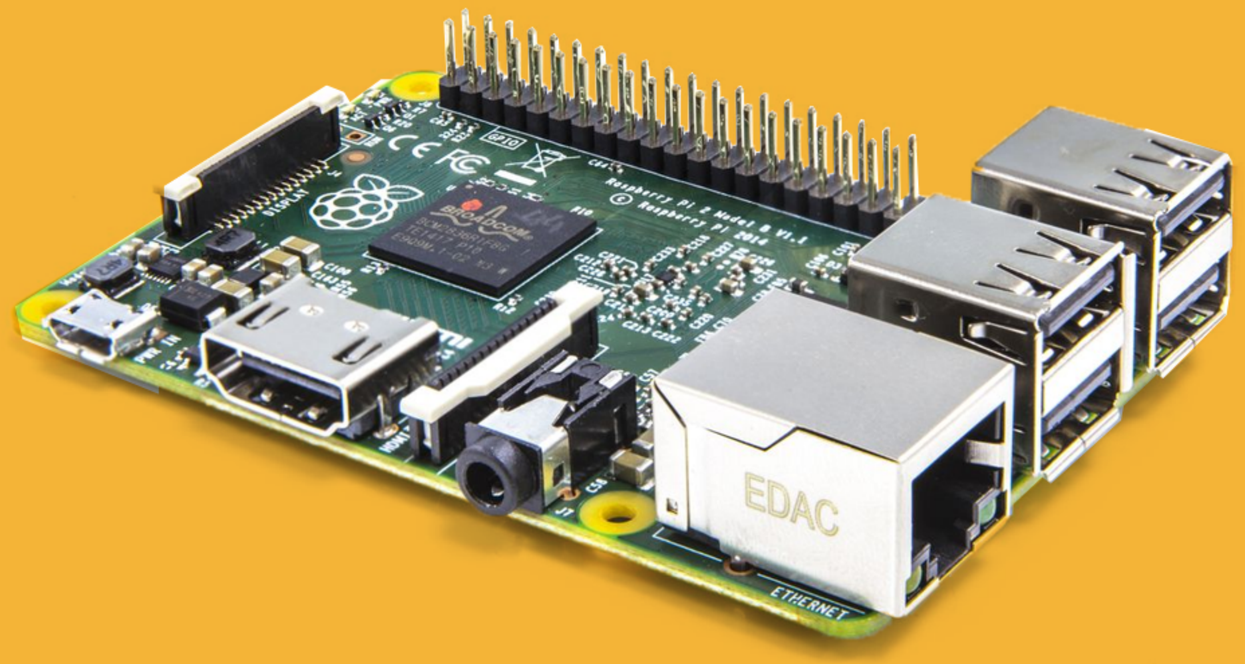
IOT SESSIONS #01

INTRODUCTION | RASPBERRY PI



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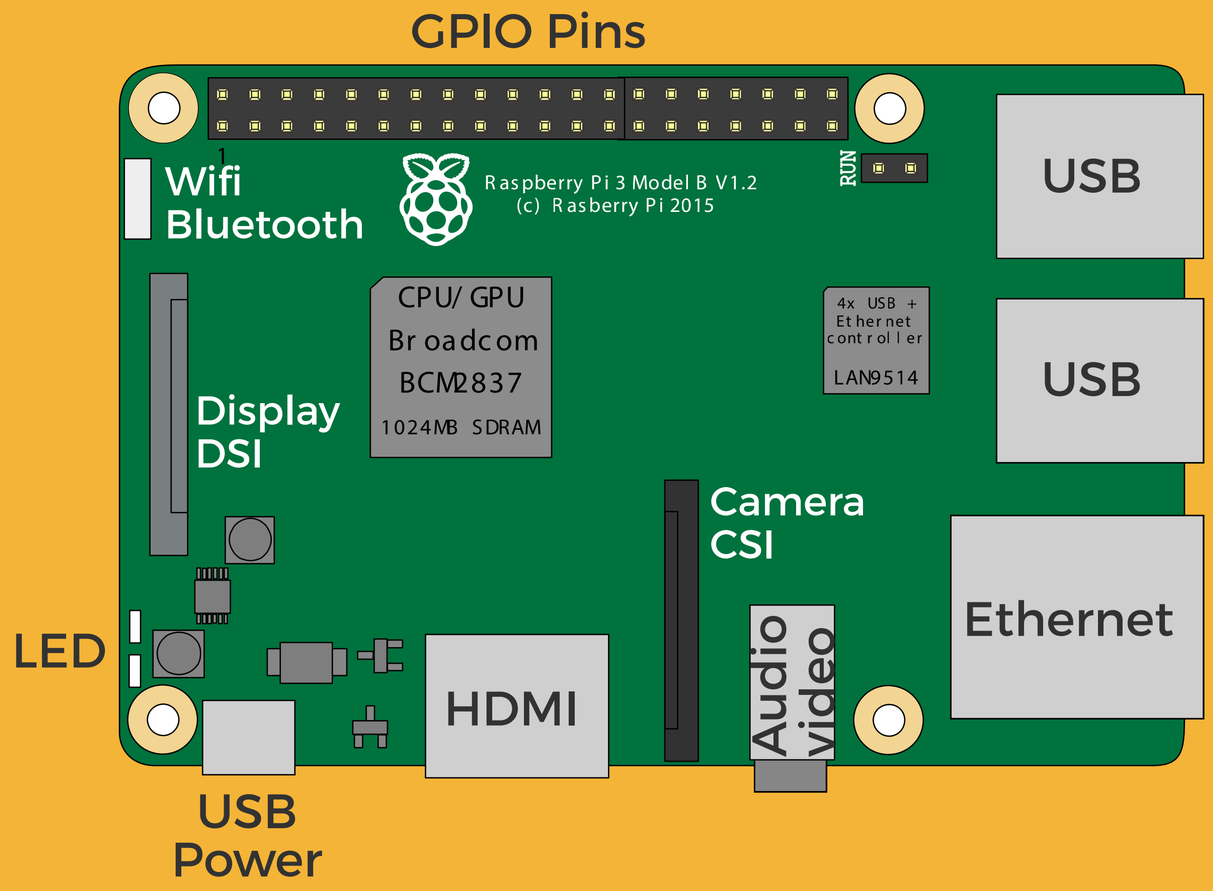
WHAT IS RASPBERRY PI?



