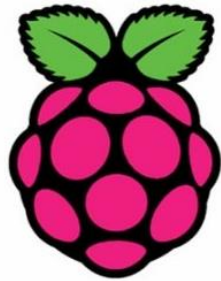
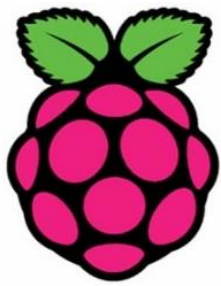


Raspberry Pi

Configuración – Introducción a IoT utilizando Adafruit.io





Raspberry Pi 3 Model A+

Our third-generation single-board computer, now in the A+ format

BUY NOW >

[or buy for business](#)



Raspberry Pi 3 Model B+

The latest revision of our third-generation single-board computer

BUY NOW >

[or buy for business](#)



Raspberry Pi 3 Model B

Our third-generation single-board computer

BUY NOW >

[or buy for business](#)



Raspberry Pi 2 Model B

The Raspberry Pi 2 Model B is the second-generation Raspberry Pi

BUY NOW >

[or buy for business](#)



Raspberry Pi 1 Model B+

The Model B+ is the final revision of the original Raspberry Pi

BUY NOW >

[or buy for business](#)



Raspberry Pi 1 Model A+

The Model A+ is the low-cost variant of the Raspberry Pi

BUY NOW >

[or buy for business](#)



Raspberry Pi Zero W

Single-board computer with wireless and Bluetooth connectivity

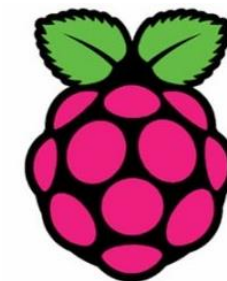
BUY NOW >



Raspberry Pi Zero

Our lowest-cost single-board computer

BUY NOW >

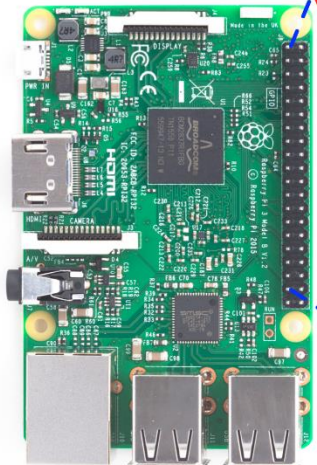


-	Raspberry Pi 1 Modelo A	Raspberry Pi 1 Modelo B	Raspberry Pi 1 Modelo B+	Raspberry Pi 2 Modelo B	Raspberry Pi 3 Modelo B	Raspberry Pi 3 Modelo B+
SoC: ⁴	Broadcom BCM2835 (CPU + GPU + DSP + SDRAM + puerto USB) ²			Broadcom BCM2836 (CPU + GPU + DSP + SDRAM + Puerto USB)	Broadcom BCM2837 (CPU + GPU + DSP + SDRAM + Puerto USB)	Broadcom BCM2837 (CPU + GPU + DSP + SDRAM + Puerto USB)
CPU:	ARM 1176JZF-S a 700 MHz (familia ARM11) ²			900 MHz quad-core ARM Cortex A7	1.2GHz 64-bit quad-core ARMv8	1.4GHz 64-bit quad-core ARMv8
Juego de instrucciones:	RISC de 32 bits				RISC de 64 bits	RISC de 64 bits
GPU:	Broadcom VideoCore IV,, ⁵⁵ OpenGL ES 2.0, MPEG-2 y VC-1 (con licencia), ⁵⁶ 1080p30 H.264/MPEG-4 AVC ²					
Memoria (SDRAM):	256 MiB (compartidos con la GPU)	512 MiB (compartidos con la GPU) ⁵⁷ desde el 15 de octubre de 2012		1 GB (compartidos con la GPU)		
Puertos USB 2.0: ⁵⁸	1	2 (vía hub USB integrado) ⁵⁹	4			
Entradas de vídeo: ⁶⁰	Conector MIPI CSI que permite instalar un módulo de cámara desarrollado por la RPF					
Salidas de vídeo: ⁴	Conector RCA (PAL y NTSC), HDMI (rev1.3 y 1.4), ⁶¹ Interfaz DSI para panel LCD ^{62 63}					
Salidas de audio: ⁴	Conector de 3.5 mm, HDMI					
Almacenamiento integrado:	SD / MMC / ranura para SDIO		MicroSD			
Conectividad de red: ⁴	Ninguna	10/100 Ethernet (RJ-45) via hub USB ⁵⁹			10/100 Ethernet (RJ-45) vía hub USB, ⁶⁴ Wifi 802.11n, Bluetooth 4.1	10/100/1000 Ethernet (RJ-45) vía hub USB Max 300Mbps/s , ⁶⁴ Wifi 802.11n/ac, Bluetooth 4.2 BLE
Periféricos de bajo nivel:	8 x GPIO, SPI, I²C, UART ⁵⁵			17 x GPIO y un bus HAT ID		

Pi Zero



Pi 3



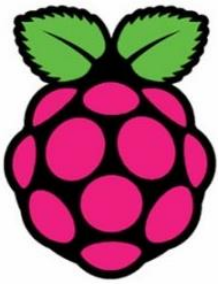
	Pin No.		
3.3V	1	2	5V
GPIO2	3	4	5V
GPIO3	5	6	GND
GPIO4	7	8	GPIO14
GND	9	10	GPIO15
GPIO17	11	12	GPIO18
GPIO27	13	14	GND
GPIO22	15	16	GPIO23
3.3V	17	18	GPIO24
GPIO10	19	20	GND
GPIO9	21	22	GPIO25
GPIO11	23	24	GPIO8
GND	25	26	GPIO7
DNC	27	28	DNC
GPIO5	29	30	GND
GPIO6	31	32	GPIO12
GPIO13	33	34	GND
GPIO19	35	36	GPIO16
GPIO26	37	38	GPIO20
GND	39	40	GPIO21

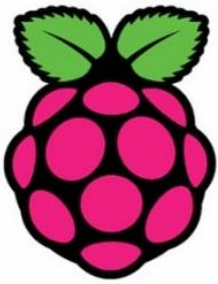
Key	
Power +	UART
GND	SPI
I²C	GPIO

Source: Building the Web of Things; book.webofthings.io
Creative Commons Attribution 4.0

Pi Model B/B+	
3V3 Power	1 2 5V Power
GPIO2 SDA1 I2C	3 4 5V Power
GPIO3 SCL1 I2C	5 6 Ground
GPIO4	7 8 GPIO14 UART0_TXD
Ground	9 10 GPIO15 UART0_RXD
GPIO17	11 12 GPIO18 PCM_CLK
GPIO27	13 14 Ground
GPIO22	15 16 GPIO23
3V3 Power	17 18 GPIO24
GPIO10 SPI0_MOSI	19 20 Ground
GPIO9 SPI0_MISO	21 22 GPIO25
GPIO11 SPI0_SCLK	23 24 GPIO8 SPI0_CE0_N
Ground	25 26 GPIO7 SPI0_CE1_N
ID_SD I2C ID EEPROM	27 28 ID_SC I2C ID EEPROM
GPIO5	29 30 Ground
GPIO6	31 32 GPIO12
GPIO13	33 34 Ground
GPIO19	35 36 GPIO16
GPIO26	37 38 GPIO20
Ground	39 40 GPIO21
Pi Model B+	

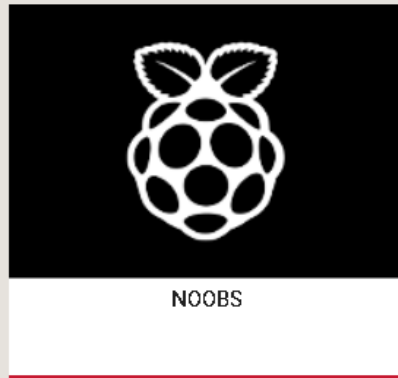
www.raspberrypi-spy.co.uk



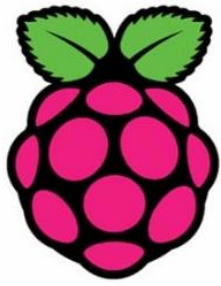


Downloads


Raspbian is our official operating system for **all** models of the Raspberry Pi.
Download it here, or use **NOOBS**, our easy installer for Raspbian and more.



Seleccionar Raspbian



Descargar la última versión de Raspbian al momento, de preferencia la que incluye el escritorio



Raspbian Buster with desktop and recommended software


Image with desktop and recommended software based on Debian Buster

Version: February 2020
Release date: 2020-02-13
Kernel version: 4.19
Size: 2530 MB

[Release notes](#)

[Download Torrent](#) [Download ZIP](#)

SHA-256: c9c382b659bd96b859ccb9e2ac0c2292a91a37c286ab464f2f380d451077663d



Raspbian Buster with desktop


Image with desktop based on Debian Buster

Version: February 2020
Release date: 2020-02-13
Kernel version: 4.19
Size: 1136 MB

[Release notes](#)

[Download Torrent](#) [Download ZIP](#)

SHA-256: a82ed4139dfad31c3167e60e943bcb28c404d1858f4713efe5530c08a419f50



Raspbian Buster Lite

Minimal image based on Debian Buster

Version: February 2020
Release date: 2020-02-13
Kernel version: 4.19
Size: 434 MB

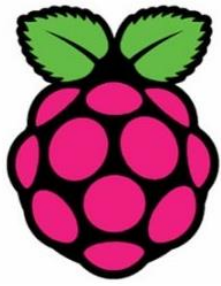
[Release notes](#)

[Download Torrent](#) [Download ZIP](#)

