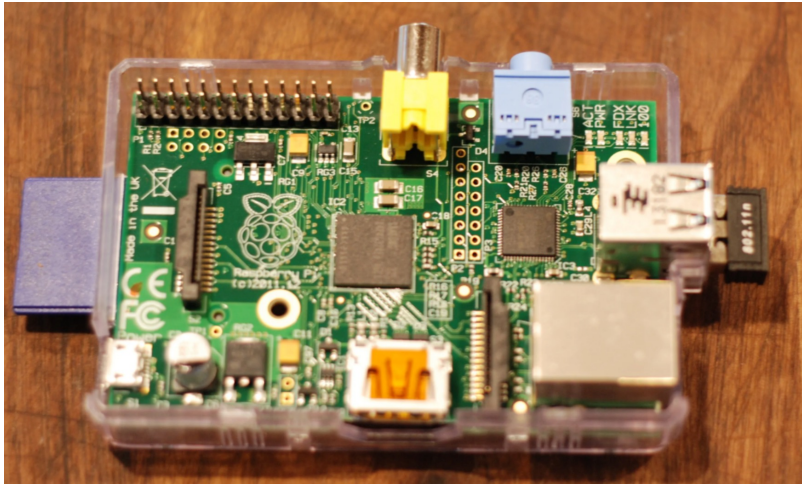




Intro to Raspberry Pi

Mon, Oct 2nd

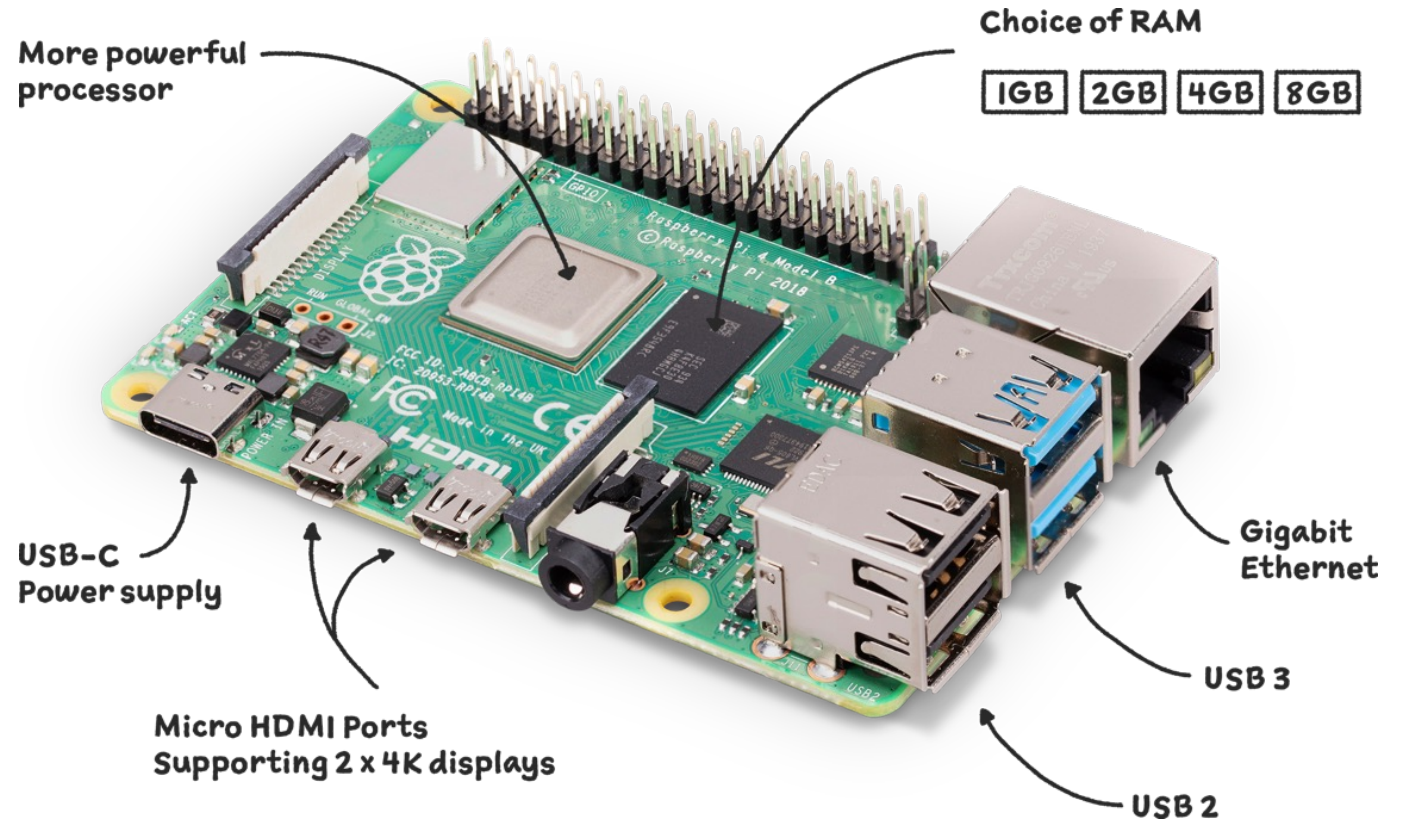
Intro to Raspberry Pi



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.

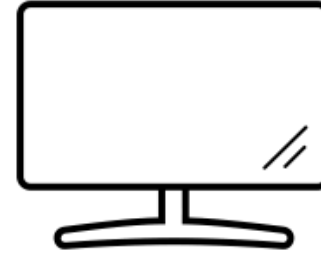


Laptop or PC
(Mac, Windows or Ubuntu)

List:

- Monitor
- HDMI to Micro HDMI
- Raspberry Pi
- Keyboard and Mouse
- USB-C Power Supply

Visual:



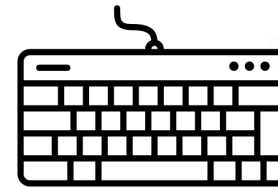
Monitor



HDMI to Micro HDMI



Raspberry Pi



Keyboard and Mouse



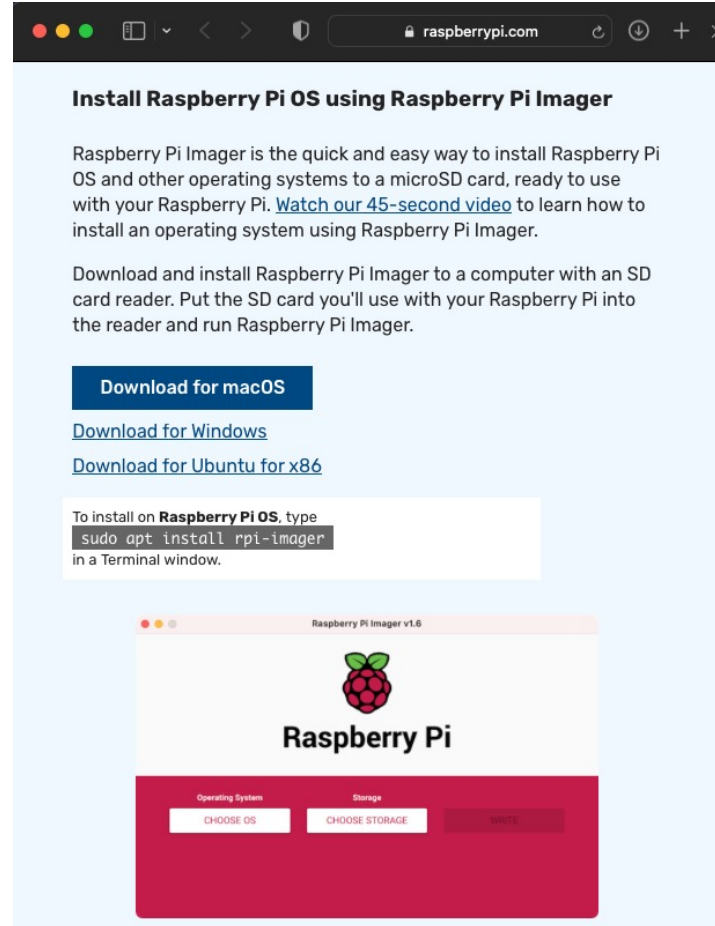
USB-C
Power
Supply

Intro to Raspberry Pi

Download the Raspberry Pi Imager



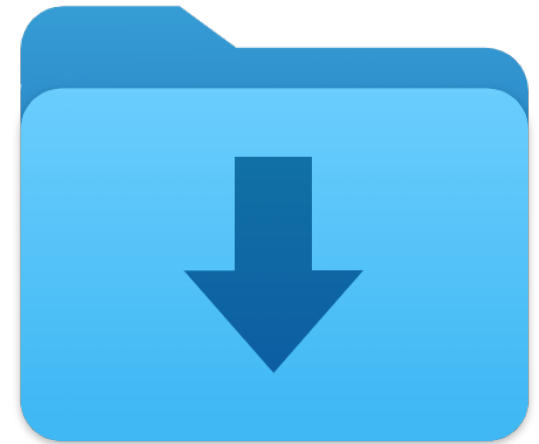
The screenshot shows the Raspberry Pi website homepage. At the top left is the Raspberry Pi logo and the text "Raspberry Pi". Below this is a large illustration of a Raspberry Pi computer setup, including a monitor displaying the desktop, a keyboard, a mouse, and a small potted plant. Below the illustration, the text "Raspberry Pi OS" is written in a large, bold, pink font. Underneath, a paragraph reads: "Your Raspberry Pi needs an operating system to work. This is it. Raspberry Pi OS (previously called Raspbian) is our official supported operating system."



The screenshot shows the "Install Raspberry Pi OS using Raspberry Pi Imager" page. The page title is "Install Raspberry Pi OS using Raspberry Pi Imager". The main text reads: "Raspberry Pi Imager is the quick and easy way to install Raspberry Pi OS and other operating systems to a microSD card, ready to use with your Raspberry Pi. [Watch our 45-second video](#) to learn how to install an operating system using Raspberry Pi Imager." Below this, there are three download links: "Download for macOS" (a blue button), "Download for Windows" (a blue link), and "Download for Ubuntu for x86" (a blue link). A code block shows the terminal command:

```
To install on Raspberry Pi OS, type  
sudo apt install rpi-imager  
in a Terminal window.
```

 At the bottom, there is a screenshot of the Raspberry Pi Imager v1.6 application interface, which features the Raspberry Pi logo and the text "Raspberry Pi". Below the logo are three buttons: "CHOOSE OS" (under "Operating System"), "CHOOSE STORAGE" (under "Storage"), and "WRITE".

