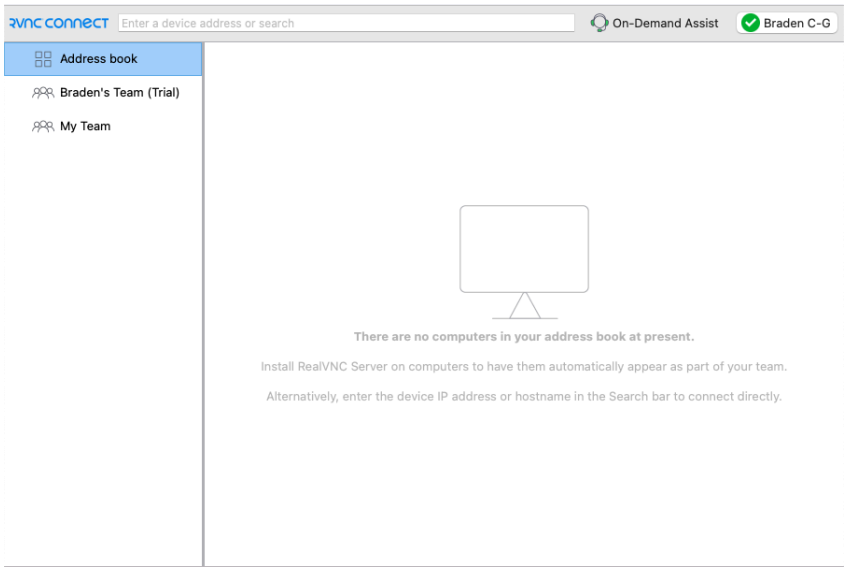
Select yes when prompted:



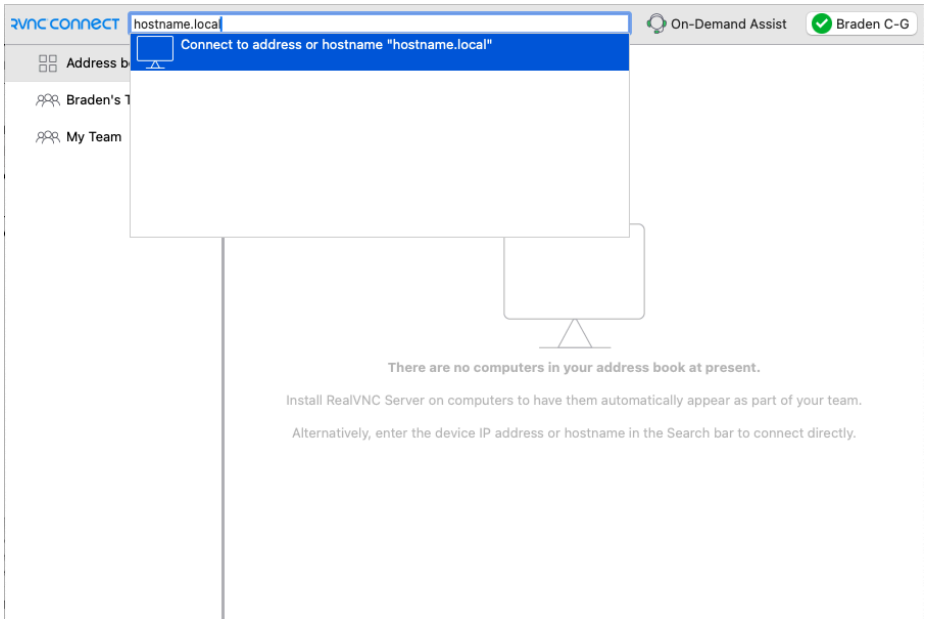
If all is done correctly this screen should be shown.



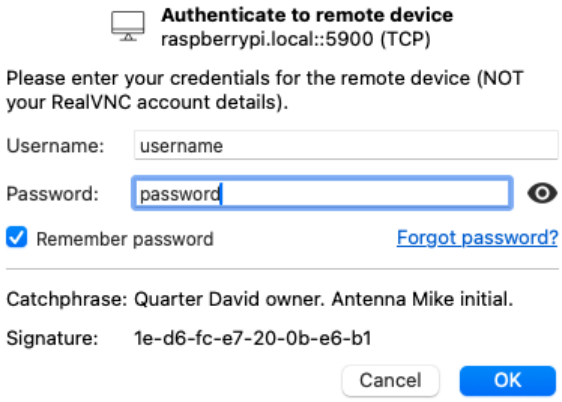
Step 15: From here you will need some sort of software to remotely view the Pi. I use RealVNC which can be downloaded from here. When you open the software it should look like this:



