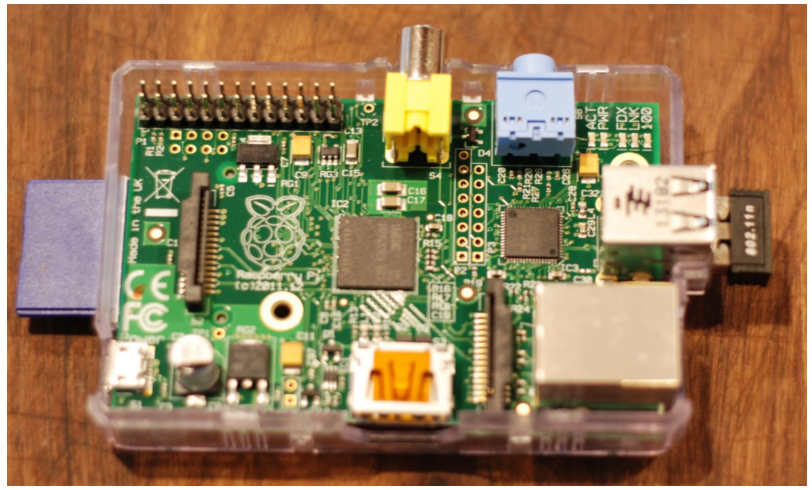
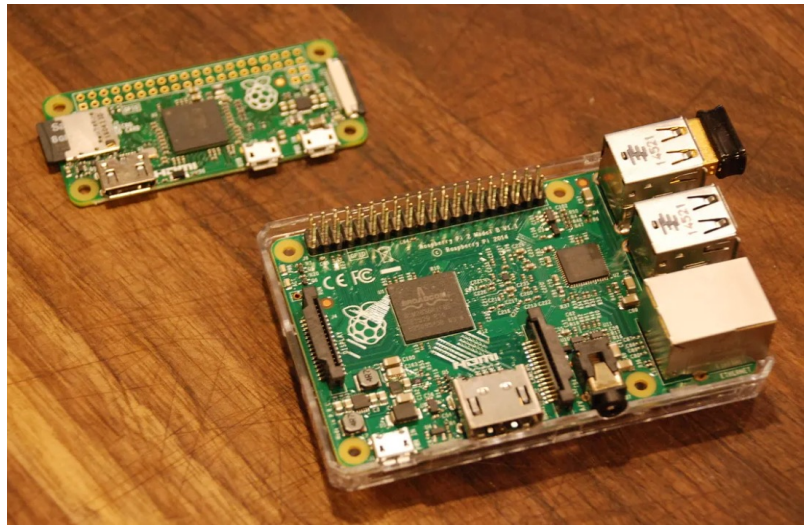
Intro to Raspberry Pi

Mon, Oct 2nd

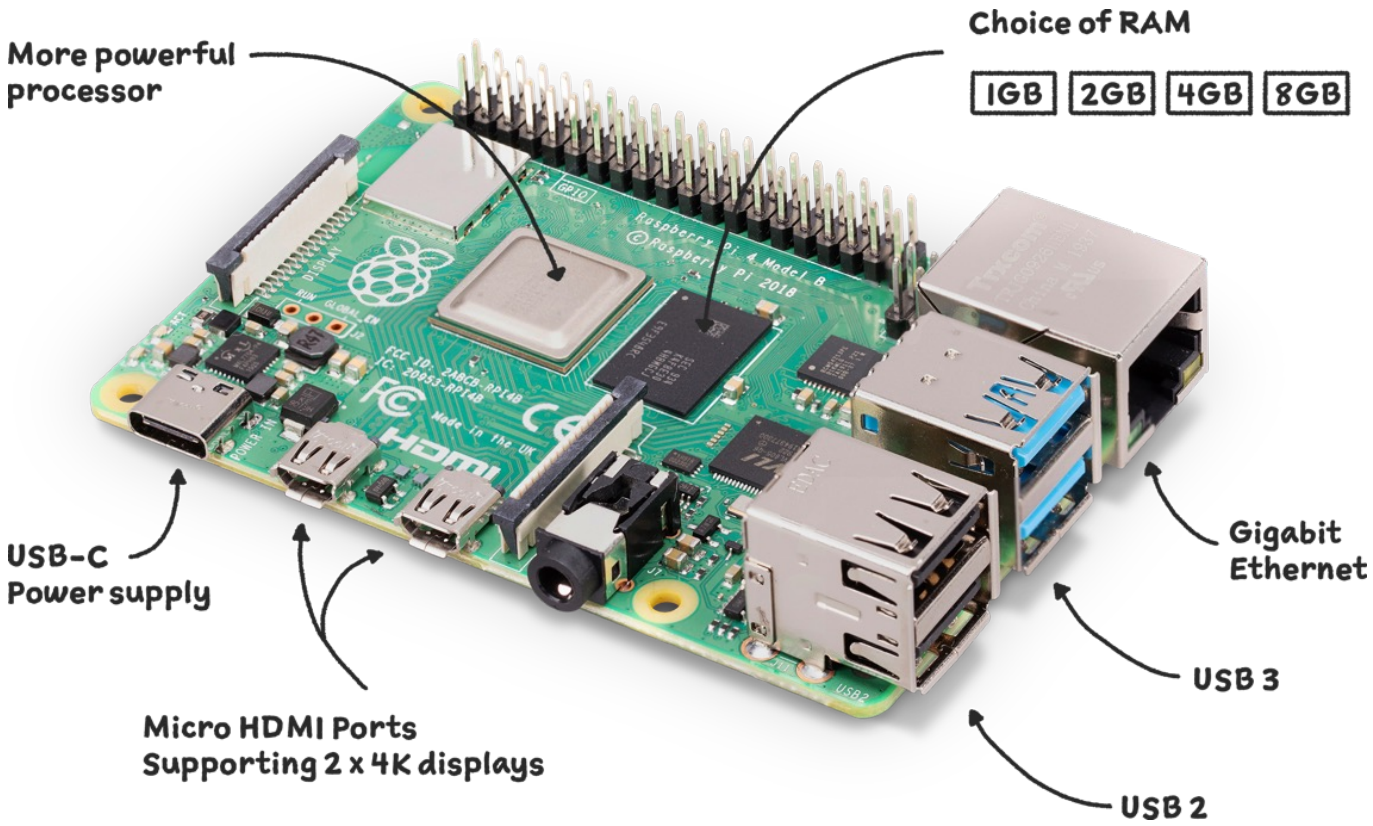
Intro to Raspberry Pi



First Generation Raspberry Pi, 2012



Second Generation Raspberry Pi B, 2015 (below)
First Generation Raspberry Pi Zero (above)



Third Generation Raspberry Pi, 2016

How to

Set up your Raspberry Pi

Intro to Raspberry Pi

What you need to make this work.