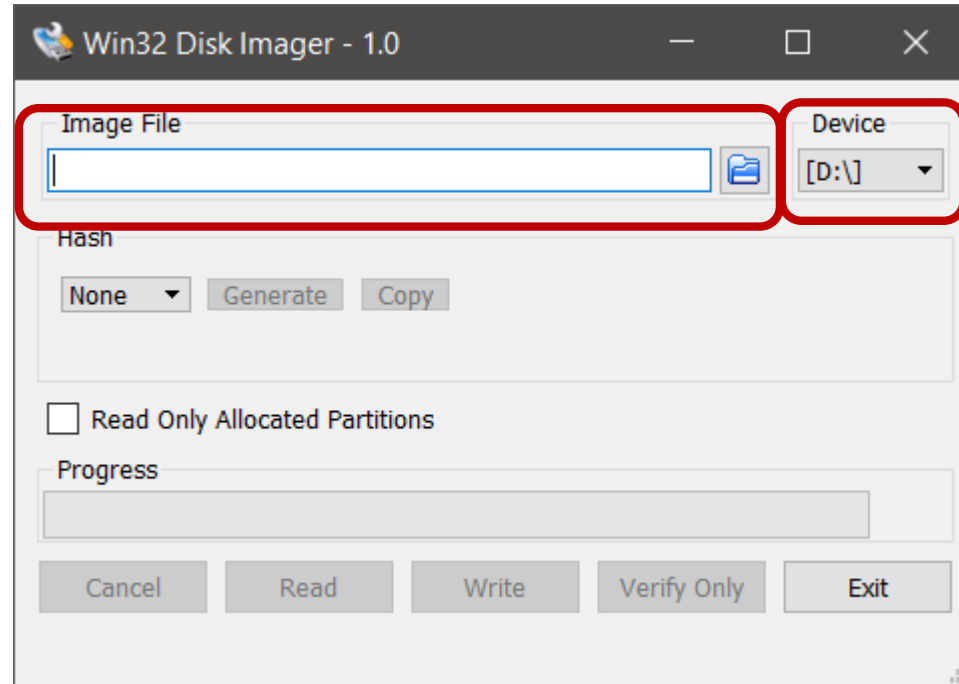
SHA-256: 12ae6e17bf95b6ba83beca61e7394e7411b45eba7e6a520f434b0748ea7370e8

https://www.sdcard.org/downloads/formatter_4/
<https://sourceforge.net/projects/win32diskimager/>

Una vez descargamos la imagen de Raspbian



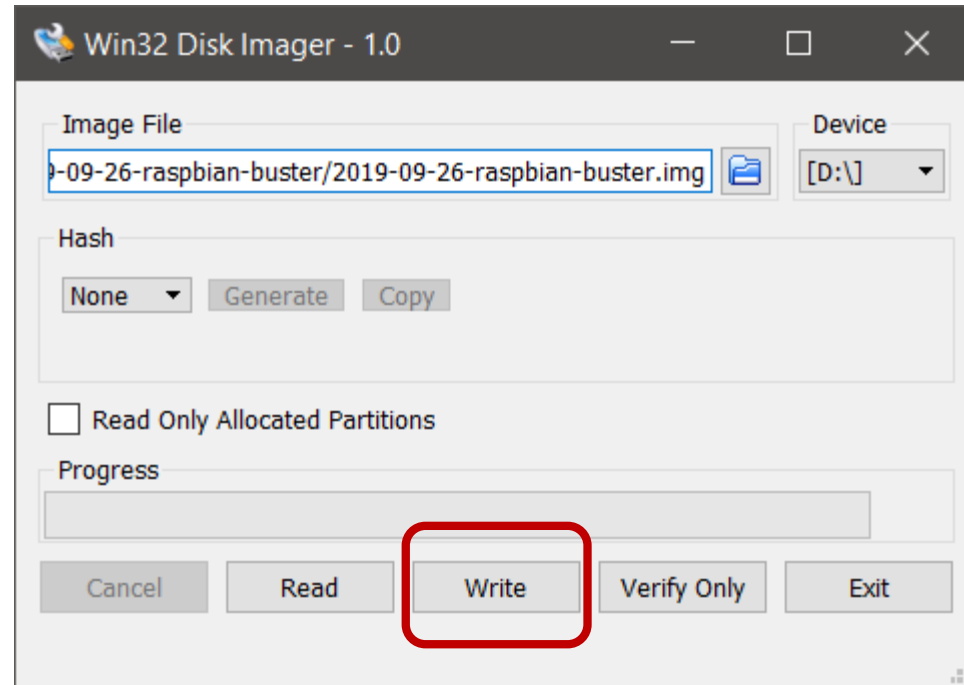
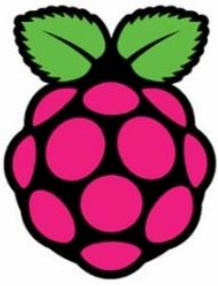
La seleccionamos dicha imagen



Verificamos que la unidad en donde vamos a montar el sistema operativo sea el adecuado, ya que se realizará un formateo de la unidad

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

Una vez tengamos seleccionada la imagen

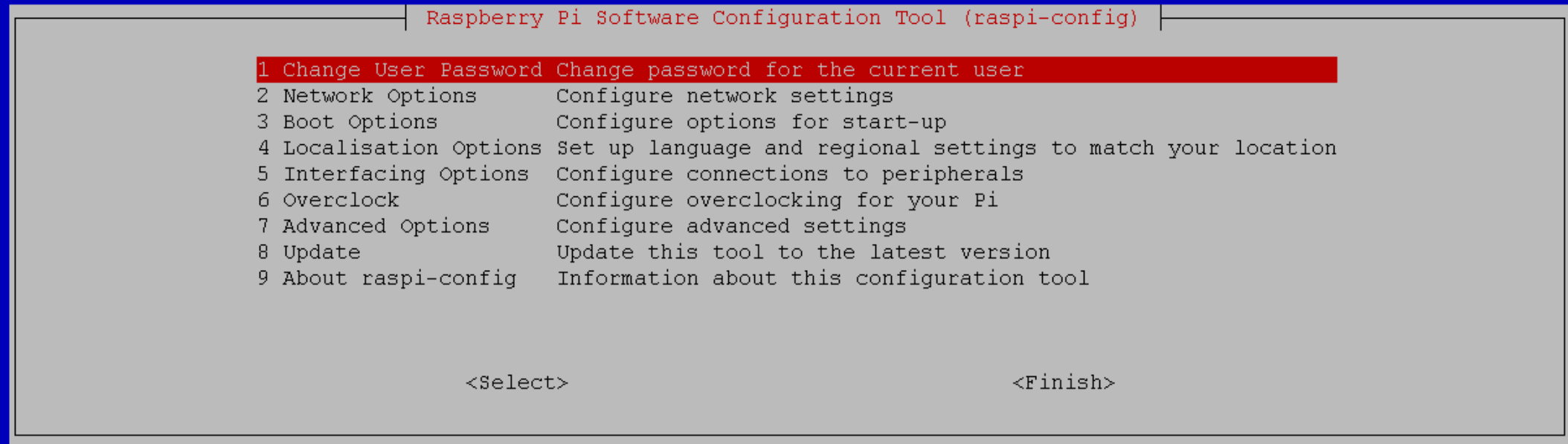
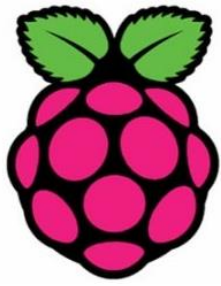


Hacemos clic en Write para montar el sistema operativo en la microSD

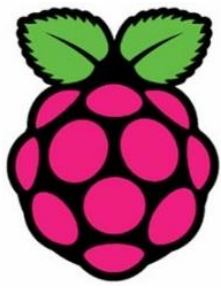
<https://sourceforge.net/projects/win32diskimager/>

Para configurar la Raspberry nos metemos a la terminal

```
pi@raspberrypi:~ $ sudo raspi-config
```



Habilitamos comunicación SSH, I2C, SPI y Serial



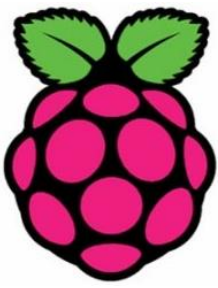
Raspberry Pi Software Configuration Tool (raspi-config)

- 1 Change User Password Change password for the current user
- 2 Network Options Configure network settings
- 3 Boot Options Configure options for start-up
- 4 Localisation Options Set up language and regional settings to match your location
- 5 Interfacing Options Configure connections to peripherals
- 6 Overclock Configure overclocking for your Pi
- 7 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>

Habilitamos comunicación SSH, I2C, SPI y Serial



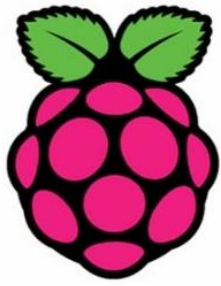
Raspberry Pi Software Configuration Tool (raspi-config)

P1 Camera	Enable/Disable connection to the Raspberry Pi Camera
P2 SSH	Enable/Disable remote command line access to your Pi using SSH
P3 VNC	Enable/Disable graphical remote access to your Pi using RealVNC
P4 SPI	Enable/Disable automatic loading of SPI kernel module
P5 I2C	Enable/Disable automatic loading of I2C kernel module
P6 Serial	Enable/Disable shell and kernel messages on the serial connection
P7 1-Wire	Enable/Disable one-wire interface
P8 Remote GPIO	Enable/Disable remote access to GPIO pins

<Select>

<Back>

Habilitamos comunicación SSH, VNC, I2C, SPI y Serial



Would you like the SSH server to be enabled?

