EVENT NAME

Desktop Ubutu on Laptops/RaspberryPis - practices how to use it with SD cards, how to manage UEFI and more

At Ubucon Asia 2021(Virtual)

DATE	EVENT ORGANIZE
SEP 26TH IN 2021	JAPANESE RASPBERRY PI USERS GROUP

MASAFUMI OHTA
FOUNDER AND REP. JAPANESE RASPBERRY PI USERS GROUP

Established Raspberry Pi community in Japan with Raspberry Pi Nerds and lead the community since 2012, and volunteering for Raspberry Pi Foundation/ LTD, helping Japanese categories and helping their business in Japan.
Lately looking into Asian markets to help them

日本語フォーラムについて

Post a reply | Watch | Moderator Control Panel | Lock topic | Go

1 post

by **masafumi_ohta** Edit post Delete post Report this post Information Reply with quote Permalink
» Fri Dec 14, 2012
2:14 pm

太田といいます。何人かの日本の皆さんはじめまして。日本Raspberry PIユーザグループの代表をしてます。

ようやっと悲願でもありました日本語フォーラムを作っていただきました。まずここまで来たことに日本のコミュニティメンバーの皆さん、また日本でこの機械をお使いいただいている方、これからお使いいただこうと考えている皆さんに御礼申し上げます。

是非今後日本のコミュニティを盛り立てるためにもどうぞこのフォーラムをどしどしお使いくださいませ。普段日常のお仕事もあり、ポスト承認がおくれちゃったらごめんなさい、なのですが、できる限りスムーズに皆様がここでいろいろお話できるよう、頑張ります。

#ちょっとさっきまで他のモデレータにおせぇぞ承認とおこられますた 😟

で、スパムや商品売り込みに関しては結構厳しくやってます...他のモデレータも他国のフォーラムであってもキチンと見てます。スパムやあやしい商品売り込みであろうポストは僕以外からも削除されることをあしからず承知くださいませ。(Google翻訳で調べているようですよ、まぢで)

基本ルールは通常のこういうOSS系フォーラムと変わりありません。節度と紳士淑女であらんことを。なにか使い方でご不明な点などありましたらどしどし太田までください。

ではでは、太田でした。

Masafumi Ohta
https://groups.google.com/d/forum/japanese-raspberry-pi-users-group

Forum Moderator

MODERATOR

Posts: 251

Joined: Sun Sep 09, 2012 10:07 am

Location: Tokyo

I am one of the volunteer for Raspberry Pi Foundation.

I am volunteering for them as one of the forum moderator on Raspberry Pi official forum site.

Agenda

- Love Ubuntu Desktop? Is useful?
- Leave Windows as dual-boot?
- EFI/SD-Card hack
- Other tips
- Pie is useful? (Ubuntu on Raspberry Pie)

Love Ubuntu Desktop?

- Past -
Freedom is important
No need MS Office
OpenSource is great
Debian Gnu/Linux...

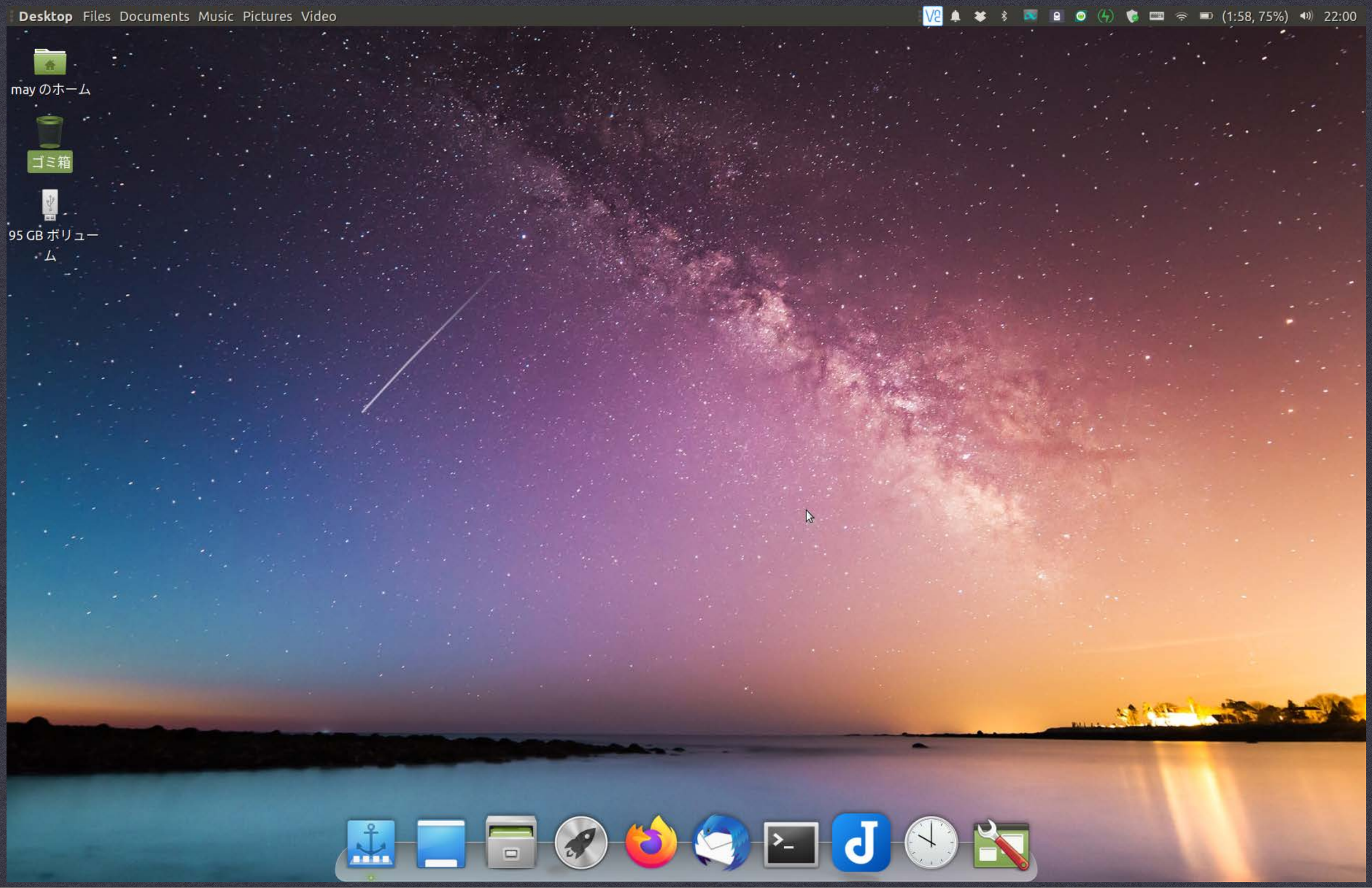
- Present -
MacOS is great Unix
Macbook Pro is great

Using Linux(Ubuntu) Desktop is like building some with Lego

There are many unexpected to build my desktop environment, need some patient to use for newbies/beginners

