**Raspberry Pi Set-up**

On another (Linux) machine which can access the SD card:

Loading Operating System

1) To determine the name of the SD card

-Open Terminal

-type ‘df -h’ without the quotes before inserting card

-A list of mounted devices will appear

-Insert card and type ‘df -h’ again. The newly listed device is the name of the SD card.

-For example, ours was listed as ‘/dev/mmcblk0p1’

-Note: the name of the card is ‘mmcblk0’ and the partition designation is ‘p1’

2) Unmount card

-type ‘umount’ followed by the full name of your SD card

-For example, ours would be ‘ umount /dev/mmcblk0p1’

3) Download the latest OS released by Raspberry Pi

-At the time this is being written, the latest release is “Raspian Jessie with Pixel”

-This OS weighs 4.3 GB.

-Extract the file and make note of the name and location of the file

-Ex: ‘2016-09-23-raspian-jessie.img’ located under ‘/home/dmauri’

4) Install OS image on SD card

- ‘sudo dd bs=4M if=2016-09-23-raspian-jessie.img of=/dev/mmcblk0’

-sudo gives permission if you aren’t logged in as root

-USE CAUTION WHEN USING THE COMMAND dd

-If used improperly, the operating system on your current device can be erased

-After ‘if=’ type in the file name of the OS image to be loaded

-After ‘of=’ type in the name of the SD card without the partition index

-Note: At this point terminal will stop responding. It will not demonstrate how much progress has been made. To check on progress, open another Terminal window and type ‘sudo pkill -USR1 -n -x dd’

-When the system has finished writing the image to the card, it will generate a report such as:

‘1036+1 records in

1036+1 records out

4348444672 bytes (4.3 GB, 4.0 GiB) copied, 799.367 s, 5.4 MB/s

5) Synchronize and Eject Card

-type in ‘Sync’

-This will pull down everything that was left in the cache so that you can unmount

-Unmount card using the previously indicated umount command.

For the Pi itself:

Getting MAC Address

MAC Address is often required to establish Internet connection

1) In terminal type ‘ifconfig eth0’

-This will generate a report. Look for the the line:

‘eth0 Link encap: Ethernet HWaddr ’

-The characters following HWaddr is the MAC Address

Installing Arduino IDE

1) In terminal type ‘sudo apt-get install arduino’

-Installation will take time but upon completion can be accessed via terminal or from the menu.

Installing Miniconda

1) In terminal type the following in the listed order:

-‘wget http://repo.continuum.io/miniconda/Miniconda-3.5.5-Linux-armv6l.sh’

-‘md5sum Miniconda-3.5.5-Linux-armv6l.sh’

-This should return something like ‘2f37cb775ec3e482280a7bd6b97ee501’

-‘/bin/bash Miniconda-3.5.5-Linux-armv6l.sh’

Should also add git and emacs

sudo apt-get install git

Figuring out which port the Arduino is on

Hi Mauricio,

I’ve looked into making the ltr-sdr library that you pointed out yesterday. You can use the directions here: <http://osmocom.org/projects/sdr/wiki/rtl-sdr>. Basically the steps I followed were:

- git clone <https://github.com/librtlsdr/librtlsdr.git>

- cd librtlsdr

- mkdir build

- cd build

- cmake ../

- make

- sudo make install

- sudo ldconfig

This approach requires having `cmake` installed, so you might need to get that from somewhere. I also had to install `libusb`, which I did via MacPorts. Let me know if you have any questions about things, and we can work through them.

-Paul

Starting from scratch

Download NOOBS

<https://www.raspberrypi.org/downloads/noobs/>

(What is Raspberry Pi Desktop? <https://www.raspberrypi.org/downloads/raspberry-pi-desktop/>)

Needed a proper SD formatter

<https://www.sdcard.org/downloads/formatter/>

Formatted SD FAT-32

Copied NOOBS from unzipped file to SD

Booted RPi and chose Raspbian (only option if not connected online?)

(Scratch programming language?)

<https://geoffboeing.com/2016/03/scientific-python-raspberry-pi/>

For RTLSDR …

sudo apt-get install cmake

git clone <https://github.com/librtlsdr/librtlsdr.git>

cd librtlsdr

mkdir build

cd build

sudo apt-get install libusb-1.0

cmake ../ -DINSTALL\_UDEV\_RULES=ON -DDETACH\_KERNEL\_DRIVER=ON

make

sudo make install

sudo ldconfig

Installing jupyter

<https://www.instructables.com/id/Jupyter-Notebook-on-Raspberry-Pi/>