

Introduction to raspbian os and desktop setup

By Scott Huang
2019.09.21

HELLO!

Just call me Scott

I am here because I love to share.

You can find me



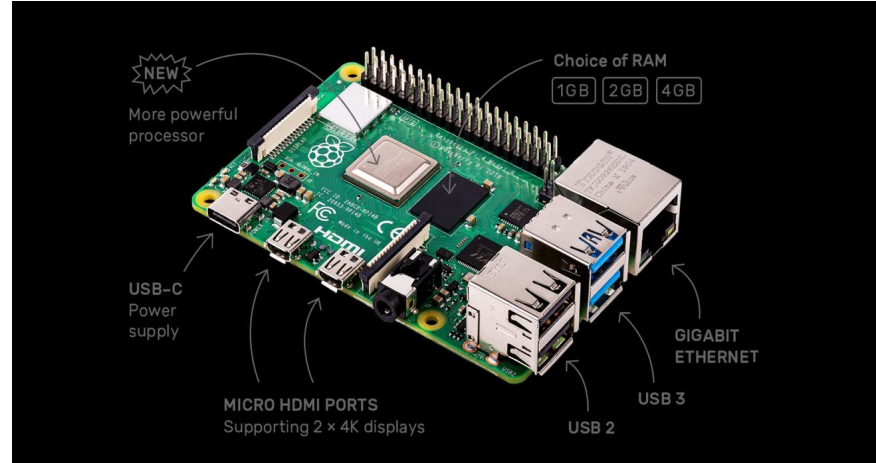
@ 我是賈伯傑

huangjbyj@gmail.com

<https://github.com/smiletoeveryone>



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overclock cpu and gpu for your raspberry pi



overclock cpu and gpu

1. `pi@raspberrypi4:~ $ cd /boot`
2. try to modify the file of `config.txt`
3. `[pi4]`
`over_voltage=2`
`arm_freq=1750`
4. `sudo reboot`

```
Doing CPU performance benchmark

Threads started!
Done.

Maximum prime number checked in CPU test: 20000

Test execution summary:
total time:                      139.0096s
total number of events:          10000
total time taken by event execution: 555.9377
per-request statistics:
    min:                      55.36ms
    avg:                      55.59ms
    max:                      133.93ms
    approx. 95 percentile:    55.73ms

Threads fairness:
events (avg/stddev):           2500.0000/8.12
execution time (avg/stddev):   138.9844/0.02
```

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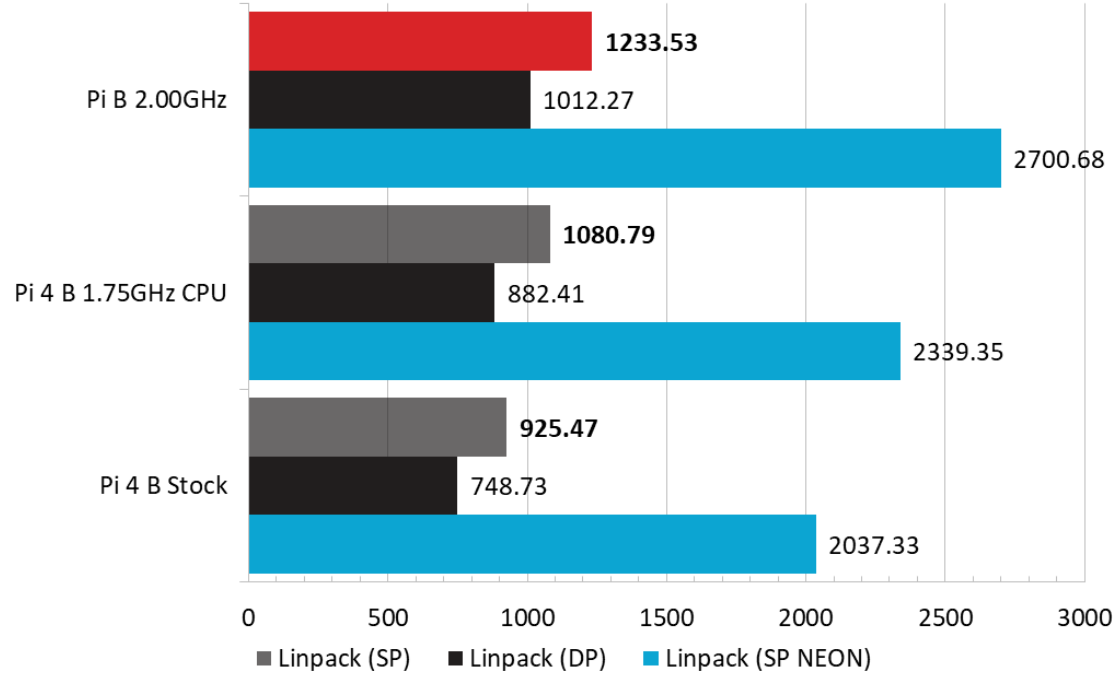