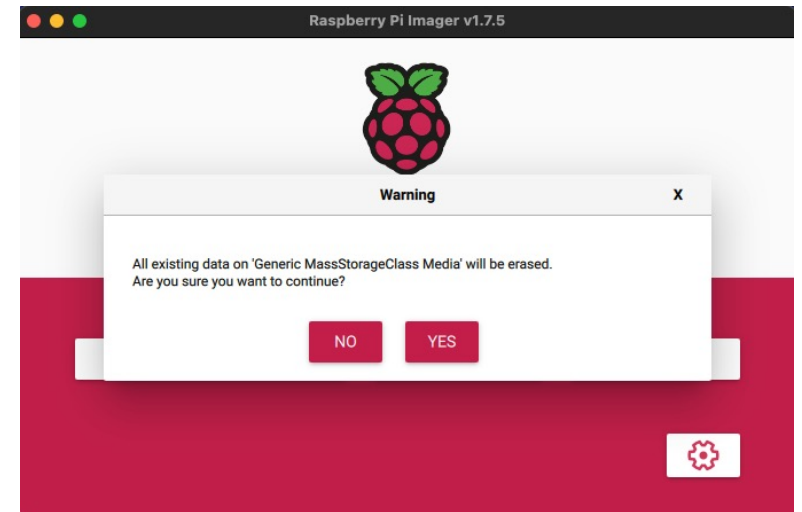
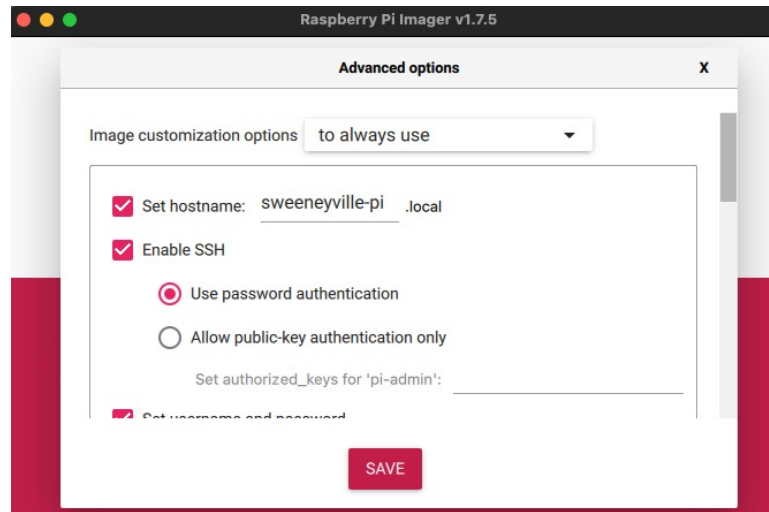
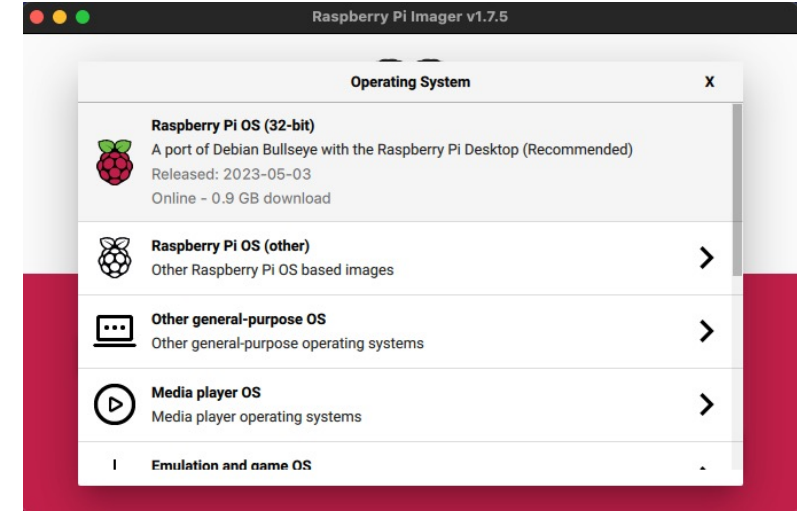
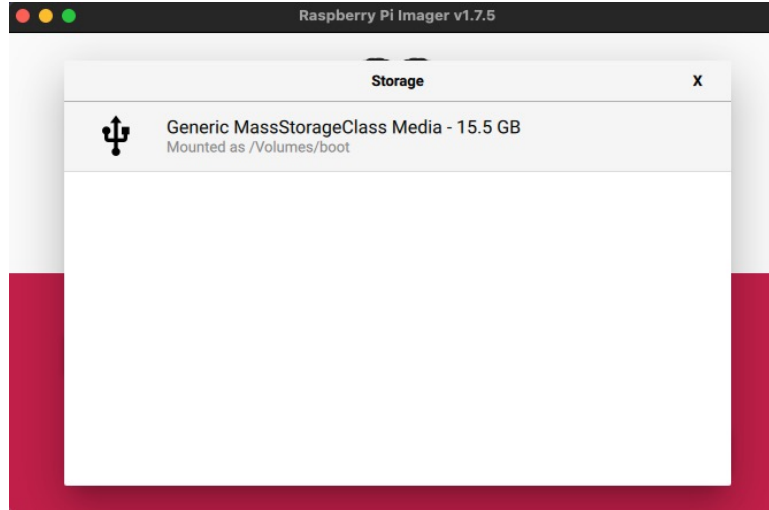


Downloads

<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.



The screenshot shows the Raspberry Pi Imager v1.7.5 interface. At the top, the title bar reads "Raspberry Pi Imager v1.7.5". Below the title bar is the Raspberry Pi logo, a red raspberry with two green leaves, and the text "Raspberry Pi" in a large, bold, black font. The main area is divided into three sections: "Operating System" with "RASPBERRY PI OS (32-BIT)", "Storage" with "GENERIC MASSST...", and a "WRITE" button. Below these sections is a progress bar labeled "Writing... 8%". At the bottom right, there is a "CANCEL WRITE" button.

Intro to Raspberry Pi

And wait.