Laptop or PC
(Mac, Windows or Ubuntu)

List:

Monitor

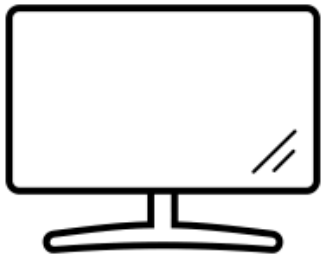
HDMI to Micro HDMI

Raspberry Pi

Keyboard and Mouse

USB-C Power Supply

Visual:



Monitor

HDMI to Micro HDMI

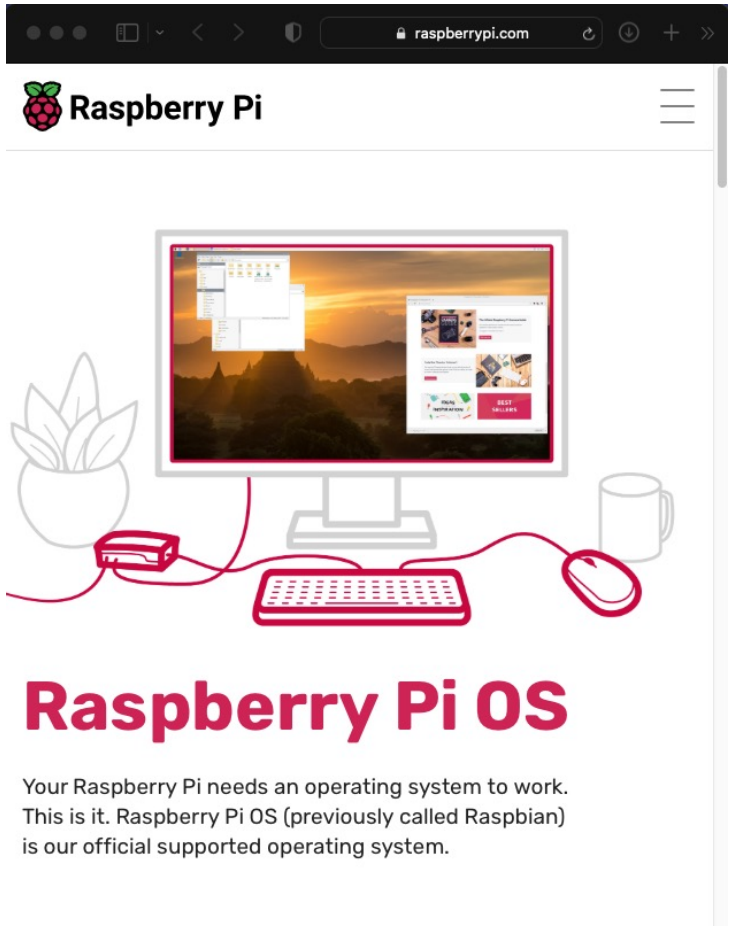
Raspberry Pi

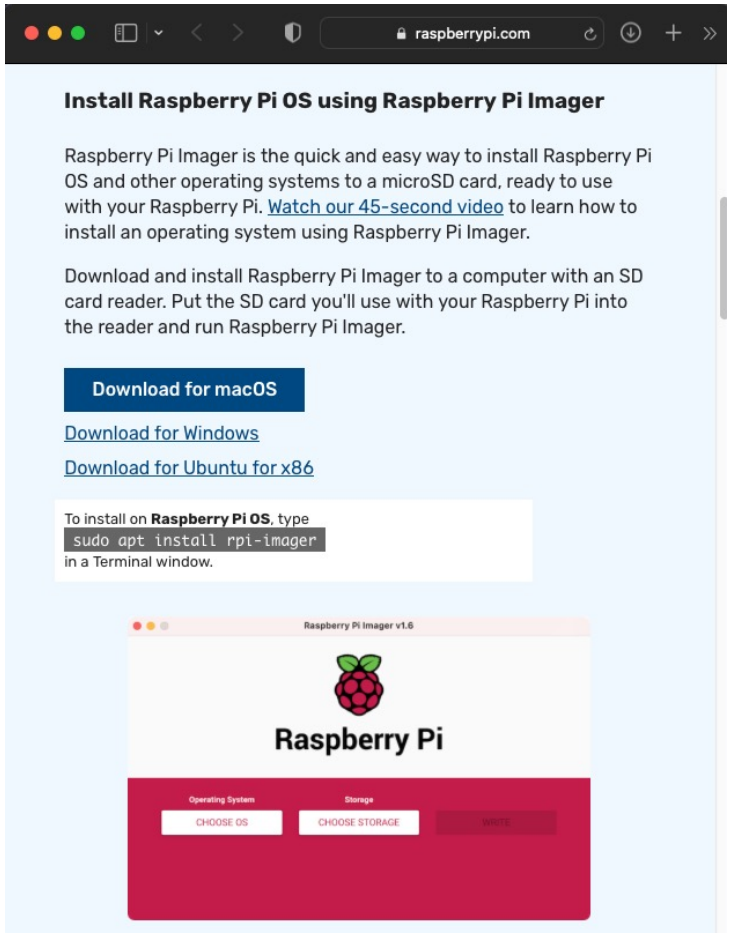
Keyboard and Mouse

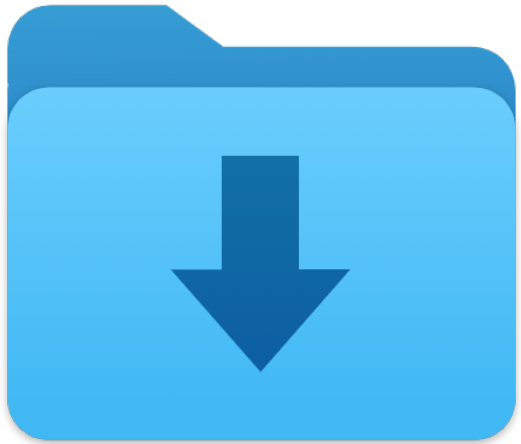
USB-C
Power
Supply

Intro to Raspberry Pi

Download the Raspberry Pi Imager