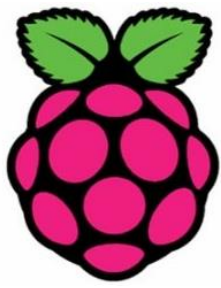
<S<

<No>

The SSH server is enabled

<Aceptar>

Buscamos actualizaciones del sistema operativo



Raspberry Pi Software Configuration Tool (raspi-config)

- | | | |
|---|----------------------|--|
| 1 | Change User Password | Change password for the current user |
| 2 | Network Options | Configure network settings |
| 3 | Boot Options | Configure options for start-up |
| 4 | Localisation Options | Set up language and regional settings to match your location |
| 5 | Interfacing Options | Configure connections to peripherals |
| 6 | Overclock | Configure overclocking for your Pi |
| 7 | 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>

NOTA: esto solo funciona si están conectados bajo la misma red

Para conocer las propiedades de las redes

```
pi@raspberrypi:~ $ ifconfig
```

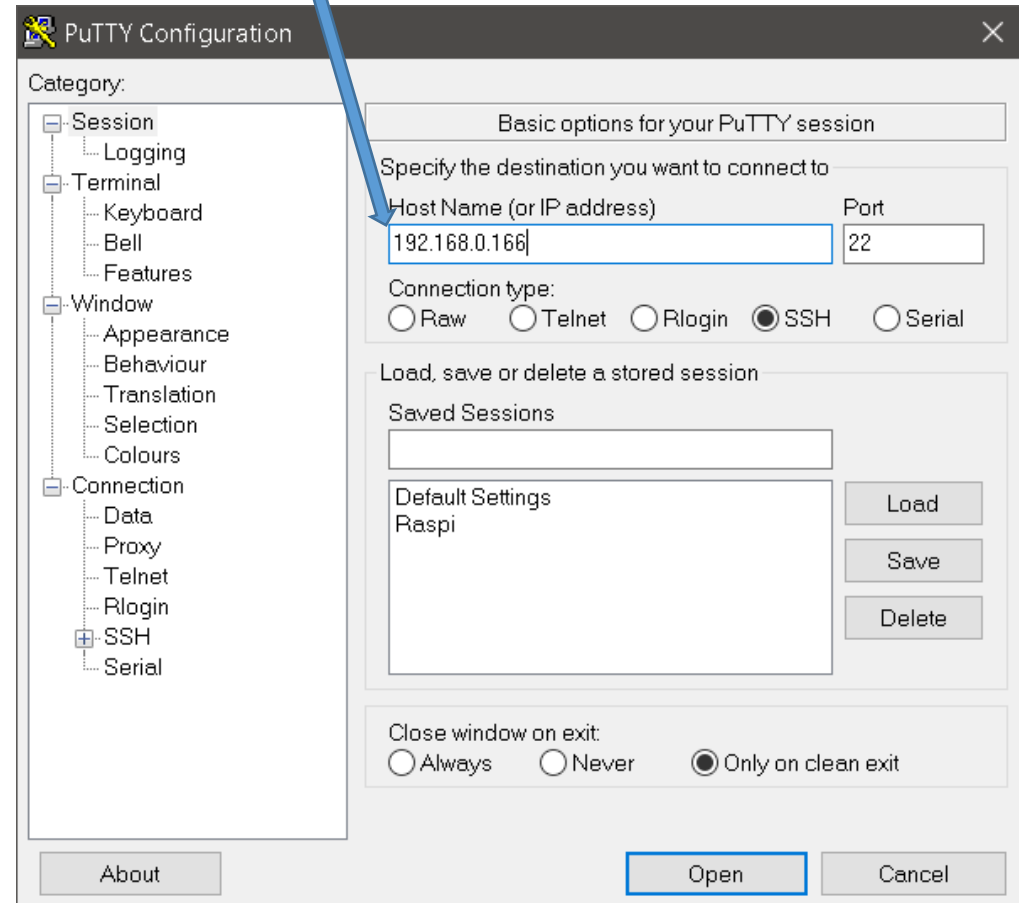
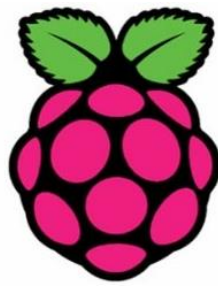
```
pi@raspberrypi:~ $ ifconfig
eth0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
    ether b8:27:eb:c3:44:09 txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 20 bytes 1136 (1.1 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 20 bytes 1136 (1.1 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

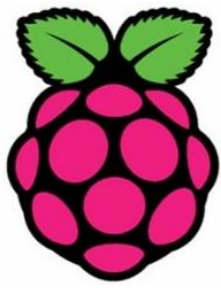
wlan0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.0.166 netmask 255.255.255.0 broadcast 192.168.0.255
    inet6 fe80::8655:104a:149c:a19a prefixlen 64 scopeid 0x20<link>
    ether d8:eb:97:2f:cd:47 txqueuelen 1000 (Ethernet)
    RX packets 783 bytes 168864 (164.9 KiB)
    RX errors 0 dropped 164 overruns 0 frame 0
    TX packets 242 bytes 40278 (39.3 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

pi@raspberrypi:~ $
```

Colocamos el número de IP que tengamos registrado según la red (wlan0 ó eth0)



Introducimos las credenciales



```
192.168.0.166 - PuTTY
login as:pi
pi@192.168.0.166's password: █
```

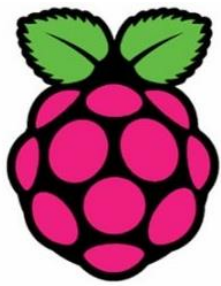
Por default

User: pi

Password: raspberry

Lo podemos cambiar desde *sudo raspi-config*

NOTA: si no estamos bajo la misma red deberemos utilizar VNC

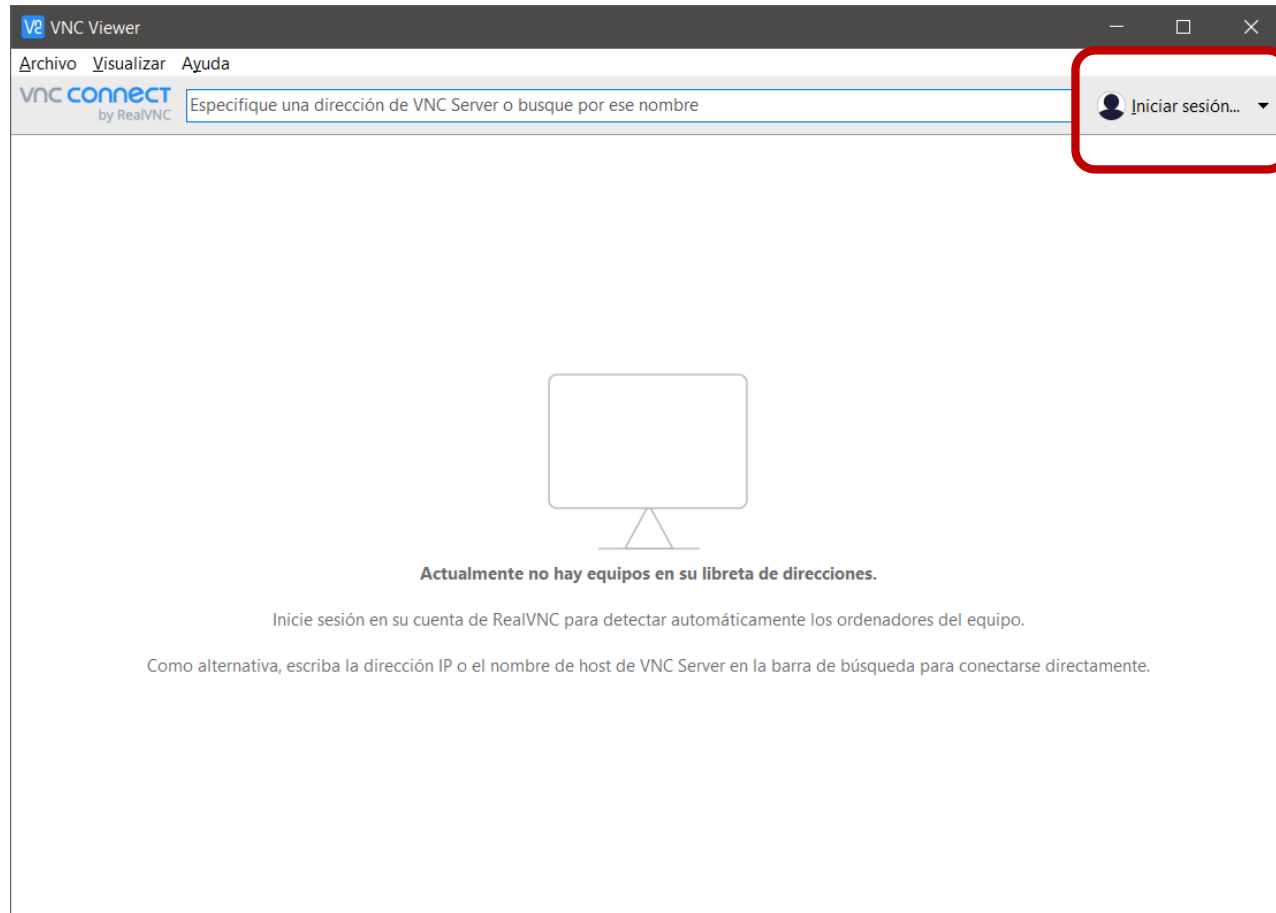
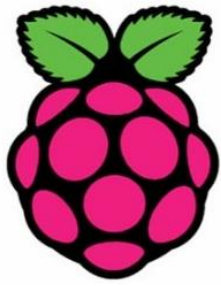


Podemos descargar el programa de VNC Viewer desde el siguiente enlace:

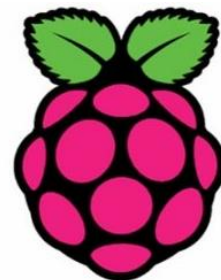
<https://www.realvnc.com/es/connect/download/viewer/>



Al correrlo nos aparecerá la siguiente ventana



Hacemos clic en Iniciar sesión



V2 Iniciar sesión

Iniciar sesión en su cuenta de RealVNC

Inicie sesión con la dirección de correo electrónico que utilizó para crear su cuenta de RealVNC en línea.

Correo electrónico

p. ej. usuario@example.com

Contraseña

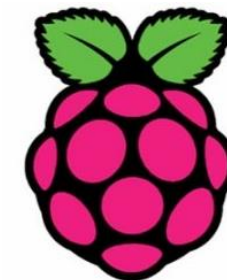
p. ej. *****

[¿Olvidó la contraseña?](#)

[¿No tiene una cuenta?](#)

Cancelar Iniciar sesión

Crearemos una cuenta



Sign up or sign in

Please enter your email

We'll sign you up if you're new. Please enter your **real email address**; you'll need to receive email to sign in on new devices.