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WHAT IS IT GOOD FOR?

Education
Home media server
IOT server
Electronic prototyping
Mobile computing

FEATURES

CPU + GPU: 64bit Quadcore Broadcom up to 1.2 GHz
1gb RAM
SD Storage
HDMI & Composite video
Screen and camera ports
USB
Ethernet
Wifi & Bluetooth (pi3)
Hardware GPIO

OPERATING SYSTEMS

raspbian jessie

ubuntu mate

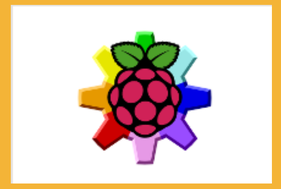
ubuntu core

windows 10 IOT

OSMC

LibreELEC

Pinet



RISC OS

Weather station

https://www.raspberrypi.org/downloads/

SOFTWARE REQUIRED

Linux & MacOSX
Terminal

Windows
Win32DiskImager

http://sourceforge.net/projects/win32diskimager/files/latest/download

INSTALLING | MACOSX & LINUX

Terminal >

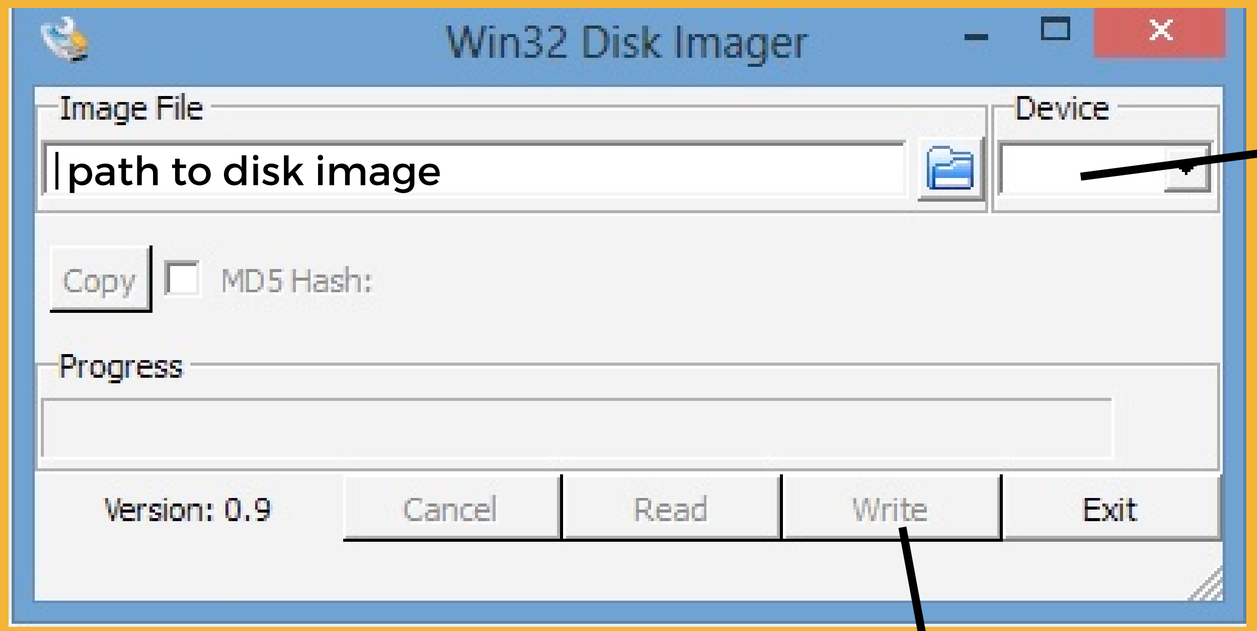
sudo dd bs=1m if=image.img of=/dev/rdiskn