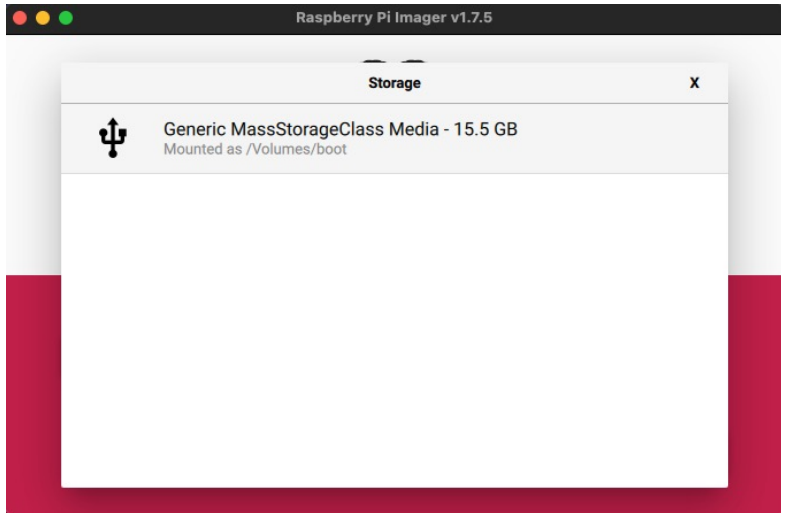


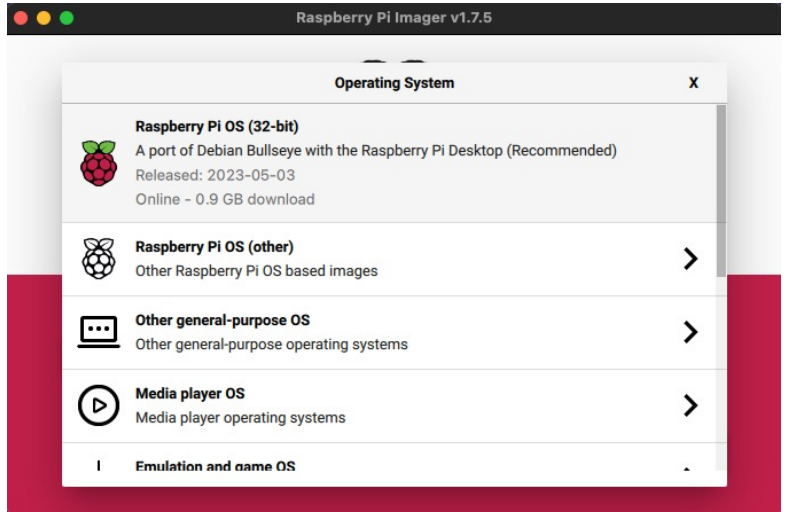
Downloads

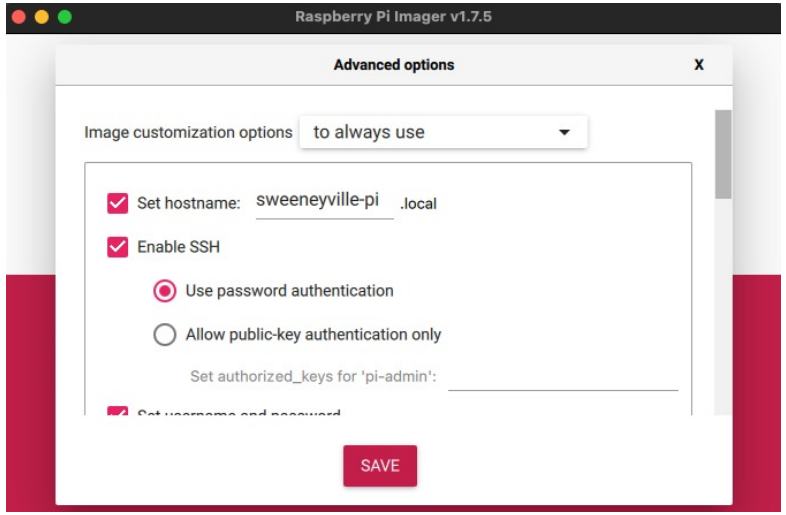
https://www.raspberrypi.com/software/

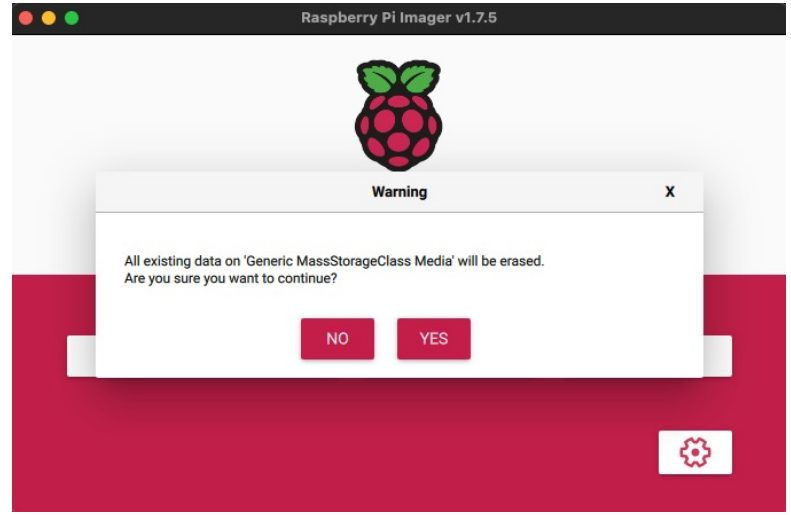
Intro to Raspberry Pi

Launch Raspberry Pi Imager, choose OS, pick SD card and configure.









Intro to Raspberry Pi

Wait.

Intro to Raspberry Pi

And wait.

Intro to Raspberry Pi

And wait.