Once make it, You may have a fan to use it

This is my GPD Pocket 2 environment, works good for me

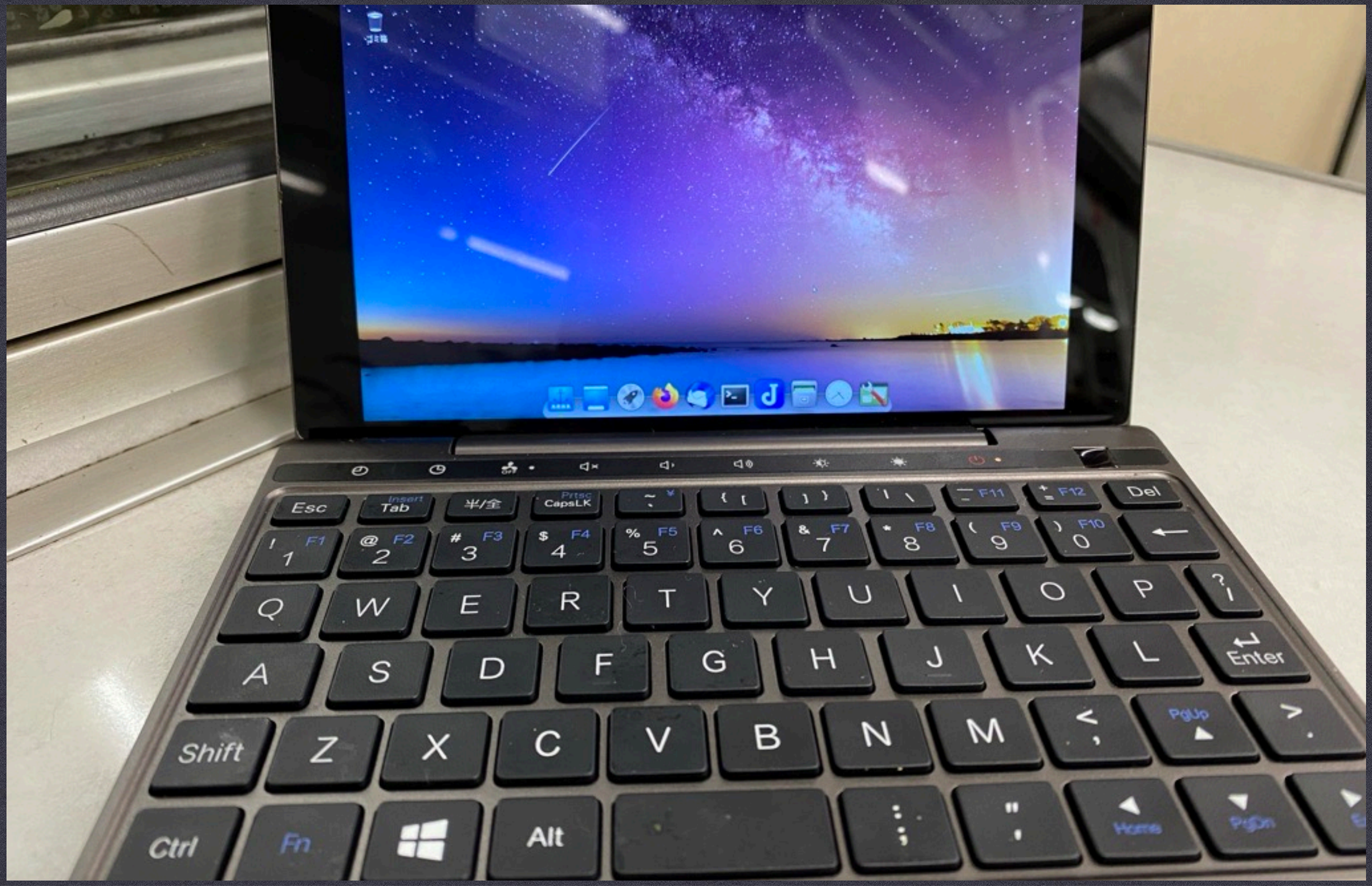


This is my latest, install Ubuntu directly to SSD in GPD P2

This is my latest, GPD Pocket 2 2021, install MATE 20.04LTS directly to SSD in GPD P2

Prevent from the heat..

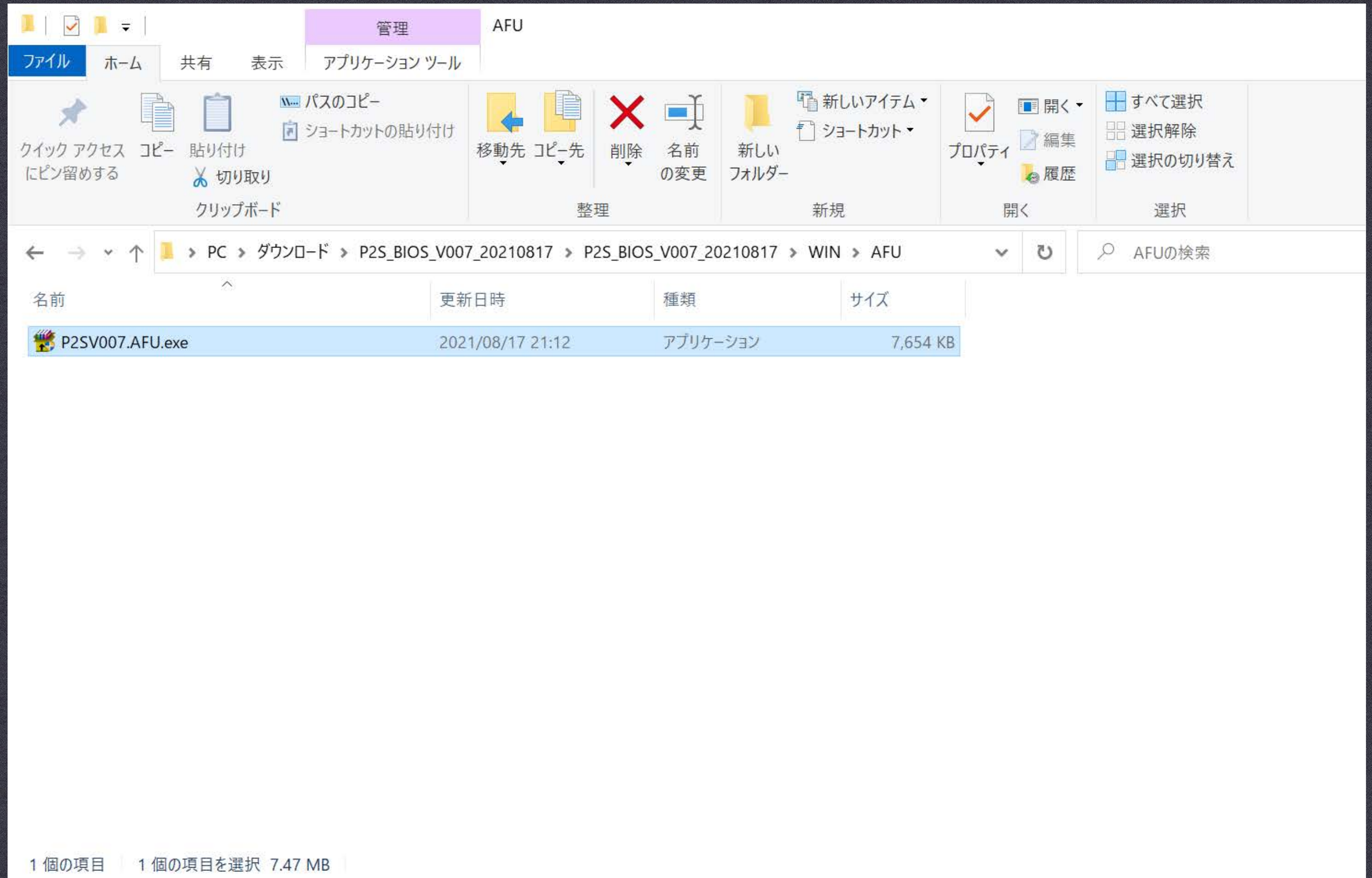
Core m3-8100Y gets really hot, so I am now using heatsink plates to get rid of heats.