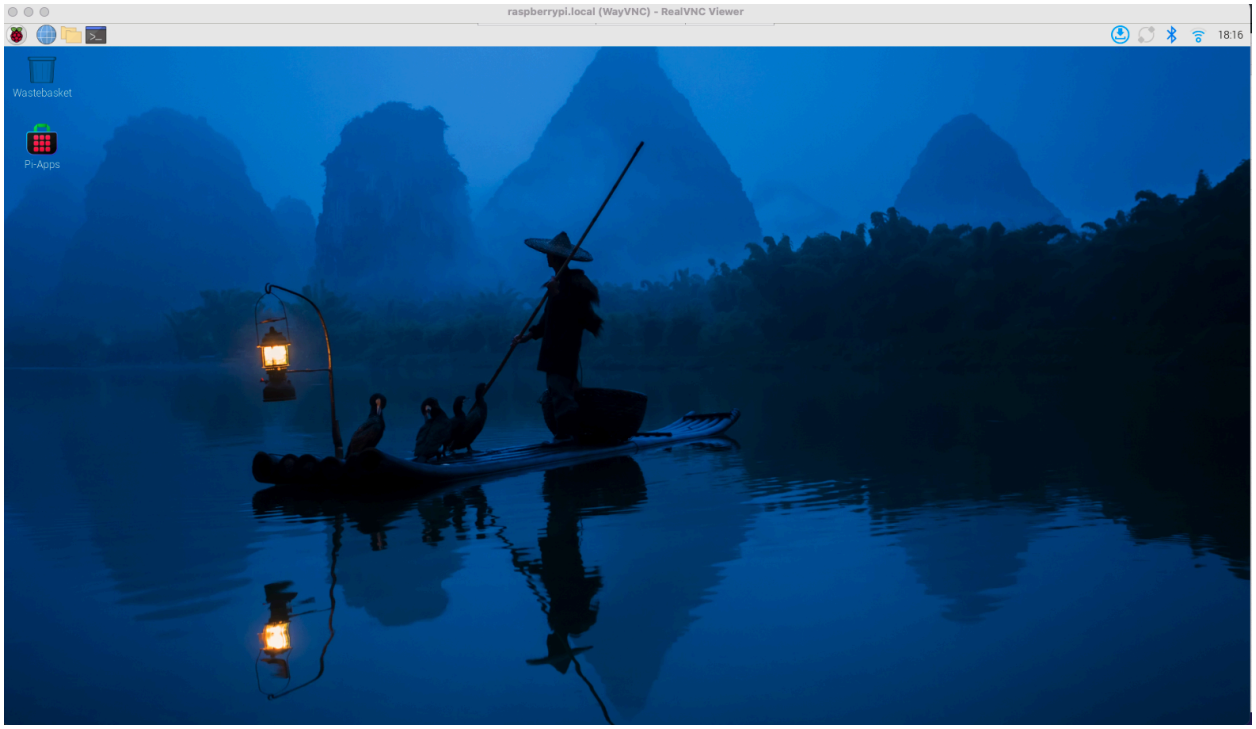
Step 16: From here you can either enter your device ip address from earlier or the device hostname followed by .local and press enter.



Step 17: From here you will be prompted to put in your Raspberry Pi's username and password which you set at the very beginning.



After hitting OK you should be taken to the desktop of your Raspberry Pi device:



After this initial setup you should be able to just open the Pi over VNC while connected on the same WIFI

Installing Processing on the Raspberry Pi Zero W

Step 1: Open Terminal from your Raspberry Pi's Desktop.

Step 2: Copy and run this command:

```
cd ~
Wget
https://github.com/processing/processing/releases/download/processing-0269-3.5.3/processing-3.5.3-linux-armv6hf.tgz
```

**Despite what is said on both the Processing and Processing for Pi websites, Processing 4.0 and more specifically the installers for Processing 4.0 are not compatible with older Pi's such as the Zero W therefore we have to download version 3.5.3 with the old linux install method.

Step 3: Once the download is complete run this command:

```
tar xvfz processing-3.5.3-linux-armv6hf.tgz
```

Step 4: Now that Processing is downloaded and installed you just need to open it which can be done by typing the following commands:

```
cd ~/processing-3.5.3/
```

```
./processing
```

Step 5: Processing should now be installed and opened on your Pi