Intro to Raspberry Pi

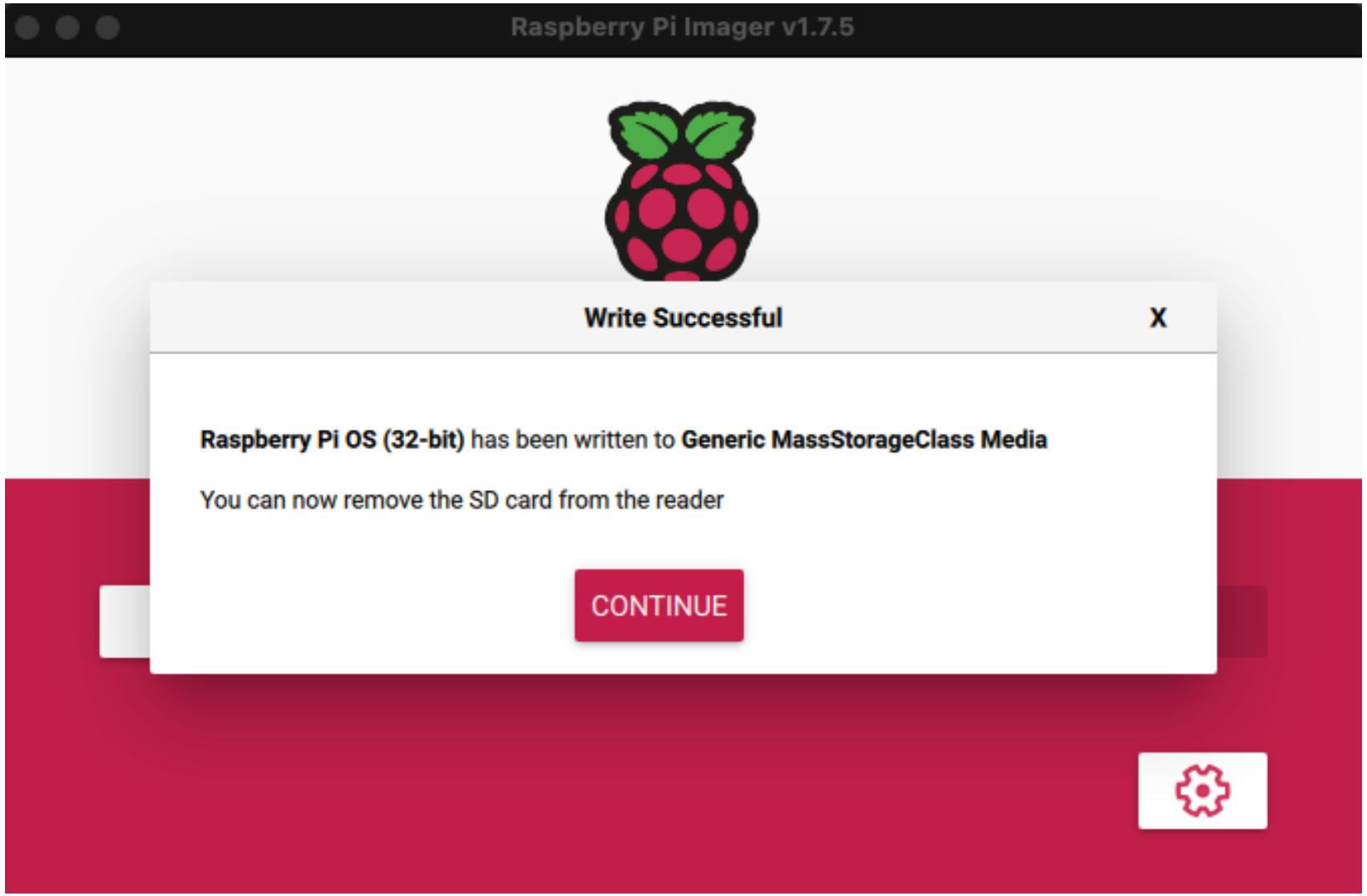
Wait while the install is verified.

Intro to Raspberry Pi

Wait.

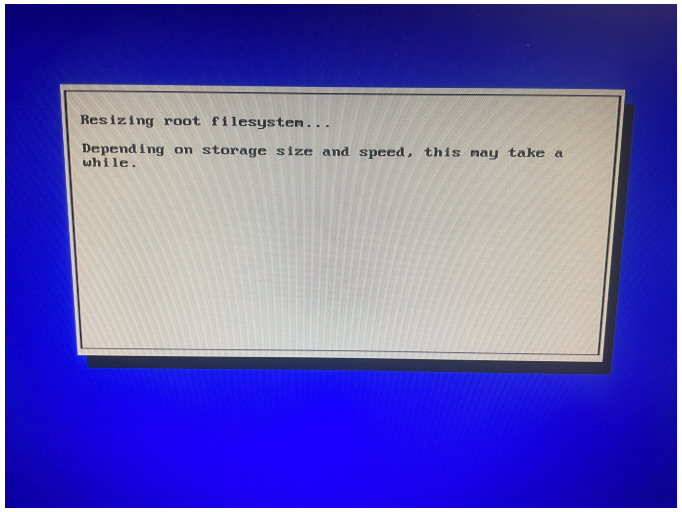
Intro to Raspberry Pi

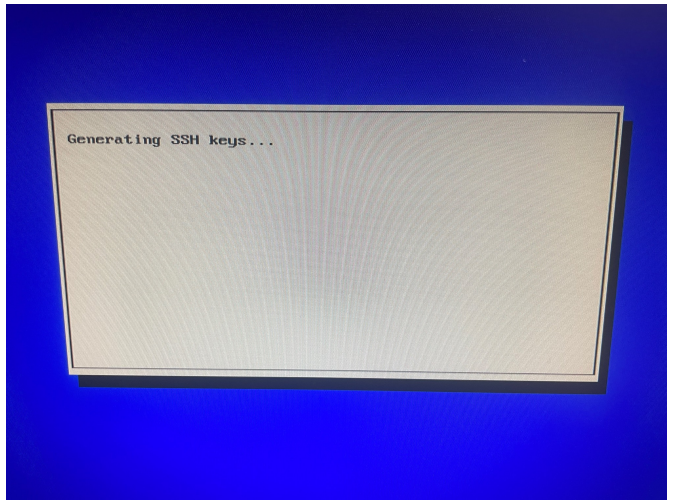
Huzzah! Done!

