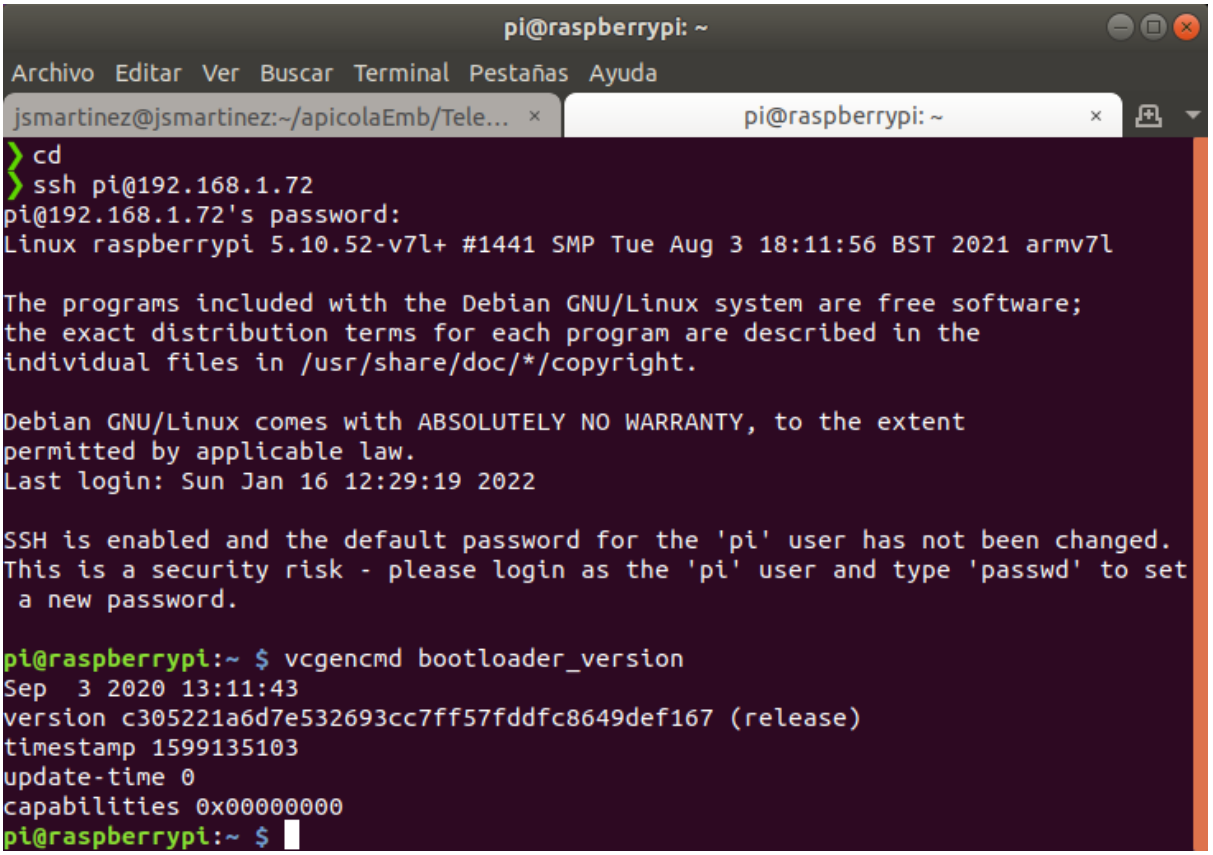
Trabajo desde la Raspberry Pi 4 Model B

ACTUALIZAR BOOTLOADER DE LA RASPBERRY PI 4

Actualizar el bootloader de las raspberry, que está alojado en la eprom interna, el bootloader indica desde dónde se arranca y se va a modificar la prioridad de arranque que será por usb.

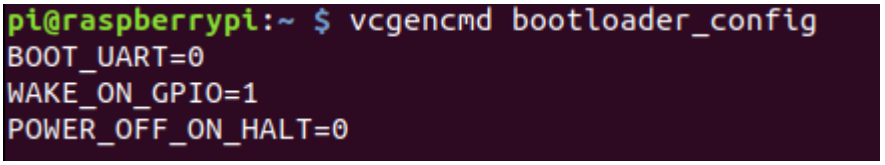
para saber que version tiene mi eprom

vcgencmd bootloader_version



mirar como está configurado

vcgencmd bootloader_config



actualizar

sudo apt-get update

sudo apt-get upgrade

```
pi@raspberrypi:~ $ sudo apt-get update
Des:1 https://download.docker.com/linux/debian buster InRelease [54,0 kB]
Des:2 http://archive.raspberrypi.org/debian buster InRelease [32,6 kB]
Des:3 https://download.docker.com/linux/debian buster/stable armhf Packages [22,
6 kB]
Des:4 http://raspbian.raspberrypi.org/raspbian buster InRelease [15,0 kB]
Des:5 http://archive.raspberrypi.org/debian buster/main armhf Packages [393 kB]
Des:6 http://raspbian.raspberrypi.org/raspbian buster/main armhf Packages [13,0
MB]
Des:7 http://raspbian.raspberrypi.org/raspbian buster/contrib armhf Packages [58
,8 kB]
Des:8 http://raspbian.raspberrypi.org/raspbian buster/non-free armhf Packages [1
04 kB]
Descargados 13,7 MB en 13s (1.090 kB/s)
Leyendo lista de paquetes... Hecho
N: Repository 'http://archive.raspberrypi.org/debian buster InRelease' changed i
ts 'Suite' value from 'testing' to 'oldstable'
```

Para hallar donde están contenidos los firmware de raspberry
cd /lib/firmware/raspberry/bootloader/

```
pi@raspberrypi:/ $ cd /lib/firmware/raspberrypi/bootloader/
pi@raspberrypi:/lib/firmware/raspberrypi/bootloader $ ls -la
total 52
drwxr-xr-x 5 root root  4096 ene 18 08:34 .
drwxr-xr-x 3 root root  4096 mar  4  2021 ..
drwxr-xr-x 2 root root  4096 ene 18 08:34 beta
drwxr-xr-x 2 root root  4096 ene 18 08:34 critical
lrwxrwxrwx 1 root root     8 feb 26  2021 default -> critical
lrwxrwxrwx 1 root root     6 feb 26  2021 latest -> stable
-rw-r--r-- 1 root root 31064 dic 13 09:56 release-notes.md
drwxr-xr-x 2 root root  4096 ene 18 08:34 stable
```

en el vamos a la carpeta critical qué es la que está por defecto y donde se pueden ver las versiones de los bootloaders

ruta: /lib/firmware/raspberrypi/bootloader/critical

```
pi@raspberrypi:/lib/firmware/raspberrypi/bootloader $ cd critical/
pi@raspberrypi:/lib/firmware/raspberrypi/bootloader/critical $ ls
pieeprom-2020-04-16.bin  pieeprom-2021-04-29.bin  vl805-000138a1.bin
pieeprom-2020-09-03.bin  recovery.bin
pieeprom-2021-03-18.bin  vl805-000137ad.bin
pi@raspberrypi:/lib/firmware/raspberrypi/bootloader/critical $
```

en la carpeta stable has otros firmware

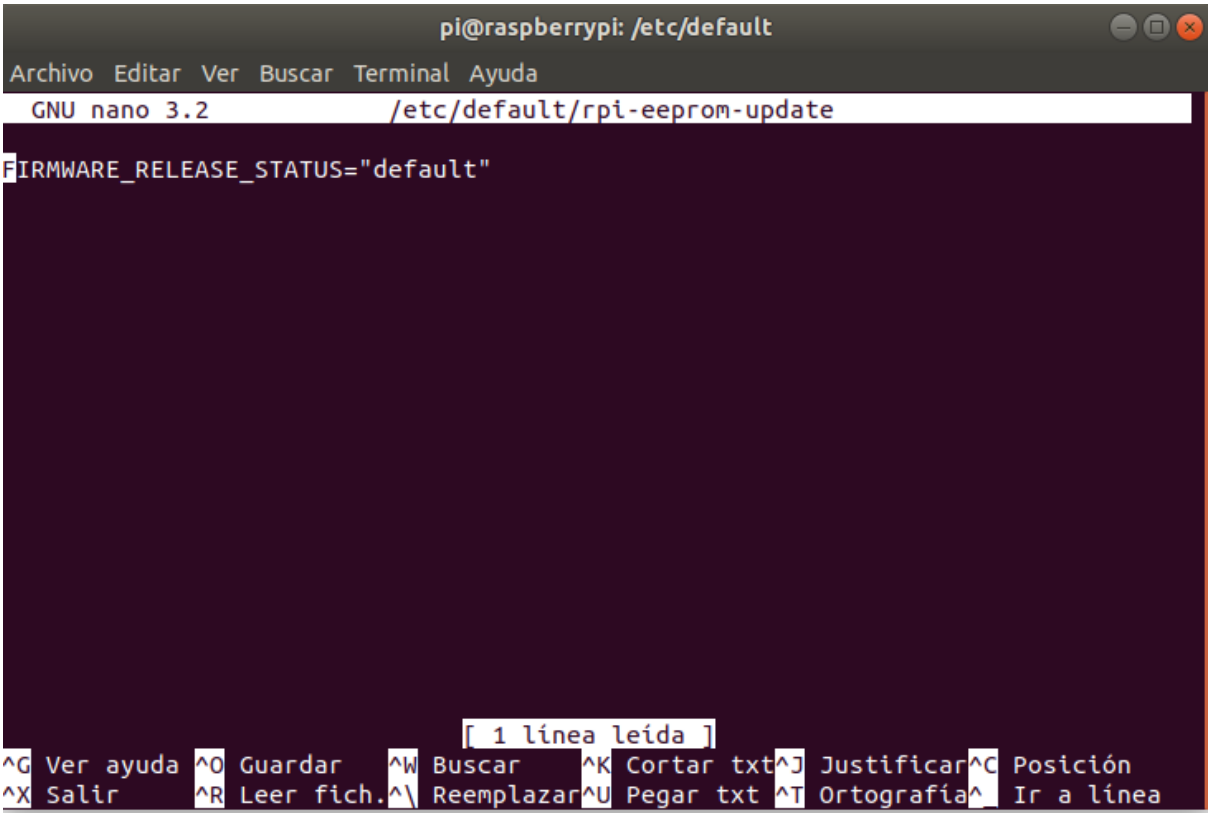
ruta: /lib/firmware/raspberrypi/bootloader/stable

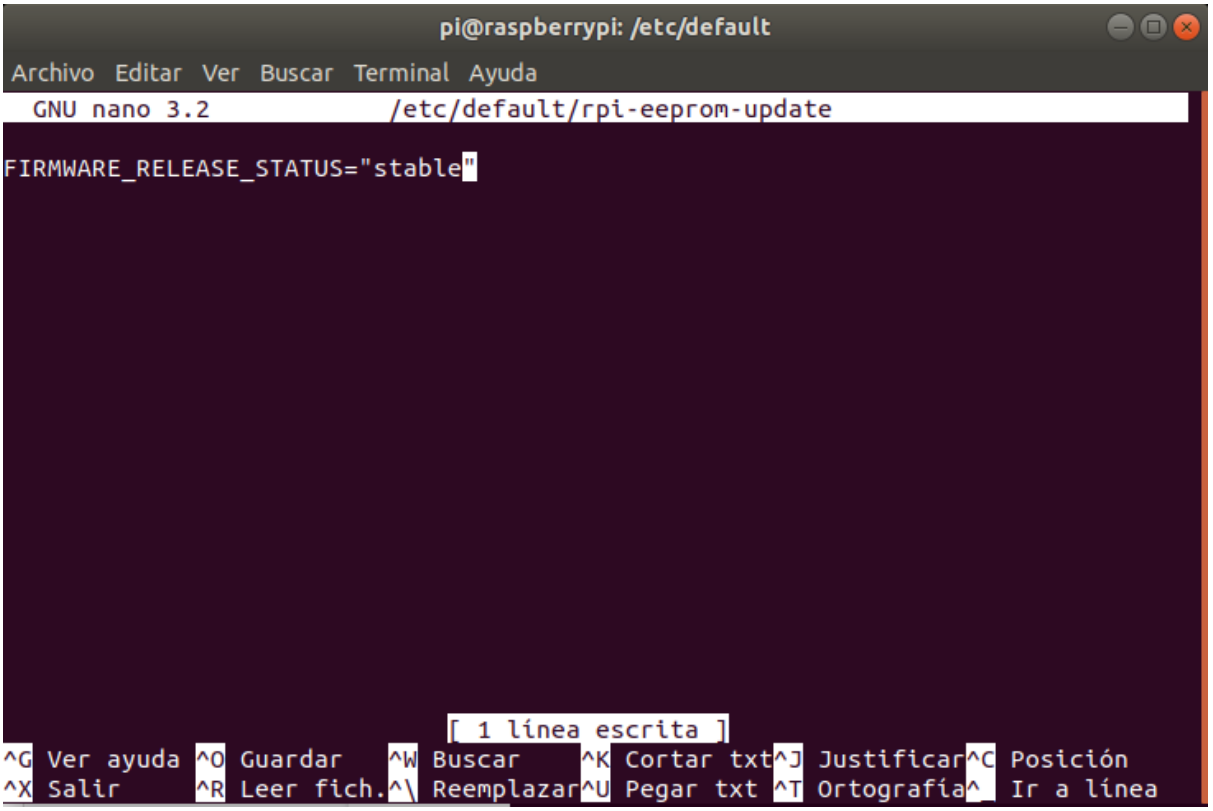
```
pi@raspberrypi:/lib/firmware/raspberrypi/bootloader $ cd stable/
pi@raspberrypi:/lib/firmware/raspberrypi/bootloader/stable $ ls -la
total 7464
drwxr-xr-x 2 root root   4096 ene 18 08:34 .
drwxr-xr-x 5 root root   4096 ene 18 08:34 ..
-rw-r--r-- 1 root root 524288 abr 23  2020 pieeprom-2020-04-16.bin
-rw-r--r-- 1 root root 524288 jun 17  2020 pieeprom-2020-06-15.bin
-rw-r--r-- 1 root root 524288 jul 20  2020 pieeprom-2020-07-16.bin
-rw-r--r-- 1 root root 524288 ago 10  2020 pieeprom-2020-07-31.bin
-rw-r--r-- 1 root root 524288 sep  7  2020 pieeprom-2020-09-03.bin
-rw-r--r-- 1 root root 524288 dic 15  2020 pieeprom-2020-12-11.bin
-rw-r--r-- 1 root root 524288 ene 14  2021 pieeprom-2021-01-11.bin
-rw-r--r-- 1 root root 524288 ene 16  2021 pieeprom-2021-01-16.bin
-rw-r--r-- 1 root root 524288 feb 22  2021 pieeprom-2021-02-16.bin
-rw-r--r-- 1 root root 524288 mar 18  2021 pieeprom-2021-03-18.bin
-rw-r--r-- 1 root root 524288 abr 30  2021 pieeprom-2021-04-29.bin
-rw-r--r-- 1 root root 524288 jul  7  2021 pieeprom-2021-07-06.bin
-rw-r--r-- 1 root root 524288 dic 13 09:56 pieeprom-2021-11-22.bin
-rw-r--r-- 1 root root 524288 dic 13 09:56 pieeprom-2021-12-02.bin
-rw-r--r-- 1 root root  89304 nov 30 06:43 recovery.bin
-rw-r--r-- 1 root root  98904 feb 28  2020 vl805-000137ad.bin
-rw-r--r-- 1 root root  99224 jul 20  2020 vl805-000138a1.bin
pi@raspberrypi:/lib/firmware/raspberrypi/bootloader/stable $
```

Vamos a modificar el archivo rpi-eeprom-update con el editor nano

sudo nano /etc/default/rpi-eeprom-update

```
pi@raspberrypi:/etc/default $ sudo nano /etc/default/rpi-eeprom-update
```





Se debe actualizar el firmware entonces se usa el comando

rpi-eeprom-update -d -f /lib/firmware/raspberrypi/bootloader/stable/

rpi-eeprom-update -d -f /lib/firmware/raspberrypi/bootloader/stable/pieeprom-2021-12-02.bin1

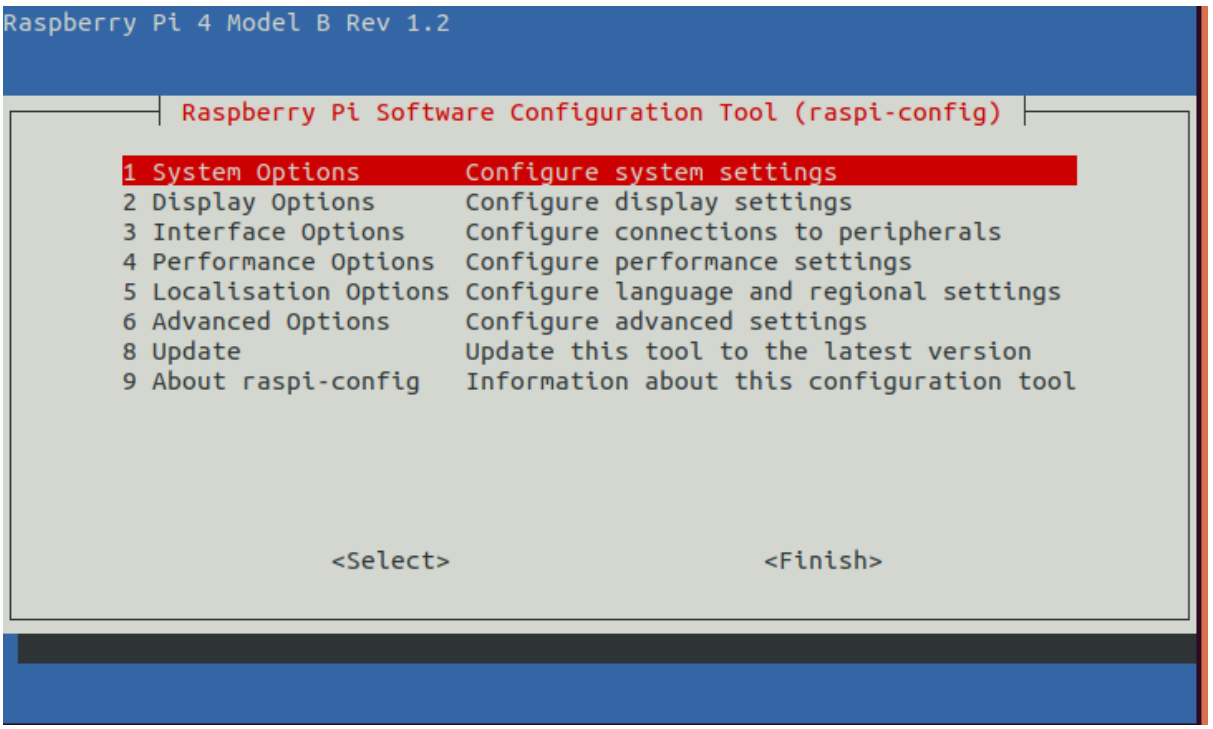
```
pi@raspberrypi:/etc/default $ sudo rpi-eeprom-update -d -f /lib/firmware/raspber
rypi/bootloader/stable/pieeprom-2021-12-02.bin
*** INSTALLING /lib/firmware/raspberrypi/bootloader/stable/pieeprom-2021-12-02.b
in  ***

   CURRENT: jue sep  3 12:11:43 UTC 2020 (1599135103)
    UPDATE: jue dic  2 11:08:03 UTC 2021 (1638443283)
    BOOTFS: /boot

EEPROM updates pending. Please reboot to apply the update.
To cancel a pending update run "sudo rpi-eeprom-update -r".
```

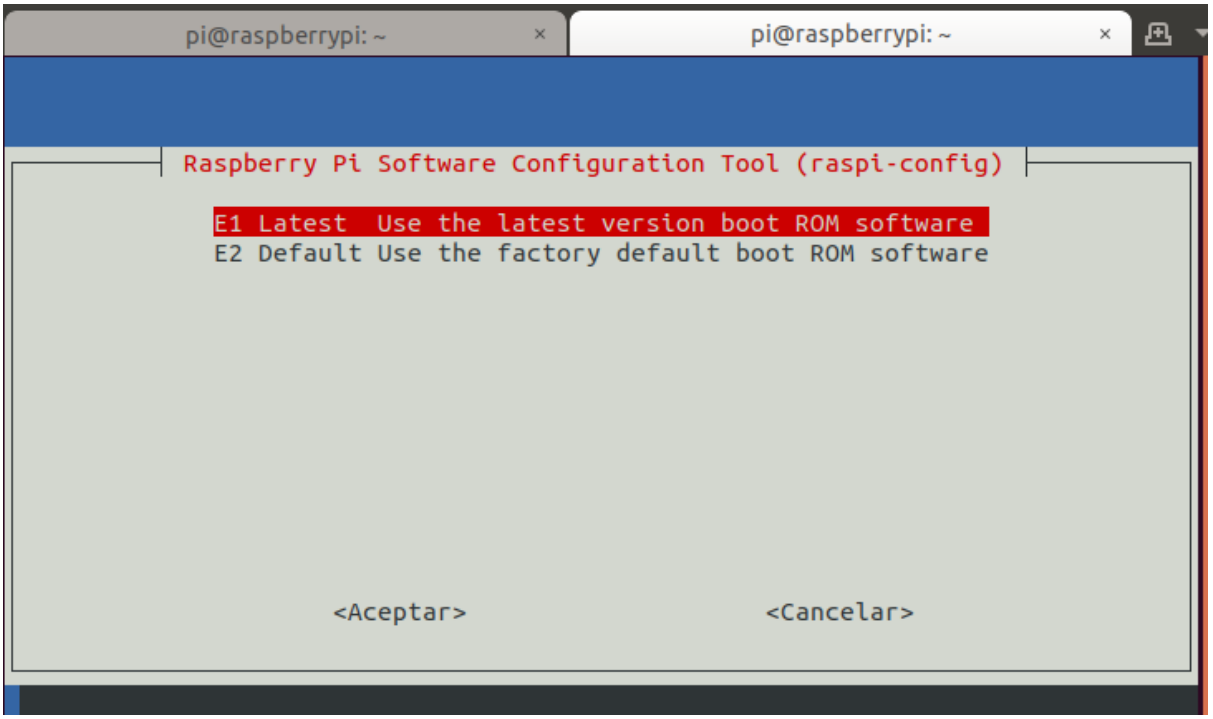
Comprobar la versión de bootloader: vcgencmd bootloader_version