^ Block size ^ Source file ^ physical disk

Protip:

use a USB card reader rather than the built in card reader, MUCH quicker

INSTALLING | WINDOWS

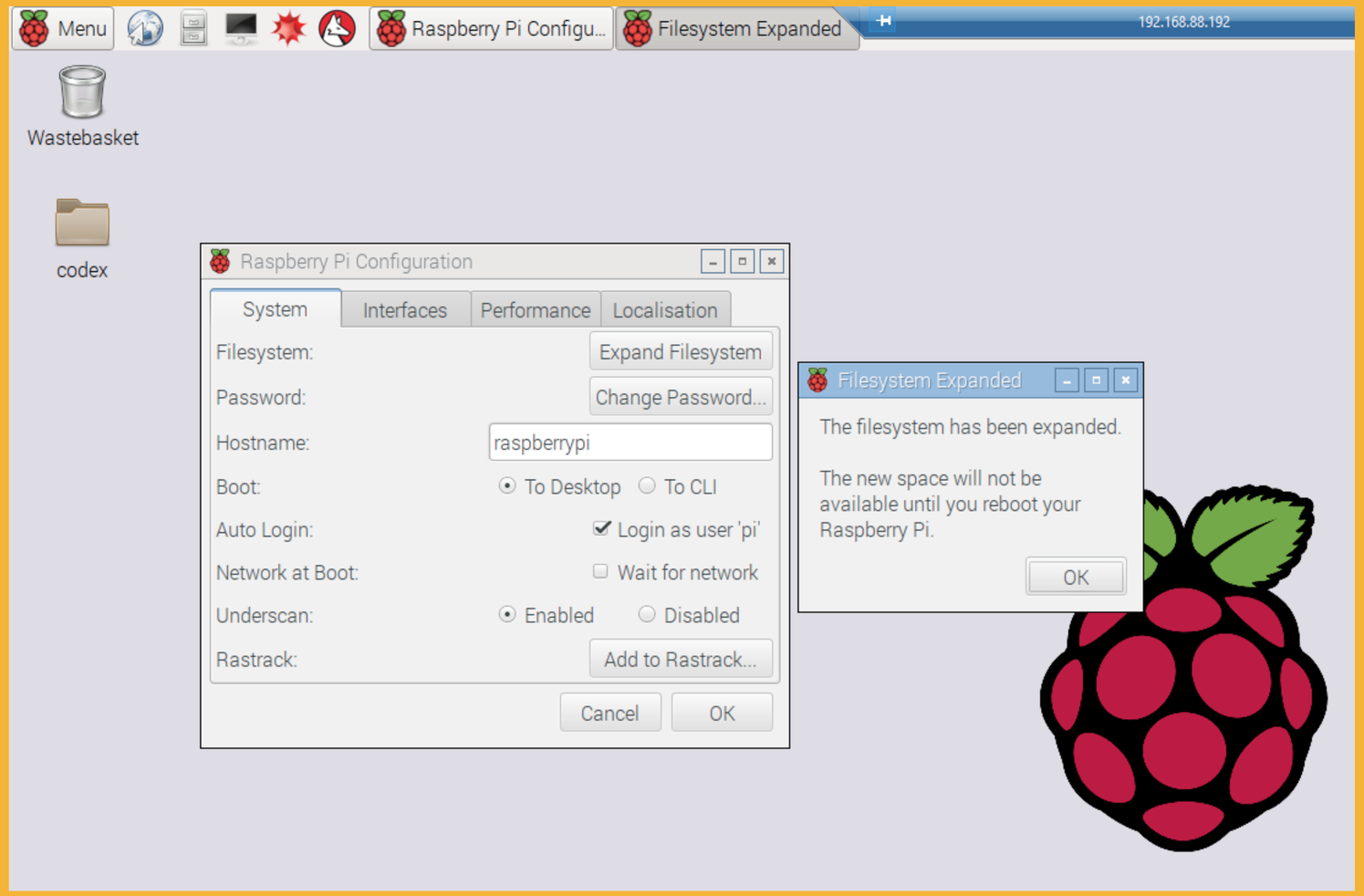


POST INSTALL | EXPANDING DISK

Menu > Raspberri pi setup >

Expand file system

Reboot



Alternatively, via terminal:
http://elinux.org/RPi_Resize_Flash_Partitions

POST INSTALL | UPGRADE AND UPDATE

IN TERMINAL:

1. sudo apt-get update
2. sudo apt-get upgrade

WEB STUFF:

3. sudo apt-get install apache2 -y
4. sudo apt-get install mysql-server -y
5. sudo apt-get install php5 -y

POST INSTALL | UPGRADE AND UPDATE

DEPENDENCIES

6. sudo apt-get install apache2-utils libapache2-mod-php5 php5-mysql php5-gd php5-mcrypt php5-curl php5-json php5-xsl php5-sqlite php5-memcache -y

MOD REWRITE

7. sudo a2enmod rewrite

ALLOW OVERRIDE

7. sudo nano /etc/apache2/apache2.conf

search for these lines and change AllowOverride

<Directory /var/www/>
Options Indexes FollowSymLinks
AllowOverride All
Require all granted
</Directory>

ctrl + o to save, ctrl + x to exit

test webserver by going to localhost/ in your web browser

A BIT EXTRA | NODE RED

nodered.org

IN TERMINAL:

1. bash <(curl -sL https://raw.githubusercontent.com/node-red/raspbian-deb-package/master/resources/update-nodejs-and-nodered)

UPDATE

2. update-nodejs-and-nodered

START

3. Menu -> Programming -> Node-RED.
   or terminal: run node-red-start

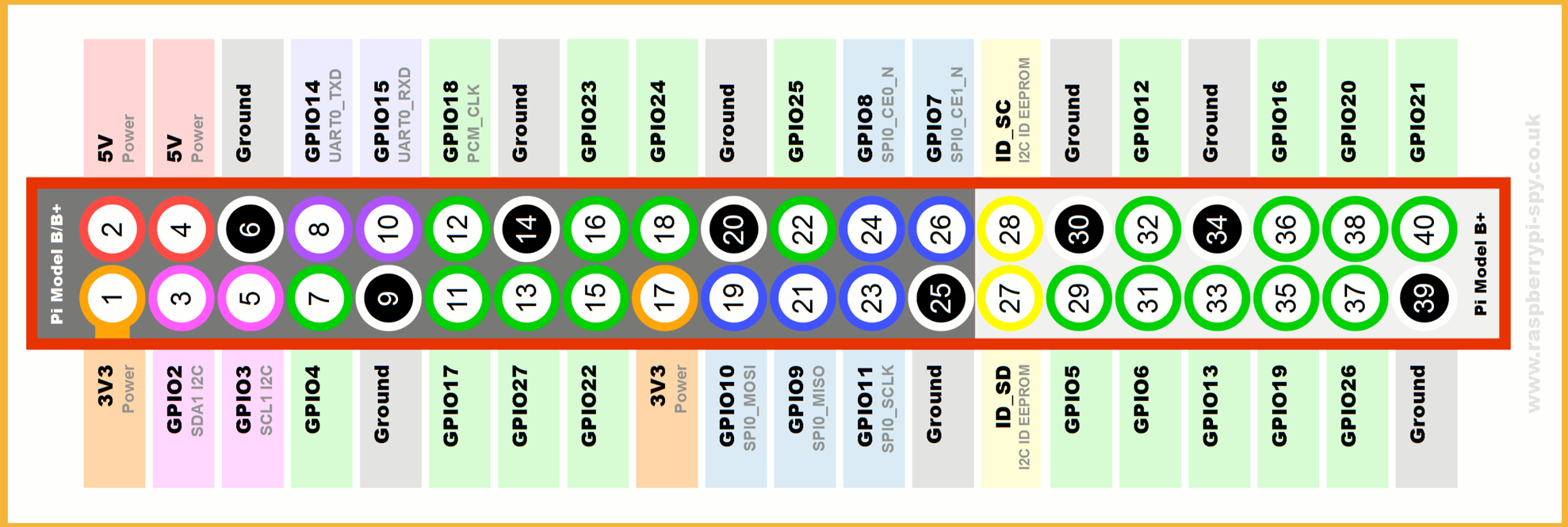
AUTOSTART

4. sudo systemctl enable nodered.service

START DEV

http://{the-ip-address-returned}:1880/

A BIT EXTRA | HARDWARE IO



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