Sus/Resume is really faster using SSD

It makes good portability - easy to use on train and other commute ways. Pics at a train, using my GPD P2 2021

Leave Windows..



If you want to update BIOS/UEFI safely, you should leave Windows

We often fail to update BIOS/UEFI, the safest way to update is to do with Windows OS

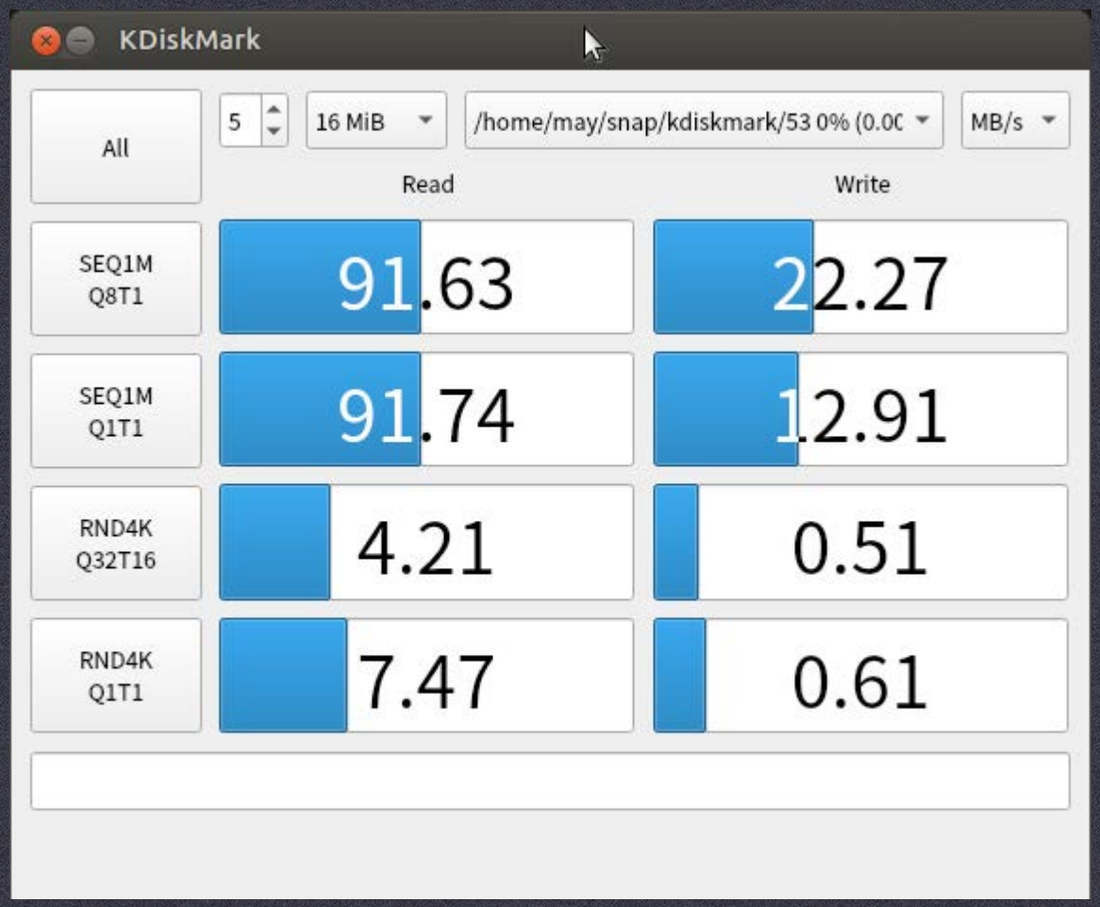
Pros

- Many of apps works friendly on Windows
  - Zoom
    *Using background, Linux desktop has not supported any AI cameras for such conference tools
  - Office/Antivirus
  - BIOS Updates
  - Chat tools (WeChat/LINE)
    *Wine sometimes is not friendly to those apps
- Laptops are supposed to be maintained by Windows

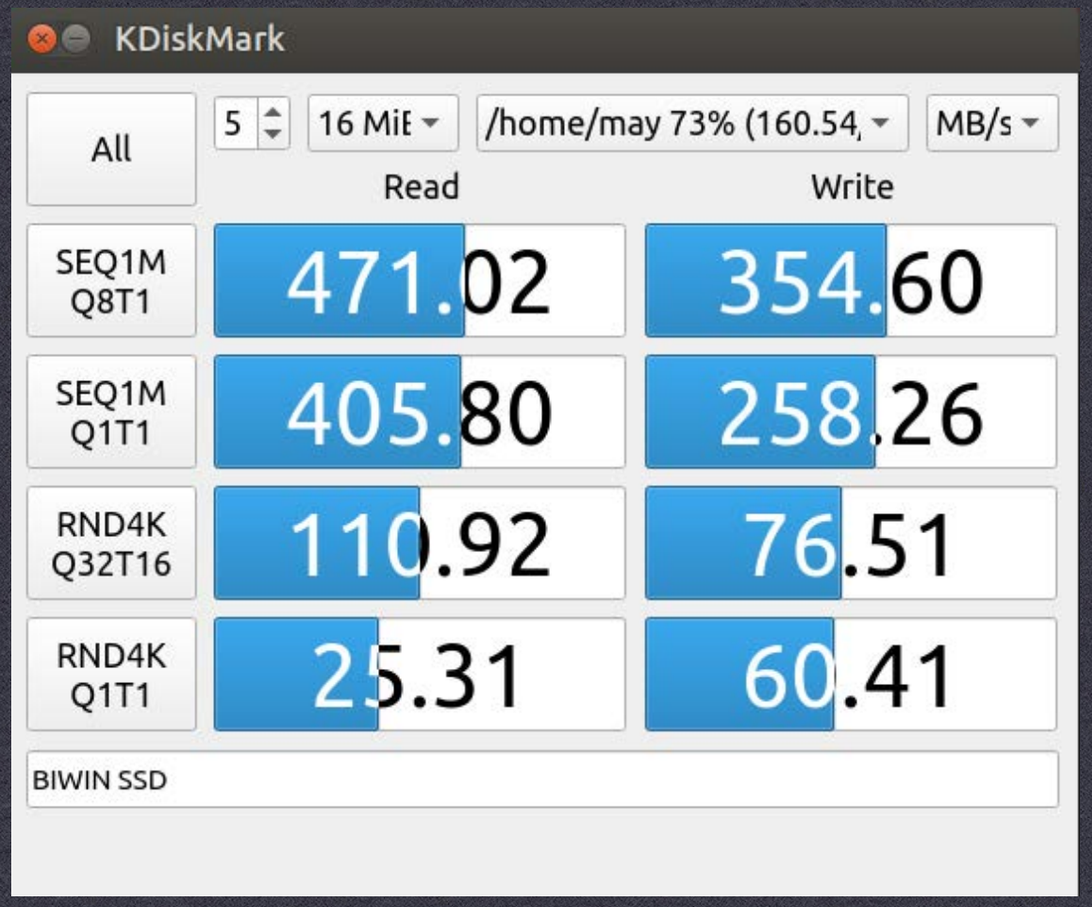
Cons

- Cannot use faster internal storage as a boot device
  - SD Cards are really slow and easy to corrupt
  - USB boot is good but speeds are limited by USB speed and its circuits
- Manage some apps to manage the system because of its disk speeds
  - Internal disks are faster than external one
    *SD/USB sticks

Case of GPD Pocket 2 2021



microSD card



Internal SSD

We have to do for slow disks

- Using hibernate, Not suspend
  *my GPD is difficult to resume from suspend
  *it may be caused by disk speeds

- Using memdisk as cache for games/browsers/mailers
  *it is for less access to such disks

UEFI/SD-Card hack (to have a fun :-)))

Get unlocked UEFI from..