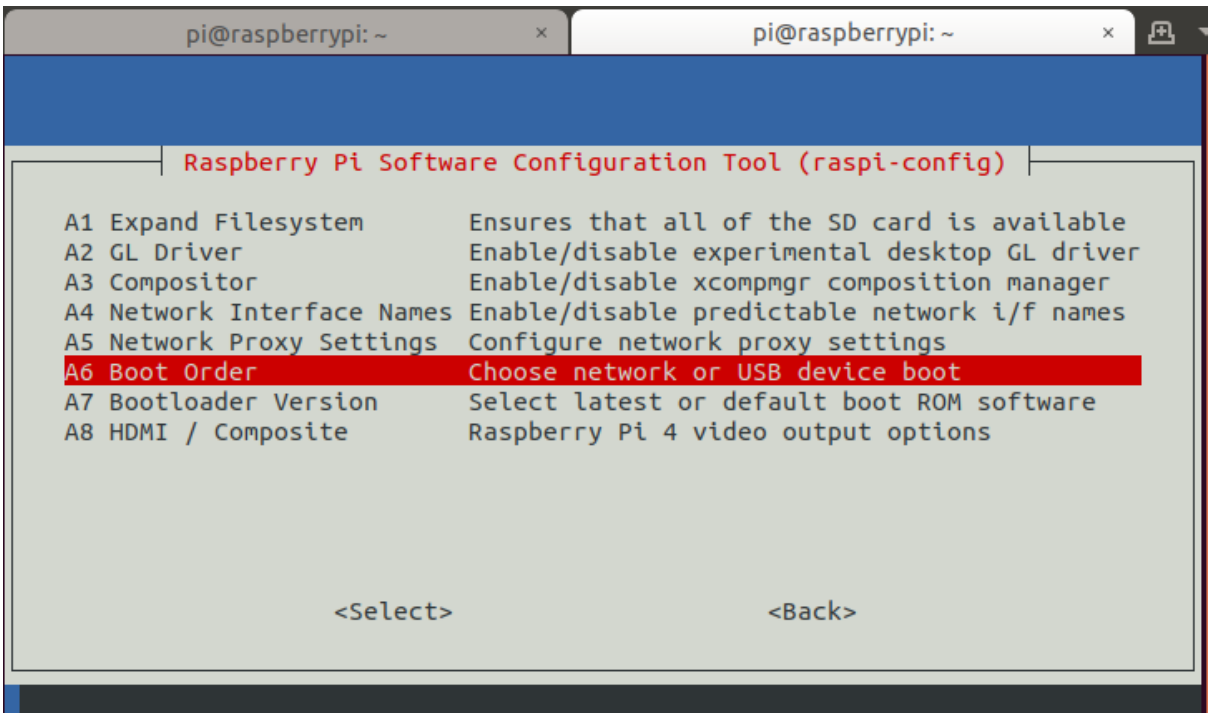
```
pi@raspberrypi:~ $ vcgencmd bootloader_version
2021/12/02 11:08:03
version 78ec57468d6bb1dd7051698539ec814d22a98c64 (release)
timestamp 1638443283
update-time 1642533428
capabilities 0x0000007f
pi@raspberrypi:~ $
```

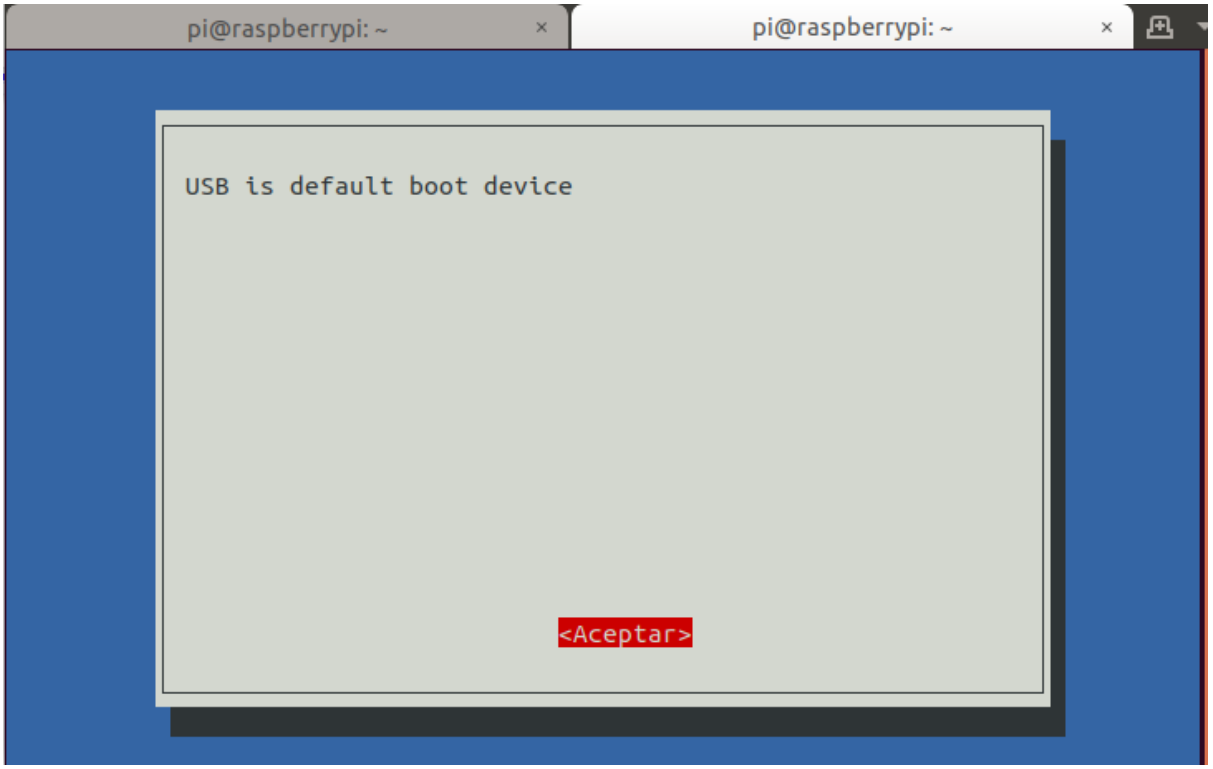
comprobar configuración:vcgencmd bootloader_config

abrir configuración de raspberry: sudo raspi-config


Raspberry Pi 4 Model B Rev 1.2
Raspberry Pi Software Configuration Tool (raspi-config)
1 System Options Configure system settings
2 Display Options Configure display settings
3 Interface Options Configure connections to peripherals
4 Performance Options Configure performance settings
5 Localisation Options Configure language and regional settings
6 Advanced Options Configure advanced settings
8 Update Update this tool to the latest version
9 About raspi-config Information about this configuration tool
<Select>
<Finish>


pi@raspberrypi: ~
pi@raspberrypi: ~
Raspberry Pi Software Configuration Tool (raspi-config)
E1 Latest Use the latest version boot ROM software
E2 Default Use the factory default boot ROM software
<Aceptar>
<Cancelar>

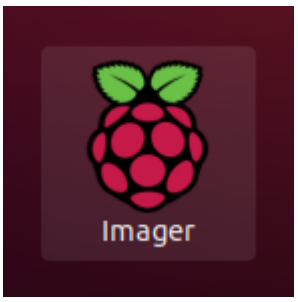


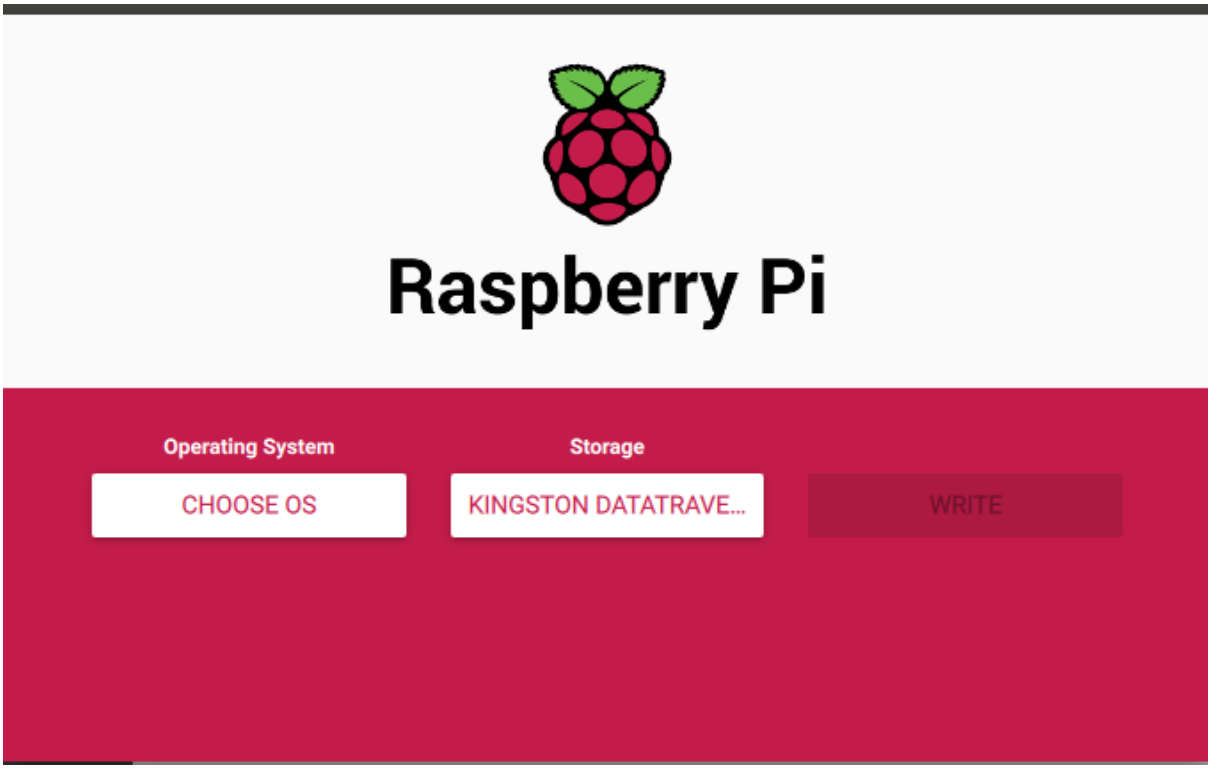


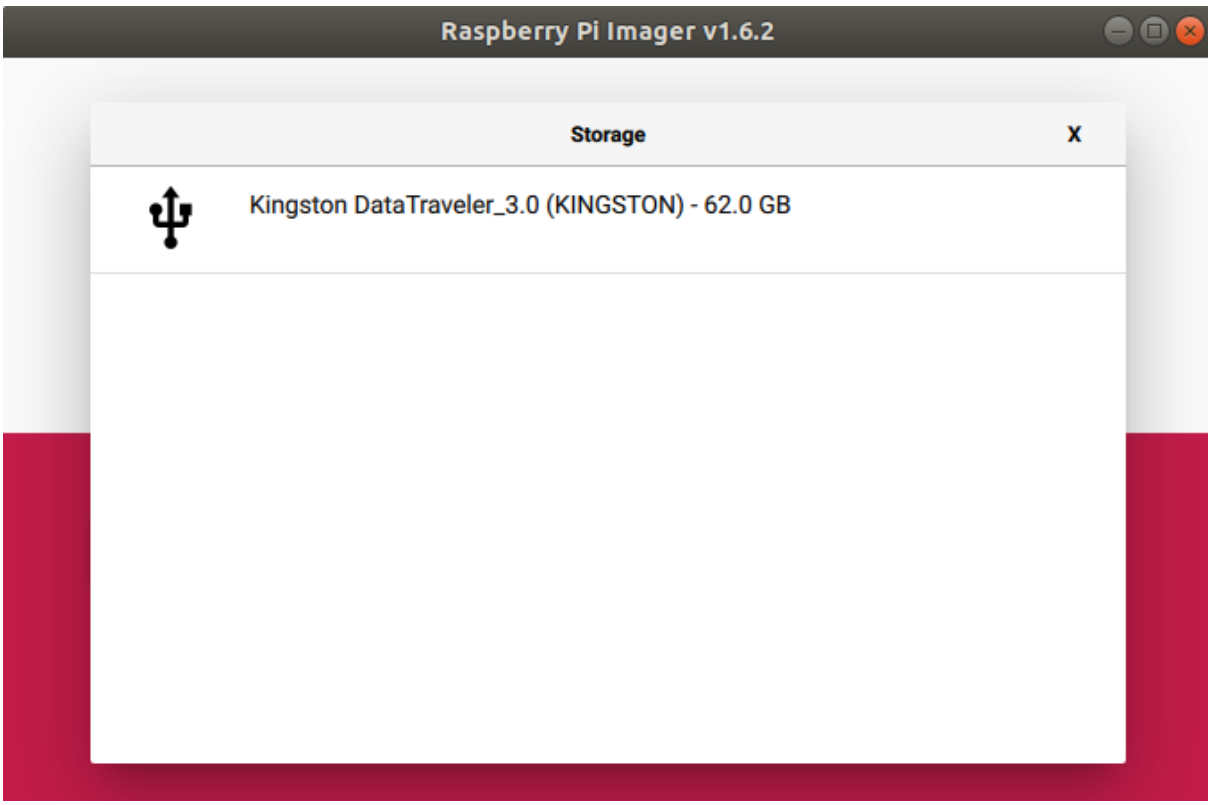

```
pi@raspberrypi:~ $ sudo -E rpi-eeprom-config --edit
```

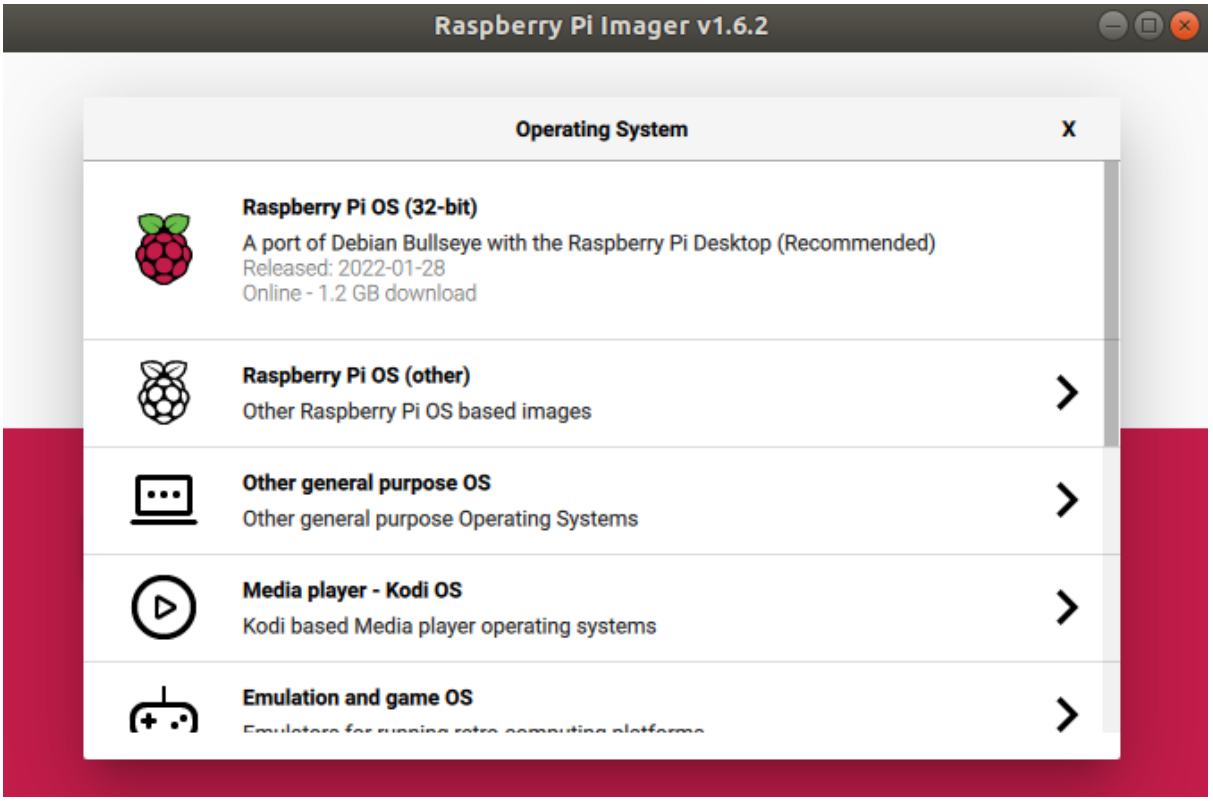
Instalación de Raspberry Pi OS (raspbian)