We'll store your email securely, and never share it. You can manage communications in your account profile. [Privacy policy](#).



No soy un robot

reCAPTCHA
Privacidad - Condiciones

If you can't see our [reCAPTCHA](#) above, please [contact support](#).

Luego nos vamos a
siguiente

[Next](#)

ACCOUNT BENEFITS



Automatic discovery

Automatically discover, seamlessly connect to, and centrally manage your remote computers with VNC Server installed.



Address book sharing

Invite people you trust in to your team to securely share remote access.



Backup and sync

Sign in to VNC Viewer on all the devices you connect from to



Remote sign out

Sign out from VNC Viewer on lost or stolen devices to help prevent

Ingresamos nuestro
correo

Hacemos clic en el
cuadro de reCAPTCHA

Llenamos el formulario

Seleccionamos que vamos a utilizar VNC como uso personal

Create an account

We just need a few details to get started. Again, please make sure this is your **real email address**.

pdmazariegos@uvg.edu.gt

[Change email](#)

Choose a password



Minimum 8 characters. Please make your password difficult to guess, and do not re-use a password from another online service.

First name

Last name

I plan to use VNC Connect for:

☐ business use ☒ personal use

Phone number

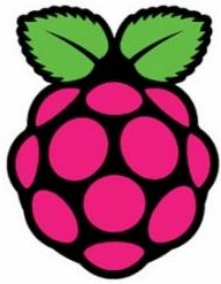
Optional. Please include your [country code](#), e.g. +1-800-555-0199 for the US.

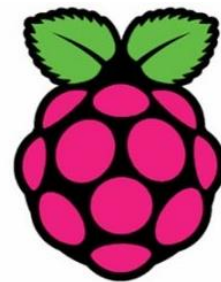
Country or region

☐ I am over the age of 16 [?](#)

☐ I've read and accept the [T&Cs](#)

☐ Keep me up-to-date with RealVNC® news





Les enviarán un correo de confirmación, solo darle clic a verificar correo



Hi Pablo,

Welcome to RealVNC! To get full access to your account, please verify your email address by clicking the button below.

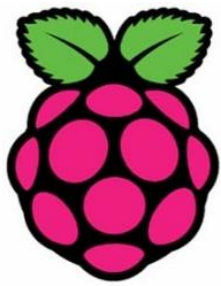
VERIFY EMAIL

Note: This must be your **real email address** to authorize each new device you use with VNC Connect, so please make sure it is correct. If not, please verify anyway and then change it on your account's **Profile** page.

Many thanks,

The RealVNC team

Ya que tenemos nuestra cuenta activa llenamos los campos para iniciar sesión



ve Iniciar sesión

Iniciar sesión en su cuenta de RealVNC

Inicie sesión con la dirección de correo electrónico que utilizó para crear su cuenta de RealVNC en línea.

Correo electrónico

Contraseña

[¿Olvidó la contraseña?](#)

[¿No tiene una cuenta?](#)

Cancelar Iniciar sesión

Por motivos de seguridad nos enviarán otro correo diciendo que nuestras credenciales han sido utilizadas en el siguiente dispositivo. Le damos clic al botón de seguir con la sesión



Hi Pablo,

Your RealVNC account credentials were just used to sign in:

Time: **2020-02-25 01:58:47 UTC**

Device: **Microsoft Windows 10, version 1909 (VNC Viewer)**

Location: **Guatemala City, Guatemala (190.56.75.151)**

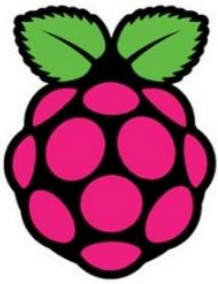
CONTINUE SIGNING IN

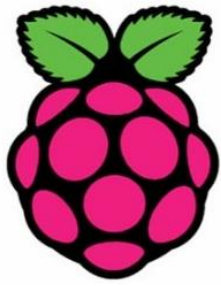
Not you?

Don't worry, we won't let this person sign in. But we strongly recommend you change your account password as soon as possible. To do this, sign in yourself at <https://manage.realvnc.com> and navigate to the **Security** page, where you should also enable 2-step verification (2FA).

Many thanks,

The RealVNC team





Confirm sign-in

Again, please check you recognize this device, since authorizing will sign it in:

Time

2020-02-25 01:58:47 UTC

Device

Microsoft Windows 10, version 1909 (VNC Viewer)

Location

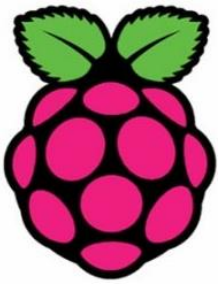
Guatemala City, Guatemala (190.56.75.151)

Authorize sign-in

Don't recognize this device?

We strongly recommend you change your RealVNC account password as soon as possible. To do this, sign in yourself and navigate to the **Security** page.

Nos llevarán a una página donde autorizaremos al dispositivo a ingresar a nuestra cuenta



Al finalizar nos aparecerá
el siguiente mensaje

Sign-in authorized

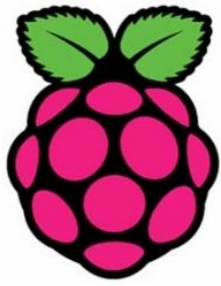
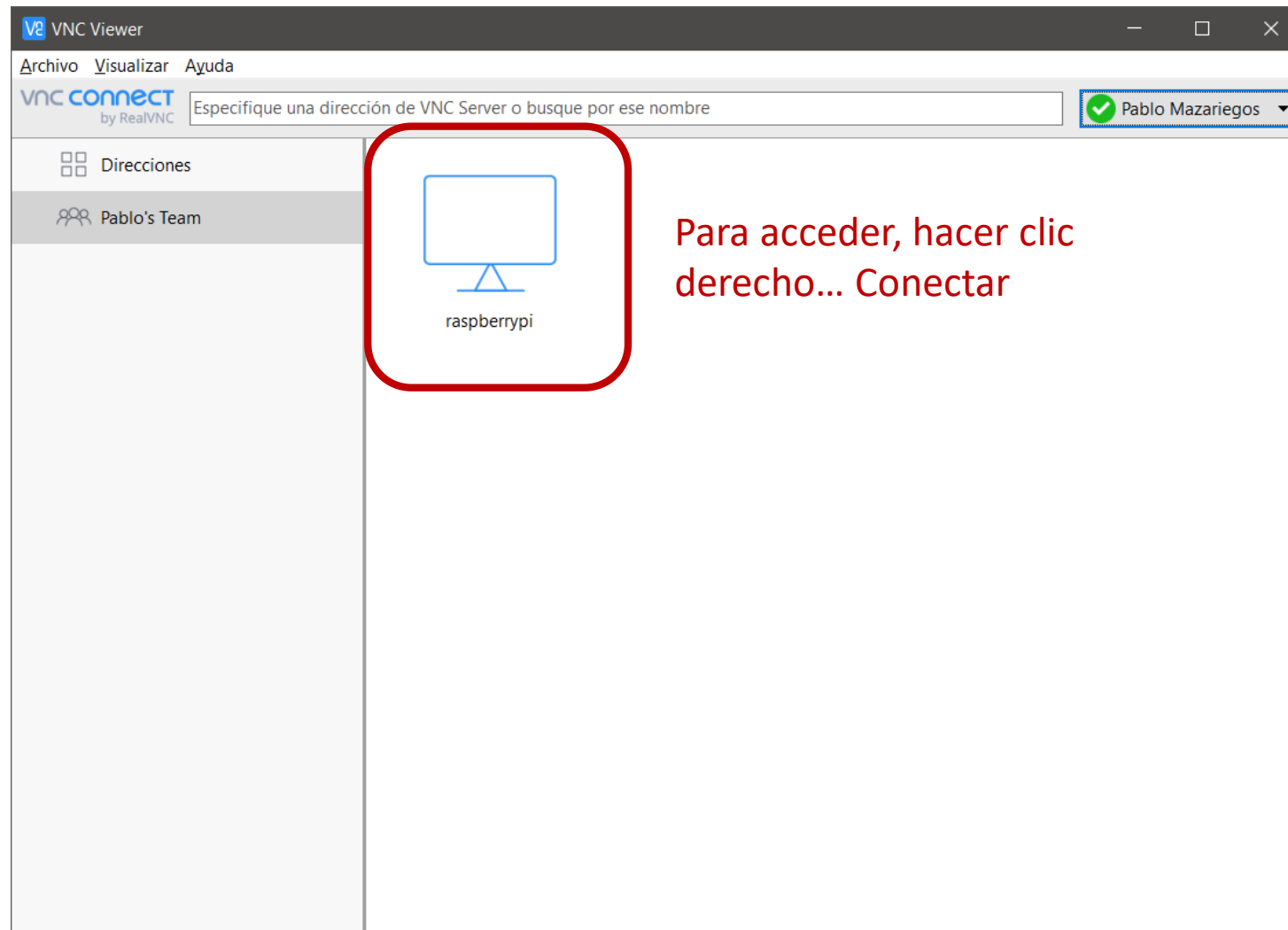
Thank you. You are now signed in to your RealVNC account on the original device.

Please close this browser tab and continue on that device.