- Almost UEFI is ‘locked’ lately..
  *vt-d/clock control..many setting are not visible and disable.
  *Vendors says those settings are caused that their customers should use their Laptop machines safely.
  *(cf) Many of Gaming Laptops are unlocked to be optimized its speeds

- Some manufacturers are negotiable
  *Good luck your try…

SD Card hacks

- Use SD cards as linux boot-device for your laptops
  *east way to use linux on your laptops

- Consider SD card itself
  *vendors
  *number of write is much more different each vendors.
  *doesn’t have any ‘trims’ to reduce the number of write.

- Understand that SD Cards are really easy to corrupt data and be broken.
  * if you meets suspected suspicious failure you need to do some actions

SD Card can NOT

- **Boot device for Windows**
  *Windows needs to use internal PCIe-connected disks as boot devices, NOT SD Cards slotted

- **Trim like SSD**
  *SD Card doesn’t have the feature
  *Consider how to reduce the number of write
  *Check your data corrupted or not

If you meet the SD failure

- ‘touch’ command to check ‘read-only’
- Booting from LiveCD(USB) and chkdisk by gparted may be recovered the issue
  *a SD card vendor set the number of write to reset the number with chkdisk
- If you cannot recover with chkdsk but can read the data, dd to move other SDs is easy tool to solve the issue.
  *dd as sd backup may be useful if the capacity is small

Tuning to solve the issue

- Working directory on NAS, Ramdisk as temp

```
*/etc/fstab
#working directory
//xxx-nas.local/works   /works  cifs
username=xxx,password=xxx,iocharset=utf8,file_mode=0777,dir_mode=0777,nofail
0       0
#working directory for temp
none /media/ramdisk tmpfs nodev,nosuid,noexec,nodiratime,size=512M 0 0
```

Tuning to solve the issue

- Ramdisk as temp (using temp for firefox)

```
*/home/xxx/.mozilla/firefox/xxxxxxx.default-release/user.js

// Relocate parent directory for browser cache
user_pref("browser.cache.disk.parent_directory", "/media/ramdisk/firefox");
```

To understand the sd issue

- Pete Stevens reported the story of Raspberry Pi Cloud and many issues on SD cards using their Raspberry Pi cloud service.
  https://www.mythic-beasts.com/blog/wp-content/uploads/2017/03/raspberry-pi-cloud-final.pdf

Other tips

Antivirus

- Some of Antivirus eats many more resources up to 100% CPU
  *Check your virus-check schedule to prevent from this issue

- If you cannot apt update because of network connection, please check Antivirus settings.

Grub setting

- Grub on desktop is supposed to use dual boot with Windows
  *Please check grub setting Installing Linux directly to internal disk, remove ‘current’ Windows OS

- It should be considered using Linux on inter-disk/sd dual boot.
  *Which should have boot-loader
  *Installing kernel updates with apt update, it will restructure grub, it make us annoyed
  *Workaround is ‘grub-install’ on the main disk (which is prefer to boot? sd or internal disk?)

Referred link for my laptops

17.10 How do I change login screen background?
https://ubuntu-mate.community/t/17-10-how-do-i-change-login-screen-background/15266

Ubuntu 14.04 Mate - disable automatic screen lock and “Screen Lock” button over terminal
https://askubuntu.com/questions/685827/ubuntu-14-04-mate-disable-automatic-screen-lock-and-screen-lock-button-over

No Wi-Fi settings or connection after switching to NVIDIA graphics drive
https://askubuntu.com/questions/1286738/no-wi-fi-settings-or-connection-after-switching-to-nvidia-graphics-driver

Boot-Repair
https://help.ubuntu.com/community/Boot-Repair

Hibernate and resume from a swap file
https://askubuntu.com/questions/6769/hibernate-and-resume-from-a-swap-file

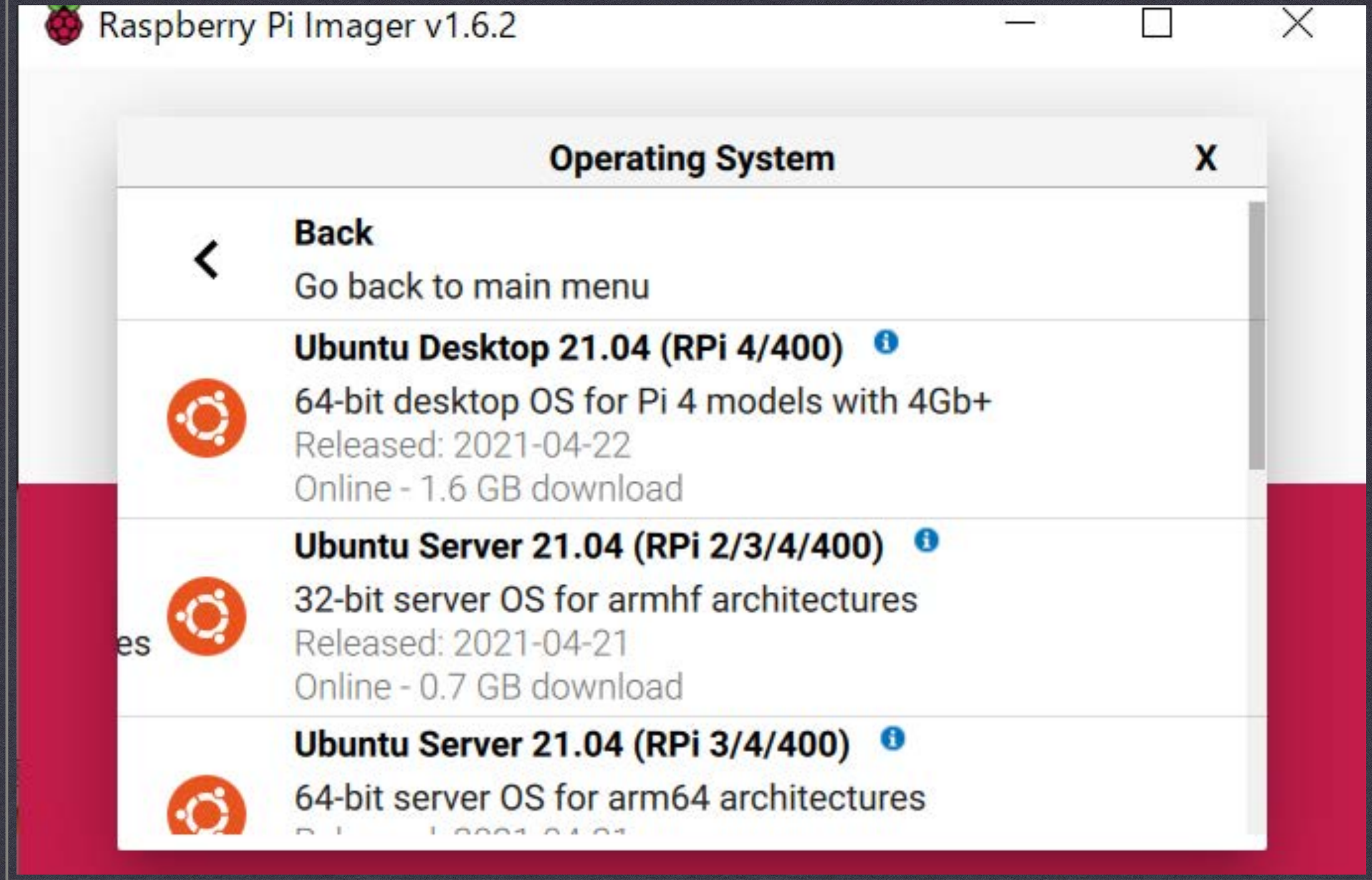
Set pm-hibernate as default in Ubuntu 18.04
https://askubuntu.com/questions/1070286/set-pm-hibernate-as-default-in-ubuntu-18-04