overclock cpu and gpu

cpu

Linpack Benchmark
MIPS (Higher is Better)

tom's **HARDWARE**



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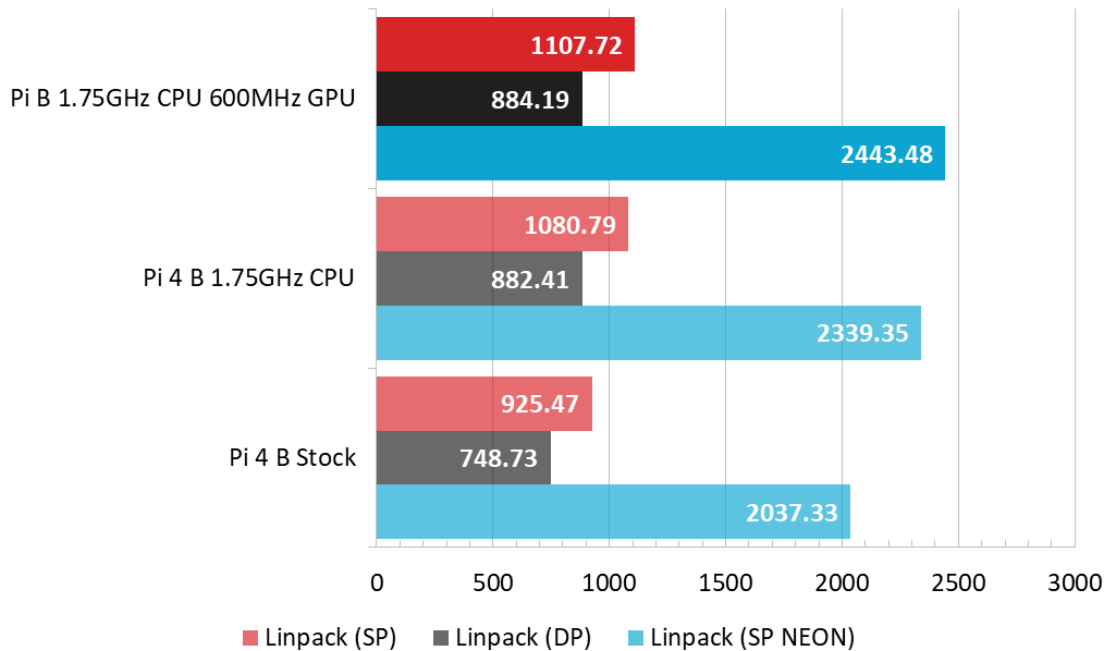


overclock cpu and gpu

gpu

Linpack Benchmark
MIPS (Higher is Better)