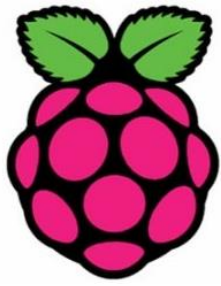
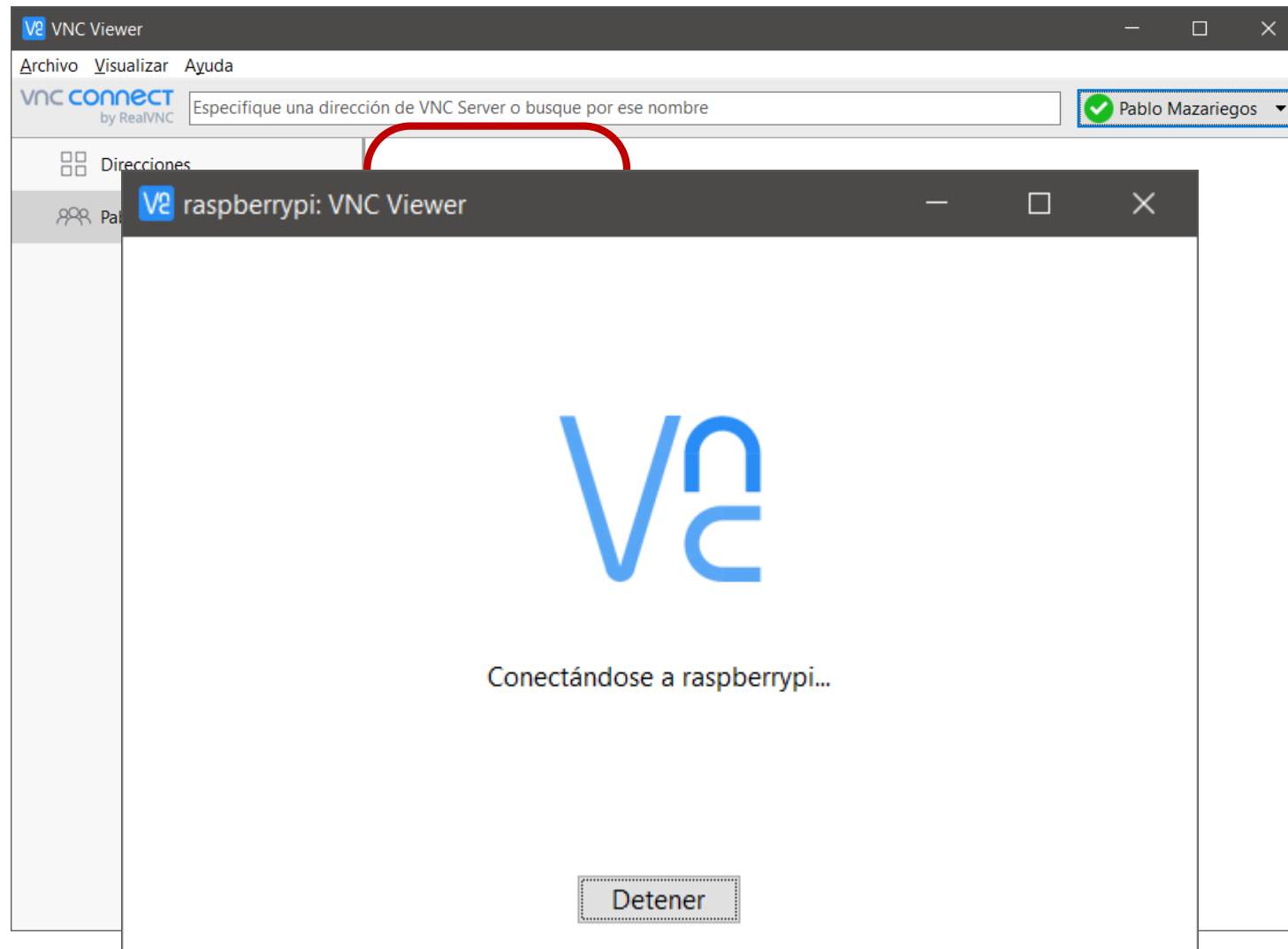
Ahora solo queda activar nuestra cuenta también en el VNC de la raspberry,
realizaremos el mismo procedimiento.

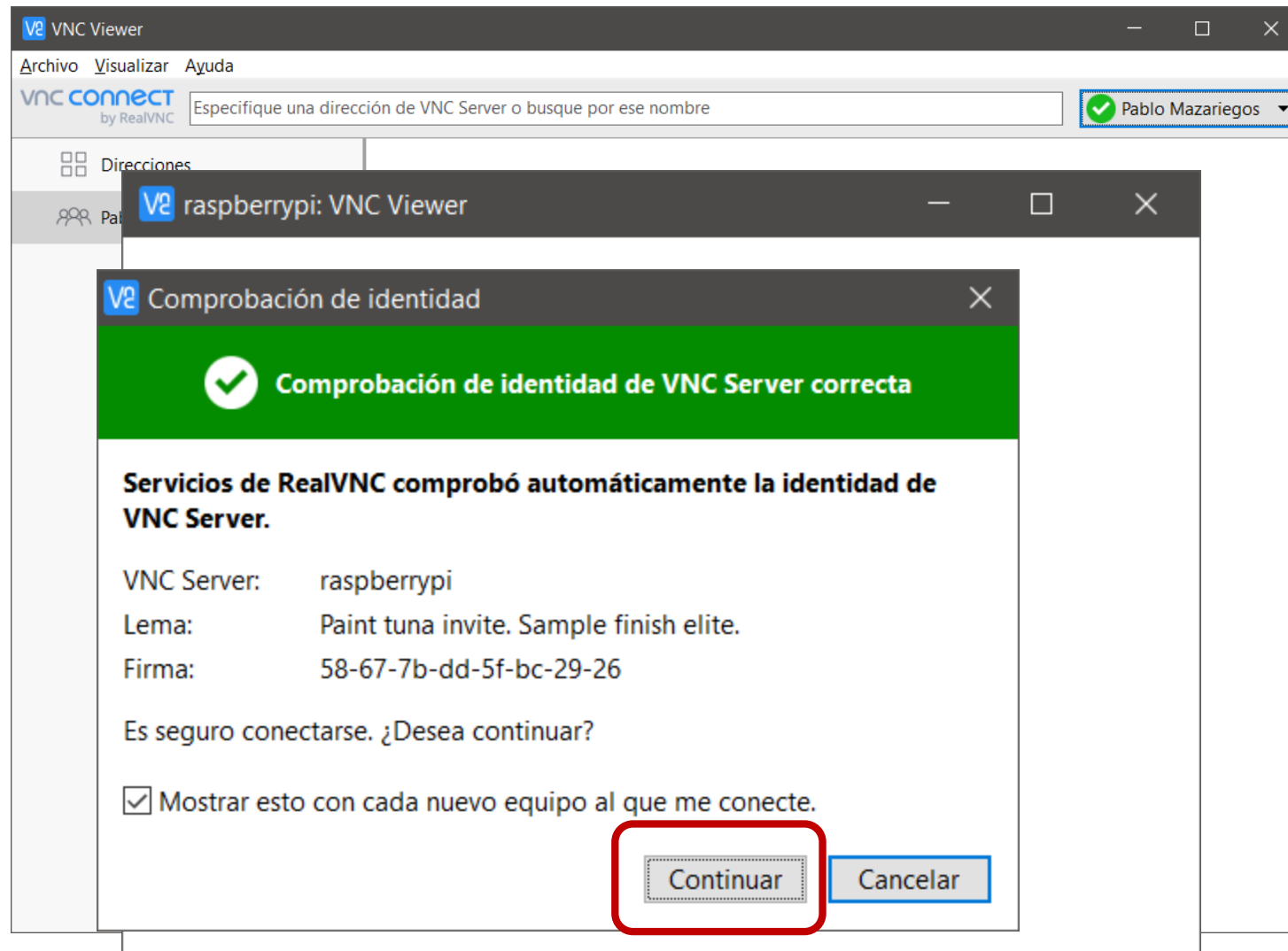
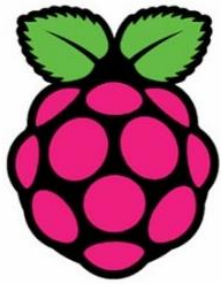
Cuando se les pregunte sobre la suscripción se deberá seleccionar Suscripción a
domicilio (uso estrictamente no comercial)

Una vez hayamos
ingresado con nuestra
cuenta en la raspberry,
desde nuestro PC
podremos acceder a la
raspberry