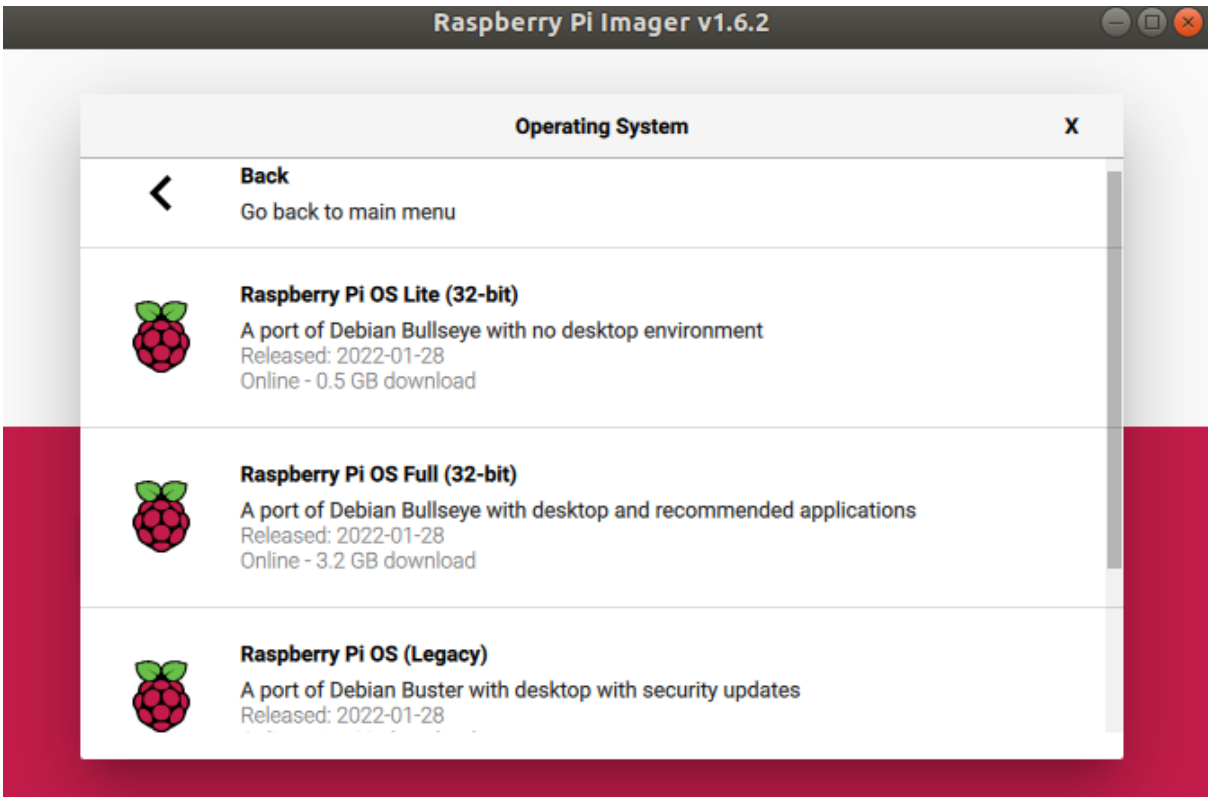
```
❯ sudo apt install rpi-imager
```

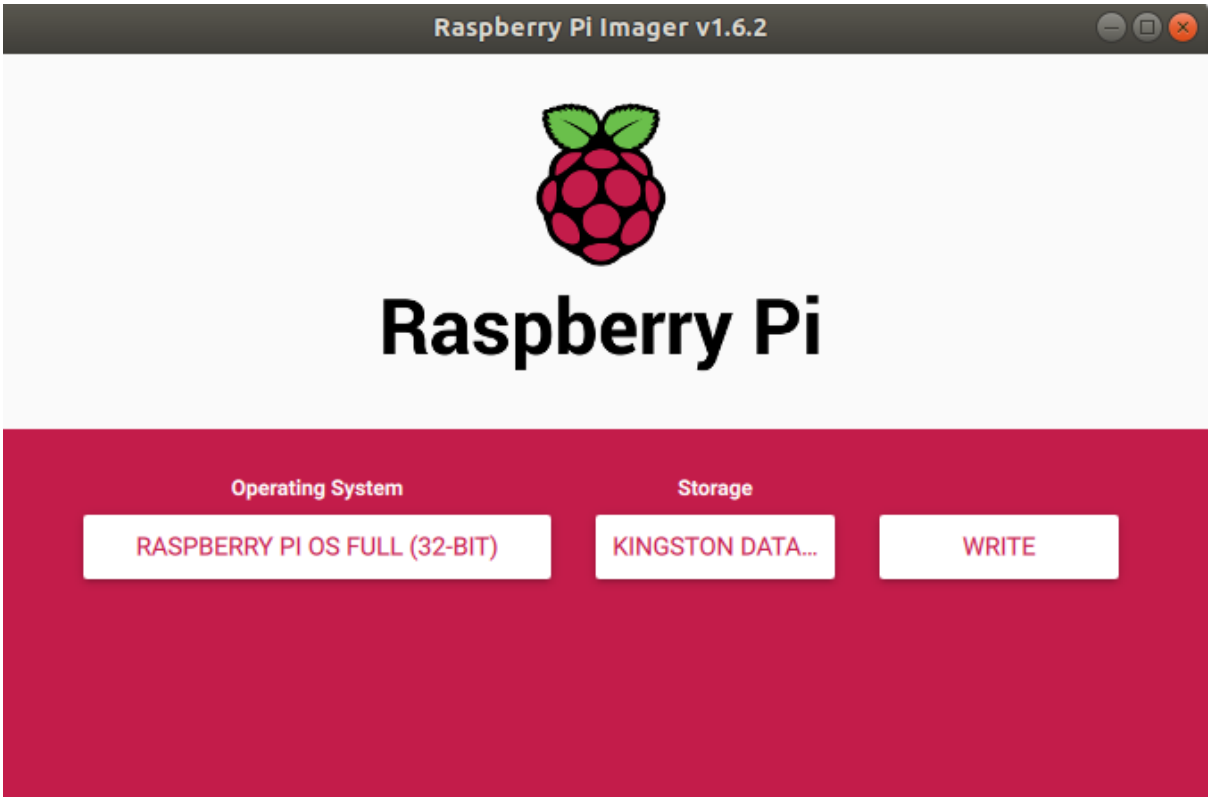

Imager

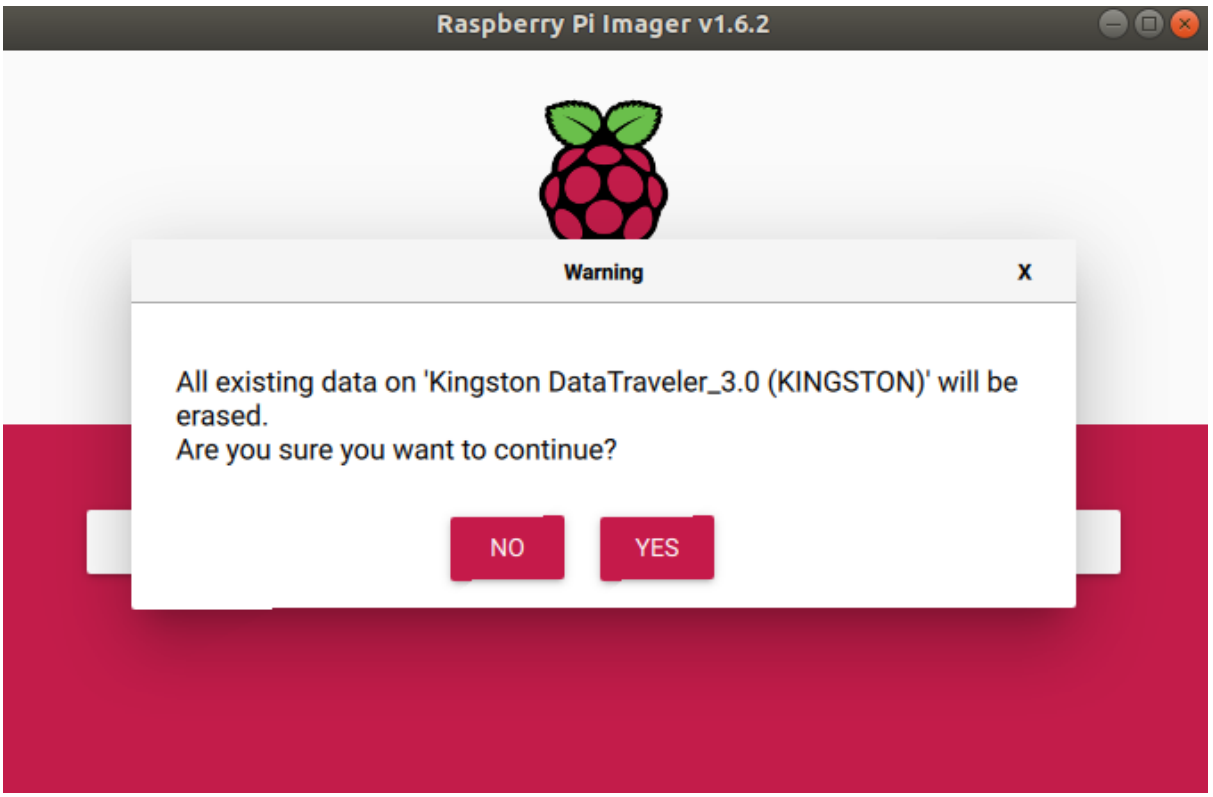

Raspberry Pi
Operating System
CHOOSE OS
Storage
KINGSTON DATATRAVE...
WRITE

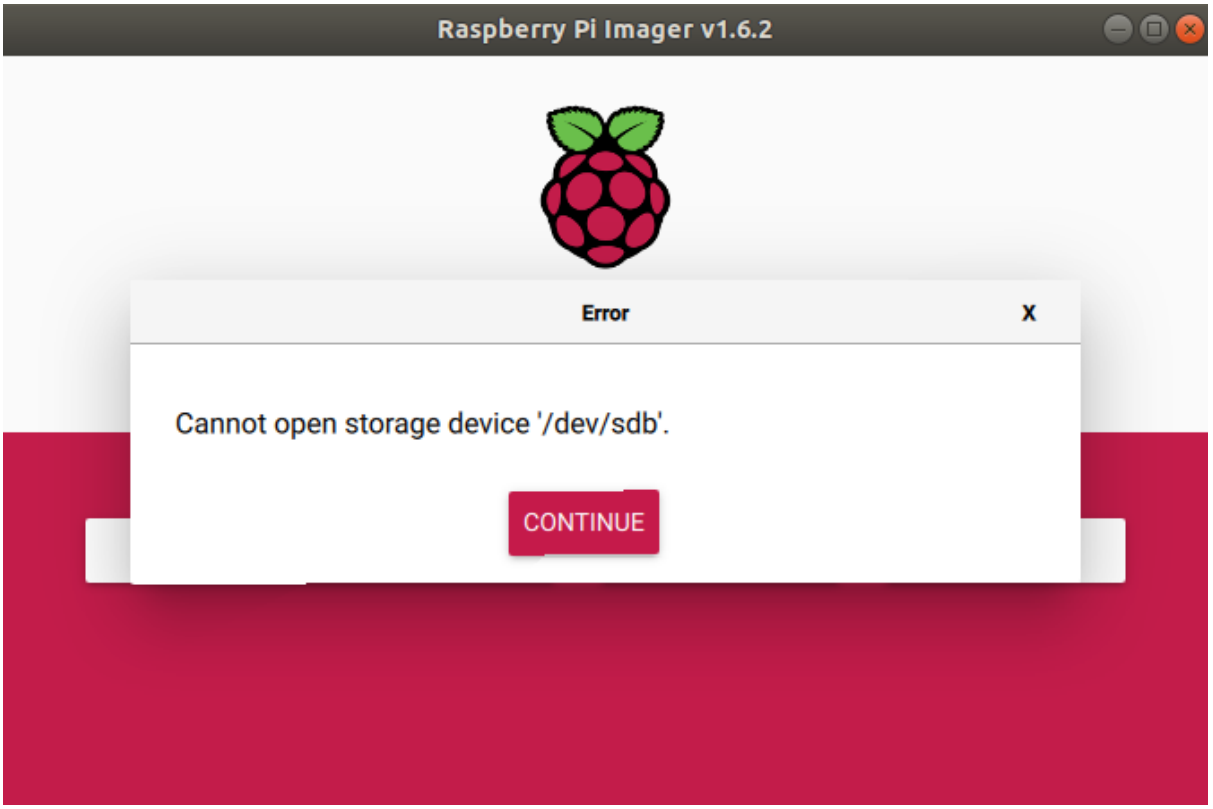

Raspberry Pi Imager v1.6.2
Storage
X
Kingston DataTraveler_3.0 (KINGSTON) - 62.0 GB


Raspberry Pi Imager v1.6.2
Operating System
X
Raspberry Pi OS (32-bit)
A port of Debian Bullseye with the Raspberry Pi Desktop (Recommended)
Released: 2022-01-28
Online - 1.2 GB download
Raspberry Pi OS (other)
Other Raspberry Pi OS based images
Other general purpose OS
Other general purpose Operating Systems
Media player - Kodi OS
Kodi based Media player operating systems
Emulation and game OS

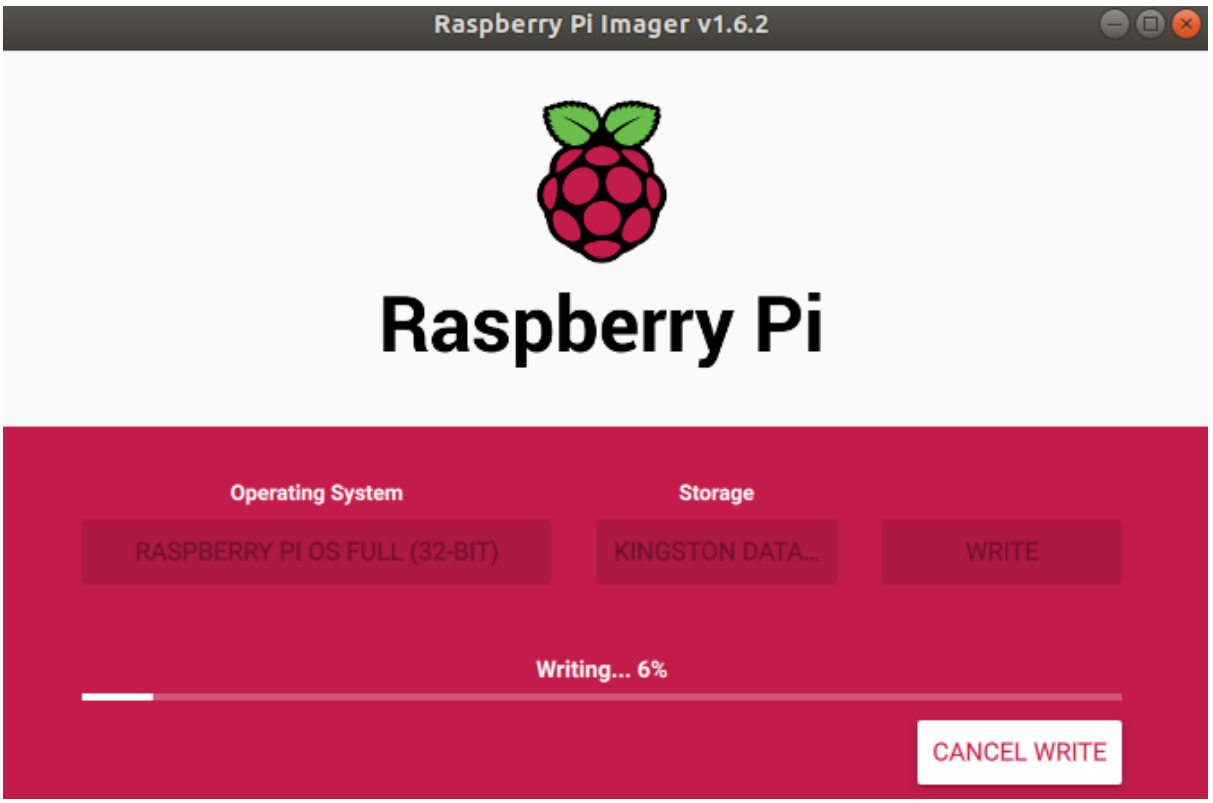

Raspberry Pi Imager v1.6.2
Operating System
X
Back
Go back to main menu
Raspberry Pi OS Lite (32-bit)
A port of Debian Bullseye with no desktop environment
Released: 2022-01-28
Online - 0.5 GB download
Raspberry Pi OS Full (32-bit)
A port of Debian Bullseye with desktop and recommended applications
Released: 2022-01-28
Online - 3.2 GB download
Raspberry Pi OS (Legacy)
A port of Debian Buster with desktop with security updates
Released: 2022-01-28

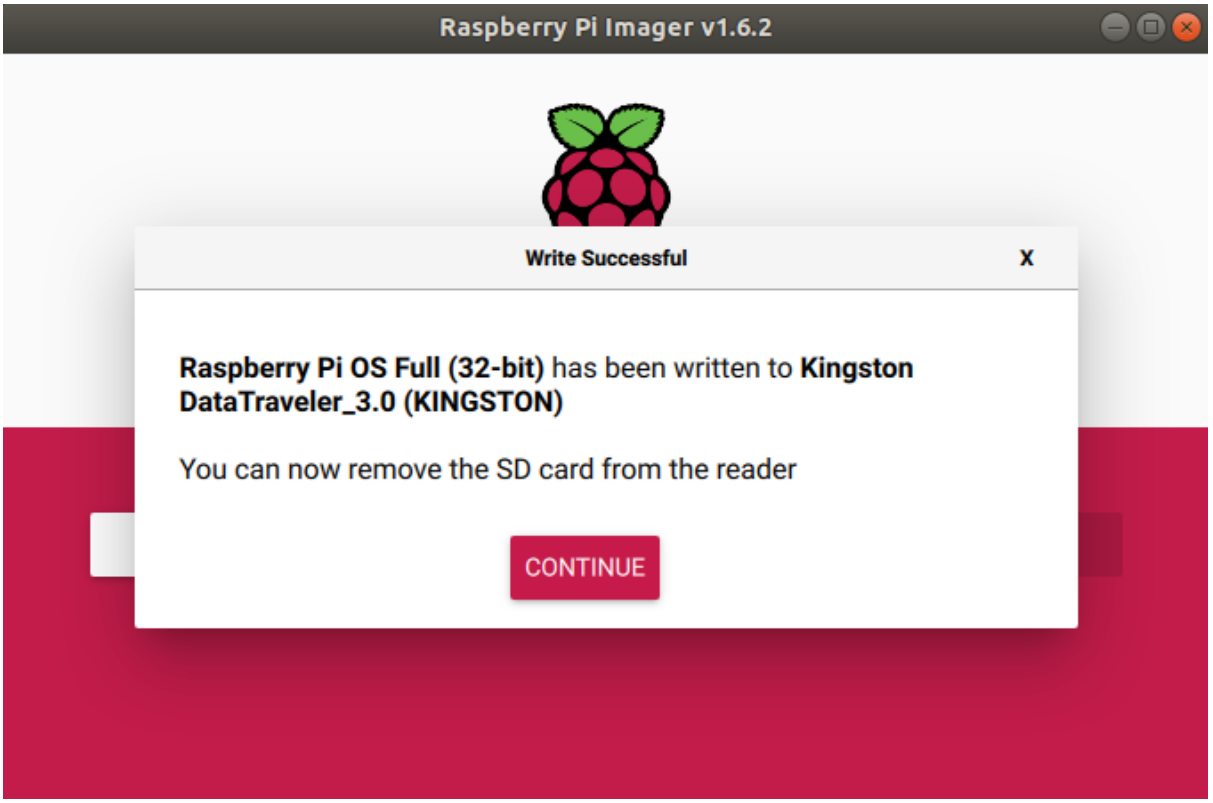

Raspberry Pi Imager v1.6.2
Raspberry Pi
Operating System
Storage
RASPBERRY PI OS FULL (32-BIT)
KINGSTON DATA...
WRITE






```
❯ sudo rpi-imager
```





Se crea un archivo sin extensión llamado ssh para conectarse de después forma remota a la raspberry utilizando la dirección IP

```
❯ cd boot
❯ ls
bcm2708-rpi-b.dtb          bcm2711-rpi-cm4.dtb   kernel7.img
bcm2708-rpi-b-plus.dtb     bcm2711-rpi-cm4s.dtb  kernel7l.img
bcm2708-rpi-b-rev1.dtb     bootcode.bin          kernel8.img
bcm2708-rpi-cm.dtb         cmdline.txt           kernel.img
bcm2708-rpi-zero.dtb       config.txt            LICENCE.broadcom
bcm2708-rpi-zero-w.dtb     COPYING.linux         overlays
bcm2709-rpi-2-b.dtb        fixup4cd.dat          start4cd.elf
bcm2710-rpi-2-b.dtb        fixup4.dat            start4db.elf
bcm2710-rpi-3-b.dtb        fixup4db.dat          start4.elf
bcm2710-rpi-3-b-plus.dtb   fixup4x.dat           start4x.elf
bcm2710-rpi-cm3.dtb        fixup_cd.dat          start_cd.elf
bcm2710-rpi-zero-2.dtb     fixup.dat             start_db.elf
bcm2710-rpi-zero-2-w.dtb   fixup_db.dat          start.elf
bcm2711-rpi-400.dtb        fixup_x.dat           start_x.elf
bcm2711-rpi-4-b.dtb        issue.txt
❯ pwd
/media/jsmartinez/boot
❯ touch ssh
```

```
❯ ssh pi@192.168.1.62
The authenticity of host '192.168.1.62 (192.168.1.62)' can't be established.
ECDSA key fingerprint is SHA256:qs7Txh41rn22MFHGb1iPm+pJJTkgSYck/j4bLaQdOss.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '192.168.1.62' (ECDSA) to the list of known hosts.
pi@192.168.1.62's password:
Linux raspberrypi 5.10.92-v7l+ #1514 SMP Mon Jan 17 17:38:03 GMT 2022 armv7l

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: Fri Jan 28 01:48:30 2022

SSH is enabled and the default password for the 'pi' user has not been changed.
This is a security risk - please login as the 'pi' user and type 'passwd' to set a new password.


Wi-Fi is currently blocked by rfkill.
Use raspi-config to set the country before use.
```

```
pi@raspberrypi:~ $ sudo apt-get update
Get:1 http://archive.raspberrypi.org/debian bullseye InRelease [23.5 kB]
Get:2 http://raspbian.raspberrypi.org/raspbian bullseye InRelease [15.0 kB]
Get:3 http://raspbian.raspberrypi.org/raspbian bullseye/main armhf Packages [13.2 MB]
Get:4 http://archive.raspberrypi.org/debian bullseye/main armhf Packages [247 kB]
Fetched 13.5 MB in 9s (1,585 kB/s)
Reading package lists... Done
pi@raspberrypi:~ $ sudo apt-get upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
```

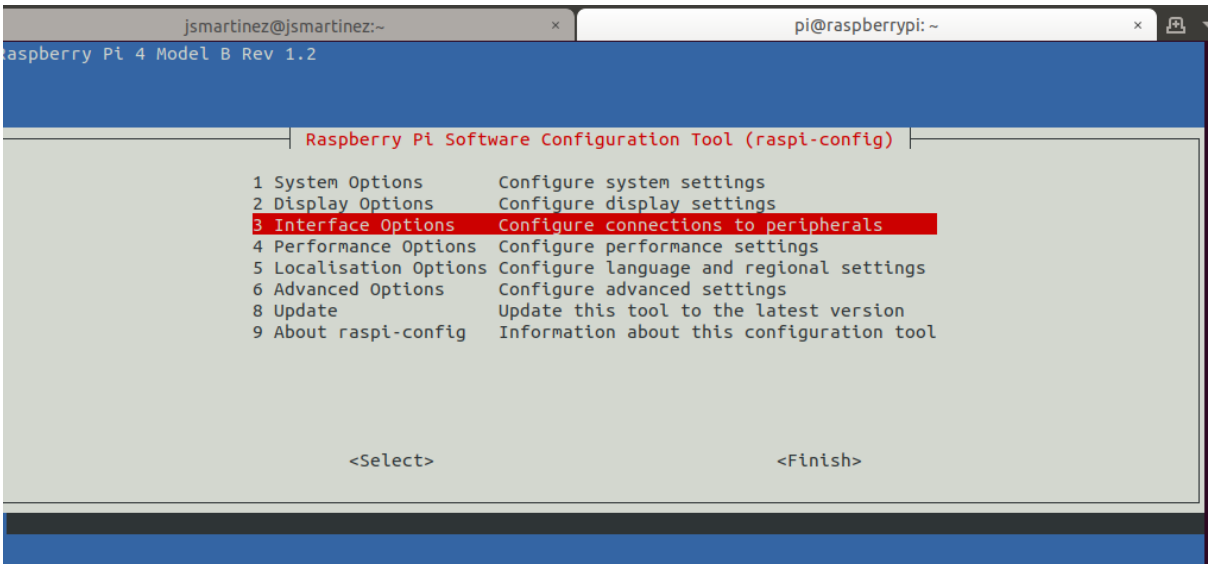
Se instala Real VNC, para ver la pantalla del sistema operativo

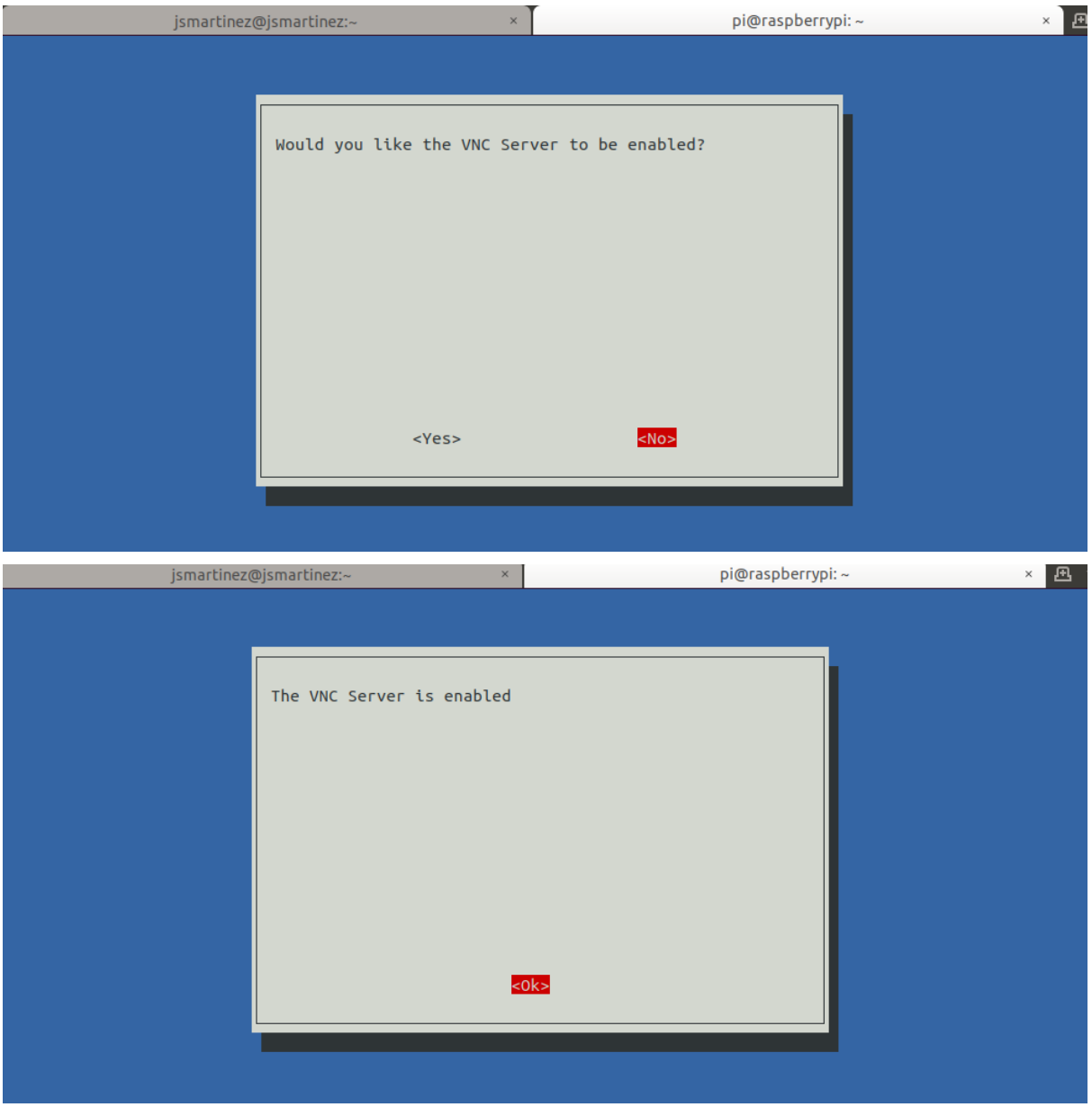
```
sudo apt-get install realvnc-vnc-viewer
```

Para poner en funcionamiento el VNC server en tu Raspberry Pi mediante la interfaz de línea de comandos necesitas la herramienta de configuración **raspi-config,** que se inicia de la siguiente manera:

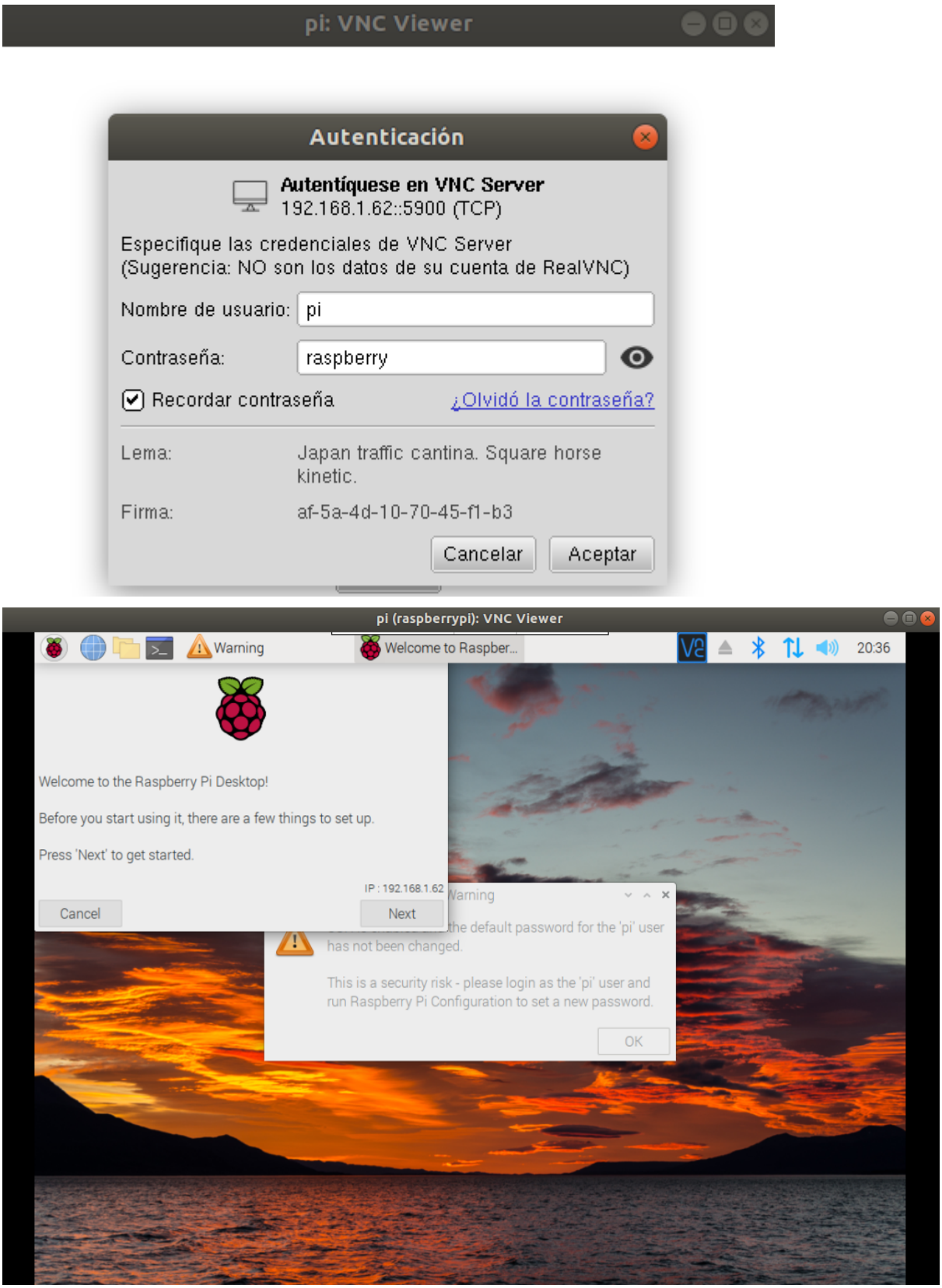
```
sudo raspi-config
```

Navega hasta llegar al botón “**Interfacing Options**” (opciones de interconexión) y desplaza el ratón hasta la opción “VNC” para activarlo en última instancia pulsando “Yes”. Tras activar el servidor, este se iniciará automáticamente al arrancar el Raspberry Pi.





Real VNC viewer


pi: VNC Viewer
Autenticación
Autentíquese en VNC Server
192.168.1.62::5900 (TCP)
Especifique las credenciales de VNC Server
(Sugerencia: NO son los datos de su cuenta de RealVNC)
Nombre de usuario: pi
Contraseña: raspberry
Recordar contraseña
¿Olvidó la contraseña?
Lema: Japan traffic cantina. Square horse kinetic.
Firma: af-5a-4d-10-70-45-f1-b3
Cancelar
Aceptar
pi (raspberrypi): VNC Viewer
Warning
Welcome to Raspber...
20:36
Welcome to the Raspberry Pi Desktop!
Before you start using it, there are a few things to set up.
Press 'Next' to get started.
IP : 192.168.1.62
Cancel
Next
Warning
has not been changed.
This is a security risk - please login as the 'pi' user and
run Raspberry Pi Configuration to set a new password.
OK

```
❯ ssh pi@192.168.1.72
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@    WARNING: REMOTE HOST IDENTIFICATION HAS CHANGED!     @
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
IT IS POSSIBLE THAT SOMEONE IS DOING SOMETHING NASTY!
Someone could be eavesdropping on you right now (man-in-the-middle attack)!
It is also possible that a host key has just been changed.
The fingerprint for the ECDSA key sent by the remote host is
SHA256:qs7Txh41rn22MFHGb1iPm+pJJTkgSYck/j4bLaQdOss.
Please contact your system administrator.
Add correct host key in /home/jsmartinez/.ssh/known_hosts to get rid of this message.
Offending ECDSA key in /home/jsmartinez/.ssh/known_hosts:2
  remove with:
  ssh-keygen -f "/home/jsmartinez/.ssh/known_hosts" -R "192.168.1.72"
ECDSA host key for 192.168.1.72 has changed and you have requested strict checking.
Host key verification failed.
❯
❯ ssh-keygen -f "/home/jsmartinez/.ssh/known_hosts" -R "192.168.1.72"
# Host 192.168.1.72 found: line 2
/home/jsmartinez/.ssh/known_hosts updated.
Original contents retained as /home/jsmartinez/.ssh/known_hosts.old
❯ ssh pi@192.168.1.72
The authenticity of host '192.168.1.72 (192.168.1.72)' can't be established.
ECDSA key fingerprint is SHA256:qs7Txh41rn22MFHGb1iPm+pJJTkgSYck/j4bLaQdOss.
Are you sure you want to continue connecting (yes/no)? yes
```

```
pi@raspberrypi:~ $ sudo apt-get install \
>     apt-transport-https \
>     ca-certificates \
>     curl \
>     gnupg \
>     lsb-release
Reading package lists... Done
Building dependency tree... 50%
```

DOCKER
https://docs.docker.com/engine/install/debian/

Configurar el repositorio

1. Actualice el `apt` índice de paquetes e instale paquetes para permitir `apt` el uso de un repositorio a través de HTTPS:

```
pi@raspberrypi:~ $ sudo apt-get update
Obj:1 http://archive.raspberrypi.org/debian bullseye InRelease
Obj:2 http://raspbian.raspberrypi.org/raspbian bullseye InRelease
Leyendo lista de paquetes... Hecho
pi@raspberrypi:~ $ sudo apt-get install \
    ca-certificates \
    curl \
    gnupg \
    lsb-release
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
ca-certificates ya está en su versión más reciente (20210119).
curl ya está en su versión más reciente (7.74.0-1.3+deb11u1).
gnupg ya está en su versión más reciente (2.2.27-2).
lsb-release ya está en su versión más reciente (11.1.0+rpi1).
fijado lsb-release como instalado manualmente.
El paquete indicado a continuación se instaló de forma automática y ya no es necesario.
  libfuse2
Utilice «sudo apt autoremove» para eliminarlo.
0 actualizados, 0 nuevos se instalarán, 0 para eliminar y 0 no actualizados.
```

2. Agregue la clave GPG oficial de Docker:

```
$ curl -fsSL https://download.docker.com/linux/debian/gpg | sudo gpg
--dearmor -o /usr/share/keyrings/docker-archive-keyring.gpg
```

```
pi@raspberrypi:~ $ curl -fsSL https://download.docker.com/linux/debian/gpg | sudo gpg --dearmor -o /usr/share/key
rings/docker-archive-keyring.gpg
```

3. Utilice el siguiente comando para configurar el repositorio **estable .** Para agregar el repositorio **nocturno** o **de prueba**`nightly` , agregue la palabra o `test`(o ambas) después de la palabra `stable`en los comandos a continuación. Más información sobre los canales **nocturnos** y de **prueba** .

```
$ echo \  "deb [arch=$(dpkg --print-architecture)
signed-by=/usr/share/keyrings/docker-archive-keyring.gpg]
https://download.docker.com/linux/debian \
  $(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list >
/dev/null
```

```
pi@raspberrypi:~ $ echo \
  "deb [arch=$(dpkg --print-architecture) signed-by=/usr/share/keyrings/docker-archive-keyring.gpg] https://downl
oad.docker.com/linux/debian \
  $(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
pi@raspberrypi:~ $
```

-Instalar el motor Docker

Este procedimiento funciona para Debian en `x86_64`/ `amd64`, `armhf`, `arm64` y Raspbian.

Actualice el `apt` índice del paquete e instale la *última versión* de Docker Engine y containerd, o vaya al siguiente paso para instalar una versión específica:

```
$ sudo apt-get update
```

```
pi@raspberrypi:~ $ sudo apt-get update
Des:1 https://download.docker.com/linux/debian bullseye InRelease [43,3 kB]
Obj:2 http://raspbian.raspberrypi.org/raspbian bullseye InRelease
Obj:3 http://archive.raspberrypi.org/debian bullseye InRelease
Des:4 https://download.docker.com/linux/debian bullseye/stable armhf Packages [6.630 B]
Descargados 50,0 kB en 1s (37,2 kB/s)
Leyendo lista de paquetes... Hecho
pi@raspberrypi:~ $
```

1. `$ sudo apt-get install docker-ce docker-ce-cli containerd.io`

```
pi@raspberrypi:~ $ sudo apt-get install docker-ce docker-ce-cli containerd.io
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
El paquete indicado a continuación se instaló de forma automática y ya no es necesario.
  libfuse2
Utilice «sudo apt autoremove» para eliminarlo.
Se instalarán los siguientes paquetes adicionales:
  docker-ce-rootless-extras iptables libip6tc2 libnetfilter-conntrack3 libnfnetlink0 libslirp0 slirp4netns
Paquetes sugeridos:
  cgroupfs-mount | cgroup-lite firewalld
Se instalarán los siguientes paquetes NUEVOS:
  containerd.io docker-ce docker-ce-cli docker-ce-rootless-extras iptables libip6tc2 libnetfilter-conntrack3
  libnfnetlink0 libslirp0 slirp4netns
0 actualizados, 10 nuevos se instalarán, 0 para eliminar y 0 no actualizados.
Se necesita descargar 71,4 MB de archivos.
Se utilizarán 293 MB de espacio de disco adicional después de esta operación.
¿Desea continuar? [S/n]
```

Para verificar que docker funciona correctamente

```
pi@raspberrypi:~ $ sudo docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
9b157615502d: Pull complete
Digest: sha256:507ecde44b8eb741278274653120c2bf793b174c06ff4eaa672b713b3263477b
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (arm32v7)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
 $ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
 https://hub.docker.com/

For more examples and ideas, visit:
 https://docs.docker.com/get-started/

pi@raspberrypi:~ $
```

¿Hay alguna máquina corriendo sobre mi docker?-rta no
$sudo docker ps

```
pi@raspberrypi:~ $ sudo docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
pi@raspberrypi:~ $
```

Instalación de Portainer en la Raspberry Pi

https://pimylifeup.com/raspberry-pi-portainer/

Ahora que hemos preparado nuestra Raspberry Pi, finalmente podemos instalar el software Portainer.

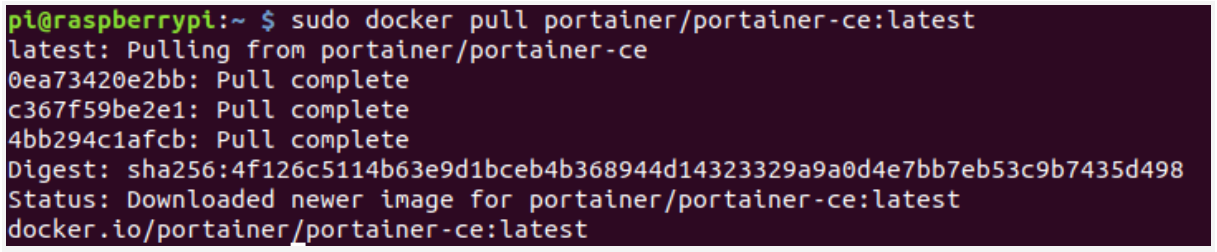
Afortunadamente para nosotros, este es un proceso muy simple ya que Portainer se ejecuta dentro de un contenedor Docker.

1. Con Docker instalado y configurado, podemos usarlo para instalar Portainer en nuestra Raspberry Pi.

Como Portainer está disponible como contenedor de Docker en el hub oficial de Docker , podemos obtener la última versión con el siguiente comando.

sudo docker pull portainer/portainer-ce:latest
Este comando descargará la imagen de la ventana acoplable a su dispositivo, lo que nos permitirá ejecutarla.

Usando " :linux-arm" al final de la solicitud de extracción, le pedimos explícitamente que descargue la versión ARM del contenedor.



2. Una vez que Docker termine de descargar la imagen de Portainer en su Raspberry Pi, ya podemos ejecutarlo.

Decirle a Docker que ejecute este contenedor requiere que pasemos algunos parámetros adicionales.

En la terminal de su Pi, ejecute el siguiente comando para iniciar Portainer.
$ sudo docker run -d -p 9000:9000 --name=portainer --restart=always -v /var/run/docker.sock:/var/run/docker.sock -v portainer_data:/data portainer/portainer-ce:latest

lgunas de las cosas importantes que hacemos aquí son definir primero los puertos a los que queremos que Portainer tenga acceso. En nuestro caso, este será port 9000.

Asignamos a este contenedor docker el nombre “portainer” para que podamos identificarlo rápidamente si alguna vez lo necesitamos.

Además, también le decimos al administrador de Docker que queremos que reinicie este Docker si alguna vez se desconecta involuntariamente.

```
pi@raspberrypi:~ $ sudo docker run -d -p 9000:9000 --name=portainer --restart=always -v /var/run/docker.sock:/var
/run/docker.sock -v portainer_data:/data portainer/portainer-ce:latest
b34a68c038f277890c025a738d5ff5b2946a5add8a971007c8c070c2f26ad103
pi@raspberrypi:~ $
```

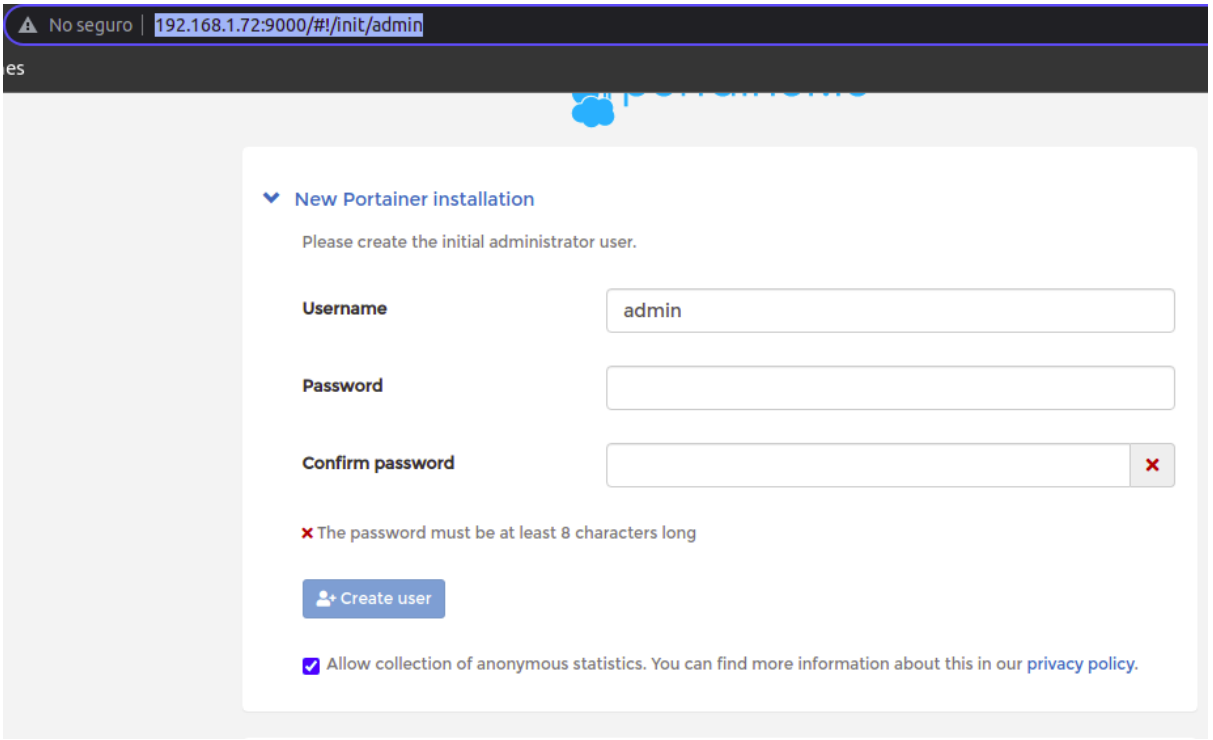
Ahora ya está instalado el portainer que funciona como un contenedor en docker.

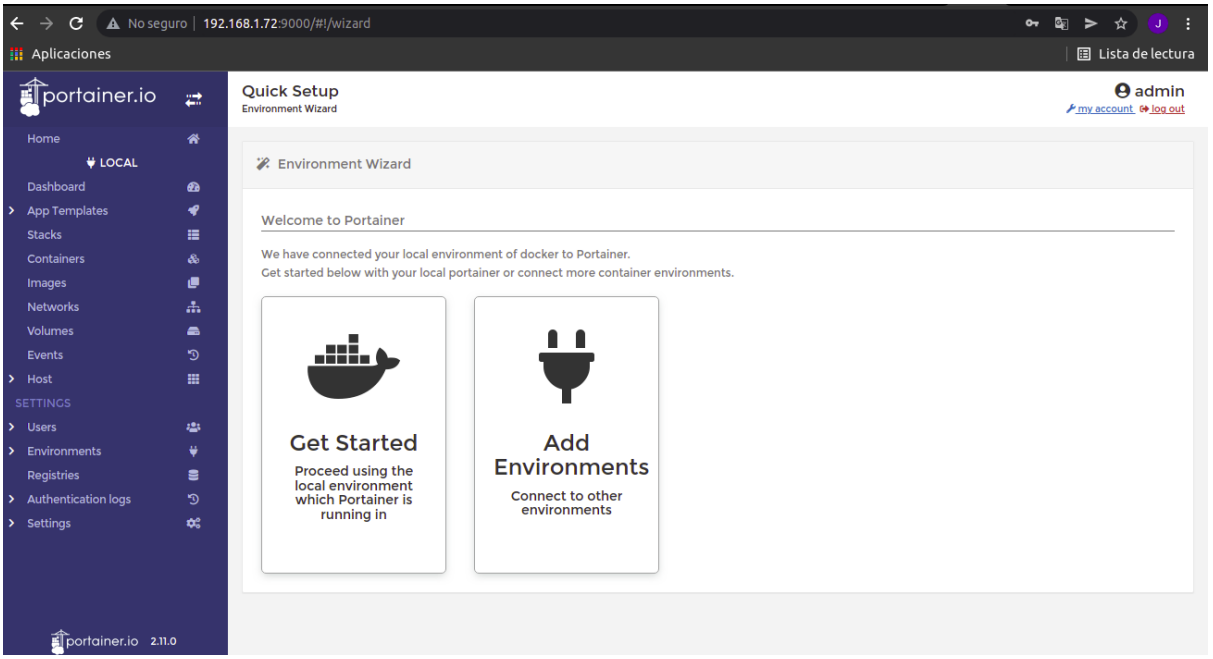
```
pi@raspberrypi:~ $ sudo docker ps
CONTAINER ID   IMAGE                           COMMAND        CREATED          STATUS          PORTS
                                              NAMES
b34a68c038f2   portainer/portainer-ce:latest   "/portainer"   45 seconds ago   Up 43 seconds   8000/tcp, 9443/tcp
, 0.0.0.0:9000->9000/tcp, :::9000->9000/tcp   portainer
pi@raspberrypi:~ $
```

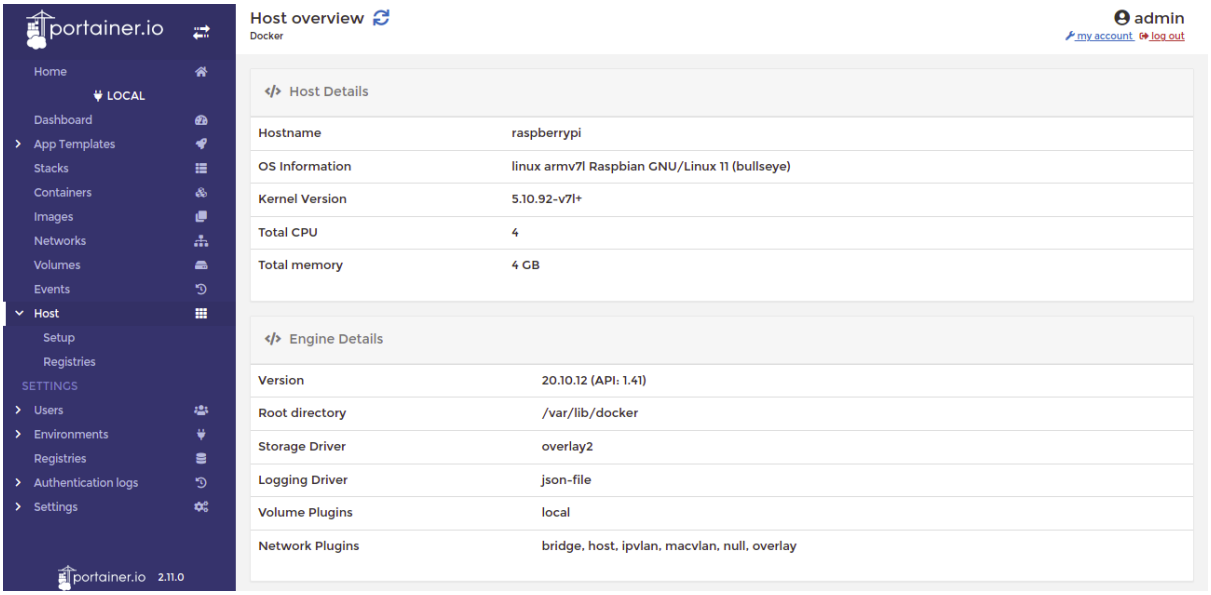
Para entrar a la parte gráfica del docker - portainer ingreso a la ip:puerto en el navegador (en mi caso http://192.168.1.72:9000/#!/init/admin) y me pide la clave y el nombre de usuario del portainer:

- admin
- 87654321

Se crea el usuario y se elige docker como servicio del portainer


No seguro | 192.168.1.72:9000/#!/init/admin
New Portainer installation
Please create the initial administrator user.
Username
admin
Password
Confirm password
The password must be at least 8 characters long
Create user
Allow collection of anonymous statistics. You can find more information about this in our privacy policy.