tom's **HARDWARE**



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benchmark test

```
Raspberry Pi Benchmark Test
Author: AikonCWD
Version: 3.0

temp=45.6°C
arm_freq=1300
core_freq=550
sdram_freq=575
gpu_freq=550
sd_clock=78.571 MHz

Running InternetSpeed test...
Ping: 28.88 ms
Download: 81.17 Mbits/s
Upload: 59.53 Mbits/s

Running CPU test...
total time: 16.2057s
min: 0.42ms
avg: 0.45ms
max: 16.46ms
temp=59.6°C

Running THREADS test...
total time: 11.0177s
min: 4.25ms
avg: 4.41ms
max: 28.95ms
temp=62.3°C

Running MEMORY test...
Operations performed: 3145728 (1340749.93 ops/sec)
3072.00 MB transferred (1309.33 MB/sec)
total time: 2.3462s
min: 0.00ms
avg: 0.00ms
max: 0.06ms
temp=63.9°C

Running HDPARM test...
Timing buffered disk reads: 102 MB in 3.02 seconds = 33.80 MB/sec
temp=50.4°C

Running DD WRITE test...
536870912 bytes (537 MB) copied, 17.0792 s, 30.4 MB/s
temp=51.5°C

Running DD READ test...
536870912 bytes (537 MB) copied, 18.4615 s, 29.1 MB/s
temp=49.4°C

AikonCWD's rpi-benchmark completed!
```

pi@raspberrypi4:~ \$ curl -L <https://raw.githubusercontent.com/aikoncwd/rpi-benchmark/master/rpi-benchmark.sh> | sudo bash

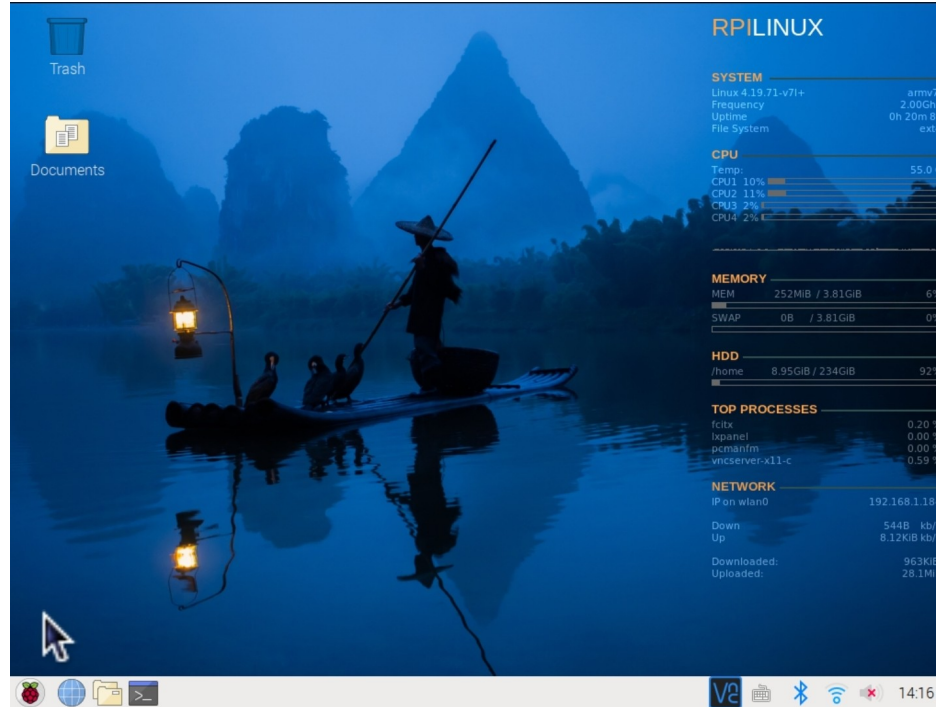
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desktop widget for raspberry pi



monitor your raspberry from desktop



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What is raspberry pi

1. `sudo apt-get install conky -y`
2. `wget -O /home/pi/.conkyrc https://raw.githubusercontent.com/novaspirit/rpi_conky/master/rpi3_conkyrc`
3. `sudo vim /usr/bin/conky.sh`
4. paste this into the conky.sh file
`#!/bin/sh`
`(sleep 4s && conky) &`
`exit 0`
5. `sudo vim /etc/xdg/autostart/conky.desktop`
[Desktop Entry]
Name=conky
Type=Application
Exec=sh /usr/bin/conky.sh
Terminal=false
Comment=system monitoring tool.
Categories=Utility;
6. `sudo reboot`

