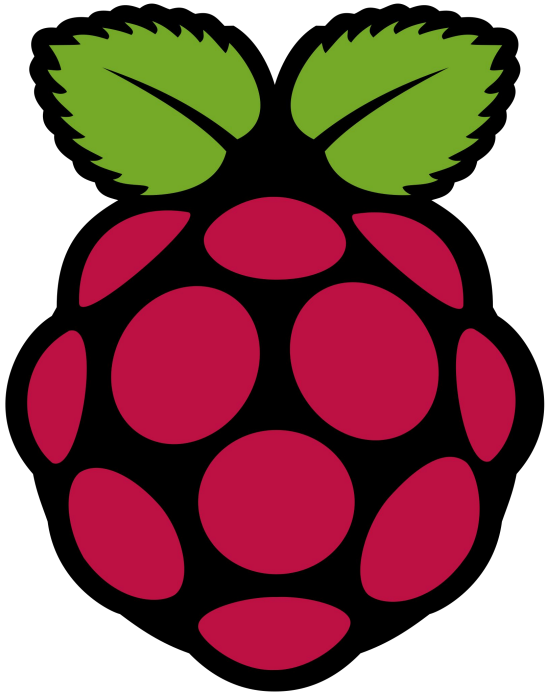
Getting started with Raspberry Pi

Michael Donnay, DHRH, SAS
Kunika Kono, DHRH, SAS
Marty Steer, Freelance Computational Humanist

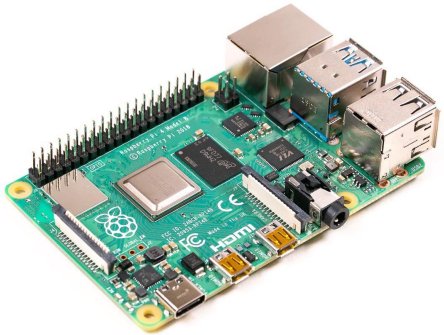
Pi Day 14 March 2024



What is Raspberry Pi?

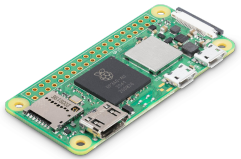
- A series of small single-board computers (SBCs).
- Complete computer built on a single circuit board, typically with microprocessor, memory, USB and display ports, and wireless LAN and Bluetooth connectivity.
- Programmable hardware, can be programmed or customized to perform specific tasks or functions.
- Designed and developed by Raspberry Pi Foundation, primarily to create easier access to computing education. Also commonly used in academic research and commercial production processes and products.
- Made in Wales, UK.

Which Raspberry Pi?



Raspberry Pi
B+/2B/3B/3A+/3B+/4B/5

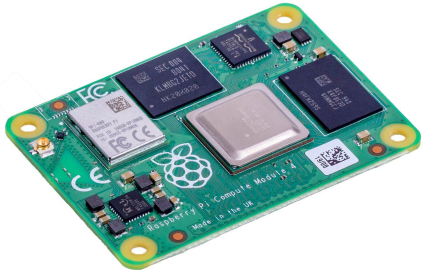
Raspberry Pi 400



Raspberry Pi Zero
W/WH/2W

Which Raspberry Pi?

Raspberry Pi Pico



Raspberry Pi
Compute Module

Installing Raspberry Pi OS

Raspberry Pi OS is **installed on a MicroSD card**, and using a computer (**not Raspberry Pi**) with a MicroSD card reader.

1. Download and install Raspberry Pi Imager on your computer.
   https://www.raspberrypi.com/software/
2. Insert the MicroSD card into the MicroSD card reader and run Raspberry Pi Imager.
3. Eject the MicroSD card and insert it into the MicroSD card slot on Raspberry Pi.
4. Connect monitor, keyboard and mouse.
5. Plug the power supply unit into a wall socket and connect it to Raspberry Pi's power port.
6. Turn on the power supply to boot up your Raspberry Pi, and wait for the operating system to finish installing (take about 3-5 minutes).