No seguro | 192.168.1.72:9000/#!/wizard
Aplicaciones
Lista de lectura
portainer.io
Quick Setup
Environment Wizard
admin
my account
log out
Home
LOCAL
Dashboard
App Templates
Stacks
Containers
Images
Networks
Volumes
Events
Host
SETTINGS
Users
Environments
Registries
Authentication logs
Settings
Environment Wizard
Welcome to Portainer
We have connected your local environment of docker to Portainer.
Get started below with your local portainer or connect more container environments.
Get Started
Proceed using the local environment which Portainer is running in
Add Environments
Connect to other environments
portainer.io 2.11.0



Montar otros servicios en DOCKER -PORTAINER:
COMO MOSQUITTO, NGINX, VERNE, ETC

MOSQUITTO

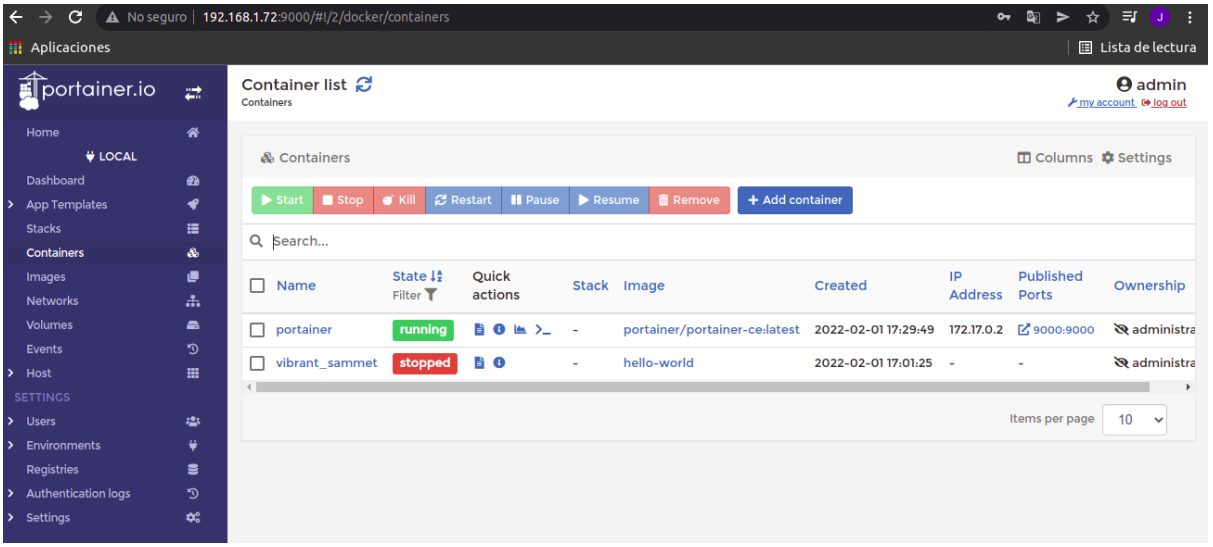
Se va a crear un directorio en la carpeta raíz de la raspberry que se llame docker
$ cd
$ mkdir docker
En esa carpeta voy a alojar las diferentes máquinas que voy a montar sobre el docker (como mosquitto, vernemq, nginx, apache, etc)
creo una carpeta para mosquitto
$ cd docker
$ mkdir mosquitto

```
pi@raspberrypi:/boot $ cd
pi@raspberrypi:~ $ pwd
/home/pi
pi@raspberrypi:~ $ mkdir docker
pi@raspberrypi:~ $ cd docker
pi@raspberrypi:~/docker $ pwd
/home/pi/docker
pi@raspberrypi:~/docker $ mkdir mosquitto
pi@raspberrypi:~/docker $ ls
mosquitto
pi@raspberrypi:~/docker $
```

Se crean dos directorios dentro de la carpeta mosquitto: data y config

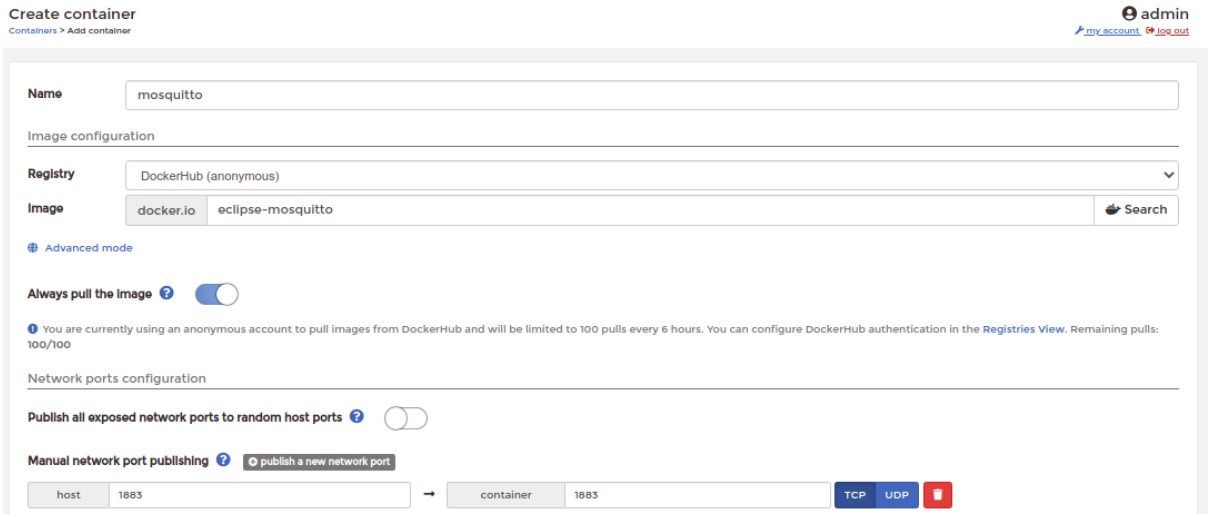
```
pi@raspberrypi:~/docker/mosquitto $ mkdir data config
pi@raspberrypi:~/docker/mosquitto $ ls
config  data
pi@raspberrypi:~/docker/mosquitto $
```

De manera gráfica en el portainer —containers/add container

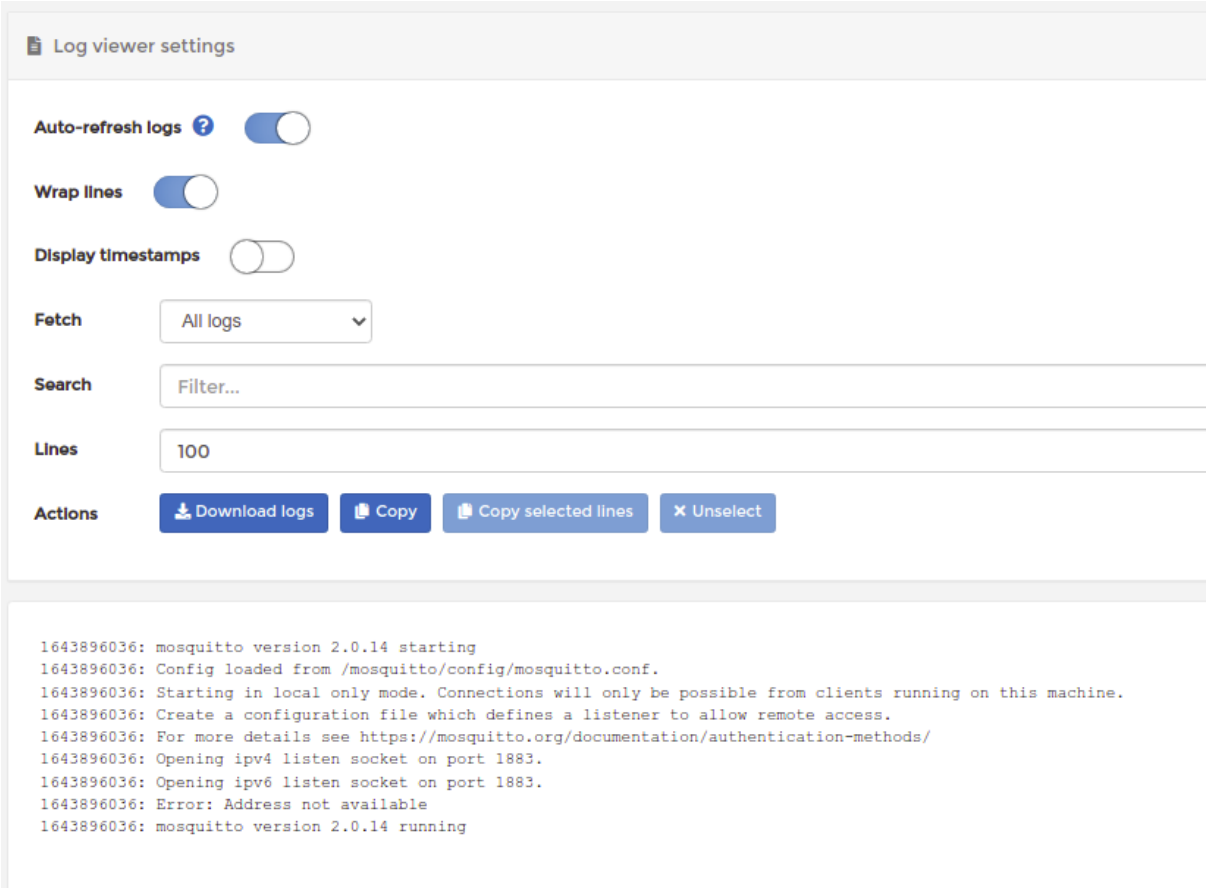


https://hub.docker.com/_/eclipse-mosquitto

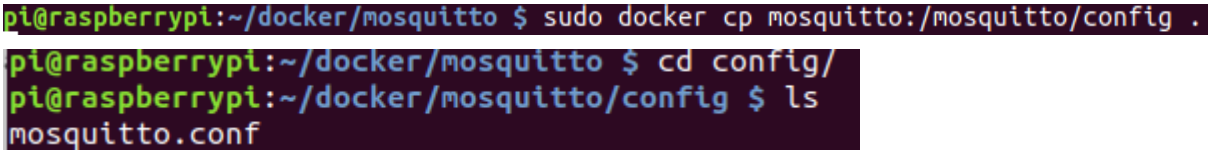
pongo un nombre, copio la imagen eclipse-mosquitto, expongo los puertos 1883:1883

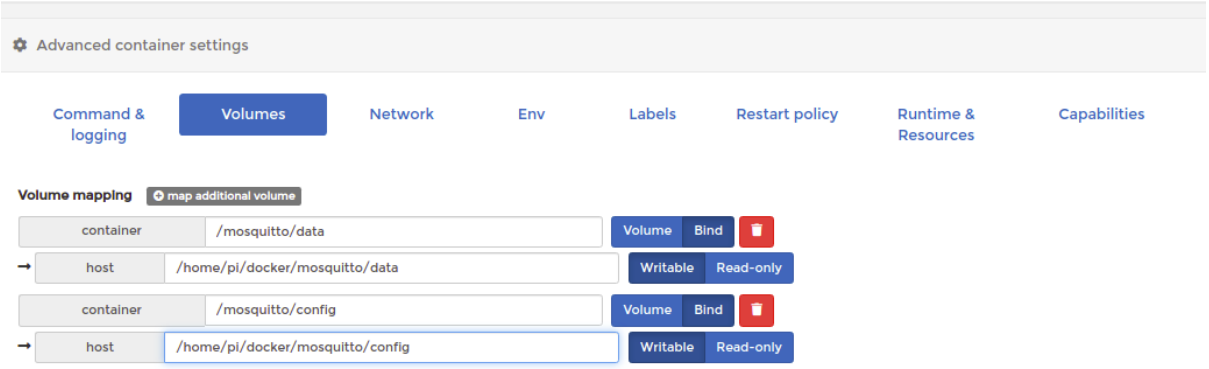


Hago deploy al contenedor y miro los logs y dice que no lo ha podido lanzar, se debe configurar bien

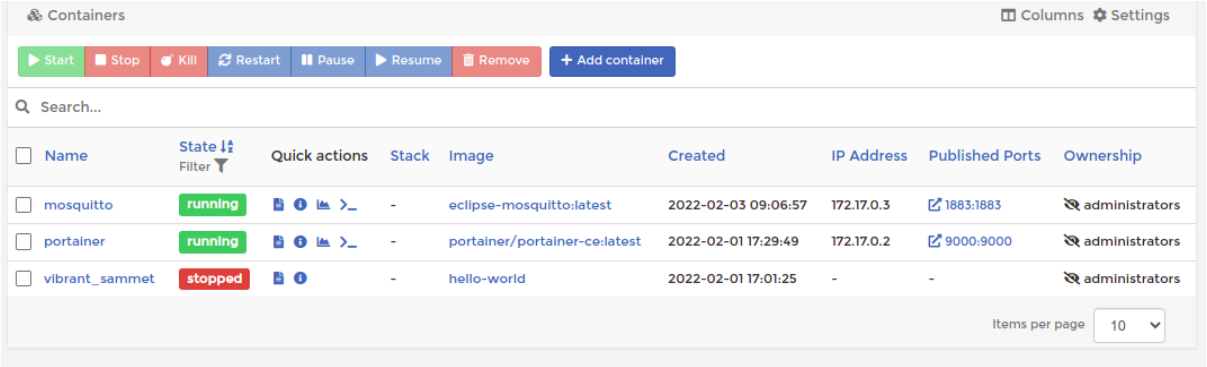


En configuración avanzada de contenedor → Volumes
Se agregan las rutas de las carpetas data y config creadas anteriormente
pero debo sacar la información de <u>config</u> que se creó cuando puse a correr el contenedor por primer vez

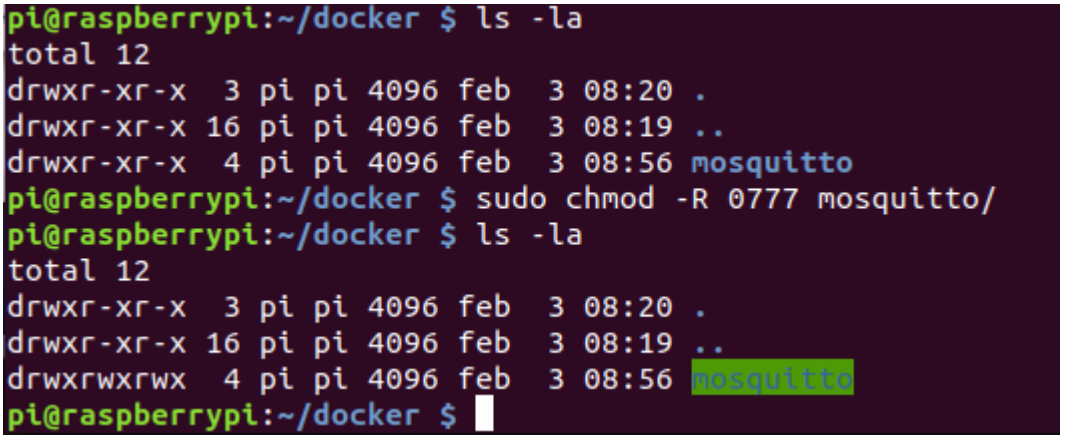




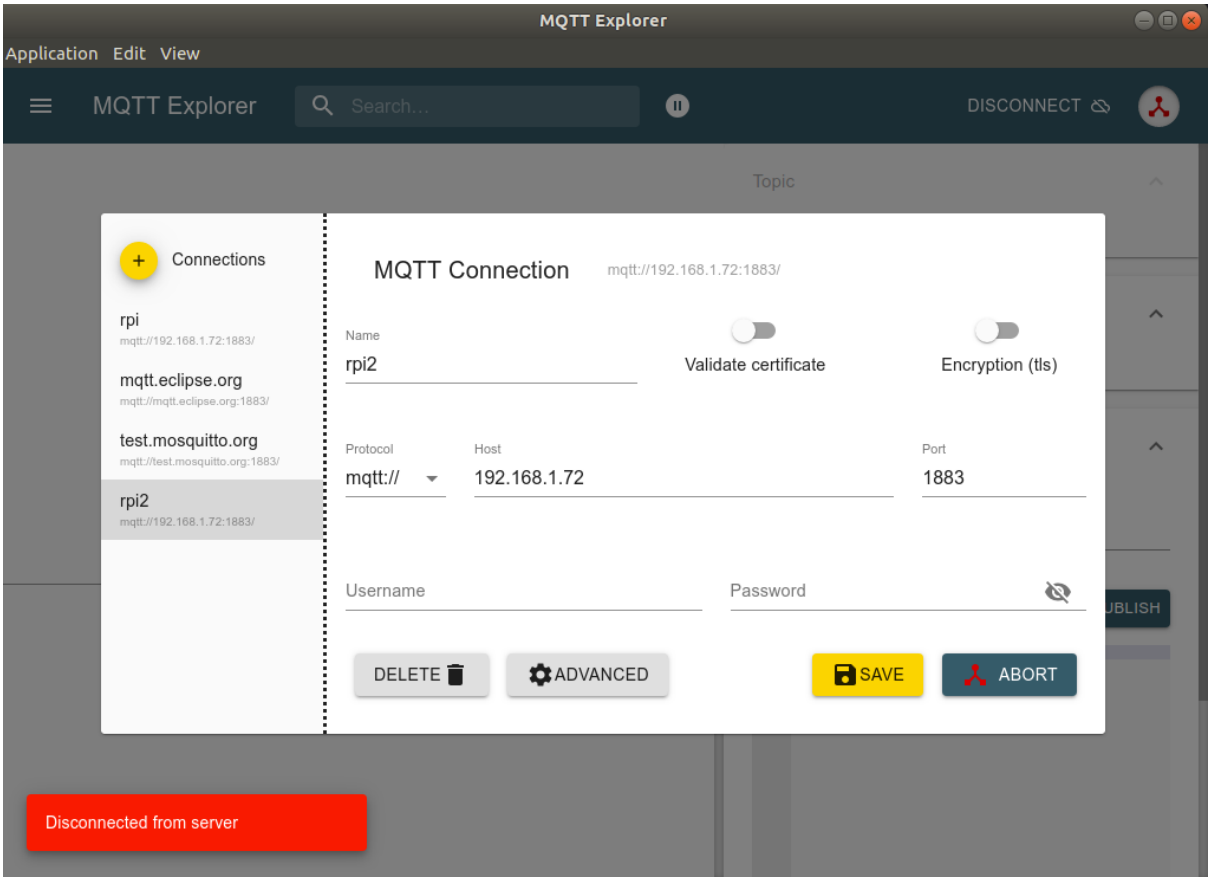
Lo que va a hacer es mapear las rutas del contenedor a una dirección (carpeta) especifica dentro de la raspberry
Le doy en <u>deploy container</u>



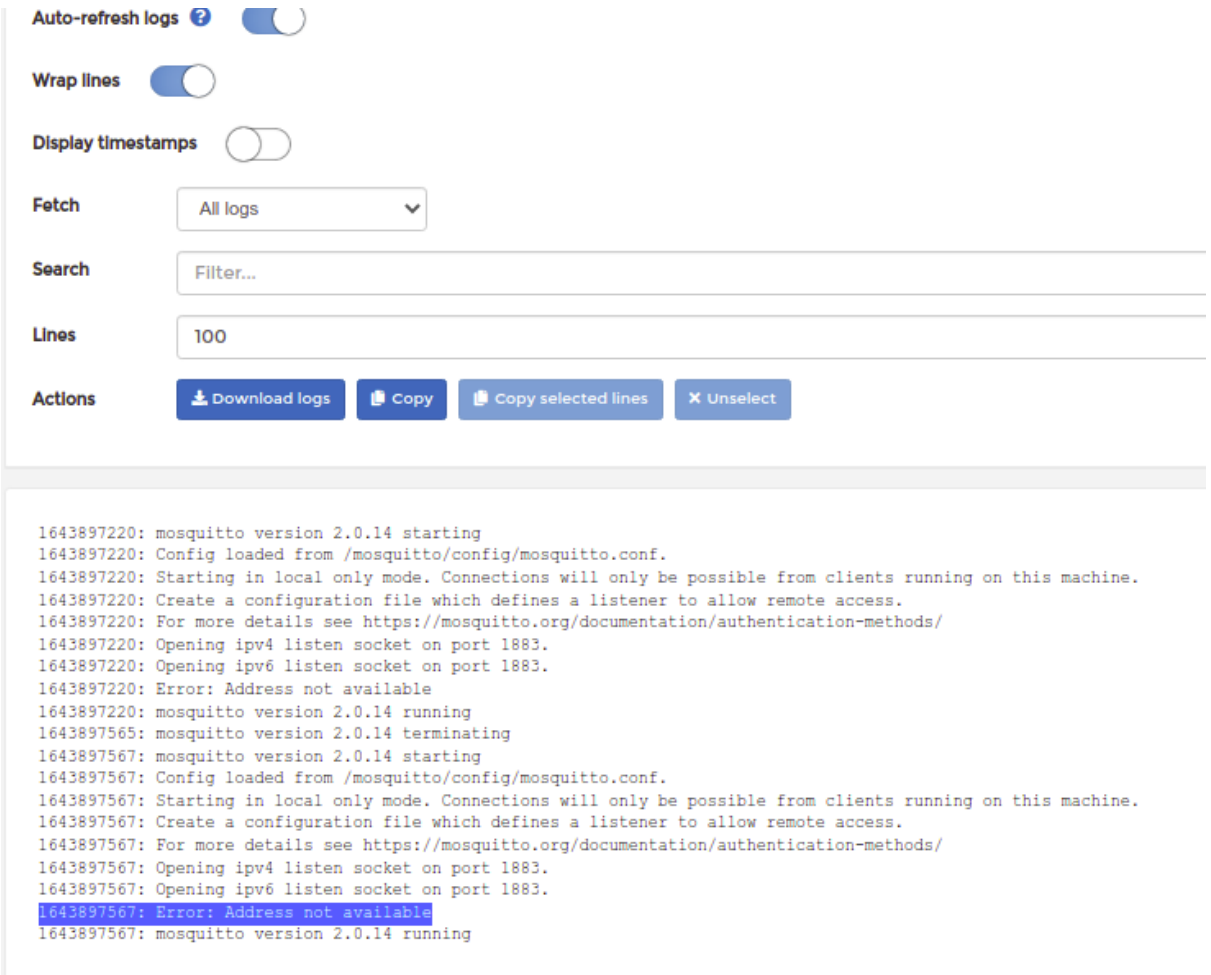
sudo chmod -R 0777 mosquitto/



En el log de portainer contenedor mosquitto aparece que la dirección no está disponible y tampoco se puede conectar por mqtt explorer.



razón por la que se debe configurar el archivo mosquitto.conf se debe agregar el listener.