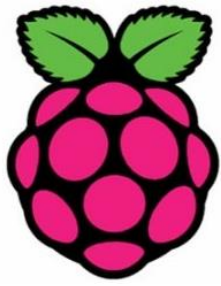


Nos aparecerá la siguiente ventana



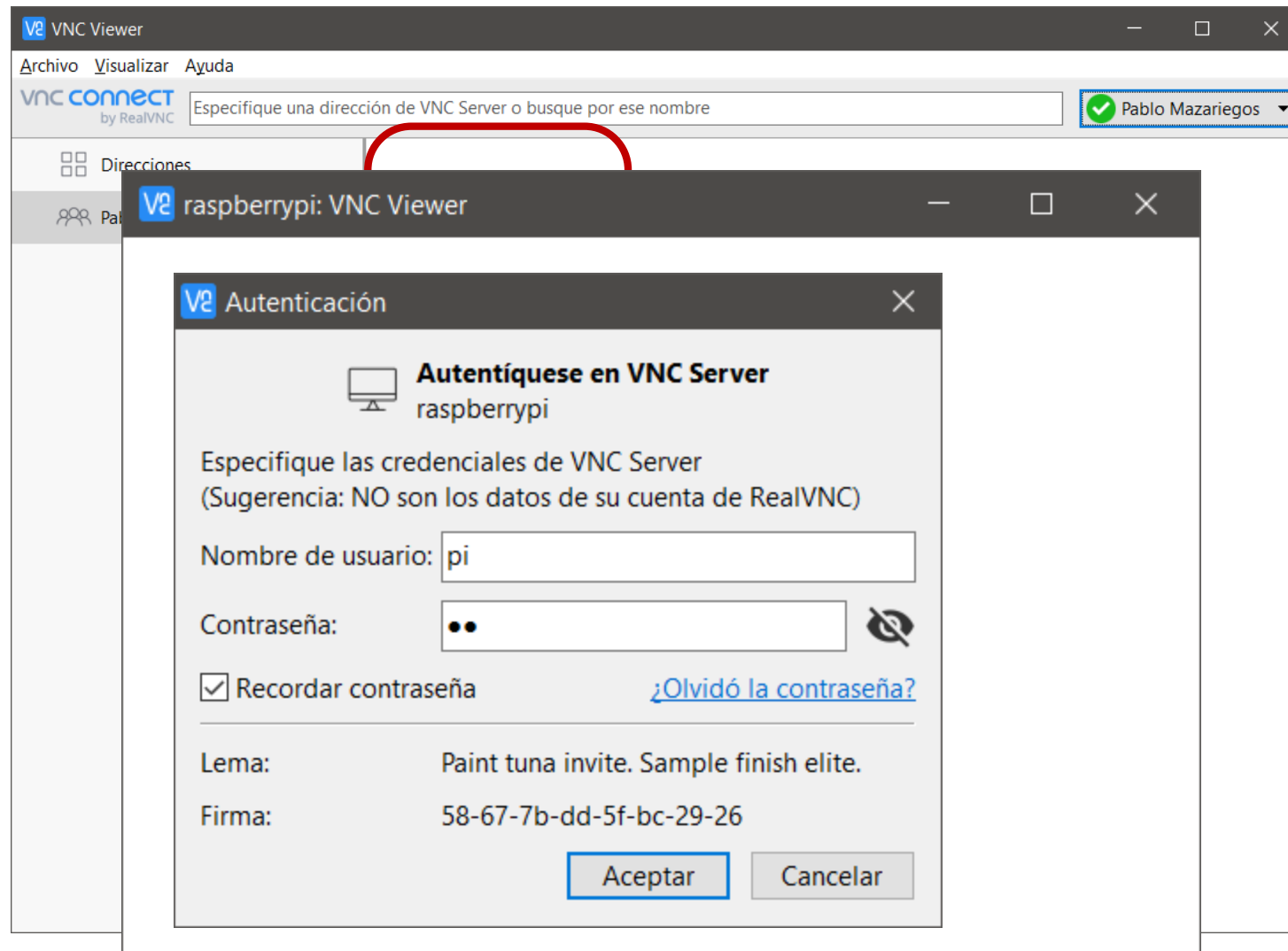


Seleccionamos continuar

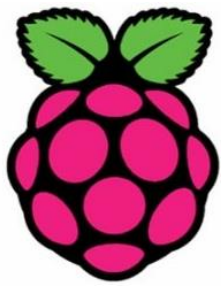
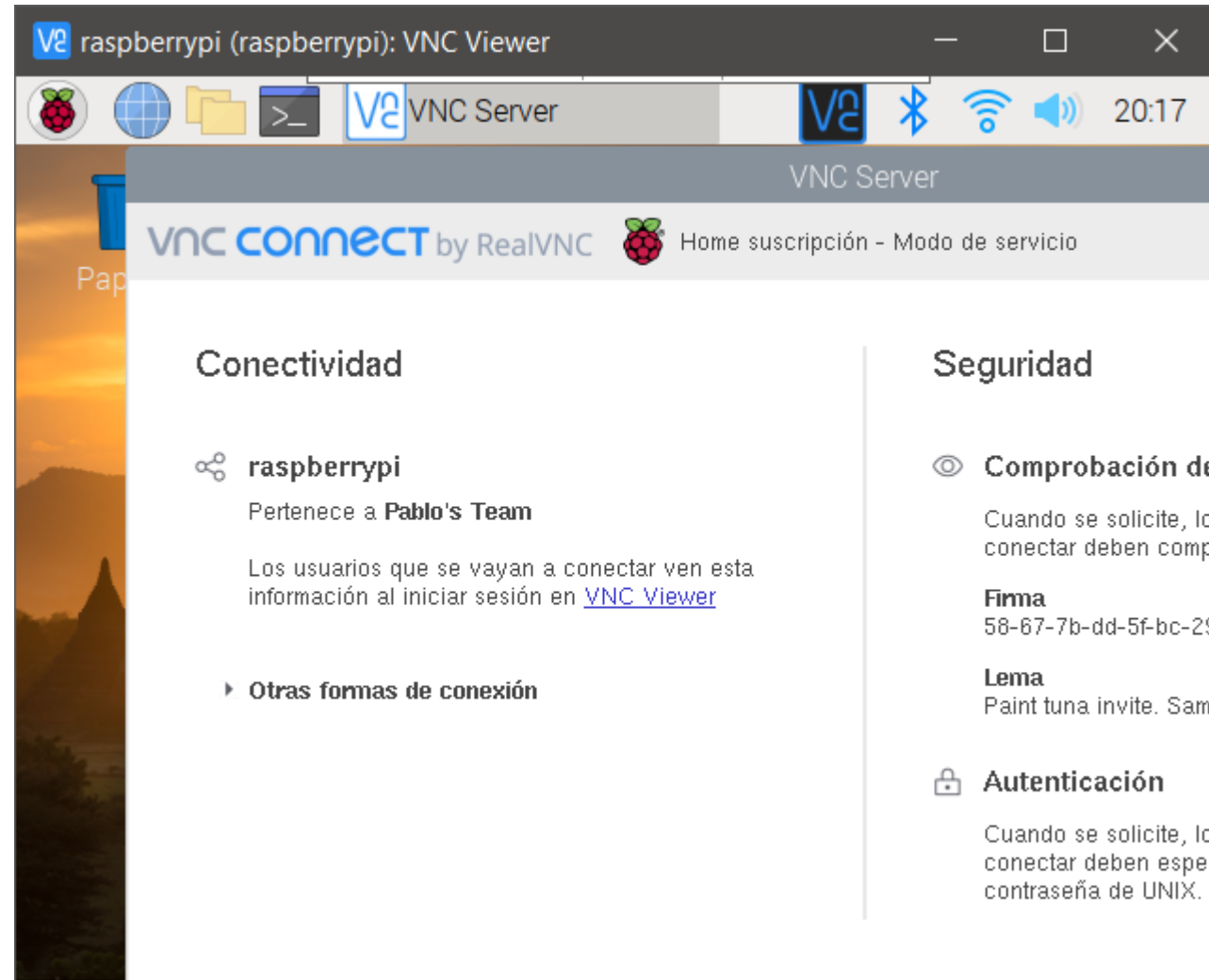


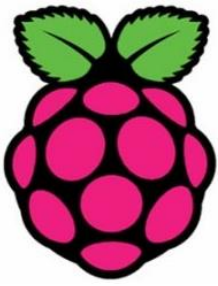
Nos aparecerá la siguiente ventana para autenticarnos

Utilizamos las credenciales que dejamos en la raspberry



Ya que ingresamos,
podremos utilizar
nuestra raspberry
desde nuestro PC



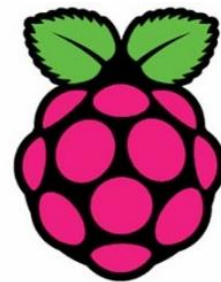


<https://io.adafruit.com/>

<https://learn.adafruit.com/welcome-to-adafruit-io?view=all>

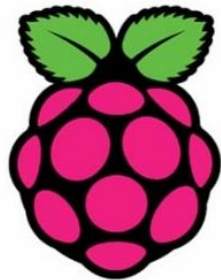
https://github.com/adafruit/Adafruit_IO_Python

<https://learn.adafruit.com/series/adafruit-io-basics>



Instalamos la librería de adafruit-io

```
pi@raspberrypi:~ $ sudo pip install adafruit-io
Collecting adafruit-io
  Downloading https://files.pythonhosted.org/packages/a6/1a/864394af8ed308cf3b40a01ca739dc0eb8eefddd63119ac50a32f6225257/adafruit-io-2.1.tar.gz (43kB)
    100% |#####| 51kB 87kB/s
Requirement already satisfied: paho-mqtt in /usr/local/lib/python2.7/dist-packages (from adafruit-io)
Requirement already satisfied: requests in /usr/lib/python2.7/dist-packages (from adafruit-io)
Building wheels for collected packages: adafruit-io
  Running setup.py bdist_wheel for adafruit-io ... done
  Stored in directory: /root/.cache/pip/wheels/3a/f7/e3/4d4e4361324779a756fd6447bcf076ec2944b785444ad6691d
Successfully built adafruit-io
Installing collected packages: adafruit-io
Successfully installed adafruit-io-2.1
```



SIGN UP

The best way to shop with Adafruit is to create an account which allows you to shop faster, track the status of your current orders, review your previous orders and take advantage of our other member benefits.

FIRST NAME

LAST NAME

EMAIL



USERNAME



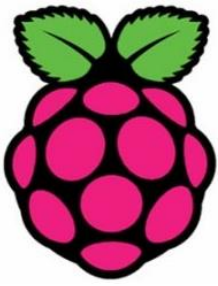
Username is viewable to the public on the forums, Adafruit IO, and elsewhere.


PASSWORD



HAVE AN ADAFRUIT ACCOUNT?

Obtenemos nuestro AIO Key para poder acceder a nuestra cuenta





Hello, Pablo Mazariegos | [Sign Out](#) | [My Account](#)


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[IO Plus](#)
[Learn](#)
[News](#)
[Support](#)
[Terms of Service](#)

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[Send Feedback](#)

pdmazariegos_uvq / Dashboards

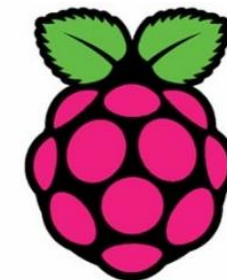
Actions ▾

<input type="checkbox"/> Name ▾		Key ▾
<input type="checkbox"/> Welcome Dashboard		welcome-dashboard

1

Loaded in 0.09 seconds.

Obtenemos nuestro AIO Key para poder acceder a nuestra cuenta



YOUR AIO KEY

Your Adafruit IO key should be kept in a safe place and treated with the same care as your Adafruit username and password. People who have access to your AIO key can view all of your data, create new feeds for your account, and manipulate your active feeds.

If you need to regenerate a new AIO key, all of your existing programs and scripts will need to be manually changed to the new key.