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checkout gpio



checkout gpio



pi@raspberrypi4:~ \$ pinout

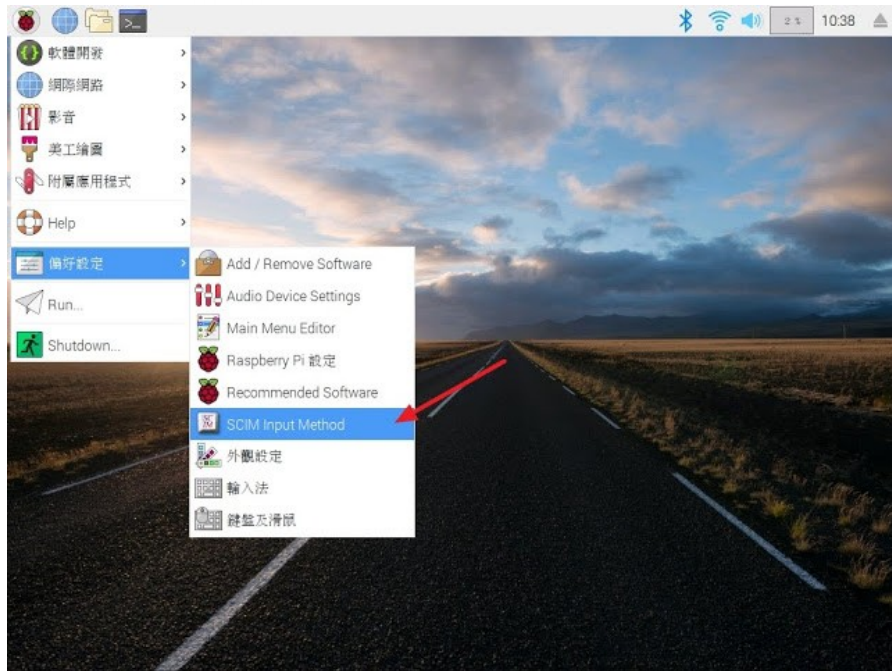
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Chinese input