Toca configurarlo mirar pagina
https://stackoverflow.com/questions/45260068/setting-up-mosquitto-on-home-server

Así es como funcionará:

1.) Configurar mosquitto.conf como

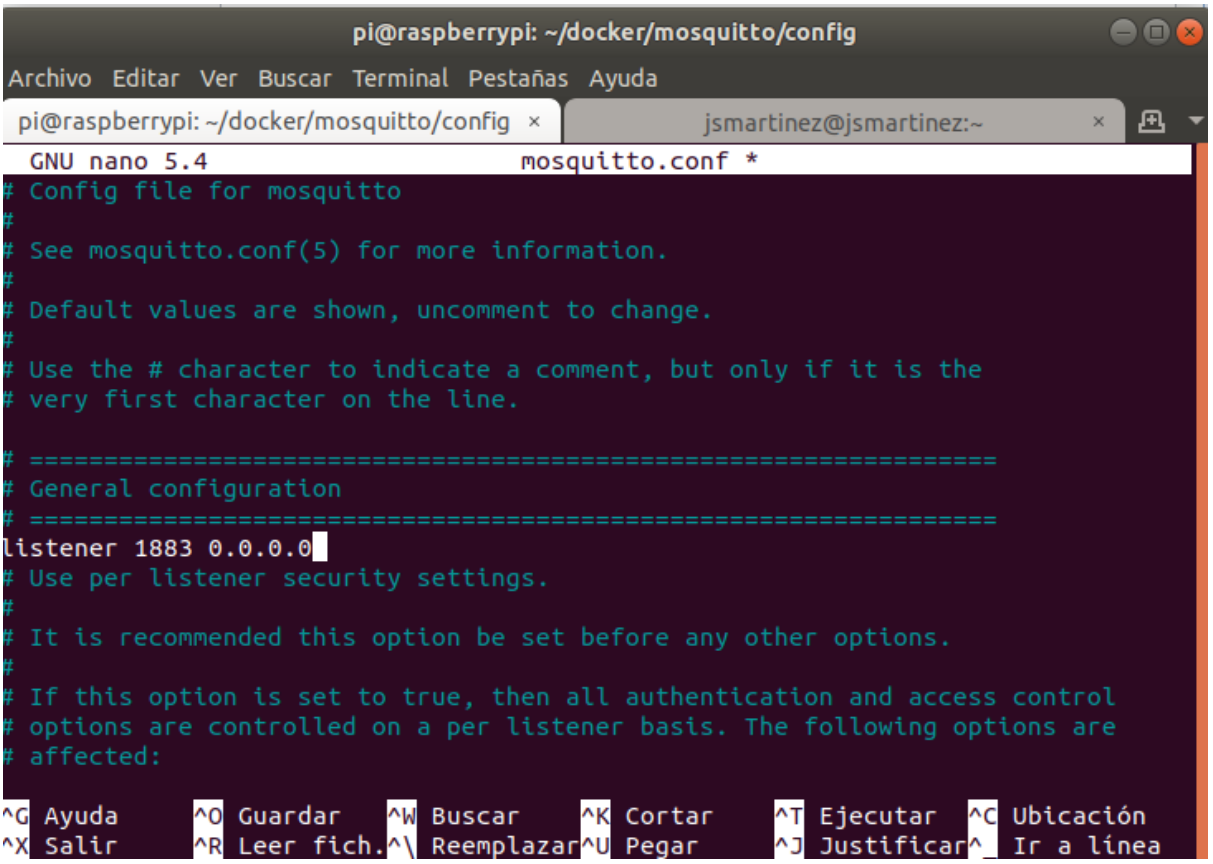
```
listener 1883 0.0.0.0
#cafile <path to ca file>
#certfile <path to server cert>
#keyfile <path to server key>
#require_certificate false
```

> 0.0.0.0 vincula el servidor a todas las interfaces presentes.
>
> Puede descomentar el código para habilitar TLS para mayor seguridad. Pero tendrás que configurar el cliente para usar lo mismo también...

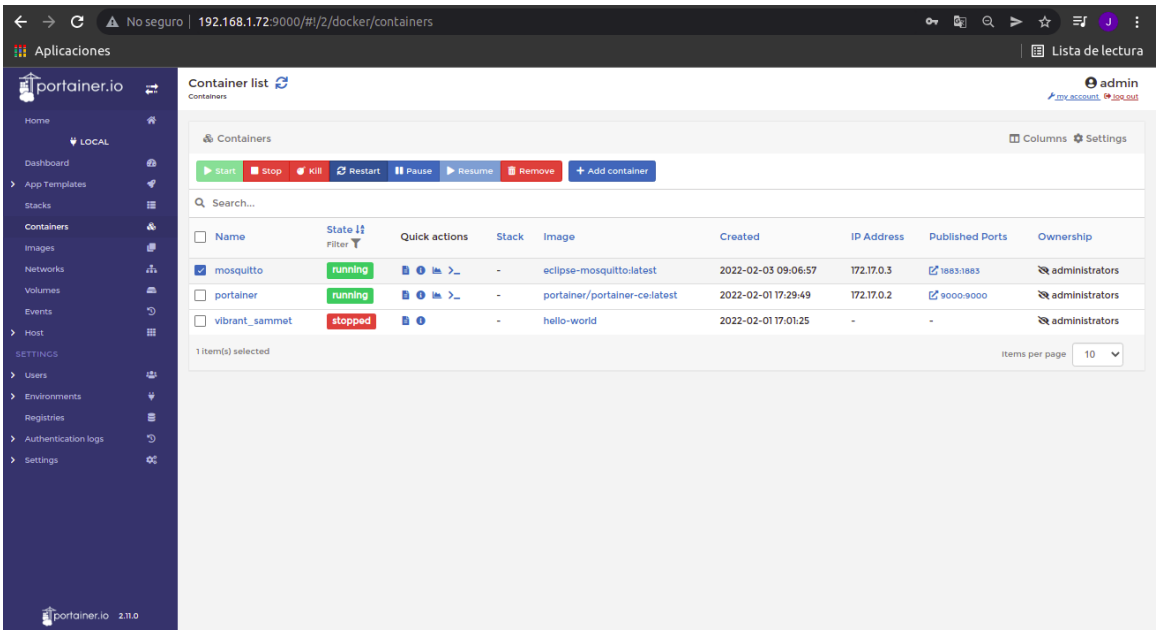
2.) El número de puerto 1883 del enrutador de reenvío de puertos al puerto 1883 de la IP de la máquina que ejecuta el intermediario.

3.) ¡Inicie el corredor y pruebe a su cliente!

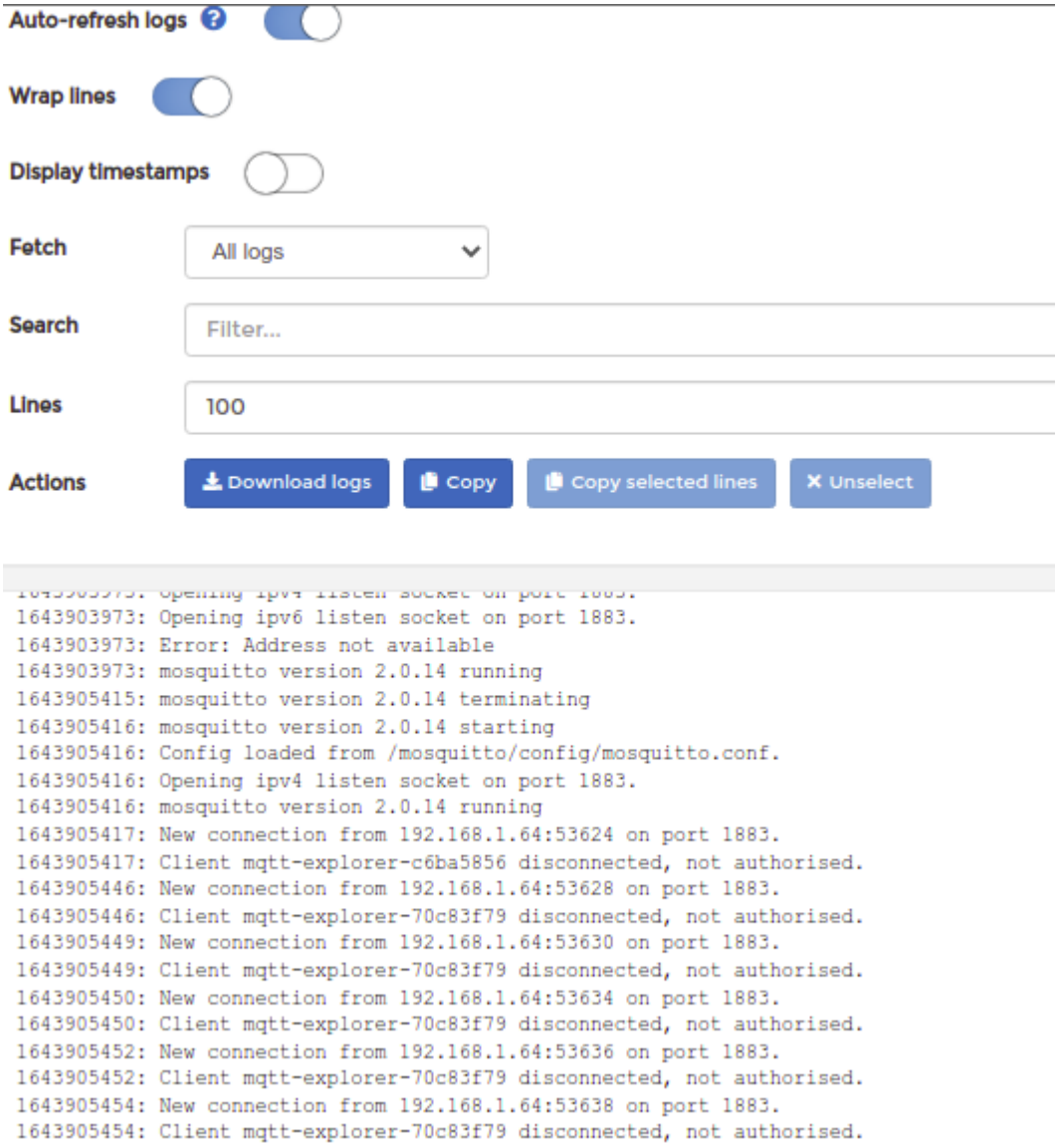
Se abre el archivo mosquitto.conf
$ nano /mosquitto/config/mosquitto.conf
Se le agrega la linea listener 18883 0.0.0.0



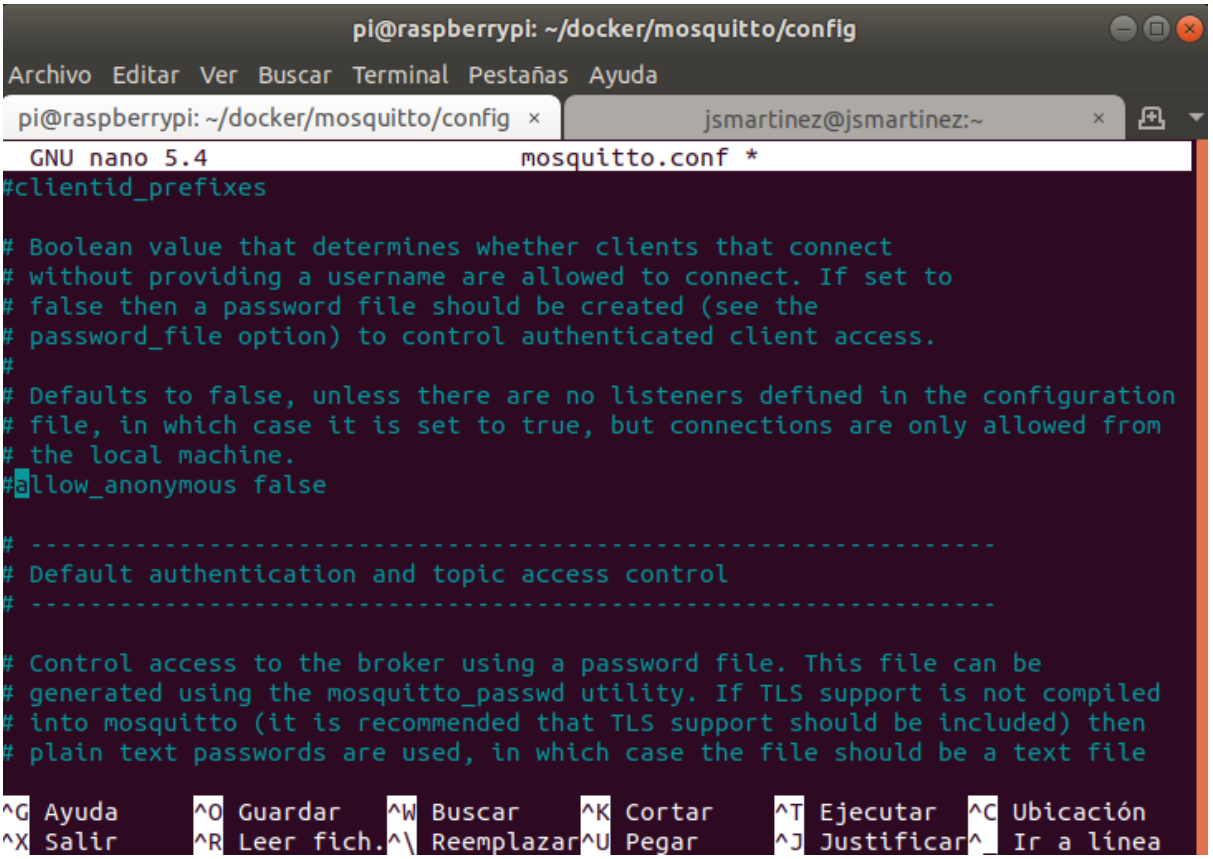
Ahora se debe reiniciar el contenedor, se puede desde portainer o desde la terminal
Portainer: se selecciona y se clickea restart

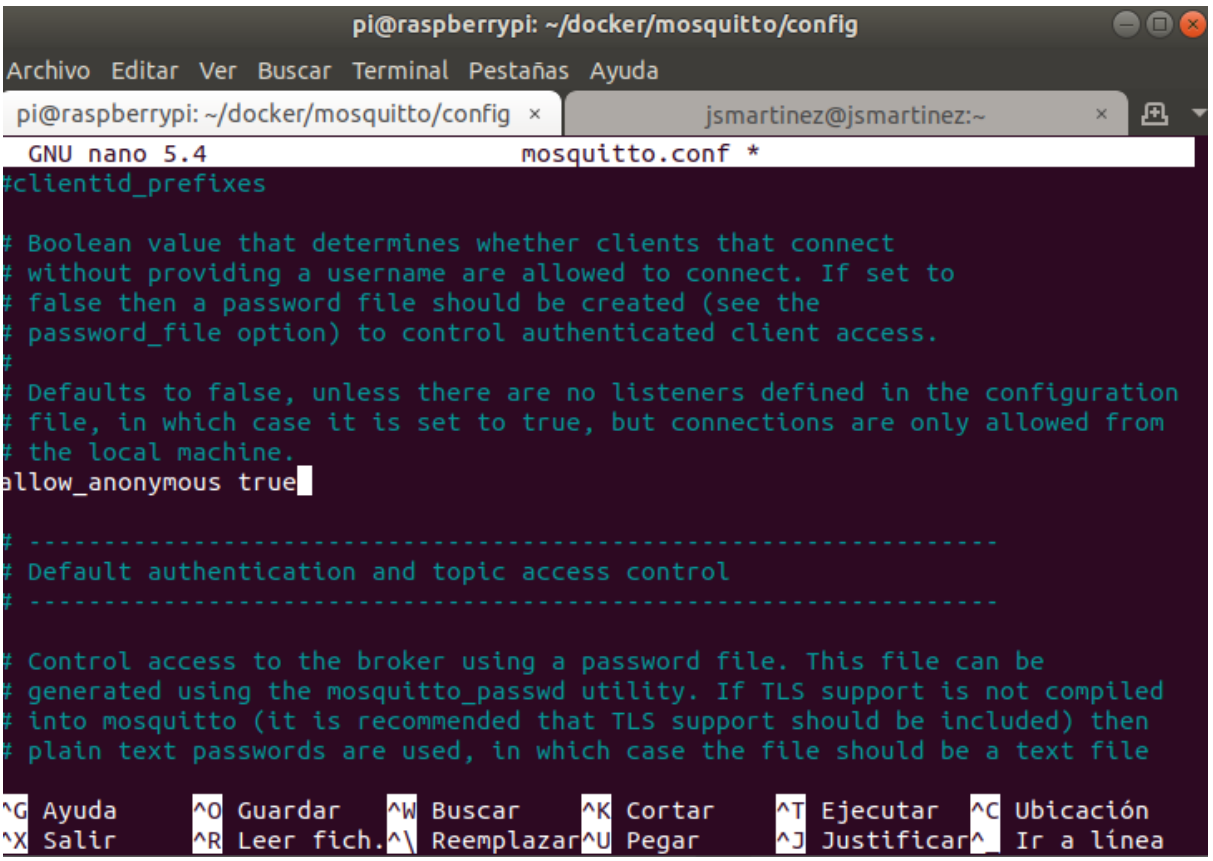


Sin embargo no me deja conctarme aun pues dice que el usuario no está autorizado



Se debe dar permiso para conexión anonima
en el archivo mosquitto.conf, se debe descomentar allow_anonymous true

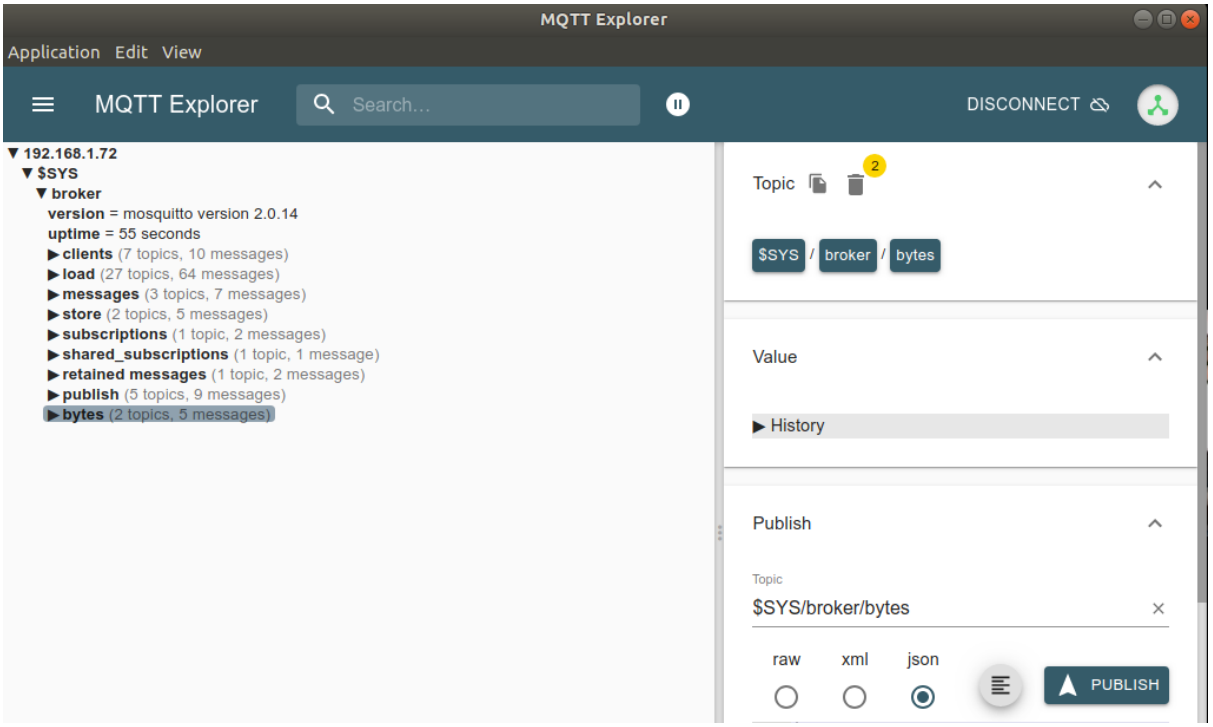




Ahora se va a reiniciar desde la consola
sudo docker restart mosquitto

```
pi@raspberrypi:~/docker/mosquitto/config $ sudo docker restart mosquitto
mosquitto
```

Ahora si se puede conectar a mqtt



NGINX

Se puede agregar nginx en docker

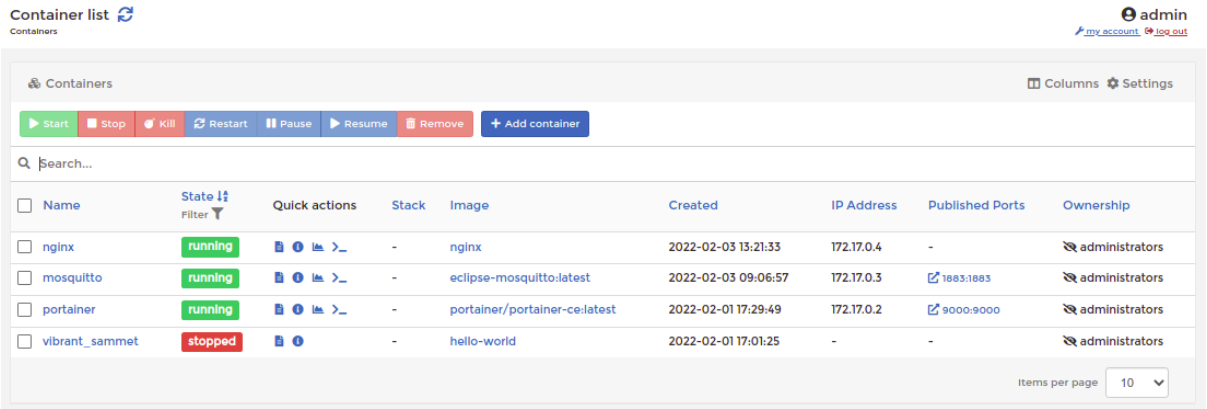
https://hub.docker.com/_/nginx

se pone en la terminal de raspberry

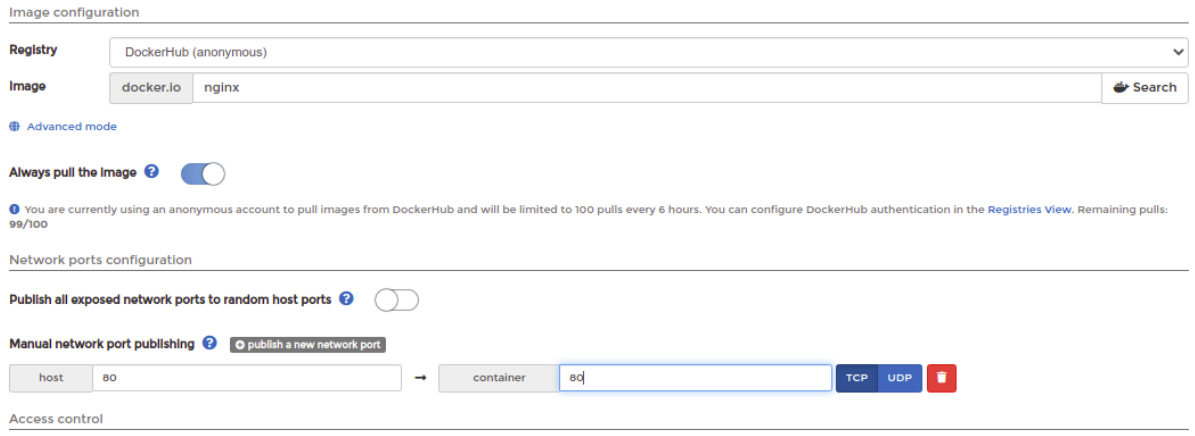
sudo docker run --name nginx -v /some/content:/usr/share/nginx/html:ro -d nginx