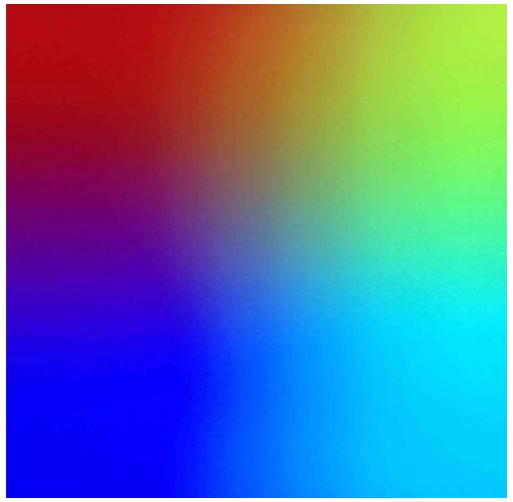


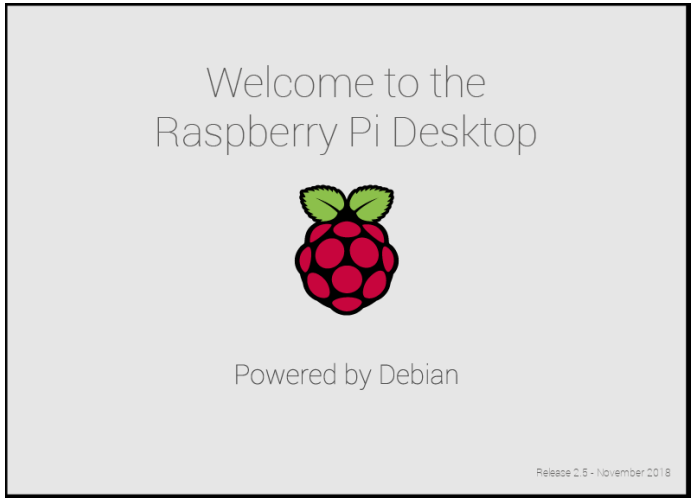
Intro to Raspberry Pi

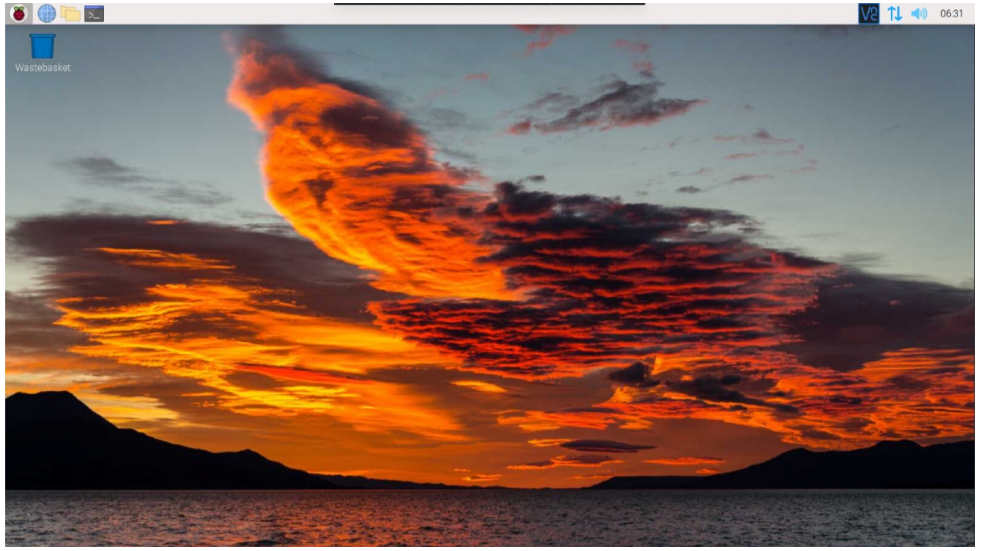
Place SD card into Pi, plug in monitor, keyboard, mouse and power.





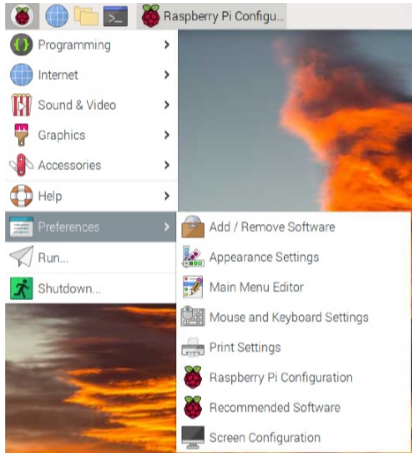


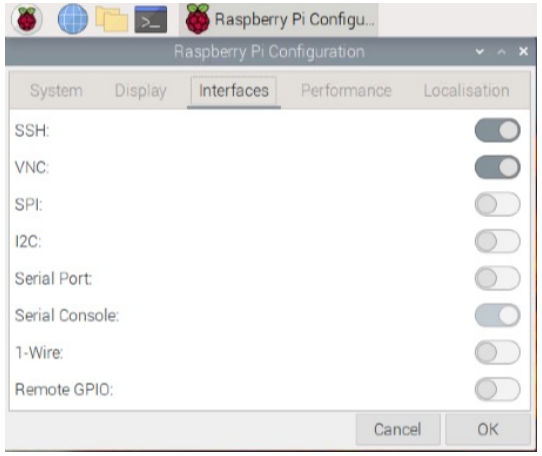


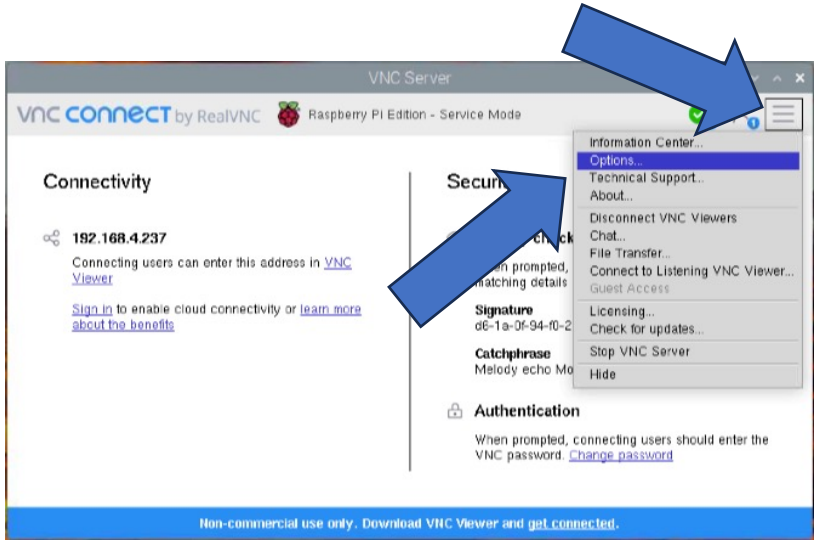


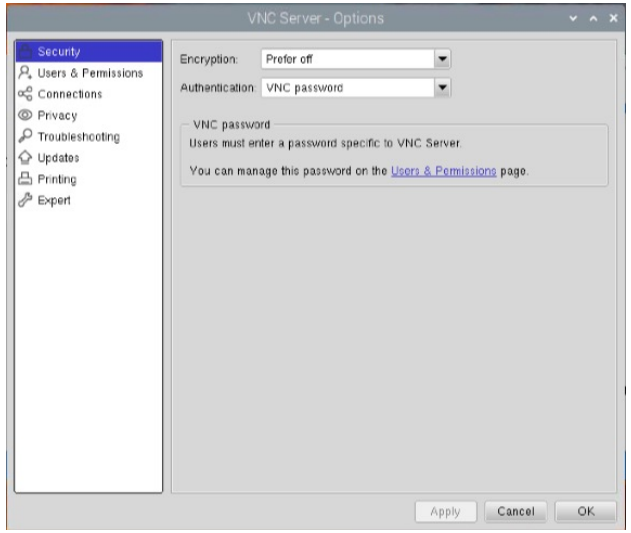
Intro to Raspberry Pi

Click on the Pi menu, top left, then choose preferences and Raspberry Pi Configuration.