What you will need

- Raspberry Pi
- Power supply unit
- MicroSD card (U1/Class 10 recommended) and MicroSD card reader/writer
- Display monitor and micro/mini HDMI cable
- USB keyboard and mouse
- Computer for installing Raspberry Pi OS on MicroSD card

Optionally:

- Speaker or headphone
- Ethernet cable
- Heatsink and/or fan
- Case

Which OS?

Raspberry Pi OS

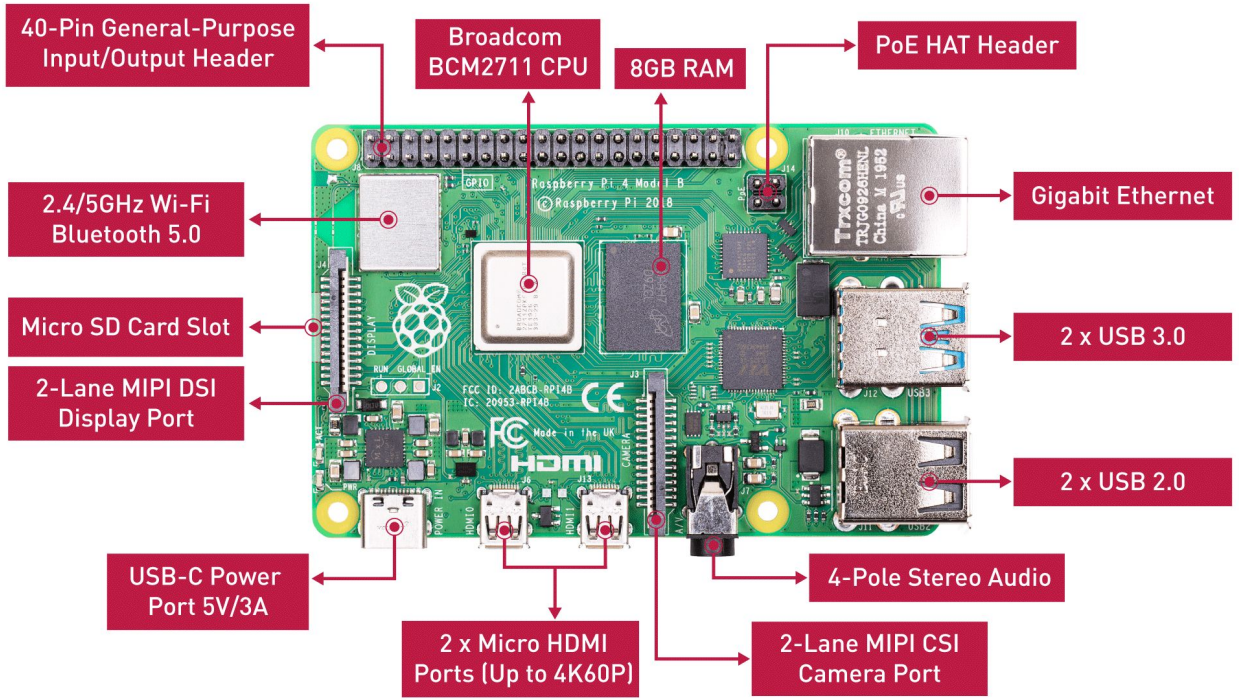
- Full vs Lite
- 32-bit vs 64-bit
- Latest vs Legacy

Other OS

- General purpose OS — Ubuntu, Apertis, RISC OS Pi
- Media player OS — LibreELEC, OSMC, Volumio, moOde audio player
- Emulation and game OS — RetroPi, Recalbox
- Other specific-purpose OS — OctoPi, Home Assistant, FullPageOS, MoodleBox, DAKboard, etc
- Freemium and paid-for OS — Digital Signage OS, Android OS
- Custom OS

Wiring up

Raspberry Pi 4 Model B



Illustrated step-by-step guide

https://projects.raspberrypi.org/en/projects/raspberry-pi-getting-started

Links

Documentation

- Getting Started with Raspberry Pi
- Raspberry Pi documentation

Project ideas and tutorials

- Raspberry Pi Foundation Learning Resources
- Raspberry Pi Foundation Project Selector (70+ projects)
- PiMyLifeUp (160+ projects)