How to Install Battery Optimizer App on Ubuntu Laptops
https://www.omgubuntu.co.uk/2019/05/slimbook-battery-optimizer-ubuntu

fancontrol-gui (found GPD P2 has no PWM fan)
https://github.com/Maldela/fancontrol-gui

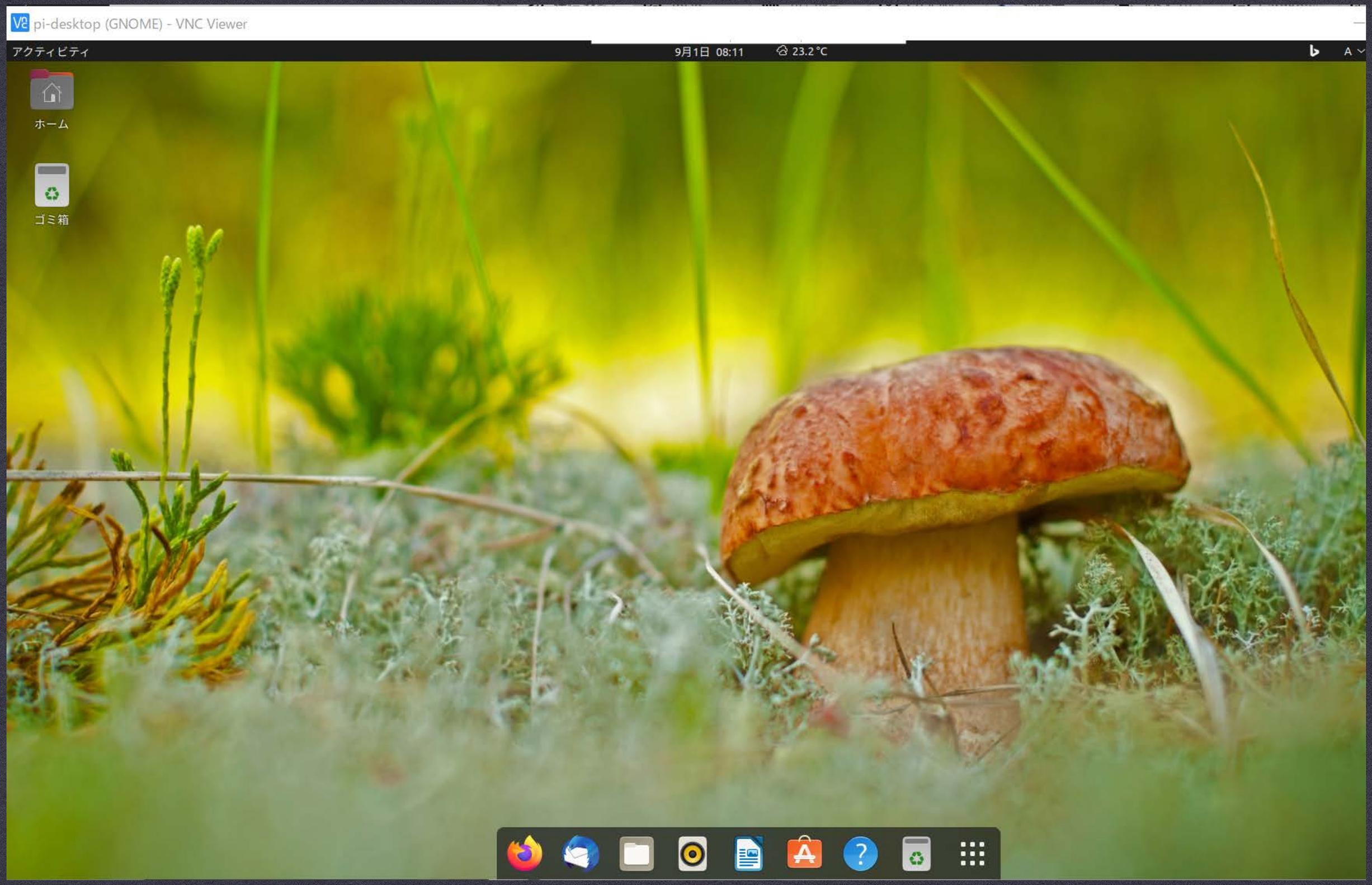
Pie is useful?

Ubuntu on Raspberry Pie



Ubuntu is now official 64bit OS for Raspberry Pi

Hammered out by Engineers at Raspberry Pi and it is one of the official 64bit OS for Raspberry Pi devices.



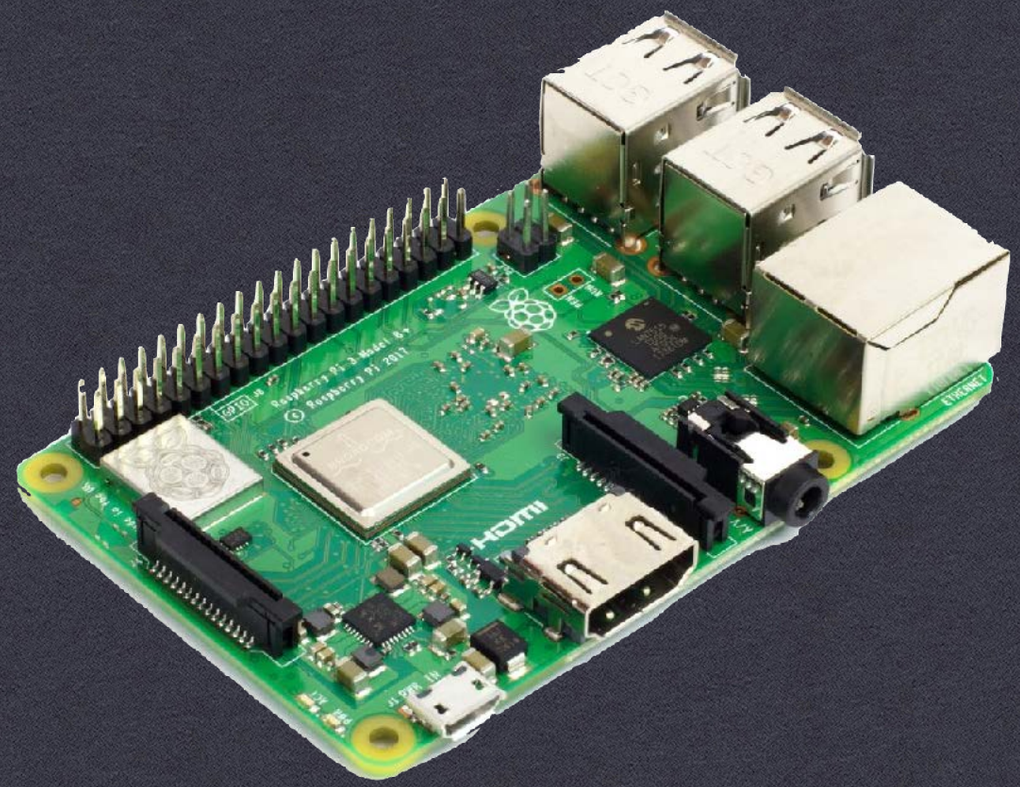
It works good on my JP Pi400

Kana-input works good on Ubuntu 21.04 (64bit) on my JP Pi 400

Raspberry Pi 3

Raspberry Pi 3 Model B+

- 1.4GHz quad ARM Cortex-A53 (BCM2837B0 compared BCM2837A1, which is for RPi3B)
- 1GB RAM
- 802.11ac + Bluetooth 4.2
- $35