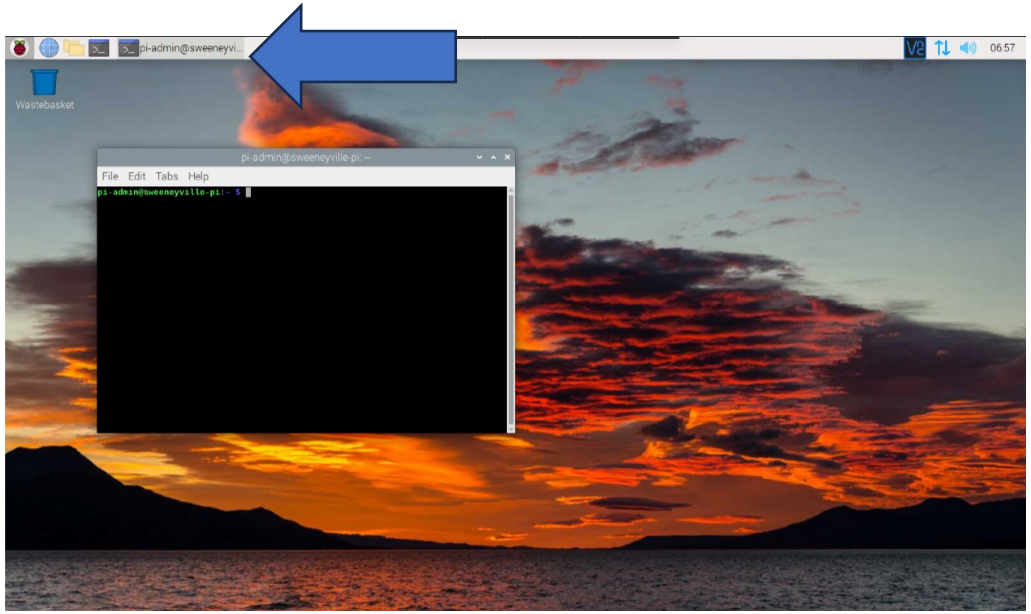


Choose the Interfaces tab, and turn on VNC.
Click on the VNC icon, top right, then the Three Lines and choose Options.
Change Encryption to “prefer off”
Change Authentication to “VNC Password”
Provide a memorable password when prompted.

Switch to your Mac, PC or Linux Desktop and connect to the Raspberry Pi with Screen Sharing or VNC Viewer of your choice. All further steps will be taken on your usual desktop.

Intro to Raspberry Pi

Launch the Terminal from the top left menu bar. Follow the commands to install add-ons.



Update and Upgrade the OS
sudo apt update && sudo apt upgrade
(This will take a while.)

Install Samba for file sharing
sudo apt install samba samba-common-bin
(This will take a while.)

Set up Samba password (pick a memorable password)
sudo smbpasswd -a pi
(Use the user account you configured)

Configure Samba to allow writing files
sudo nano /etc/samba/smb.conf

Inside the smb.conf file scroll down to the [homes] section and set "read only = no" to make the shared folders writable.

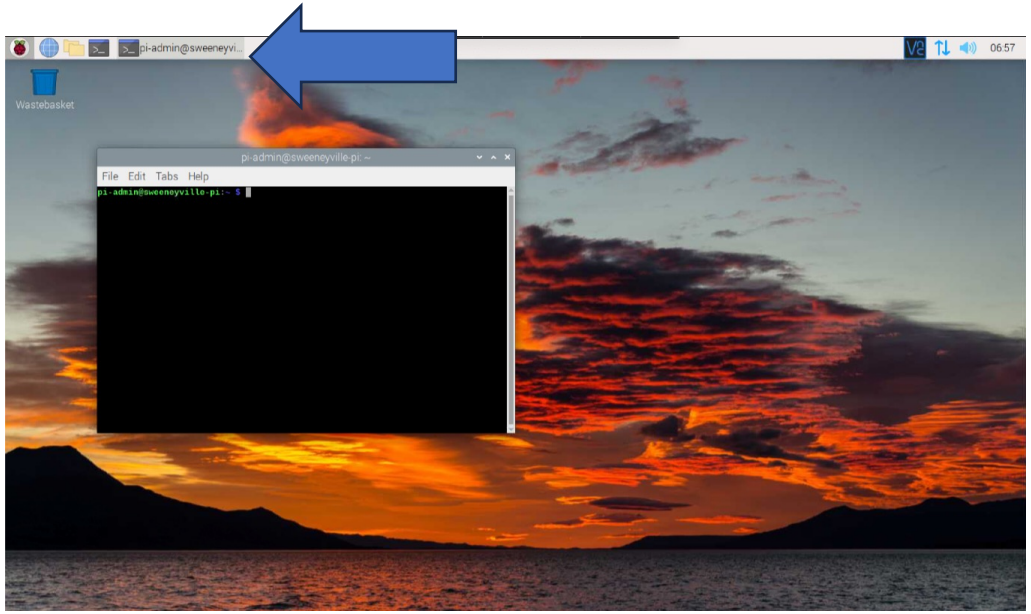
Restart the Samba service
sudo service smbd restart

If you want to share additional resources, like an external drive, add another section at the end of the smb.conf and make it fully writable.

```
[sharename]
   path = /mnt/myexternaldrive/
   read only = no
   public = yes
   writable = yes
```

Intro to Raspberry Pi

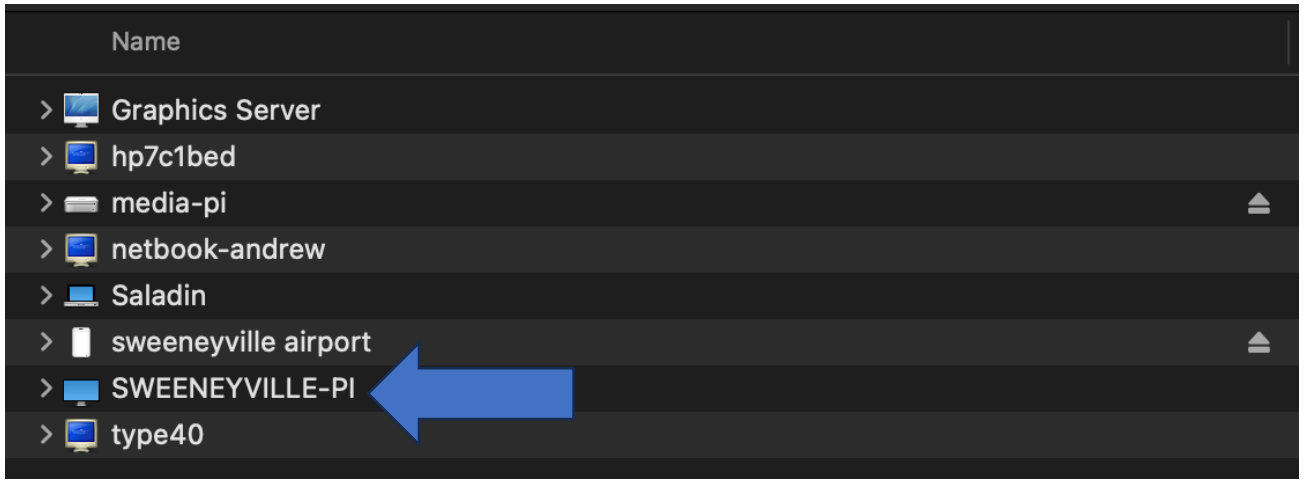
Turn on VNC and Samba advertising with Bonjour