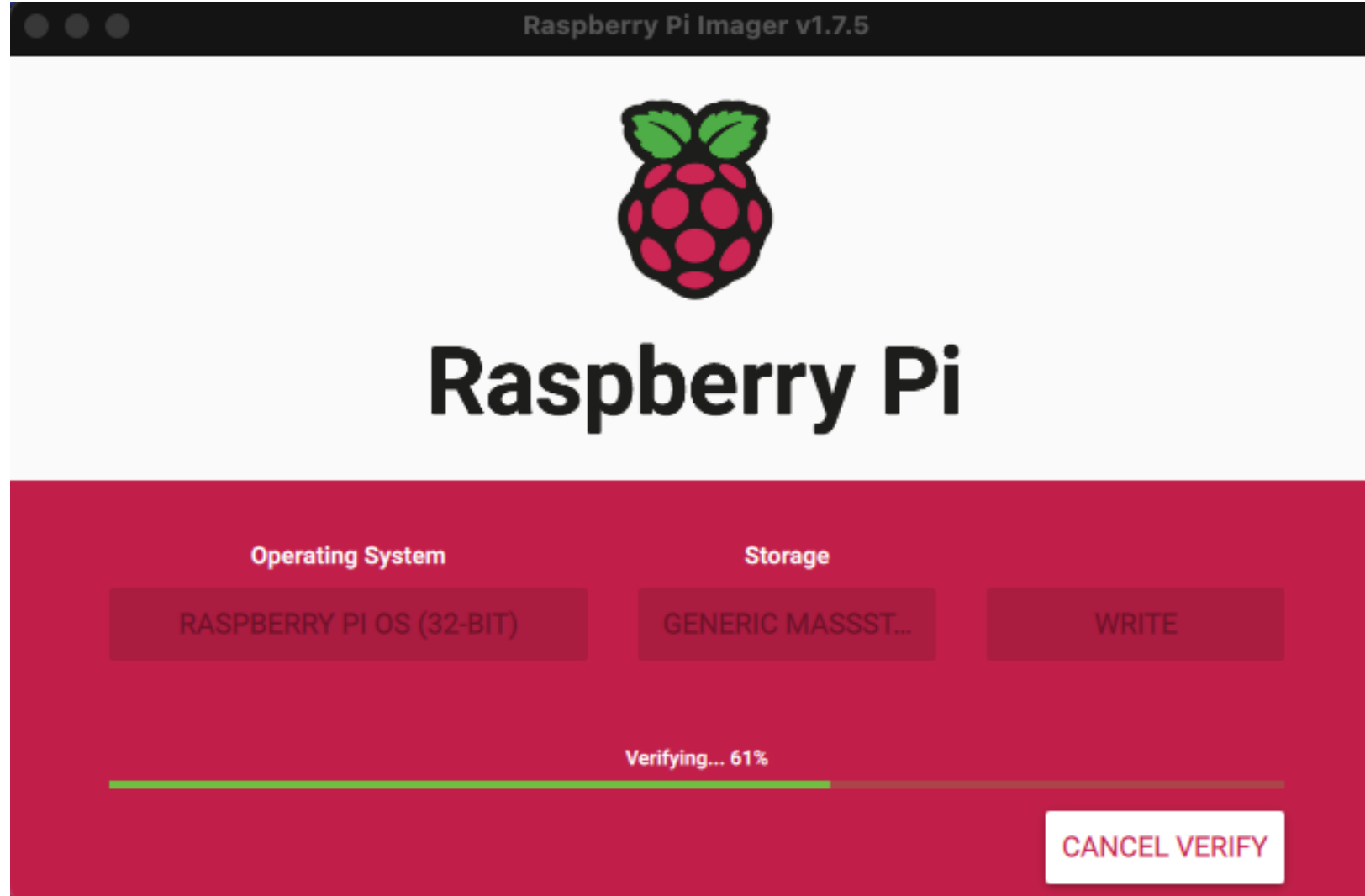
Intro to Raspberry Pi

And wait.



Intro to Raspberry Pi

Wait while the install is verified.



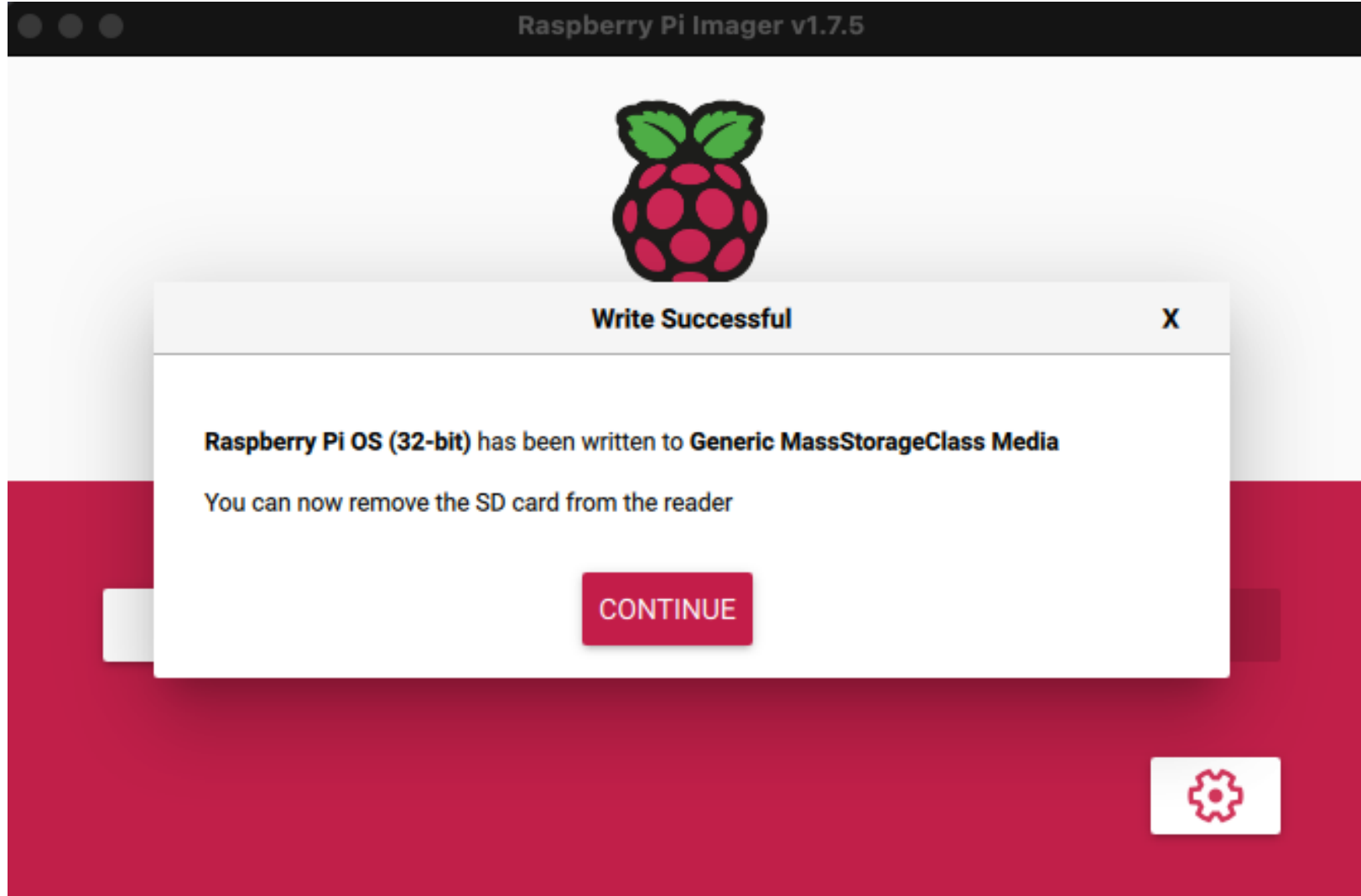
Intro to Raspberry Pi

Wait.