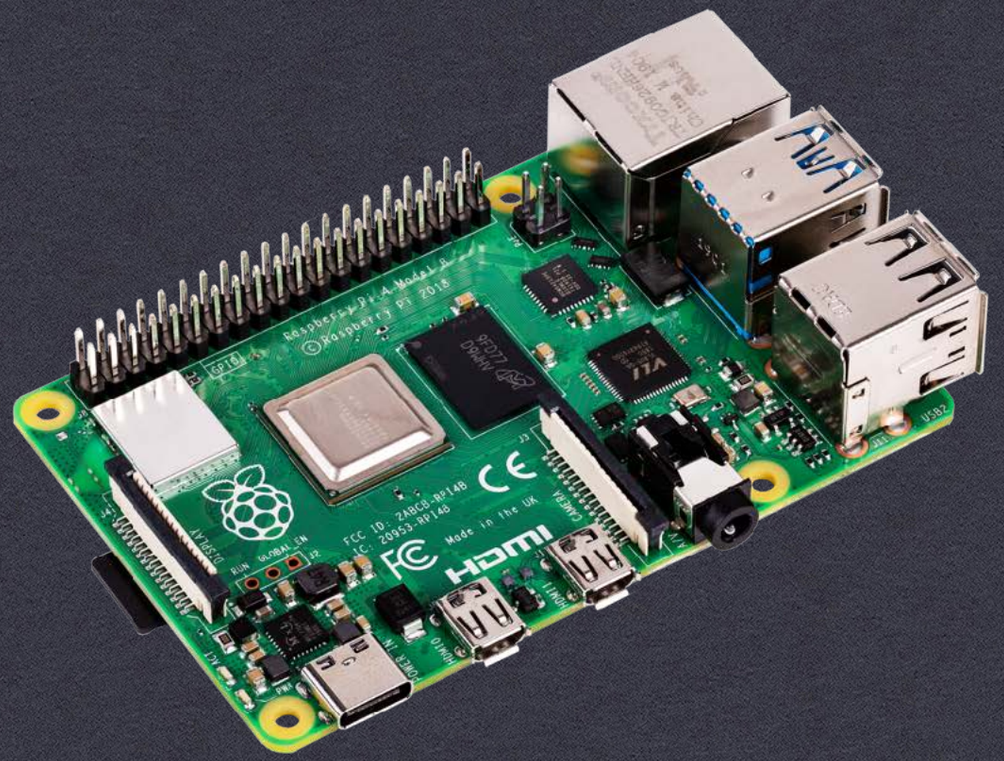


Raspberry Pi 3 is still the best selling model in Raspberry Pi products

Raspberry Pi 4

Raspberry Pi 4 Model B

- 1.5GHz quad ARM Cortex-A72
- 1GB,2GB,4GB and up to 8GB LDDR4-RAM
- 802.11b/g/n/ac + Bluetooth 5.0 BLE
- VL805 USB controller
- BCM54213PE Gigabit Ethernet
- VideoCore VI 3D Graphics, supports dual HDMI display output up to 4Kp60
- From $35



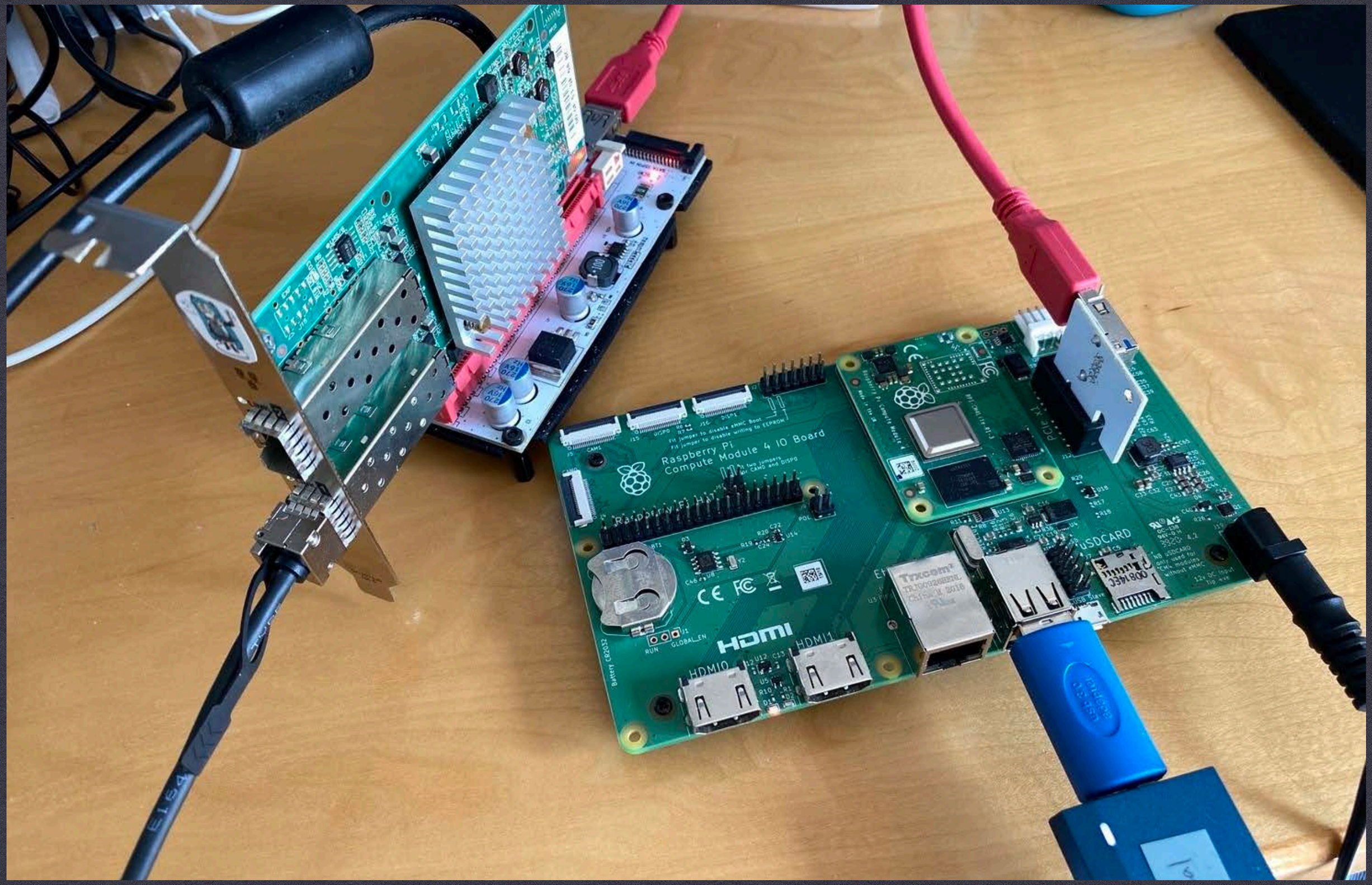
Please check the latest revision, and..