Username

pdmazariegos_uvg

Active Key

d606d315d3d940a686fe253db075a0ed

REGENERATE AIO KEY

[Hide Code Samples](#)

Arduino

```
#define IO_USERNAME "pdmazariegos_uvg"
#define IO_KEY      "d606d315d3d940a686fe253db075a0ed"
```

Linux Shell

```
export IO_USERNAME="pdmazariegos_uvg"
export IO_KEY="d606d315d3d940a686fe253db075a0ed"
```

Scripting

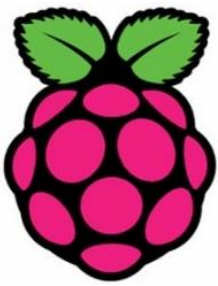
```
ADAFRUIT_IO_USERNAME = "pdmazariegos_uvg"
ADAFRUIT_IO_KEY = "d606d315d3d940a686fe253db075a0ed"
```

Reemplazamos con los valores que nos aparecen en el código de Python

```
# Set to your Adafruit IO key.
# Remember, your key is a secret,
# so make sure not to publish it when you publish this code!
ADAFRUIT_IO_KEY = 'YOUR_AIO_KEY'

# Set to your Adafruit IO username.
# (go to https://accounts.adafruit.com to find your username)
ADAFRUIT_IO_USERNAME = 'YOUR_AIO_USERNAME'
```

Creamos un nuevo Feed (un canal)



Home Feeds Dashboards Triggers Services View AIO Key API Docs FAQ

pdmazariegos_uvg / Feeds

Search

Actions

- Create a New Feed
- Create a New Group
- Disable Selected Feeds
- Delete Selected Feeds
- Delete Selected Groups

Key	Last value	Recorded
default		

Create a new Feed

Name

counter

Description

Canal de ejemplo recibe valor de contador

Cancel Create

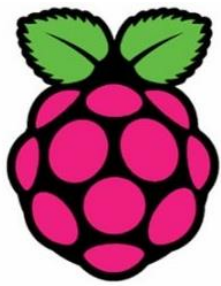
pdmazariegos_uvg / Feeds

Actions

Group / Feed	Key	Last value
<input type="checkbox"/> Default	default	
<input type="checkbox"/> counter	counter	
<input type="checkbox"/> Welcome Feed	welcome-feed	60

```
# Set to the ID of the feed to subscribe to for updates.  
FEED_ID = 'counter'
```


Creamos un nuevo Feed (un canal)



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[Services](#)
[View AIO Key](#)

[API Docs](#)
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pdmazariegos_uvg/Feeds

Search

Actions

[Create a New Feed](#)
[Create a New Group](#)

Disable Selected Feeds

Delete Selected Feeds
Delete Selected Groups

Key	Last value	Recorded
default		

Create a new Feed

Name

counter

Description

Canal de ejemplo recibe valor de contador

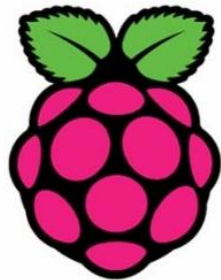
Cancel Create


pdmazariegos_uvg/Feeds

Actions

Group / Feed	Key	Last value
<input type="checkbox"/> Default	default	
<input type="checkbox"/> counter	counter	
<input type="checkbox"/> Welcome Feed	welcome-feed	60

Creamos un nuevo dashboard





[Home](#)
[Feeds](#)
[Dashboards](#)
[Triggers](#)
[Services](#)
[View AIO Key](#)

pdmazariegos_uvg / Dashboards

Actions ▾

[Create a New Dashboard](#)
Edit Selected Dashboard
Remove Selected Dashboards

Create a new Dashboard

Name

HelloWorld

Description

Dashboard de ejemplo

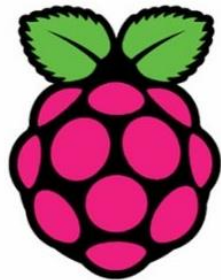
Cancel


Create

pdmazariegos_uvg / Dashboards

<input type="checkbox"/> Name ▾		Key ▾
<input type="checkbox"/> HelloWorld	🔒	helloworld
<input type="checkbox"/> Welcome Dashboard	🔒	welcome-dashboard








Creamos un nuevo dashboard






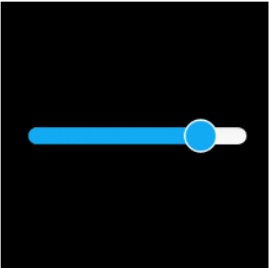
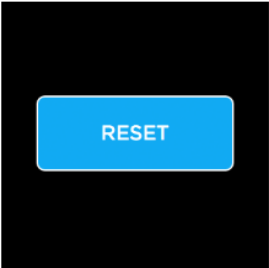

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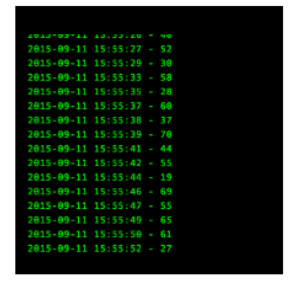

pdmazariegos_uvg / Dashboards / HelloWorld


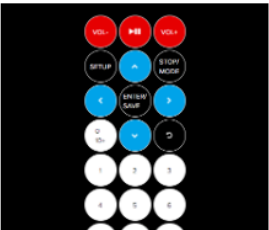

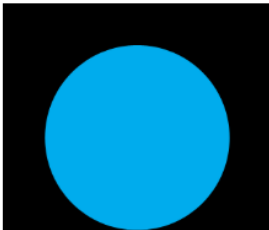


Create a new block

Click on the block you would like to add to your dashboard. You can always come back and switch the block type later if you change your mind.







Seleccionamos el Feed que creamos anteriormente

Choose up to 5 feeds

Stream: A stream block can be used to view the rolling history of data for multiple feeds. Up to 5 of your feeds can send data to this block.

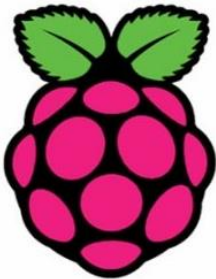
If you have lot of feeds, you may want to use the search field. You can also create a feed quickly below.

[Create](#)

Group / Feed	Last value	Recorded
<input type="checkbox"/> counter		10 minutes
<input type="checkbox"/> Welcome Feed	60	12 months

[< Previous step](#) [Next step >](#)

Llenamos la configuración del bloque



Block settings



In this final step, you can give your block a title and see a preview of how it will look. Customize the look and feel of your block with the remaining settings. When you are ready, click the "Create Block" button to send it to your dashboard.

Block Title (optional)

Font Size

Small

Colorscheme

Green

Show Feed Name?

Yes

Show Timestamp?

Yes

Show Location?

No

Show Errors?

Yes

Block Preview

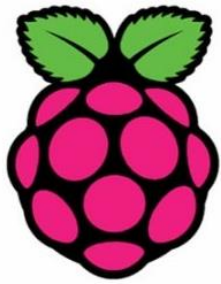
```
2018/02/01 8:23am Temperature 78.34
2018/02/01 8:25am Temperature 78.34
2018/02/01 8:25am Lamp Color #FF0028
2018/02/01 8:25am username/errors
Validation failed: Name may contain only letters,
digits, underscores, spaces, or dashes
2018/02/01 8:27am Temperature 78.34
2018/02/01 8:28am username/throttle
username data rate limit reached, 58 seconds
until throttle reset
```


Stream A stream block can be used to view the rolling history of data for multiple feeds. Up to 5 of your feeds can send data to this block.

pdmazariegos_uvg / Dashboards / HelloWorld

Contador


Añadimos otro bloque








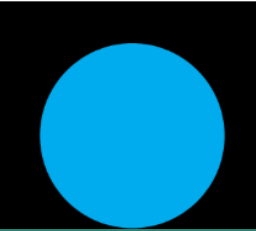


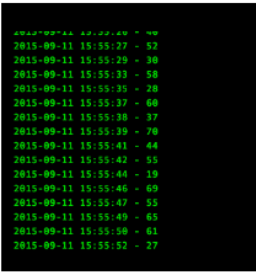

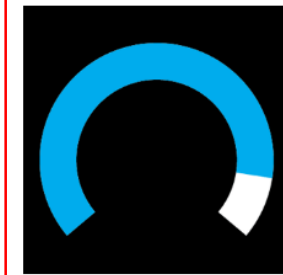
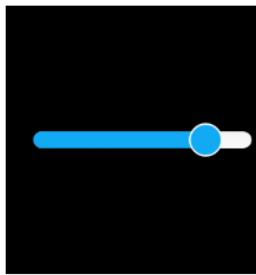
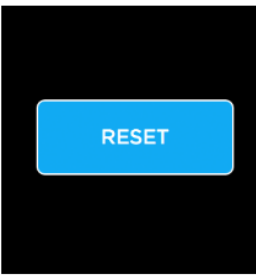

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pdmazariegos_uvg / Dashboards / HelloWorld



Create a new block

Click on the block you would like to add to your dashboard. You can always come back and switch the block type later if you change your mind.



Seleccionamos el Feed que creamos anteriormente

Choose feed

Gauge: A gauge is a read only block type that shows a fixed range of values.

If you have lot of feeds, you may want to use the search field. You can also create a feed quickly below.

[Create](#)

Group / Feed	Last value	Recorded
<input checked="" type="checkbox"/> counter		15 minutes
<input type="checkbox"/> Welcome Feed	60	12 months

[< Previous step](#) [Next step >](#)

Llenamos la configuración del bloque

Block settings

In this final step, you can give your block a title and see a preview of how it will look. Customize the look and feel of your block with the remaining settings. When you are ready, click the "Create Block" button to send it to your dashboard.