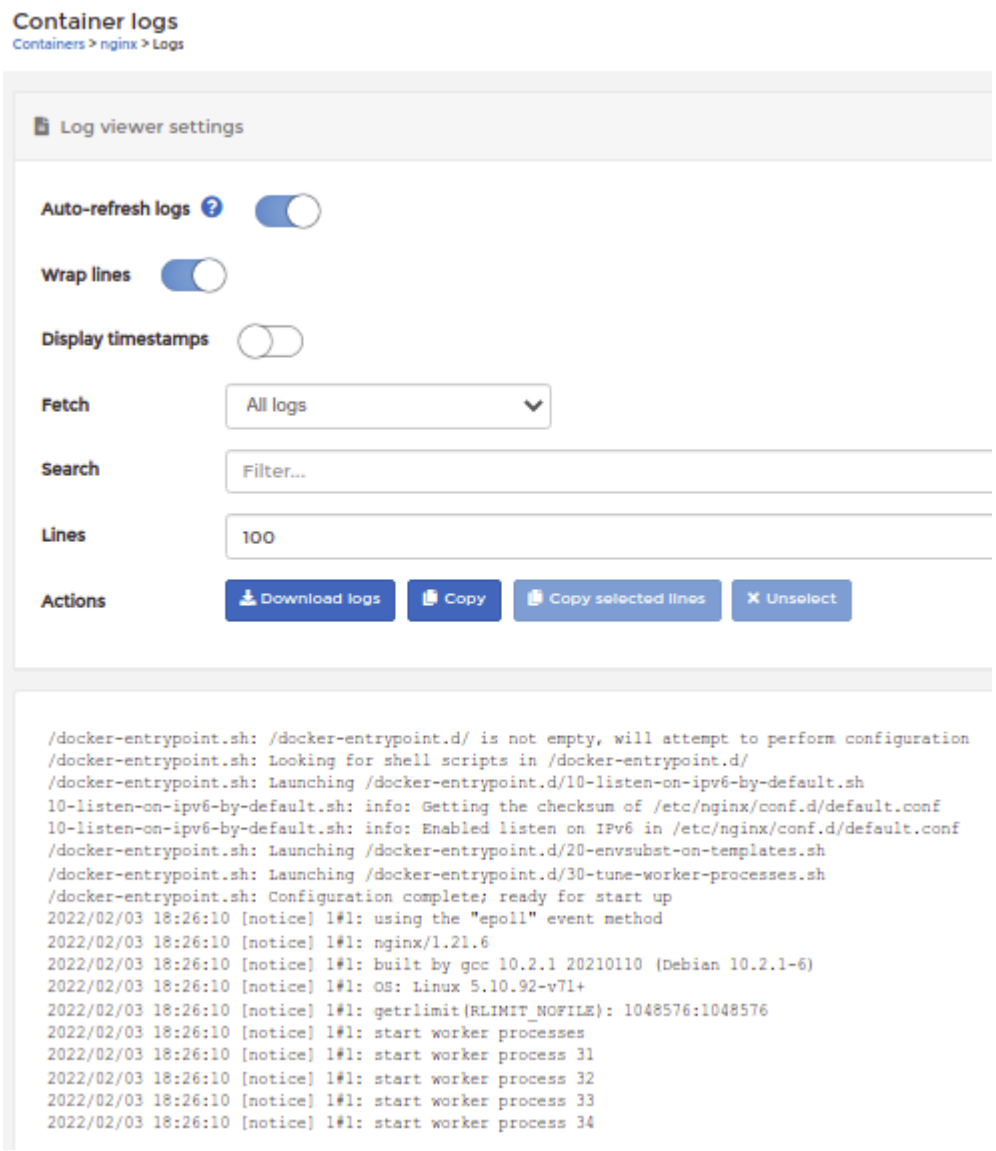
```
pi@raspberrypi:~/docker/mosquitto/config $ sudo docker run --name nginx -v /some
/content:/usr/share/nginx/html:ro -d nginx
Unable to find image 'nginx:latest' locally
latest: Pulling from library/nginx
aaef1f1162ec: Pull complete
158fdbcad3be: Pull complete
e91a8f81054f: Pull complete
5dac8ed1dcde: Pull complete
f4ad1f3b674e: Pull complete
83c0cd4ca302: Pull complete
Digest: sha256:2834dc507516af02784808c5f48b7cbe38b8ed5d0f4837f16e78d00deb7e7767
Status: Downloaded newer image for nginx:latest
c1a09260b0de20c1358b5749c0ad5e6e8ae89e65a2a7a0cd5cf75a260df3ad4a
pi@raspberrypi:~/docker/mosquitto/config $
```

En portainer ya aparece el servidor nginx

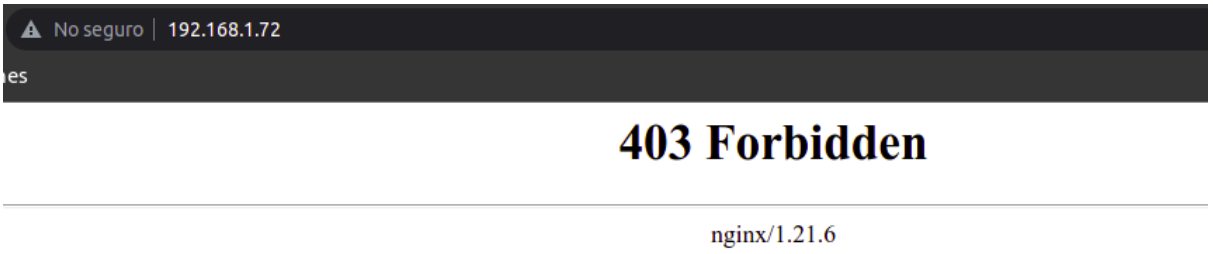


Toca editar en el portainer el contenedor de NGINX y toca exponer los puertos de raspberry desde la parte gráfica y pongo que el puerto 80 interno lo uno al 80 externo y pongo deploy the container

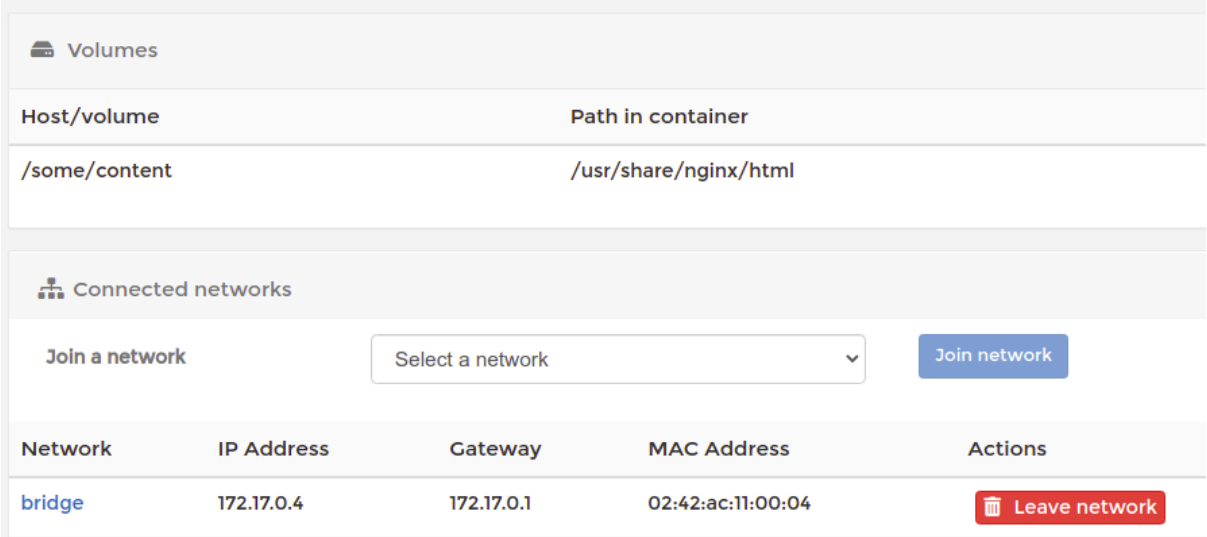




En el log de nginx ya aparece funcionando y en el navegador debe aparecer 403 forbidden sobre el nginx



Toca mapear la ruta a la que se dirige en /usr/share/nginx/html y como no existe vamos a crearlo




```
pi@raspberrypi:/usr/share $ sudo mkdir /usr/share/nginx
pi@raspberrypi:/usr/share $ sudo mkdir /usr/share/nginx/html
pi@raspberrypi:/usr/share $ sudo chmod -R 777 /usr/share/nginx/html
pi@raspberrypi:/usr/share $ cd /usr/share/nginx/html
pi@raspberrypi:/usr/share/nginx/html $
```

y se crean 2 archivos ahí dentro, un index html y una carpeta con un estilo.css dentro

```
pi@raspberrypi:/usr/share/nginx/html $ touch index.html
```

```
pi@raspberrypi:/usr/share/nginx/html $ mkdir css
pi@raspberrypi:/usr/share/nginx/html $ cd css
pi@raspberrypi:/usr/share/nginx/html/css $ touch estilo.css
pi@raspberrypi:/usr/share/nginx/html/css $ cd ..
pi@raspberrypi:/usr/share/nginx/html $ ls
css  estilo  index.html
```

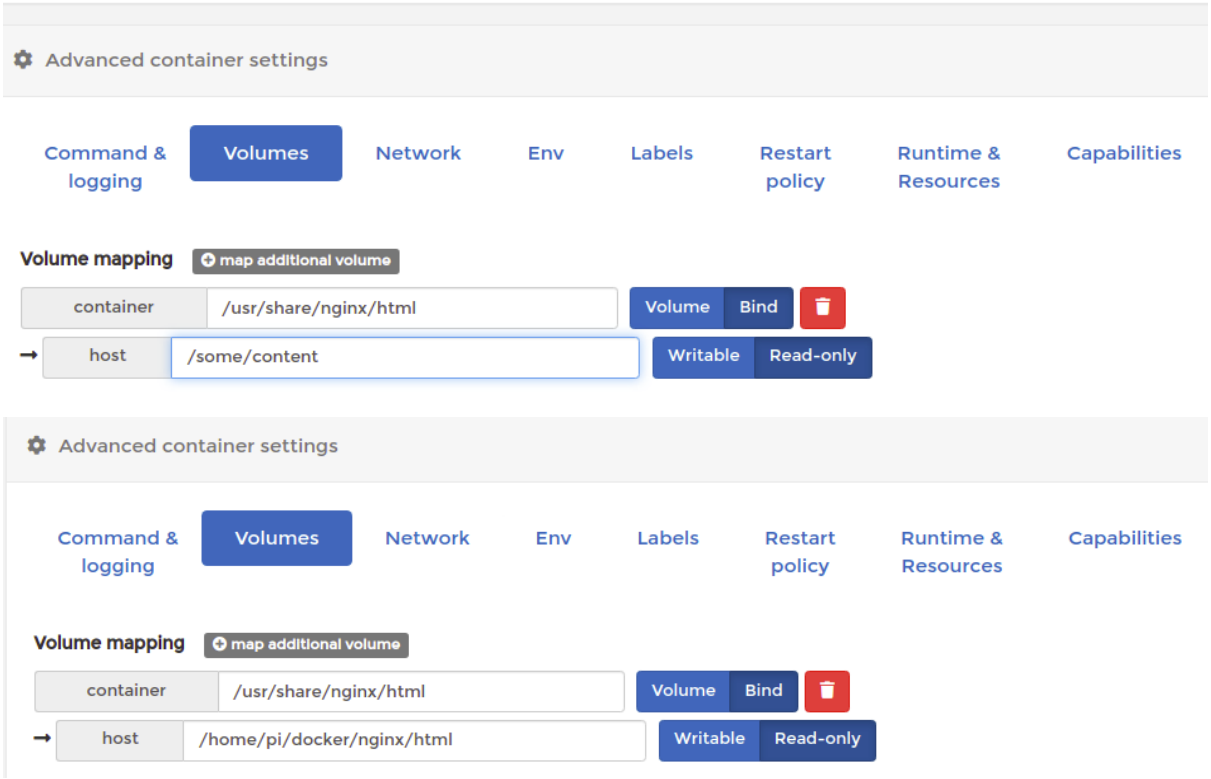
```
pi@raspberrypi:/usr/share/nginx/html $ tree
.
├── css
│   └── estilo.css
└── index.html
```

y se editan los contenidos de esos archivos

```
<html>
    <head>
        <title>
            Embebidos - Telemetria apicola
        </title>
        <link rel="stylesheet" href="css/estilo.css" />
        <body>
            <div id="container">
                <div id="cabecera">

                    Esta web es una prueba de Nginx para montar un servicio web
                    <span id="tagline">Telemetria Apicola</span>
                </div>
                <div id="post">
                    <h1>parrafo 0</h1>
                    <p>parrafo 1</p>
                    <p>Parrafo 2</p>
                    <p>parrafo 3</p>
                </div>
        <div id="footer">
            Ejemplo de servicio web
        </div>
            </div>
        </body>
    </head>
</html>
```

```css
body
{
    background: black;
    color: blue;
    text-align: center;
    font-family: "Arial";
    font-size: 20px;
}
#cabecera
{
    background: black;
    box-shadow: 0px 2px 20px 0px rgba(0, 0, 0, 75);
    color: white;
    font-weight: bold;
    margin: 0;
    padding: 0.5em 0 0.5em 2em;
}
#cabecera #logo
{
    width: 20px;
    vertical-align: middle;
}
#cabecera #tagline
```

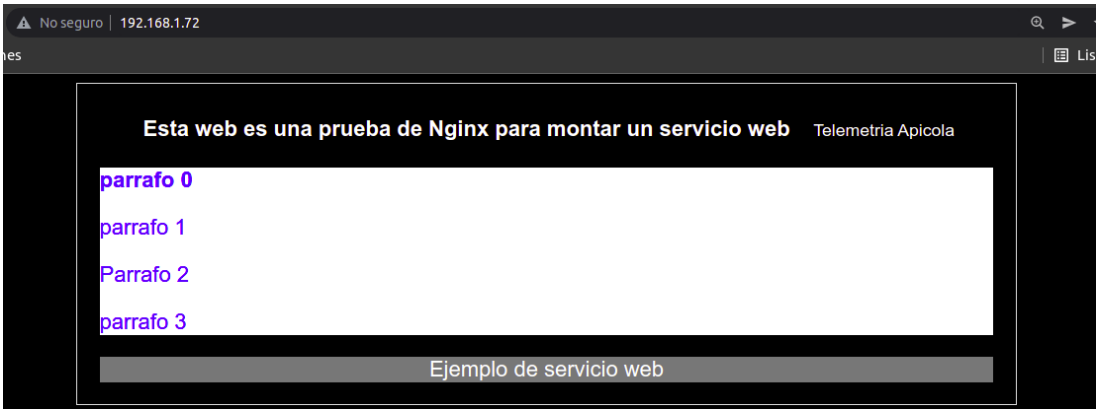
Se debe editar el contenedor desde portainer y agregar la ruta en volumes



El .html y css deben estar en está ruta no en la otra entonces vamos a copiarlos a está ruta desde consola

```
pi@raspberrypi:~/docker/nginx/html $ sudo cp /usr/share/nginx/html/index.html .
pi@raspberrypi:~/docker/nginx/html $ sudo cp /usr/share/nginx/html/css/ .
cp: -r not specified; omitting directory '/usr/share/nginx/html/css/'
pi@raspberrypi:~/docker/nginx/html $ sudo cp -ri /usr/share/nginx/html/css/ .
pi@raspberrypi:~/docker/nginx/html $ ls
css  index.html
```

Se va a probar ahora síesta corriendo una pagina web desde el navegador



Se instala visual studio code en la raspberry

```
pi@raspberrypi:~ $ sudo apt install code
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
El paquete indicado a continuación se instaló de forma automática y ya no es nece
sario.
  libfuse2
Utilice «sudo apt autoremove» para eliminarlo.
Se instalarán los siguientes paquetes NUEVOS:
  code
0 actualizados, 1 nuevos se instalarán, 0 para eliminar y 5 no actualizados.
Se necesita descargar 69,3 MB de archivos.
Se utilizarán 242 MB de espacio de disco adicional después de esta operación.
Des:1 http://archive.raspberrypi.org/debian bullseye/main armhf code armhf 1.63.2
-1639561205 [69,3 MB]
Descargados 69,3 MB en 21s (3.365 kB/s)
Seleccionando el paquete code previamente no seleccionado.
(Leyendo la base de datos ... 177391 ficheros o directorios instalados actualment
e.)
```

Ahora falta una base de datos del tipo relacionales (sql) o no relacionales

Base de datos - MariaDB

https://www.luisllamas.es/como-instalar-mariadb-en-raspberry-pi/

sudo apt install mariadb-server

```
pi@raspberrypi:~/docker $ sudo apt install mariadb-server mariadb-client
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
El paquete indicado a continuación se instaló de forma automática y ya no es nec
esario.
  libfuse2
```

sudo mysql_secure_installation

```
pi@raspberrypi:~/docker $ sudo mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
      SERVERS IN PRODUCTION USE!  PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the current
password for the root user. If you've just installed MariaDB, and
haven't set the root password yet, you should just press enter here.

Enter current password for root (enter for none):
```

```
pi@raspberrypi:~/docker $ sudo mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
      SERVERS IN PRODUCTION USE!  PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the current
password for the root user. If you've just installed MariaDB, and
haven't set the root password yet, you should just press enter here.

Enter current password for root (enter for none):
OK, successfully used password, moving on...

Setting the root password or using the unix_socket ensures that nobody
can log into the MariaDB root user without the proper authorisation.

You already have your root account protected, so you can safely answer 'n'.

Switch to unix_socket authentication [Y/n] n
```

```
Change the root password? [Y/n] y
New password:
Re-enter new password:
Password updated successfully!
Reloading privilege tables..
 ... Success!


By default, a MariaDB installation has an anonymous user, allowing anyone
to log into MariaDB without having to have a user account created for
them.  This is intended only for testing, and to make the installation
go a bit smoother.  You should remove them before moving into a
production environment.

Remove anonymous users? [Y/n]
```

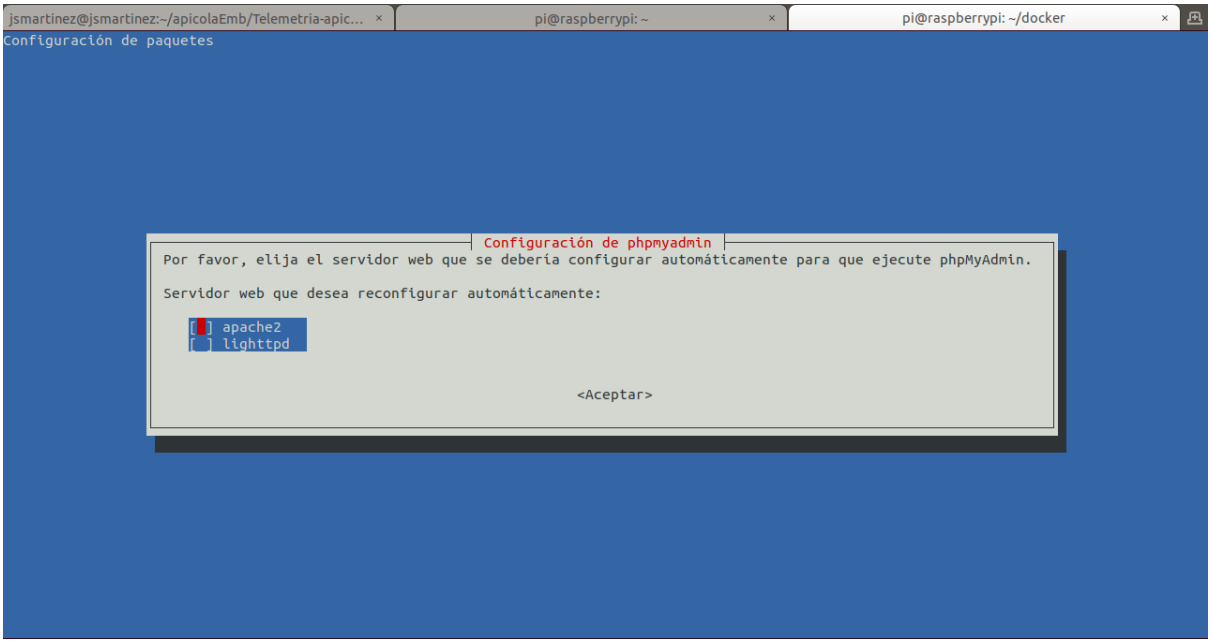
```
Remove anonymous users? [Y/n] y
 ... Success!

Normally, root should only be allowed to connect from 'localhost'.  This
ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] y
 ... Success!

By default, MariaDB comes with a database named 'test' that anyone can
access.  This is also intended only for testing, and should be removed
before moving into a production environment.

Remove test database and access to it? [Y/n] y
 - Dropping test database...
 ... Success!
 - Removing privileges on test database...
 ... Success!

Reloading the privilege tables will ensure that all changes made so far
will take effect immediately.

Reload privilege tables now? [Y/n] y
 ... Success!

Cleaning up...

All done!  If you've completed all of the above steps, your MariaDB
installation should now be secure.

Thanks for using MariaDB!
pi@raspberrypi:~/docker $
```

con mysql -u root -p entro al prompt de mysql. o la administración por línea de comando

```
pi@raspberrypi:~/docker $ mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 52
Server version: 10.5.12-MariaDB-0+deb11u1 Raspbian 11

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]>
```