Raspberry Pi Compute Module 4

Raspberry Pi Compute Module 4

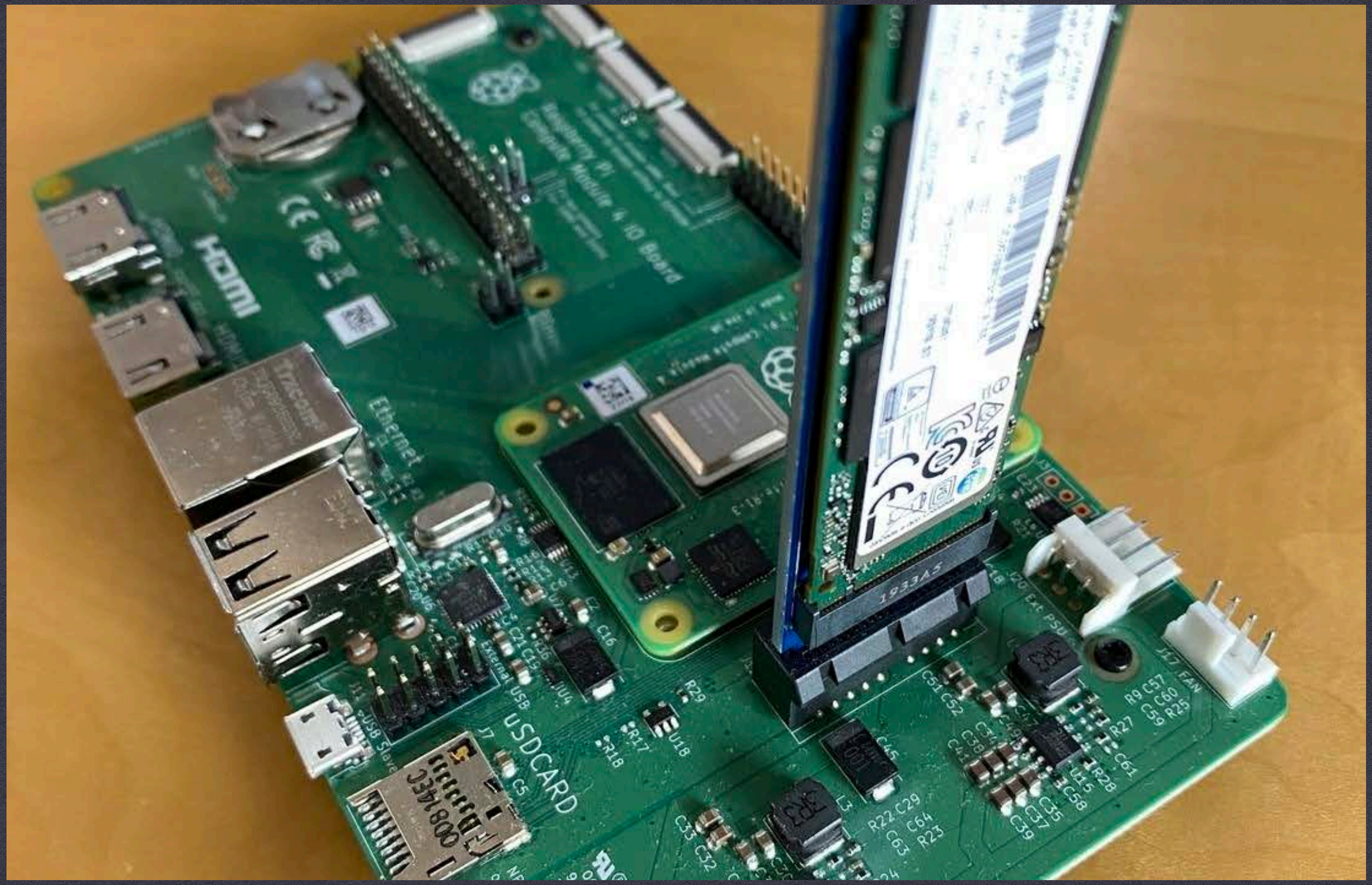
- 1.5GHz quad ARM Cortex-A72
- 1GB/2GB/4GB and up to 8GB RAM
- Lite(No eMMC)/8GB/16GB/32GB eMMC
- 2.5/5GHz 802.11ac + Bluetooth 5.0
  or No Wifi/Bluetooth
- PCIe use with IO board
- Long Term Availability
  (～2028)
- 25$

Can use PCIe but please understand USB2.0 limitation..
And it may be worth to use Ubuntu..



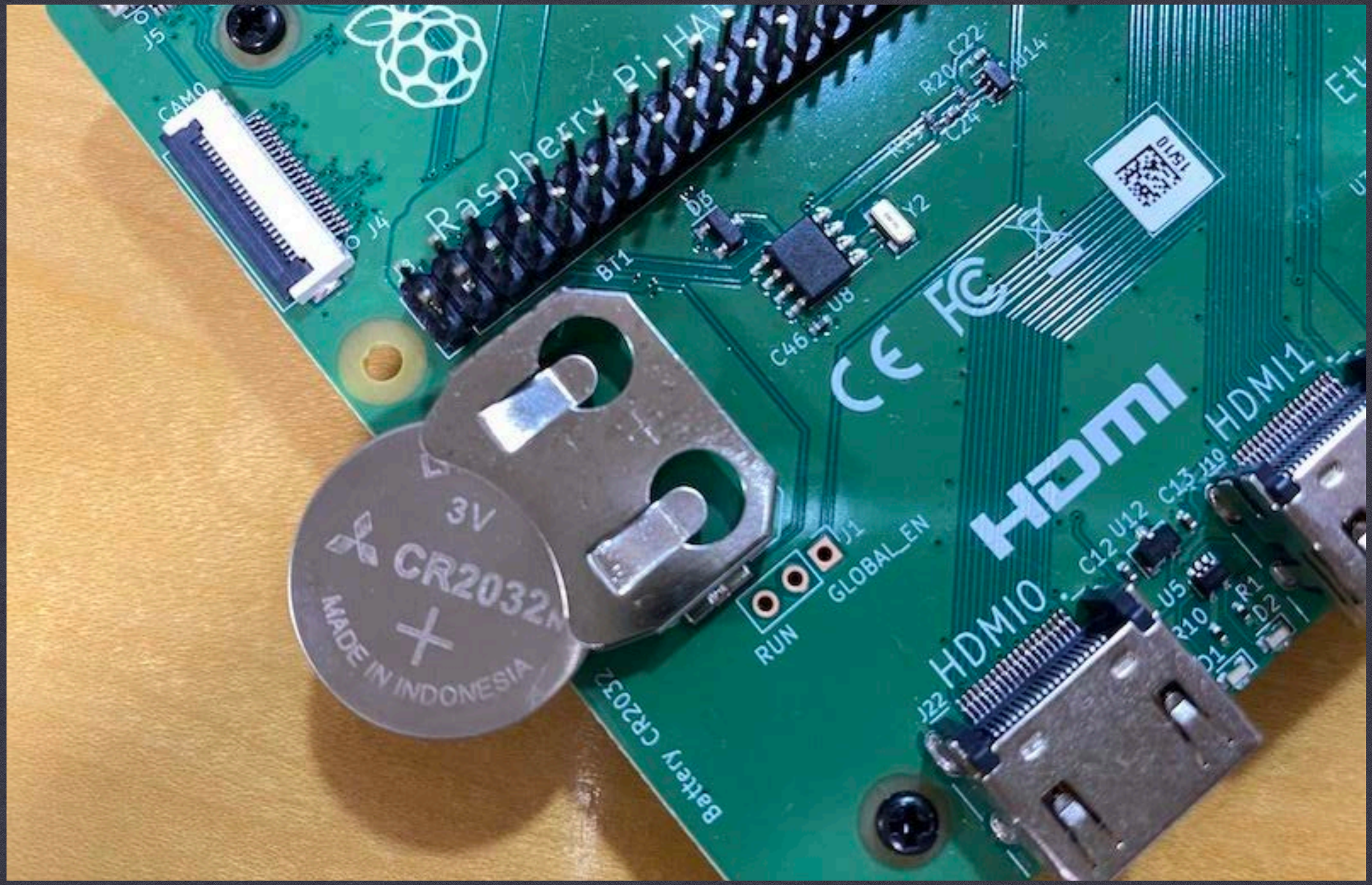
10Gbps Ethernet on PCIe with CM4+IO board