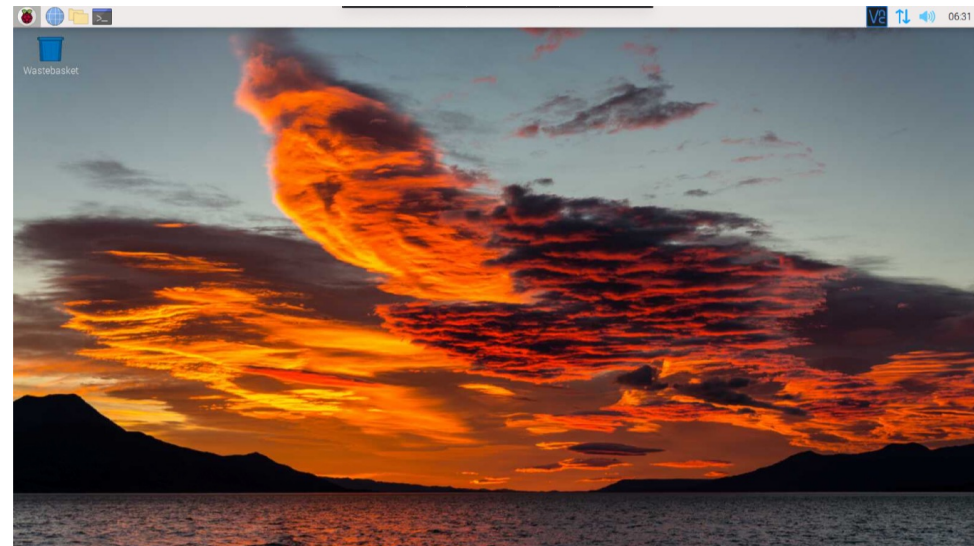
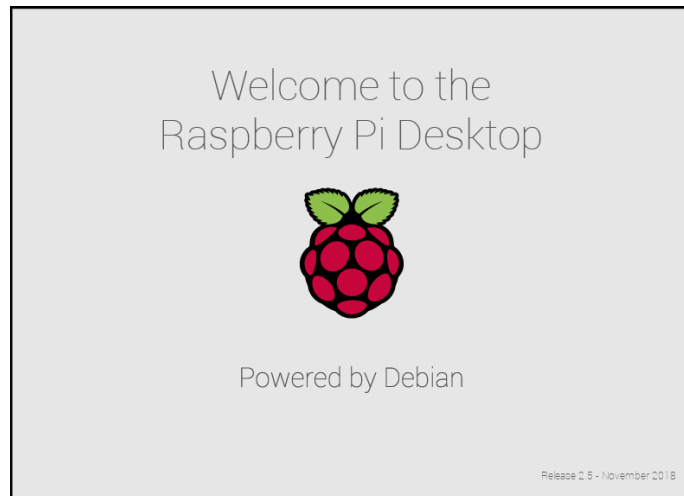
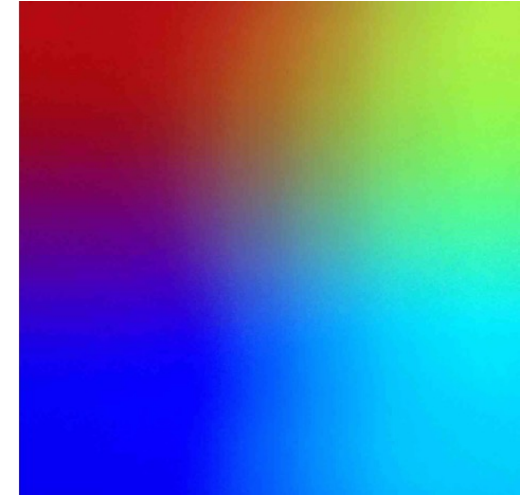
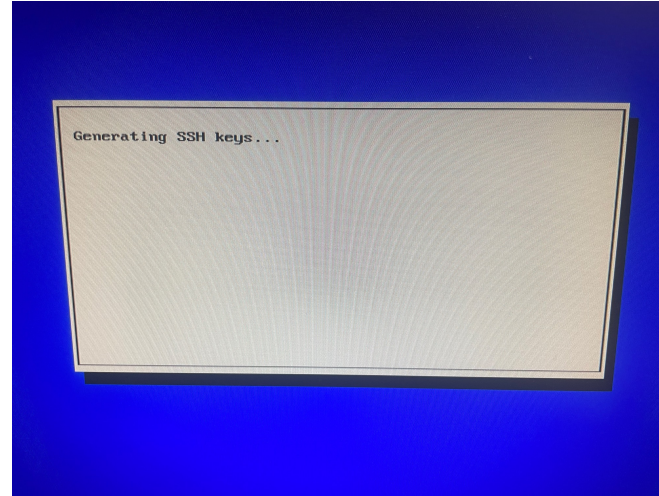
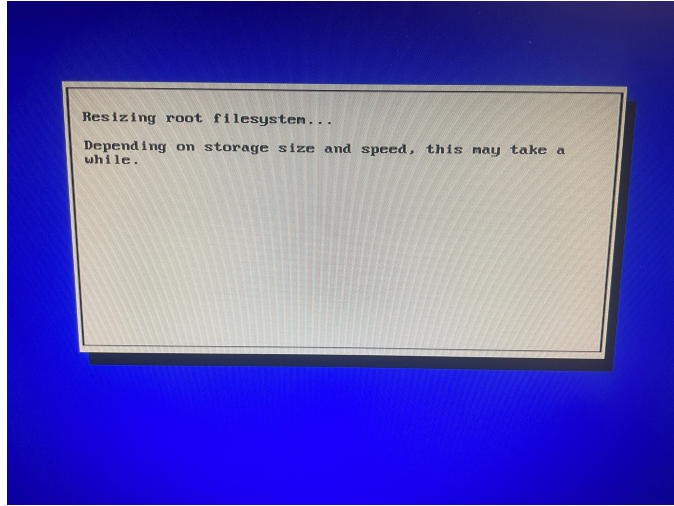
Intro to Raspberry Pi

Huzzah! Done!