Block Title (optional)

Contador

Gauge Min Value

0

Gauge Max Value

100

Gauge Width

25px

Gauge Label

Contador

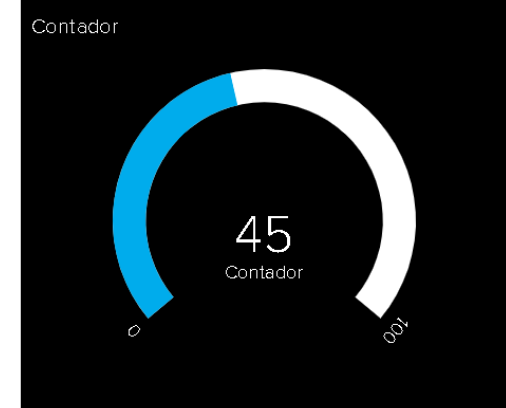
Low Warning Value

Optional. If no low warning value is given, the gauge will only change color when the value is out of bounds.

High Warning Value

Optional. If no high warning value is given, the gauge will only change color when the value is out of bounds.

Block Preview



Gauge A gauge is a read only block type that shows a fixed range of values.

Test Value

45

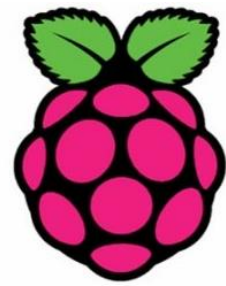
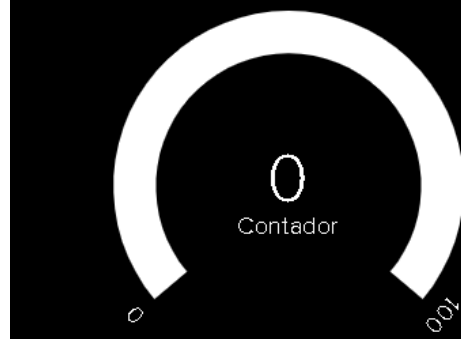
Published Value

0 bytes

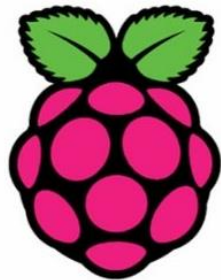
pdmarriegos_uvg / Dashboards / HelloWorld


Contador

Contador










Añadimos otro bloque









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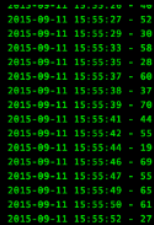

pdmazariegos_uvg / Dashboards / HelloWorld


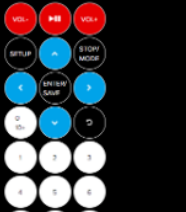




Create a new block

Click on the block you would like to add to your dashboard. You can always come back and switch the block type later if you change your mind.







Seleccionamos el Feed que creamos anteriormente

Choose feed

Slider: The slider works well if you have a range of values you need to send.

If you have lot of feeds, you may want to use the search field. You can also create a feed quickly below.

Group / Feed	Last value	Recorded
<input checked="" type="checkbox"/> counter	60	44 minutes
<input type="checkbox"/> Welcome Feed	60	12 months

Llenamos la configuración del bloque

Block settings

In this final step, you can give your block a title and see a preview of how it will look. Customize the look and feel of your block with the remaining settings. When you are ready, click the "Create Block" button to send it to your dashboard.

Block Title (optional)

Dato a enviar

Slider Min Value

0

Slider Max Value

100

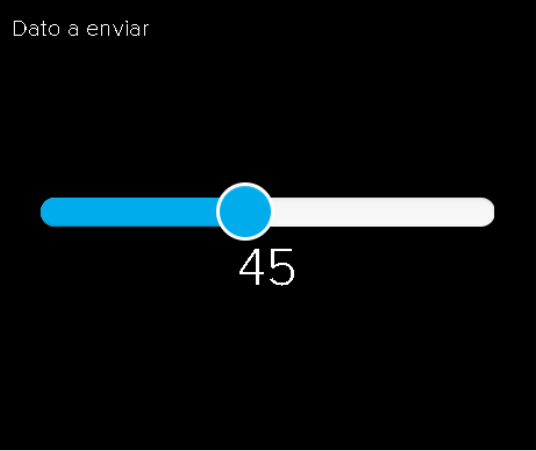
Slider Step Size

10

Slider Label

Value

Block Preview



Slider The slider works well if you have a range of values you need to send.

Test Value

45

Published Value

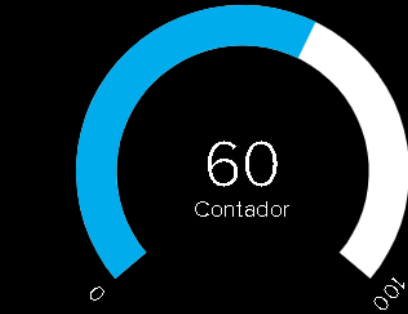


0 bytes

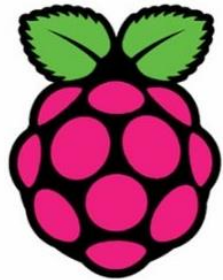
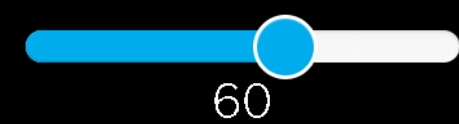
Contador

2019/02/11 10:28pm counter 40
2019/02/11 10:28pm counter 60

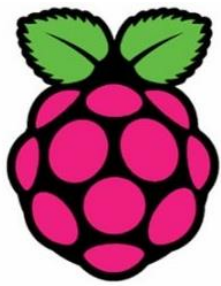
Contador



Dato a enviar



Abrimos ejemplo ***subscribe.py*** y llenamos los parámetros



```
"""
'subscribe.py'
=====
Subscribes to an Adafruit IO Feed
Author(s): Brent Rubell, Todd Treece for Adafruit Industries
"""
# Import standard python modules.
import sys

# This example uses the MQTTClient instead of the REST client
from Adafruit_IO import MQTTClient

# Set to your Adafruit IO key.
# Remember, your key is a secret,
# so make sure not to publish it when you publish this code!
ADAFRUIT_IO_KEY = 'd606d315d3d940a686fe253db075a0ed'

# Set to your Adafruit IO username.
# (go to https://accounts.adafruit.com to find your username)
ADAFRUIT_IO_USERNAME = 'pdmazariegos_uvg'

# Set to the ID of the feed to subscribe to for updates.
FEED_ID = 'counter'

# Define callback functions which will be called when certain events happen.
def connected(client):
    """Connected function will be called when the client is connected to
    Adafruit IO. This is a good place to subscribe to feed changes. The client
    parameter passed to this function is the Adafruit IO MQTT client so you
    can make calls against it easily.
    """
    # Subscribe to changes on a feed named Counter.
    print('Subscribing to Feed {0}'.format(FEED_ID))
    client.subscribe(FEED_ID)
    print('Waiting for feed data...')

def disconnected(client):
    """Disconnected function will be called when the client disconnects."""
    sys.exit(1)

def message(client, feed_id, payload):
    """Message function will be called when a subscribed feed has a new value.
    The feed_id parameter identifies the feed, and the payload parameter has
    the new value.
    """
    print('Feed {0} received new value: {1}'.format(feed_id, payload))
```

```
# Create an MQTT client instance.
client = MQTTClient(ADAFRUIT_IO_USERNAME, ADAFRUIT_IO_KEY)

# Setup the callback functions defined above.
client.on_connect = connected
client.on_disconnect = disconnected
client.on_message = message

# Connect to the Adafruit IO server.
client.connect()

# The first option is to run a thread in the background so you can continue
# doing things in your program.
client.loop_blocking()
```

Abrimos el editor de texto ***nano*** y pegamos nuestro código y lo guardamos como ***subscribe.py***

```
pi@raspberrypi:~ $ sudo nano subscribe.py
```

Para correr nuestro programa lo realizamos de la siguiente forma:

```
pi@raspberrypi:~ $ sudo python subscribe.py
```

pdmazariegos_uvq/Dashboards/HelloWorld

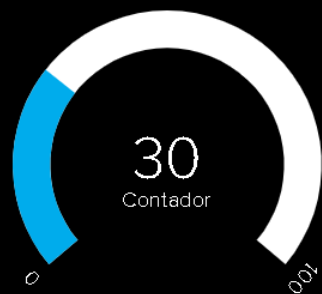
Contador

```
2019/02/11 10:28pm counter 40
2019/02/11 10:28pm counter 60
2019/02/11 10:33pm counter 30
2019/02/11 10:33pm counter 30
```

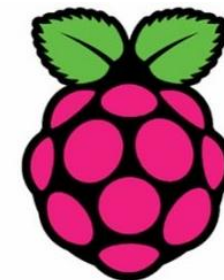
Dato a enviar

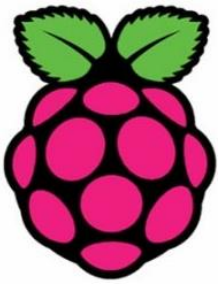


Contador



```
pi@raspberrypi:~ $ python subscribe.py
Connected to Adafruit IO!
Subscribing to Feed counter
Waiting for feed data...
Feed counter received new value: 40
Feed counter received new value: 60
Feed counter received new value: 30
Feed counter received new value: 30
Feed counter received new value: 30
```





Enlaces importantes

- Tutorial GPIO de Raspberry Pi de Adafruit

<https://learn.adafruit.com/adafruits-raspberry-pi-lesson-4-gpio-setup?view=all>

- Convertidor Lógico 3.3V a 5V

<https://learn.sparkfun.com/tutorials/bi-directional-logic-level-converter-hookup-guide>

- Tutorial 1 SPI Raspberry Pi API

http://tightdev.net/SpiDev_Doc.pdf

- Tutorial 2 de SPI de la Raspberry Pi

<https://www.takaitra.com/spi-device-raspberry-pi/>

- Tutorial 3 de SPI de la Raspberry Pi

<https://raspberrypi-aa.github.io/session3/spi.html>

- Tutorial SPI e I2C de Raspberry en Sparkfun en Lenguaje C

<https://learn.sparkfun.com/tutorials/raspberry-pi-spi-and-i2c-tutorial>