sudo nano /etc/avahi/services/rfb.service

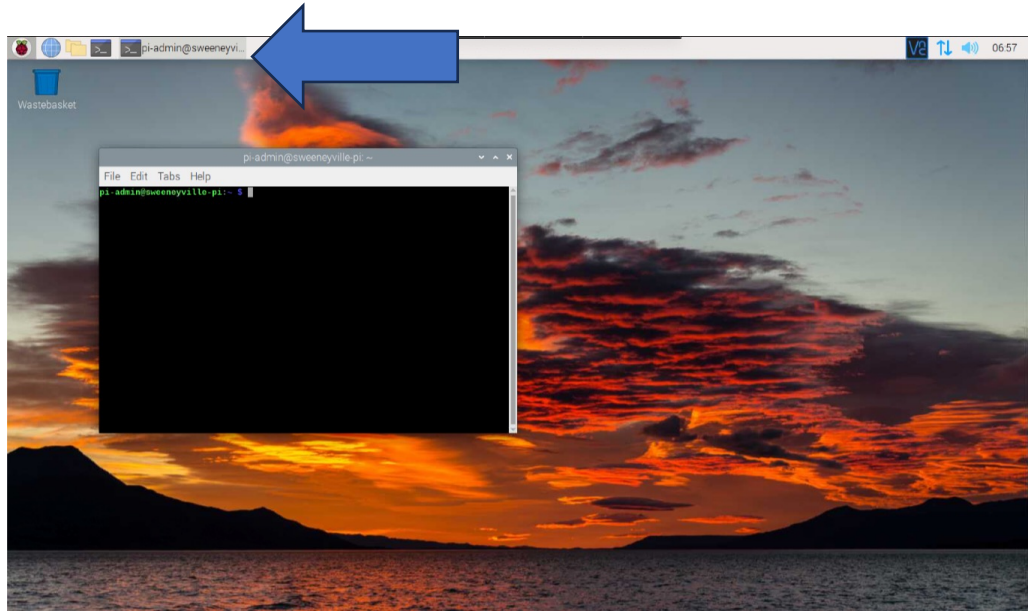
Copy in the Avahi service description for VNC

```
<?xml version="1.0" standalone='no'?>
<!DOCTYPE service-group SYSTEM "avahi-service.dtd">
<service-group>
 <name replace-wildcards="yes">%h</name>
 <service>
  <type>_rfb._tcp</type>
  <port>5900</port>
 </service>
</service-group>
```



Intro to Raspberry Pi

Add Samba service file and custom icon for your Pi

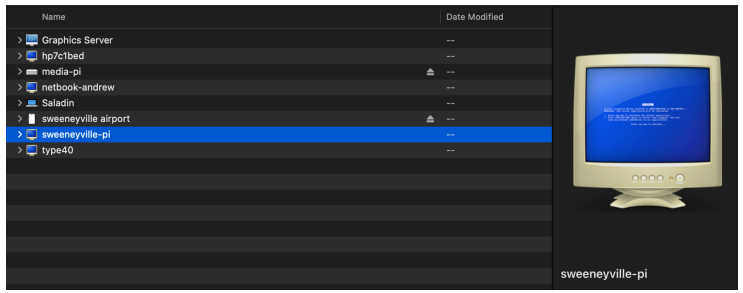


sudo nano /etc/avahi/services/smb.service

Copy in the Samba service description

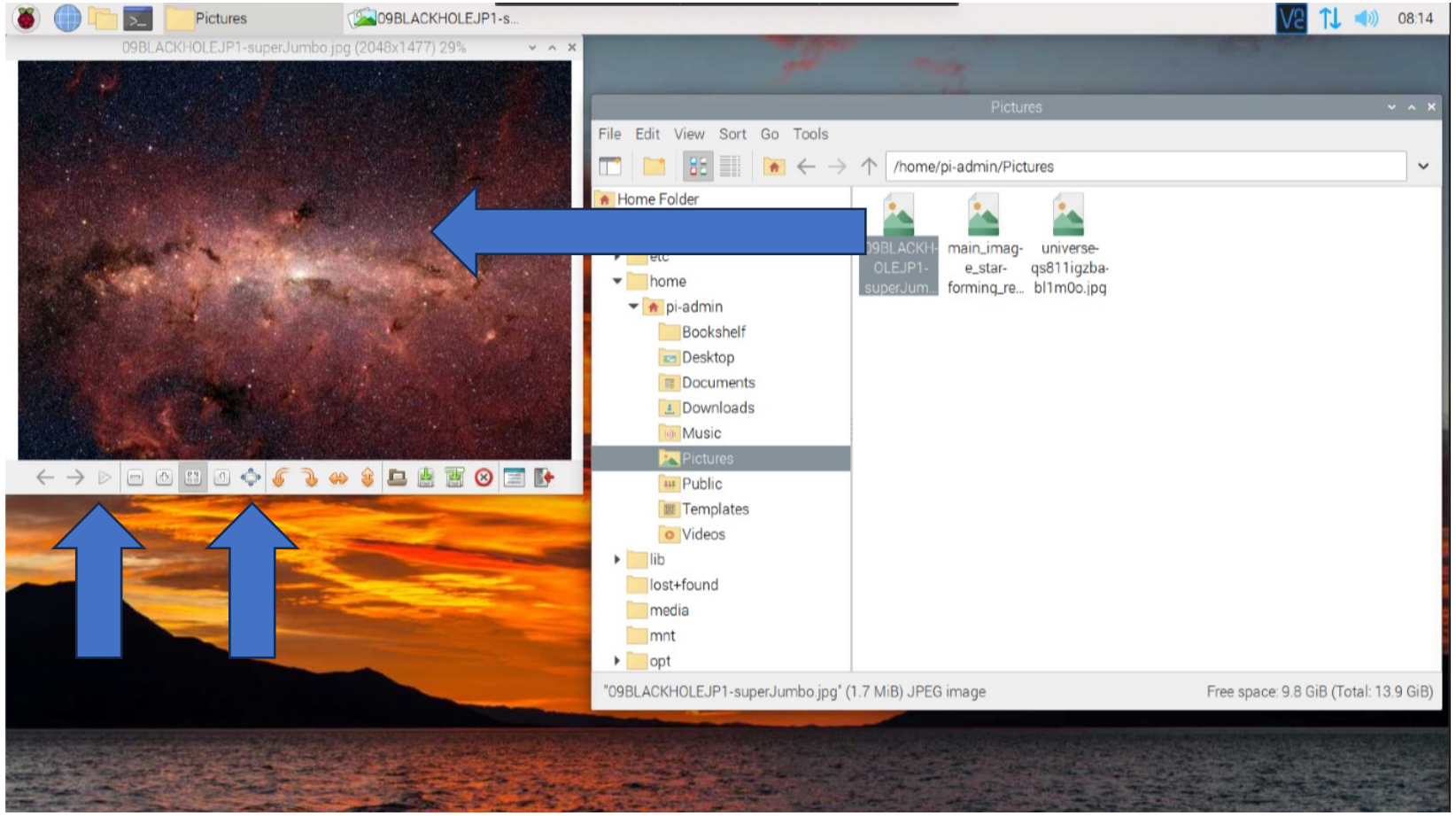
```
<?xml version="1.0" standalone='no'?>
<!DOCTYPE service-group SYSTEM "avahi-service.dtd">
<service-group>
 <name replace-wildcards="yes">%h</name>
 <service>
  <type>_smb._tcp</type>
  <port>445</port>
 </service>
 <service>
  <type>_device-info._tcp</type>
  <port>0</port>
  <txt-record>model=Xserve</txt-record>
 </service>
</service-group>
```