Chinese input

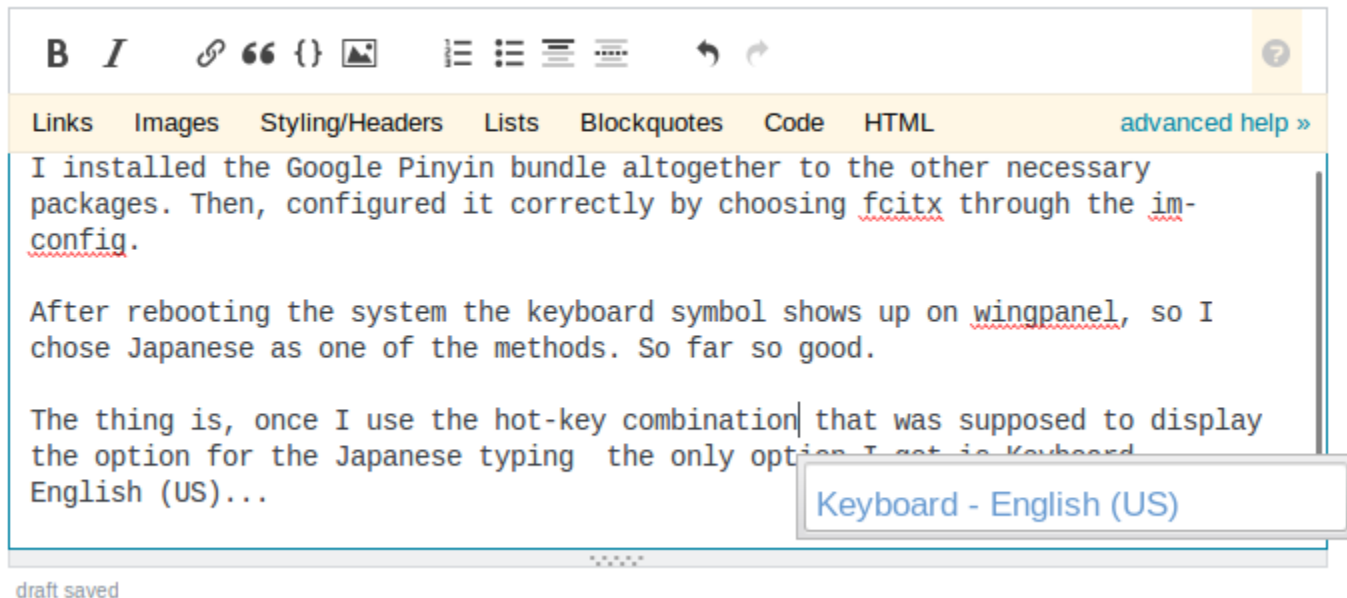


1. `sudo apt-get install scim-chewing`
2. `sudo reboot`

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Chinese input



1. `sudo apt install fcitx`

2. `sudo apt install fcitx-googlepinyin`



configure bluetooth



configure bluetooth

```
[bluetooth]# power on
Changing power on succeeded
[bluetooth]# agent on
Agent registered
[bluetooth]# scan on
Discovery started
[CHG] Controller B8:27:EB:38:F5:35 Discovering: yes
```

pi@raspberrypi4:~ \$ bluetoothctl

- 1. power on**
- 2. agent on**
- 3. scan on**

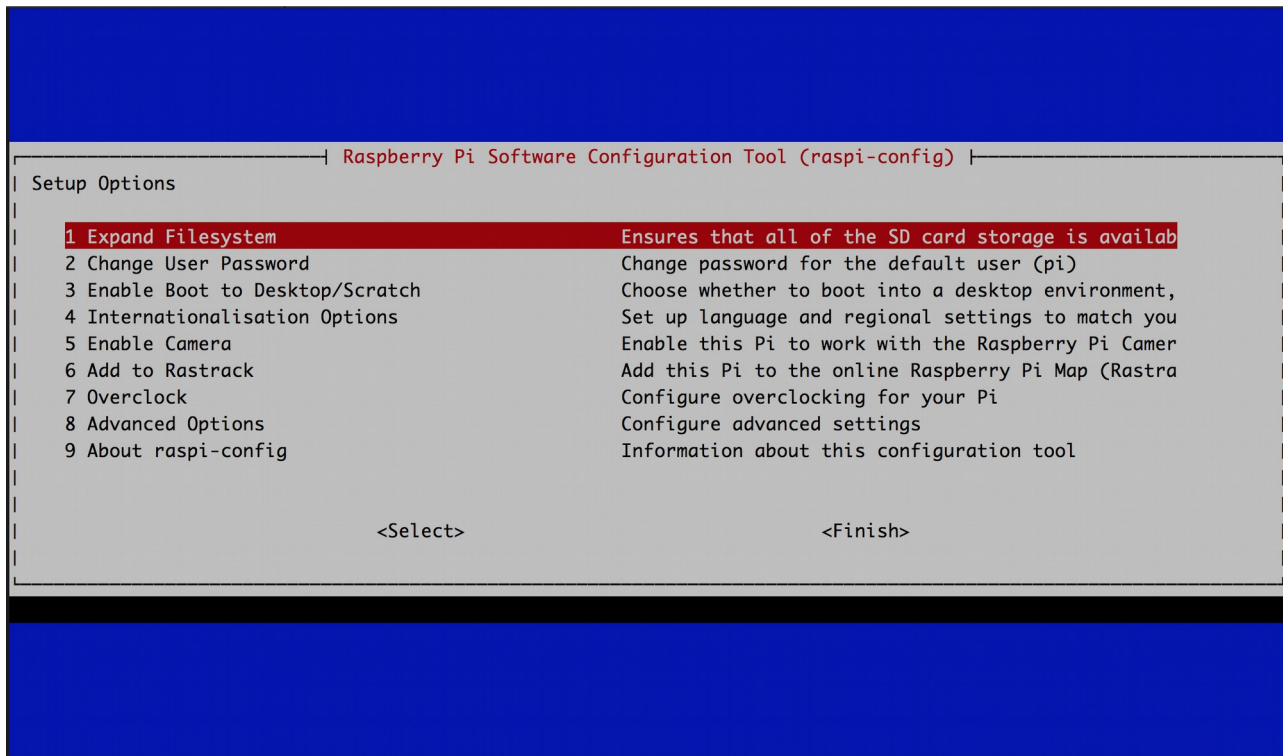
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know more about configuration tools