Para administrar gráficamente uso PHPMYADMIN
sudo apt install phpmyadmin

```
pi@raspberrypi:~/docker $ sudo apt install phpmyadmin
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
El paquete indicado a continuación se instaló de forma automática y ya no es necesario.
  libfuse2
Utilice «sudo apt autoremove» para eliminarlo.
Se instalarán los siguientes paquetes adicionales:
  apache2 apache2-bin apache2-data apache2-utils dbconfig-common dbconfig-mysql icc-profiles-free libapr1 libaprutil1 libaprutil1-dbd-sqlite3
  libaprutil1-ldap libjs-bootstrap4 libjs-codemirror libjs-jquery-mousewheel libjs-jquery-timepicker libjs-openlayers libjs-popper.js
  libjs-sizzle liblua5.3-0 libonig5 libzip4 node-jquery php-bz2 php-cli php-common php-curl php-gd php-google-recaptcha php-mariadb-mysql-kbs
  php-mbstring php-mysql php-phpmyadmin-motranslator php-phpmyadmin-shapefile php-phpmyadmin-sql-parser php-phpseclib php-psr-cache
  php-psr-container php-psr-log php-symfony-cache php-symfony-cache-contracts php-symfony-config php-symfony-dependency-injection
  php-symfony-expression-language php-symfony-filesystem php-symfony-service-contracts php-symfony-var-exporter php-symfony-yaml php-tcpdf
  php-twig php-twig-i18n-extension php-xml php-zip php7.4-bz2 php7.4-cli php7.4-common php7.4-curl php7.4-gd php7.4-json php7.4-mbstring
  php7.4-mysql php7.4-opcache php7.4-readline php7.4-xml php7.4-zip
Paquetes sugeridos:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom libjs-requirejs php-dbase php-libsodium php-mcrypt php-gmp php-symfony-finder
  php-symfony-proxy-manager-bridge php-symfony-console php-imagick php-twig-doc php-pear php-recode php-gd2 php-pragmarx-google2fa-qrcode
  php-samyoul-u2f-php-server
Paquetes recomendados:
  php-mcrypt
```



PHPMYADMIN Funciona con apache2, entonces lo que se debe hacer es iniciarlo
Compruebo su estado

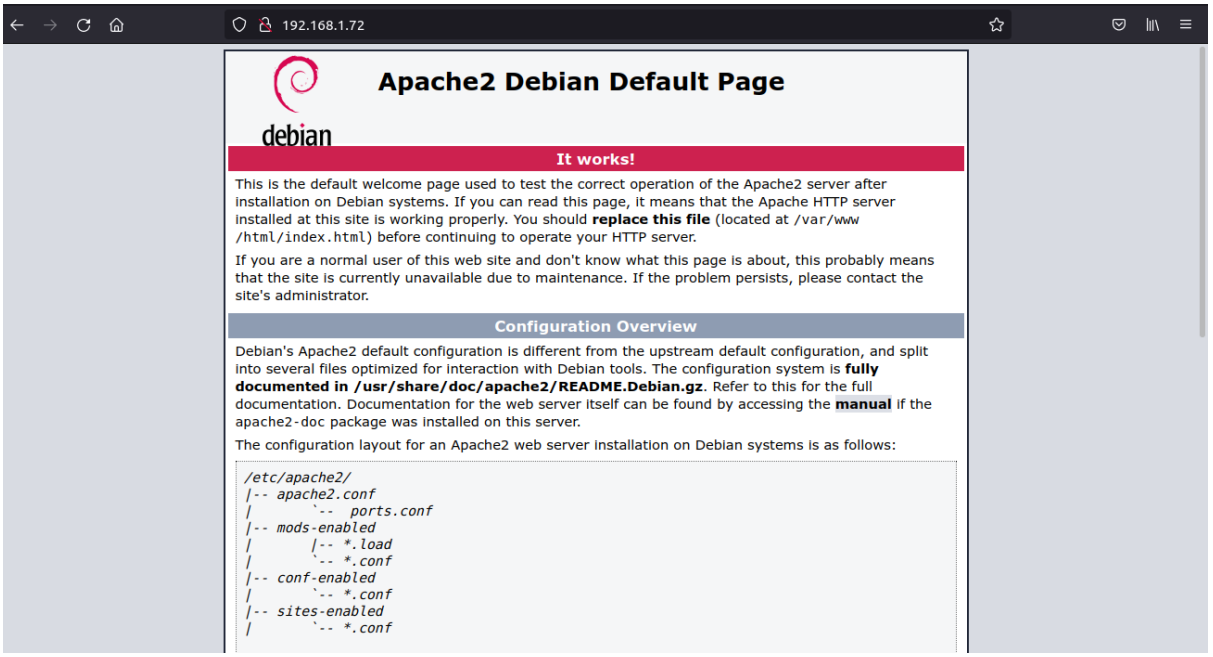
```
pi@raspberrypi:~/docker $ sudo service apache2 status
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
     Active: failed (Result: exit-code) since Thu 2022-02-10 01:25:50 -05; 4min 29s ago
       Docs: https://httpd.apache.org/docs/2.4/
        CPU: 65ms

feb 10 01:25:50 raspberrypi apachectl[13311]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 1>
feb 10 01:25:50 raspberrypi apachectl[13311]: (98)Address already in use: AH00072: make_sock: could not bind to address [::]:80
feb 10 01:25:50 raspberrypi apachectl[13311]: (98)Address already in use: AH00072: make_sock: could not bind to address 0.0.0.0:80
feb 10 01:25:50 raspberrypi apachectl[13311]: no listening sockets available, shutting down
feb 10 01:25:50 raspberrypi apachectl[13311]: AH00015: Unable to open logs
feb 10 01:25:50 raspberrypi apachectl[13301]: Action 'start' failed.
feb 10 01:25:50 raspberrypi apachectl[13301]: The Apache error log may have more information.
feb 10 01:25:50 raspberrypi systemd[1]: apache2.service: Control process exited, code=exited, status=1/FAILURE
feb 10 01:25:50 raspberrypi systemd[1]: apache2.service: Failed with result 'exit-code'.
feb 10 01:25:50 raspberrypi systemd[1]: Failed to start The Apache HTTP Server.
```

Ahora si se debe habilitar

```
pi@raspberrypi:~/docker $ sudo service apache2 start
pi@raspberrypi:~/docker $ sudo service apache2 status
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
     Active: active (running) since Thu 2022-02-10 01:31:21 -05; 12s ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 14262 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 14266 (apache2)
      Tasks: 55 (limit: 4915)
        CPU: 79ms
     CGroup: /system.slice/apache2.service
             ├─14266 /usr/sbin/apache2 -k start
             ├─14267 /usr/sbin/apache2 -k start
             └─14268 /usr/sbin/apache2 -k start

feb 10 01:31:21 raspberrypi systemd[1]: Starting The Apache HTTP Server...
feb 10 01:31:21 raspberrypi apachectl[14265]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 1>
feb 10 01:31:21 raspberrypi systemd[1]: Started The Apache HTTP Server.
lines 1-16/16 (END)
```

se sale del menú mysql con la letra q

Para confirmar si esta funcionando ingreso la ip de las raspberry en el navegador



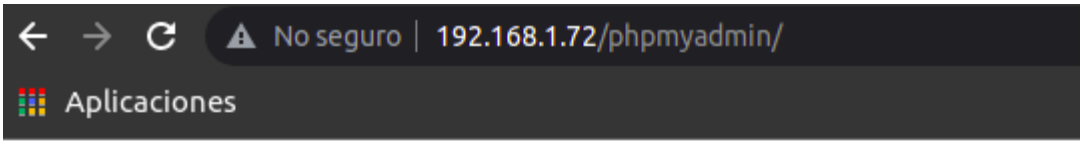

```
pi@raspberrypi:~/docker $ sudo mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 64
Server version: 10.5.12-MariaDB-0+deb11u1 Raspbian 11

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> GRANT ALL PRIVILEGES ON *.* TO 'jsmartinezv'@'localhost' IDENTIFIED BY 'ag1948' WITH GRANT OPTION;
```

```
pi@raspberrypi:~/docker $ sudo nano /etc/apache2/apache2.conf
pi@raspberrypi:~/docker $
```

jsmartinez@jsmartinez:~/apicolaEmb/Telemetria-apic... | pi@raspberrypi: ~ | pi@raspberrypi: ~/docker

```
  GNU nano 5.4                          /etc/apache2/apache2.conf *
#
# The following directives define some format nicknames for use with
# a CustomLog directive.
#
# These deviate from the Common Log Format definitions in that they use %O
# (the actual bytes sent including headers) instead of %b (the size of the
# requested file), because the latter makes it impossible to detect partial
# requests.
#
# Note that the use of %{X-Forwarded-For}i instead of %h is not recommended.
# Use mod_remoteip instead.
#
LogFormat "%v:%p %h %l %u %t \"%r\" %>s %O \"%{Referer}i\" \"%{User-Agent}i\"" vhost_combined
LogFormat "%h %l %u %t \"%r\" %>s %O \"%{Referer}i\" \"%{User-Agent}i\"" combined
LogFormat "%h %l %u %t \"%r\" %>s %O" common
LogFormat "%{Referer}i -> %U" referer
LogFormat "%{User-agent}i" agent

# Include of directories ignores editors' and dpkg's backup files,
# see README.Debian for details.

# Include generic snippets of statements
IncludeOptional conf-enabled/*.conf

# Include the virtual host configurations:
IncludeOptional sites-enabled/*.conf

# vim: syntax=apache ts=4 sw=4 sts=4 sr noet

## SE AGREGO ESTÁ ULTIMA LINEA PARA QUE PHPMYADMIN IDENTIFIQUE APACHE2
Include /etc/phpmyadmin/apache.conf

^G Ayuda      ^O Guardar     ^W Buscar      ^K Cortar      ^T Ejecutar    ^C Ubicación   M-U Deshacer   M-A Poner marca M-] A llave
^X Salir      ^R Leer fich.  ^\ Reemplazar  ^U Pegar      ^J Justificar  ^_ Ir a línea  M-E Rehacer    M-6 Copiar      ^Q Buscar atrás
```

```
pi@raspberrypi:~/docker $ sudo service apache2 restart
pi@raspberrypi:~/docker $
```



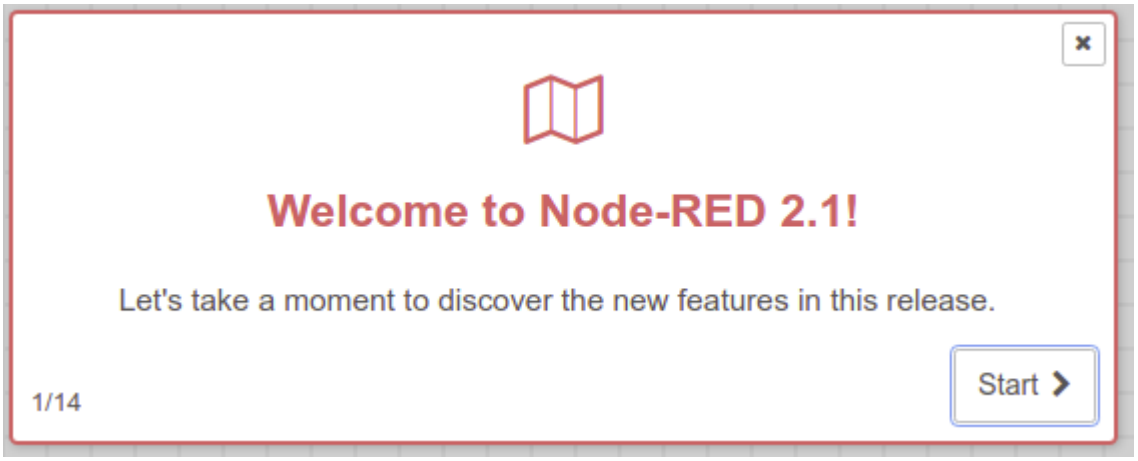

```
<?php
/* vim: set expandtab sw=4 ts=4 sts=4: */
/**
 * Main loader script
 *
 * @package PhpMyAdmin
 */
declare(strict_types=1);

use PhpMyAdmin\Controllers\HomeController;
use PhpMyAdmin\Core;
use PhpMyAdmin\DatabaseInterface;
use PhpMyAdmin\Response;
use PhpMyAdmin\Url;
use PhpMyAdmin\Util;

if (! defined('ROOT_PATH')) {
    define('ROOT_PATH', __DIR__ . DIRECTORY_SEPARATOR);
}

global $server;

require_once ROOT_PATH . 'libraries/common.inc.php';

/**
 * pass variables to child pages
 */
$drops = [
    'lang',
    'server',
    'collation_connection',
    'db',
    'table',
];
foreach ($drops as $each_drop) {
```

problema entrando a phpmyadmin

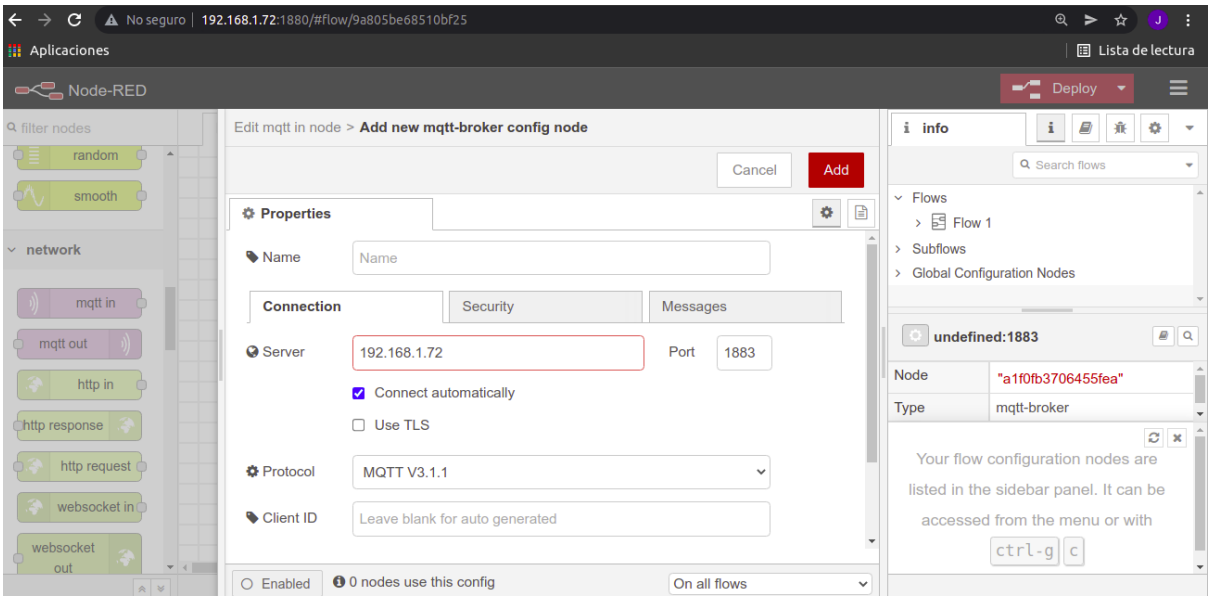
systemctl status mariadb.service

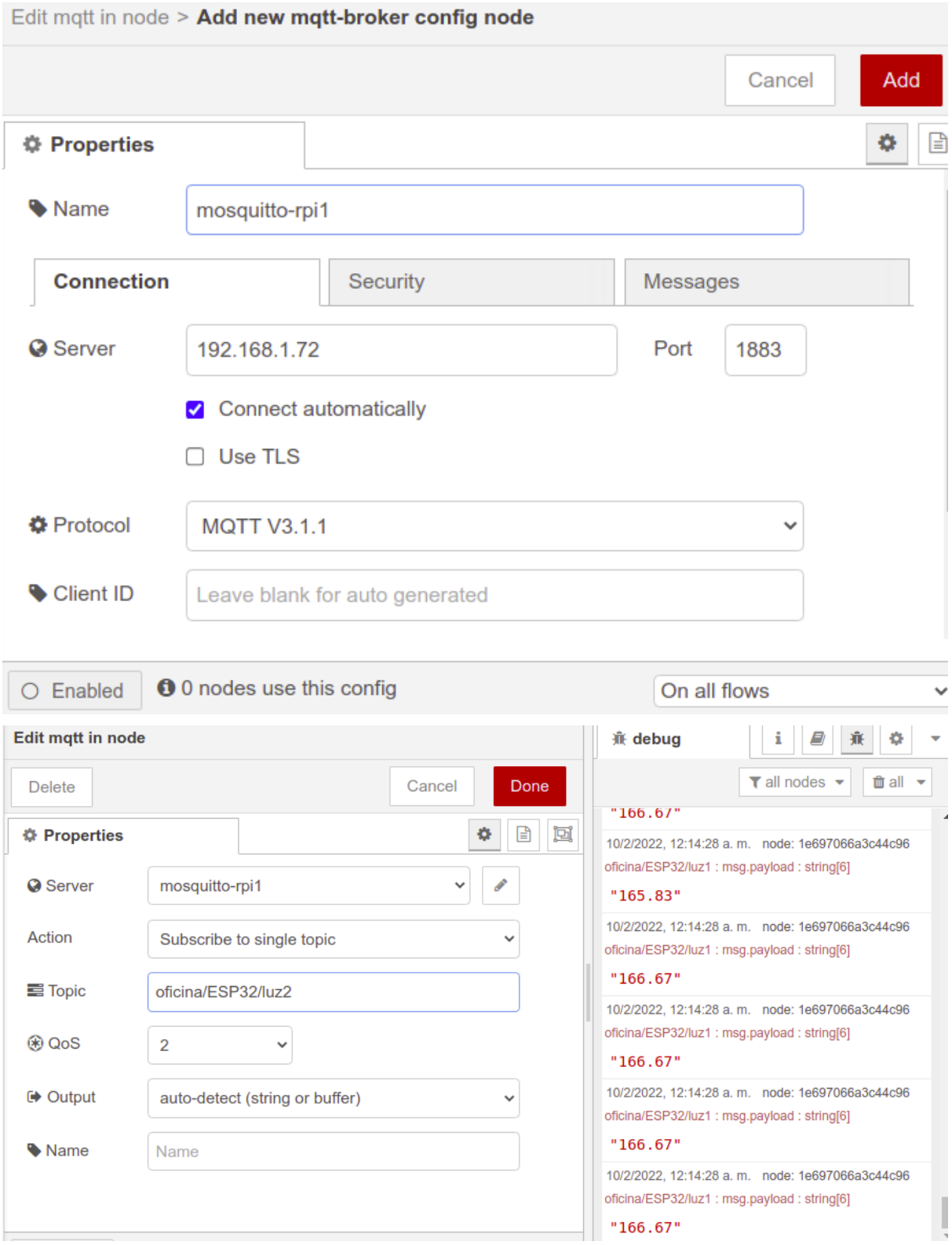
Node-red

```
pi@raspberrypi:~ $ node-red
```

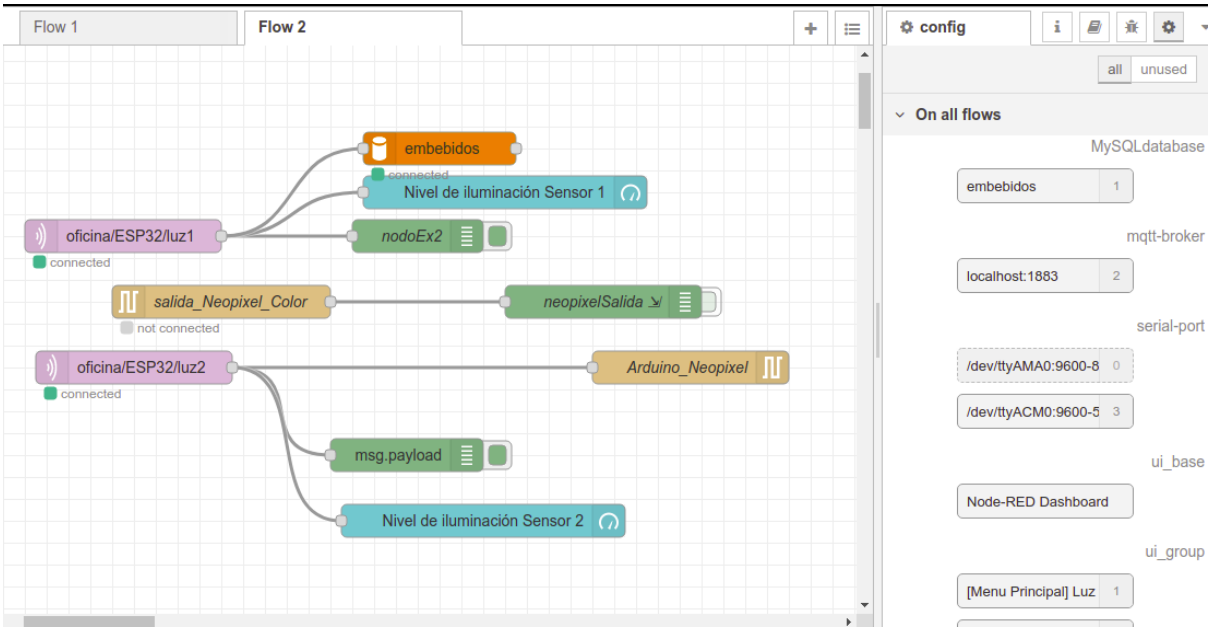


Se agrega un nodo de entrada MQTT
Para probarlo se va a probar con dos sensores de luz BH1750, suscritos a dos tópicos llamados oficina/ESP32/luz1 y oficina/ESP32/luz2
Se modifican los valores de ese nodo- (servidor=IP_RASPBERRY:1880)




Edit mqtt in node > Add new mqtt-broker config node
Cancel
Add
Properties
Name
mosquitto-rpi1
Connection
Security
Messages
Server
192.168.1.72
Port
1883
Connect automatically
Use TLS
Protocol
MQTT V3.1.1
Client ID
Leave blank for auto generated
Enabled
0 nodes use this config
On all flows
Edit mqtt in node
Delete
Cancel
Done
Properties
Server
mosquitto-rpi1
Action
Subscribe to single topic
Topic
oficina/ESP32/luz2
QoS
2
Output
auto-detect (string or buffer)
Name
Name
debug
all nodes
all
"166.67"
10/2/2022, 12:14:28 a. m. node: 1e697066a3c44c96
oficina/ESP32/luz1 : msg.payload : string[6]
"165.83"
10/2/2022, 12:14:28 a. m. node: 1e697066a3c44c96
oficina/ESP32/luz1 : msg.payload : string[6]
"166.67"
10/2/2022, 12:14:28 a. m. node: 1e697066a3c44c96
oficina/ESP32/luz1 : msg.payload : string[6]
"166.67"
10/2/2022, 12:14:28 a. m. node: 1e697066a3c44c96
oficina/ESP32/luz1 : msg.payload : string[6]
"166.67"
10/2/2022, 12:14:28 a. m. node: 1e697066a3c44c96
oficina/ESP32/luz1 : msg.payload : string[6]
"166.67"

a


Flow 1
Flow 2
embebidos
connected
Nivel de iluminación Sensor 1
oficina/ESP32/luz1
nodoEx2
connected
salida_Neopixel_Color
neopixelSalida
not connected
oficina/ESP32/luz2
Arduino_Neopixel
connected
msg.payload
Nivel de iluminación Sensor 2
config
all
unused
On all flows
MySQLdatabase
embebidos 1
mqtt-broker
localhost:1883 2
serial-port
/dev/ttyAMA0:9600-8 0
/dev/ttyACM0:9600-5 3
ui_base
Node-RED Dashboard
ui_group
[Menu Principal] Luz 1