Tried PCIe Works https://akkiesoft.hatenablog.jp/search?q=CM4



NVMe SSD on PCIe with CM4+IO board

Tried PCIe Works https://akkiesoft.hatenablog.jp/entry/20210106/1609922005



RTC on CM4 IO board

For more see our member Akkie's blog https://akkiesoft.hatenablog.jp/entry/20201217/1608130800

Raspberry Pi 400

Raspberry Pi Compute Module 400

- 1.8GHz quad ARM Cortex-A72
- 4GB RAM
- 2.5/5GHz 802.11ac + Bluetooth 5.0
- Gigabit Ethernet
- JP and other langs version will be soon as ‘Second batch’

inspired by Commodore 64 - retro PC.
Embedded in Raspberry Pi with fan-less design and a bit over-clocked.

Roadmaps..

The Raspberry Pi 5 is still a long way off, also the 4A

When one stops to see everything that can be done with a Raspberry Pi in general and with the latest Raspberry Pi 4B, Pi 400 and Compute Module 4 in particular, it is normal to think of everything that could be achieved with a **More powerful Raspberry Pi 5**. And yes, it is true that it could be incredible, but **You're going to have to wait.**

In an interview with Tom's Hardware, Eben Upton, creator of the Raspberry Pi, commented that his organization is not working on any new development boards to replace and improve the current one. What's more, not even there will be a 4A model at the moment. Which is usually characterized by a cut in the hardware that, without excessively cutting its benefits, allows an even more attractive price than that of the B model itself.

The reasons for this decision or the consequence of the fact that there is no new model in sight, neither superior nor cheaper, are none other than the good sales rate of current models and the lack of components. Because, as Upton explains, the Raspberry Pi 4, Pi 400, and Compute Module 4 are **they are selling so well** that it would be absurd to slow down the pace of production to launch a model even like the 4A.

In previous generations of Raspberry Pi, versions A have always been different from the rest by being cheaper at the cost of a limitation in their hardware. In the case of the Raspberry Pi 4 model A compared to the Pi 4 model, the only thing that would really have been cut would be the USB 3 controller. This way,

Interview to Eben on Tom's hardware webcast

Talking about Pi5 and Pi4A

Remember..sneaking point

- Down-compatible: works old/new Raspberry Pi
- ’It would have to be interesting to children, which for us meant playing games and videos’
- Official stuff, magazines and books combined with Raspberry Pi
    - MagPi/Hackspace/WireFrame
    - Cases
- Sneak Github :-)

Appendix
Calling for your RPi project

CutiePi

Want to liberate your projects from the desktop? This all-in-one Raspberry Pi tablet may provide the answer. **Phil King** investigates

MAKER

Penk Chan

A digital nomad wannabe from Taiwan, currently living in Tokyo and working as a principal software engineer at The Qt Company. He's leading a team of open-source enthusiasts to make the CutiePi tablet happen.

Having long dreamt of owning a usable Linux-based portable device, a group of enthusiasts set out to create one and the CutiePi tablet was born. Based around a Raspberry Pi Compute Module 3+ Lite and custom carrier board, it features an 8-inch touchscreen, typical tablet features, and everything you need to make your Raspberry Pi projects portable.

"We tried to make the CutiePi tablet on par with normal tablets," says project lead Penk Chan. "You'll find a gyro, a microcontroller for battery and button monitoring, WiFi/Bluetooth, and a speaker. We also kept the camera connector and made the remaining GPIO pins available, keeping it hacking friendly." This will enable it to be used as a launchpad for users' portable Raspberry Pi projects.

Making a portable device isn't easy, though. "It's not just about the Li-Po battery nor the DC-DC step-up converter," says Penk. "Those features that we take for granted in consumer electronics, like using the device while it's charging, reading

▲ You'll be able to rotate the screen to portrait mode, for instance to use it as an e-reader

their own custom-designed carrier board. "Using the Compute Module allowed us to make the device a lot thinner, explore other form factors other than the regular Raspberry Pi 3's, and probably most important of all, it allowed us to mass-produce the CutiePi tablet," explains Penk.

Taking around three months to develop, the CutiePi carrier board is based on the reference designs made freely available by Raspberry Pi, and the team have open-sourced their now OSHWA-certified hardware: **magpi.cc/CutiePiBoard**. "At the heart of this project is our love for open-source, and CutiePi is our expression of that

Looking for good project to intorduce to MagPi - Official Raspberry Pi Magazine

This is one of the case - CutiePi by Penk Chen

Vineyard Kikushima

We've seen plenty of beer brewed with the help of Raspberry Pi, but now it's wine's time to shine. We paired **Rob Zwetsloot** with this full-bodied article

MAKER

Kunio Kikushima

An ex-employee of electronics manufacturers

We've covered several plant and garden automation projects in *The MagPi* before, and even a robot farm or two. However, we've not previously come across a vineyard with some IoT/automation abilities thanks to Raspberry Pi.

"We are now doing viniculture in Koshu city, Yamanashi Prefecture, and we aim to open a small winery in Katsunuma in the spring of this year," says Kunio Kikushima, owner of Vineyard Kikushima. "We also aim for eco-friendly wine without any agricultural chemicals where possible. We are now doing viniculture

▲ The first prototype system set out in the field. Sensors hang out of the box to obtain an accurate reading

2nd Case: Vineyard use Raspberry PI to measure Temps and Thamos

Kikushima-san is not familiar with IT, he tried his project with the knowledge on search listings.

Masafumi Ohta

We talk to Masafumi Ohta about Raspberry Pi and maker communities in East Asia

- Name Masafumi Ohta | Occupation Consultant
- Community role Community leader | Website raspi.jp

One of the things we like to do in *The MagPi* is cover the Raspberry Pi community outside of the UK and America. Seeing the different approaches in various countries to making and tinkering is always enlightening, and it's thanks to the efforts of people like Masafumi Ohta that we've been able to see some of the amazing work from makers in Japan and even other parts of East Asia.

"I founded 'Japanese Raspberry Pi Users Group' with [around ten] Raspberry Pi

It's me - encourage your projects in asian area

I will be your help - not only for Japanese but also Asian people (HongKong/Taiwan/Singapore/Korea..etc)

Conclusion

Conclusion

- Using Ubuntu Desktop is like building some with Lego block
- There are pros/cons about target devices internal disks/sd-cards
- We should understand how SD-card works as boot devices
- Ubuntu on Raspberry Pi is one of the official OS that works on 64bit
- Please let me know if you have good projects with Raspberry Pi.

THANK YOU!

MASAFUMI OHTA - REP OF JAPANESE RASPBERRY PI USERS GROUP masafumi@pid0.org tweet @masafumiohta