Configuration tools



pi@raspberrypi4:~ \$ sudo raspi-config

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display revolution setup

```
sudo vim boot/cconfig.txt
```



uninstall applications what you do not need

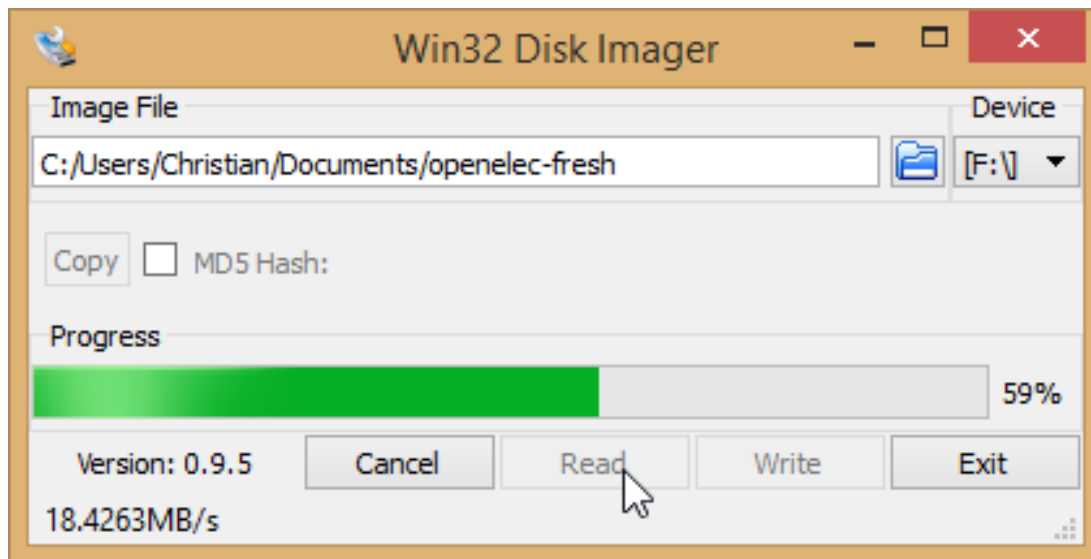
```
sudo apt-get --purge remove APPNAME  
sudo apt-get autoremove --purge
```



backup your raspberry



backup you raspberry





contents

any questions?



contents

more information



overclock the raspberry pi4

<https://www.tomshardware.com/reviews/raspberry-pi-4-b-overclocking,6188.html>

Can the Raspberry Pi Work as a Desktop PC?

<https://www.makeuseof.com/tag/using-raspberry-pi-as-desktop-pc/>

configuration

<https://www.raspberrypi.org/documentation/configuration/>



HackMD

<https://hackmd.io/ToKBOF7NRfa0Fked44uQRQ?view>

Github

https://github.com/smiletoeveryone/headless_raspberry_pi4

Google drive

<https://drive.google.com/drive/folders/1scj6plgnJYSrZBSpTw1h-w0c5z1GLrSF?usp=sharing>



Thank you so much