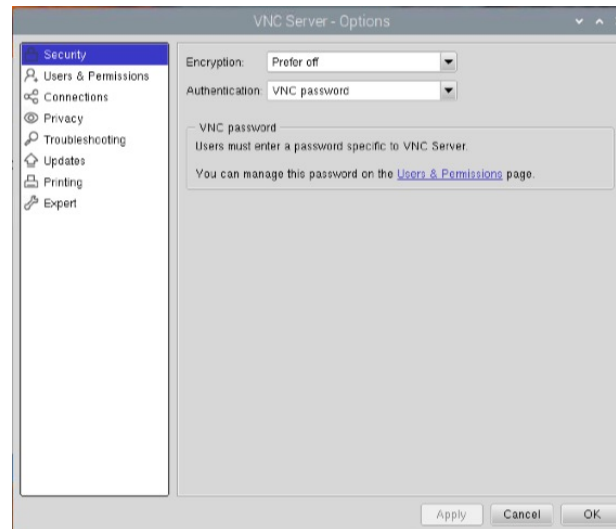
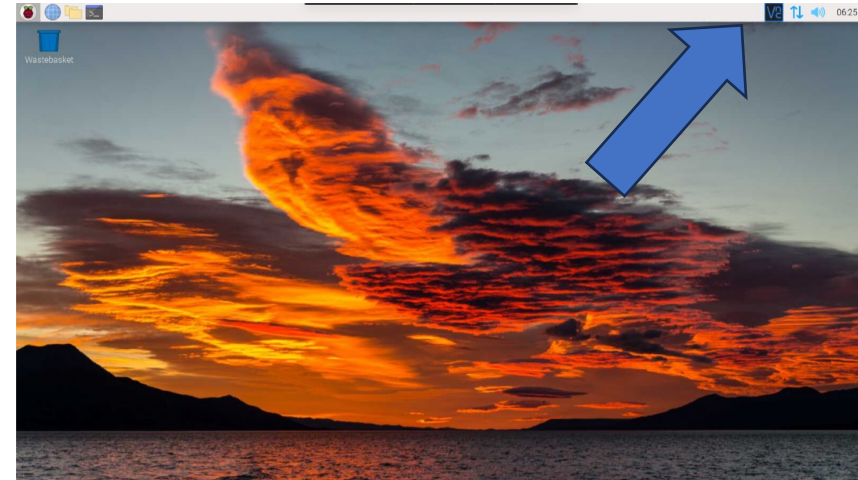
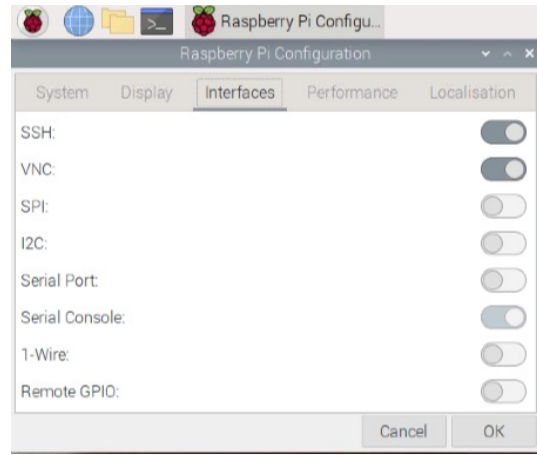
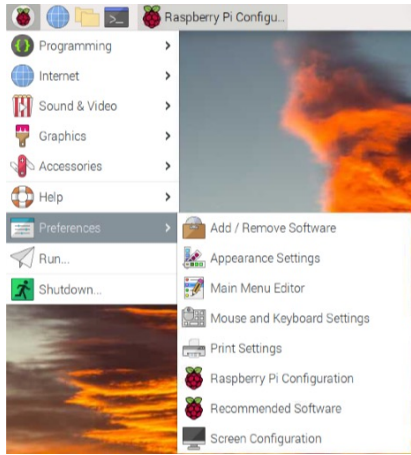
Intro to Raspberry Pi

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.

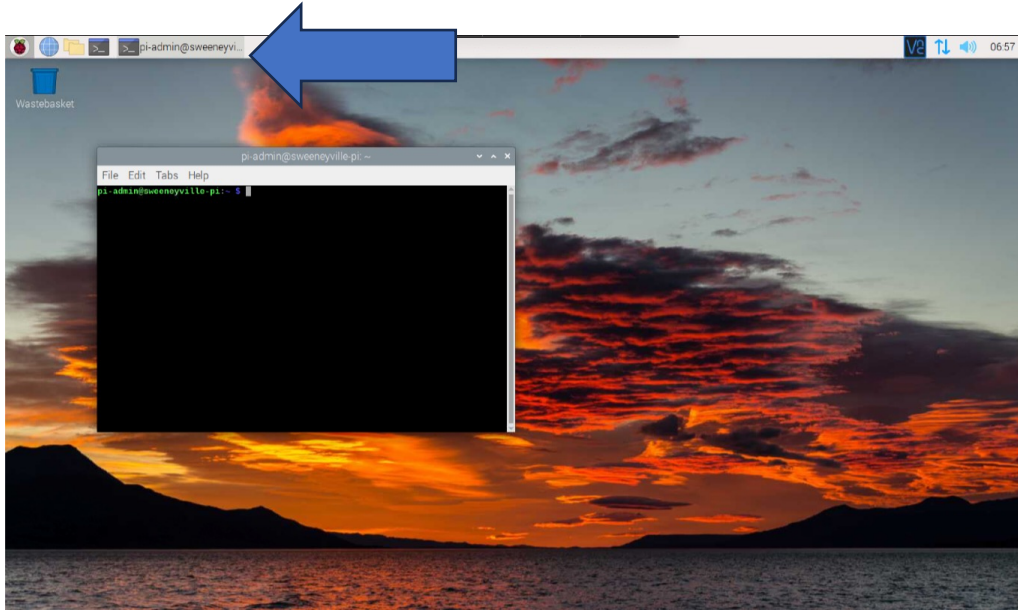


Choose the Interfaces tab, and turn on VNC.
Click on the VNC icon, top right, then the Three Lines and choose Options.
Change Encryption to “prefer off”
Change Authentication to “VNC Password”
Provide a memorable password when prompted.

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.



