

Raspberry Pi RPi OS Lite Set-Up



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Tools Needed:

Hardware:

- Raspberry Pi 3b+
- SD Card (16GB)
- SD Card Reader

Software:

- RPi OS Lite image - <https://www.raspberrypi.org/software/operating-systems/>
- SD Card Formatter - <https://www.sdcard.org/downloads/formatter/>
- Balena SD Card Etcher - <https://www.balena.io/etcher/>

Set-up Steps:

1. Install (Flash) OS on SD Card, and setup initial WiFi configuration for a "headless" installation (without adding screen or keyboard to the Pi):

<https://peppe8o.com/install-raspberry-pi-os-lite-in-your-raspberry-pi/>

** For Pi Zero W, in wpa_supplicant.conf, remove country code line from config file (else Pi cannot connect to wifi network; reason unknown; learning from forum)

2. Expand file system to access entire SD Card capacity, and install essential latest packages:

(start from Step #7. Stop before desktop ui installation)

<https://www.raspberrypi.org/forums/viewtopic.php?t=133691>

3. Desktop UI & VNC Server installation:

(recommended for Pi 2/3 or later, but not for Pi Zero/Zero W)

<https://desertbot.io/blog/headless-raspberry-pi-4-lite-remote-desktop-upgrade>

4. Install other software (need basis):

Python3:

<https://projects.raspberrypi.org/en/projects/generic-python-install-python3>

(look at last section of this document, for Raspberry Pi OS)

NginX (web server):

<https://www.raspberrypi.org/documentation/remote-access/web-server/nginx.md>

SQLite (RDBMS & browser):

<https://scienceprog.com/powerful-open-source-sqlite-manager-for-raspberry-pi/>

GPIO interface:

<https://www.instructables.com/Raspberry-Pi-LED-Blink/>

OpenCV:

<https://stackoverflow.com/questions/60096360/is-there-an-easy-way-to-install-opencv-on-raspberry-pi>

Pi Camera:

<https://www.pyimagesearch.com/2015/03/30/accessing-the-raspberry-pi-camera-with-opencv-and-python/>

For IoT : MQTT Broker:

<https://www.instructables.com/Installing-MQTT-BrokerMosquitto-on-Raspberry-Pi/>

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