If you want your Pi to show up with a different icon, just change the “model=Xserve” to an icon that you prefer. Examples: Xserve, Macmini, PowerMac, iMac, Windows icon image



Intro to Raspberry Pi

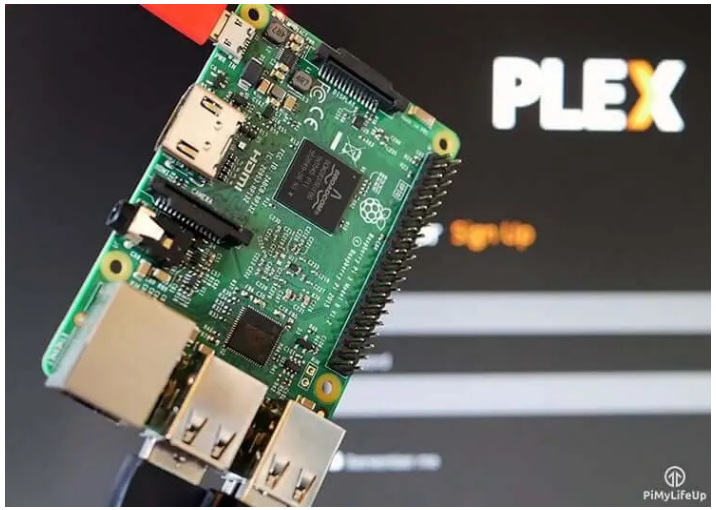
Connect with your computer and copy photos

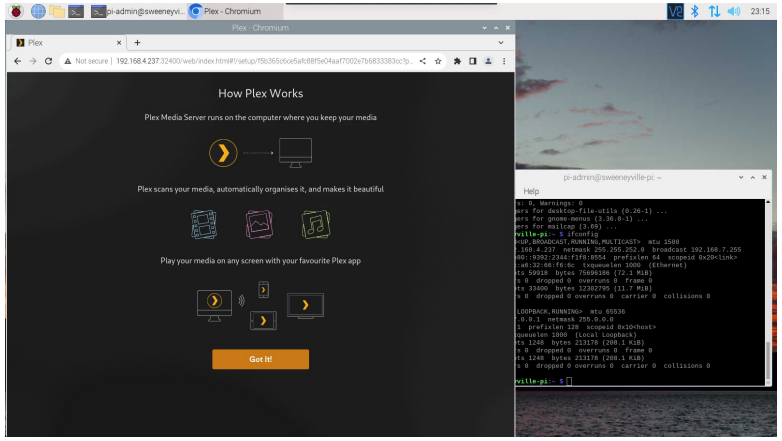


Open Image Viewer and several drag photos to make slideshow.
Click play, then “full screen” and enjoy your photo frame!

Intro to Raspberry Pi

More? Let's set up a Plex Media Server





Allow the "apt" package manager to access the PLEX packages over https
sudo apt-get install apt-transport-https

Add the Plex repository secure key to the keyrings directory
curl https://downloads.plex.tv/plex-keys/PlexSign.key | gpg --dearmor | sudo tee /usr/share/keyrings/plex-archive-keyring.gpg >/dev/null

Add the Plex repository to approved repositories list
echo deb [signed-by=/usr/share/keyrings/plex-archive-keyring.gpg] https://downloads.plex.tv/repo/deb public main | sudo tee /etc/apt/sources.list.d/plexmediaserver.list

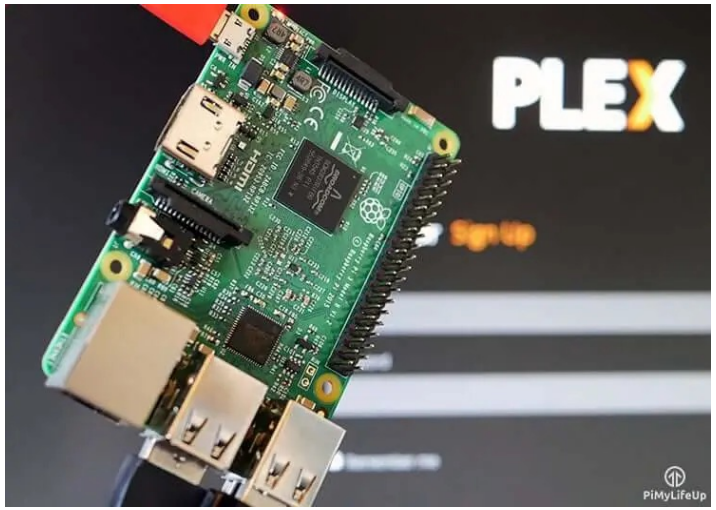
Update the package list
sudo apt-get update

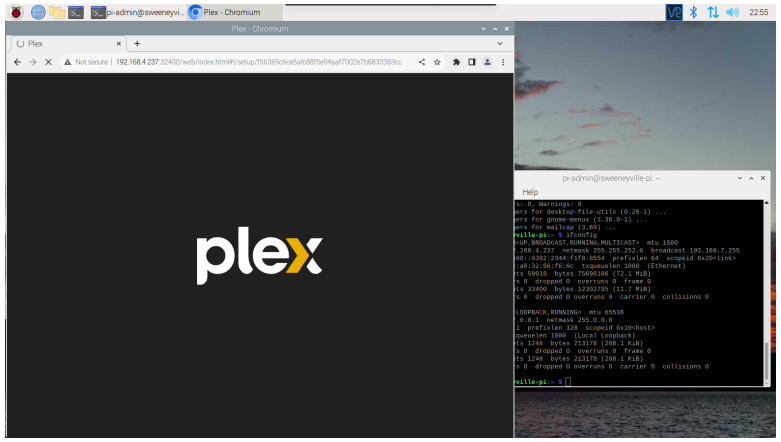
Install the Plex media server
sudo apt install plexmediaserver

Connect to the Plex Server
pi.ip.address:32400/web/
(Replace with the IP address your Pi got assigned)

Intro to Raspberry Pi

Keep your sanity by setting a static IP address for your Raspberry Pi





Eventually your router and Pi will disagree about what IP address it should have and it will get changed. We can keep that from happening by telling the Pi to always have the same IP, and most routers will just go along with that. If you have your home network configured to be more strict you will need to accommodate that also.

Get the current ip address
hostname –I

Open the cmdline.txt file
sudo nano /boot/cmdline.txt

Add your IP to the bottom
ip=YOUR IP

Reboot your Pi
sudo reboot

Connect to the Plex Server
pi.ip.address:32400/web/
(Replace with the static IP address)