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
```

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
```

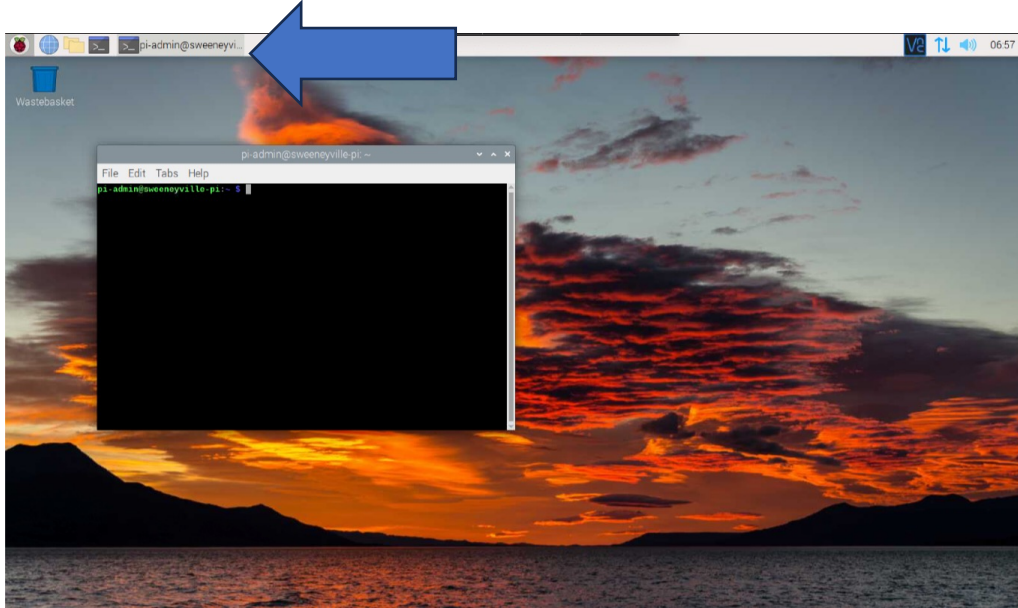
Inside the smb.conf file scroll down to the [homes] section and set “read only = no” to make the shared folders writable.

Restart the Samba service

```
sudo service smbd restart
```

Intro to Raspberry Pi

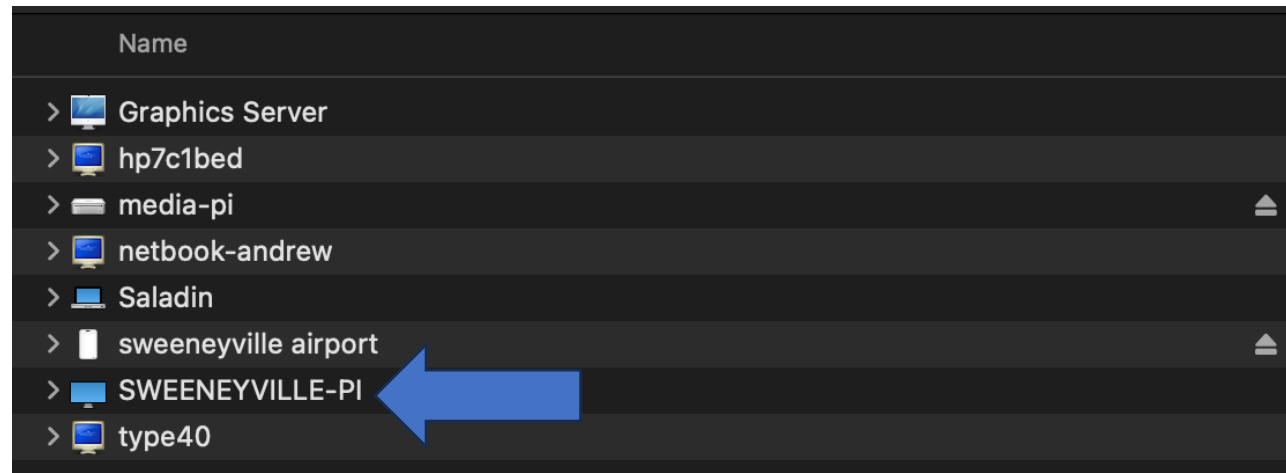
Turn on VNC and Samba advertising with Bonjour



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

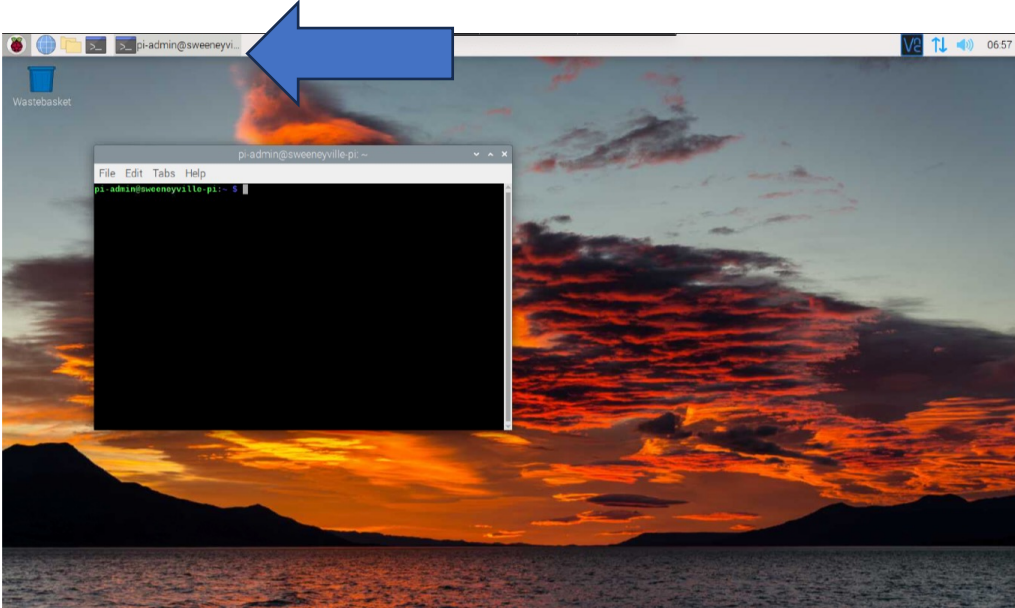
Copy in the Avahi service description for VNC

```
<?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>
```

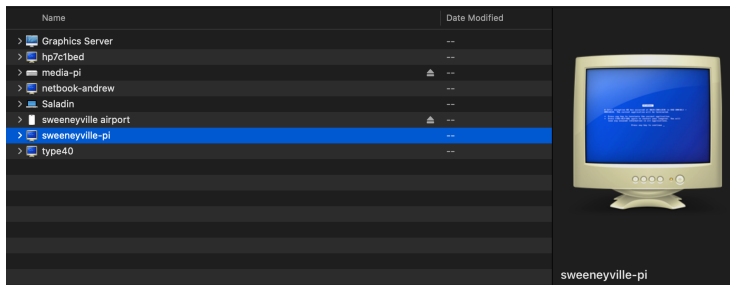


Intro to Raspberry Pi

Add Samba service file and custom icon for your Pi



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



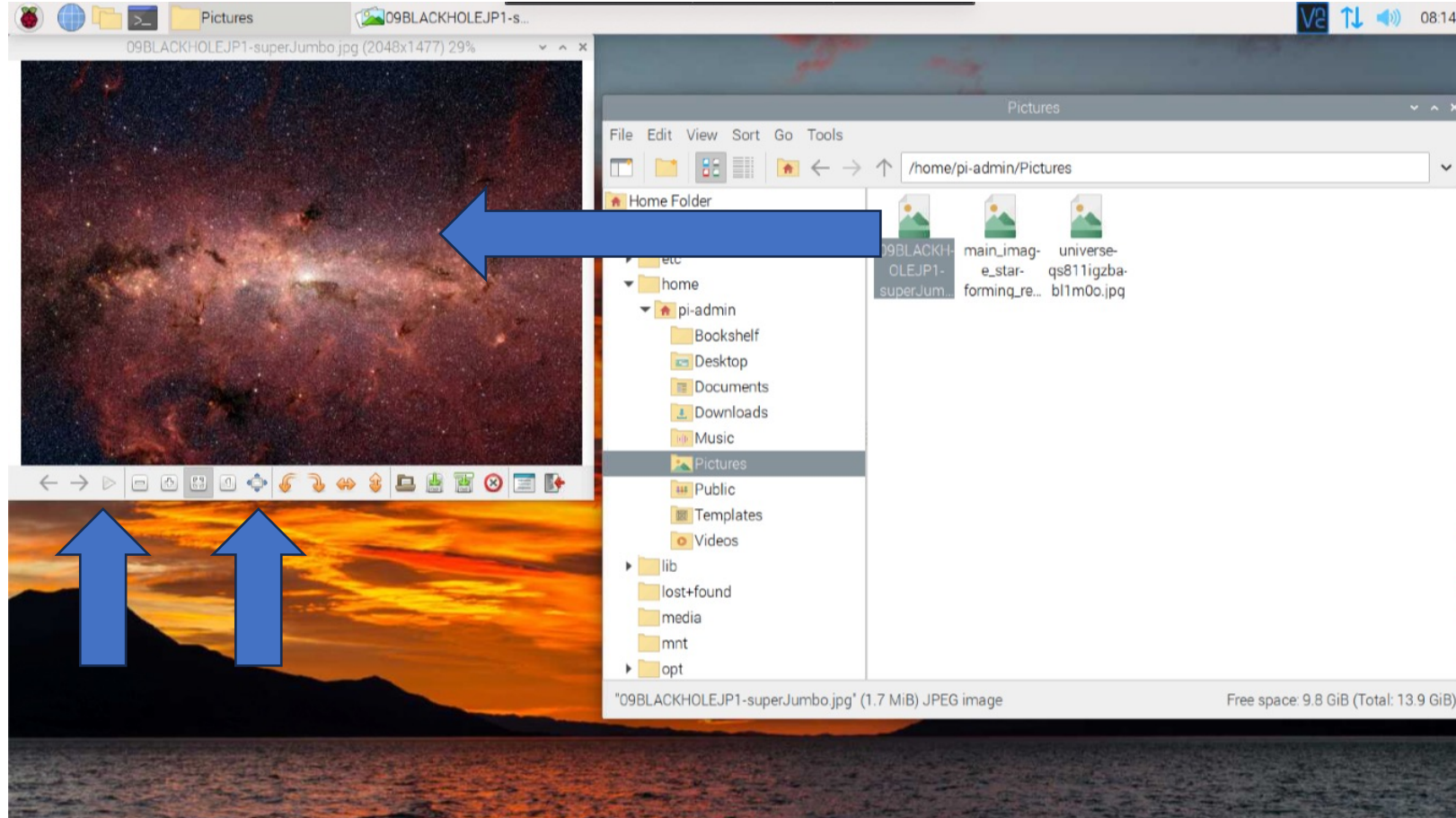
```
sudo nano /etc/avahi/services/smb.service
```

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>
```

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`

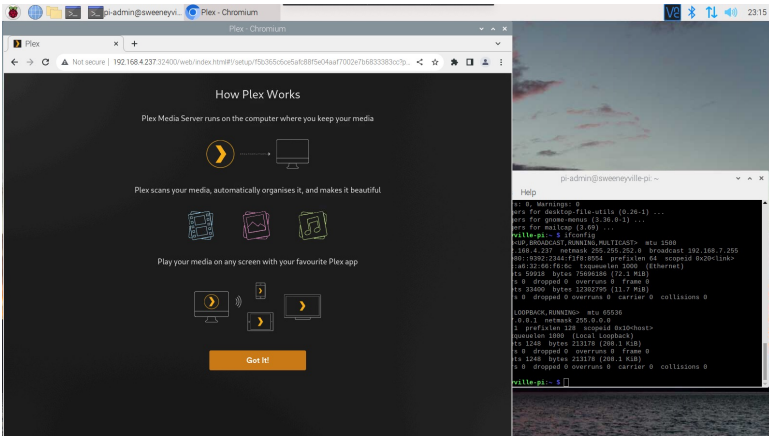
Add the Plex repository secure key to the keyrings directory
`curl https://downloads.plex.tv/plex-keys/PlexSign.key | gpg --dearmor | sudo tee /usr/share/keyrings/plex-archive-keyring.gpg >/dev/null`

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)

