



APU2 successor wishlist

yurgl · Sep 12th 2021



yurgl

[Beginner]

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Sep 12th 2021 · +1

Hello,

these are my wishes for an APU2 successor from a personal users point of view. I have a small number of devices deployed.

- high Quality 2.5G NICs (could make use of models with 2 to 5 NICs, but 3 suffice most of the time)
- faster CPU with same level of power consumption (to accelerate some networking workloads up to 1G wirespeed or higher)

Nice to have:

- M.2 Slot with four PCIe Lanes for NVMe Storage (instead of mSATA, which became old)
- PCIe Slot for external Hardware

(edit)- IEEE 802.3 PoE (to power the APU itself would be most useful, but the APU powering other devices is also nth)

- integrated programmable Ethernet switch

Features we already have, I dont want to miss and hope they get even better over time:

- Coreboot Firmware
- ECC Memory
- AES Hardware Acceleration
- 4GB RAM (or more)
- low Power usage
- good Stability

The post was edited 2 times, last by yurgl (Sep 26th 2021).

👍 rahlquist likes this.



lezzmeister

[Beginner]

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Apr 9th 2022 · +1

Most internet connections are 1Gbit max, APU being a firewall will not really need it, and if I order the one above 1Gbit, it jumps straight to 10Gbit (but that is like €100+ a month). Then again, if it has multiple ports it can be rather handy for routing the home network, especially if power and costs are almost the same.

Faster cpu is likely needed for 2.5Gbit. There are options like Ryzen 1102G (2c2t, 6 watt), 1305G (2c4t, 8 watt). Going up there is a 1505G (quadcore) but bulk price is something like \$90 which seems high if you do not want to pay a hefty premium. Then there are V1500B and R1600 (also 4c Ryzen, but 12-25 watt tdp) but they do have dual 10Gbit options and 8 pcie lanes to use. Not sure about the price but Sapphire has these on boards that start at ~€180.

Other option if AMD is not required (probably not?) then there is Intel x6200FE, 3×2.5Gbit in it for 4.5 watt, around €40 per 1000 (2c2t). The quadcore is 9 watt, same deal, but 45-47 per 1000 from what I can find, 4 pcie lanes to use freely. Must be other cpu options there. There also is a 3rd gen of G-series soc. Seems most if not all are dualcore, but mostly higher frequencies.

Nice to have would be a B+M key M.2 socket, gives the option of either sata or NVMe. Probably sata, because if there are only 4 lanes free to use, that means all lanes go to storage when sata is fast enough, 2 lanes would be enough if NVMe is needed at all. Then 2 lanes can go to a M.2 E-key socket.

My wishlist of what I am guessing is feasible:

- max ~10 watt tdp cpu, AES instructions
- 2/3×2.5Gbit (add in 2/3× 1Gbit Intel if possible if any extra lanes)
- 1 E-key M.2
- 1 M.2 for storage, B-key (1 sata port for flexibility maybe)

- POE for attached devices
- updated serial port maybe?
- If any lanes available, a x1 pcie port, on the side (maybe a fitting case for 1 low slot, can add anything you like, sata controller, extra wifi card, sim slot, very flexible, might attract the sbc crowd that otherwise uses the ARM boards if price is not too high). Maybe this over adding Gbit ports on the board, can be done using this slot.

And a separate AP, tiny, just 1x2.5Gbit port (POE if possible), 1x E-key slot, 1x B-key slot. Just use the same cpu, same parts as much as possible. Then I can attach 2 of these to the APU with whatever software I want.

👍 rahlquist likes this.



rahlquist

[Beginner]

Posts:

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Apr 11th 2022

While I agree/disagree with some of the thoughts here, since this is a wish list I am going to stick to that.

CPU is a struggle here, not a ton of good SOC from AMD recently.

<https://www.cpubenchmark.net/c...A6-9220C/4156vs2473vs3455>

(<https://www.cpubenchmark.net/compare/AMD-Ryzen-7-5700U-vs-AMD-GX-412HC-vs-AMD-A6-9220C/4156vs2473vs3455>)

Compares the GX-412hc vs the 9220c and a low power 5700U (15w) ryzen. With the Ryzen costs would be more due to needing more support components I would think?

Ram ECC please. 4GB should be fine

Network Config 1 (likely cheaper)

1 SFP+ cage 82599EN

3x Intel I225 2.5G

Network Config 2 (higher power(13.6 W), expensive)

Intel X557-AT4

(<https://www.intel.com/content/www/us/en/products/sku/88341/intel-ethernet-connection-x557at4/specifications.html>) (4 10Gbps ports)

Network Config 3 (compromise of above)

Intel X557-AT2 (2 10 Gbps ports)

2x Intel I225 2.5G

2 Mini PCIe w/ 1 connected to sim and the other connected with UART support for cards like QCA6391 so BT could be supported. Enhance power handling to spec max for these slots

1x SATA

1x M.2

Optional side connect like APU3 for PCIe expansion with a PCIe x4 slot.

2 USB 2.x internal header

2 USB 3.x external ports

TPM

RTC

Hardware Watchdog

Serial console



Photojim

[Beginner]

Apr 18th 2022

To put in my vote... I use my PC Engines devices as smart routers. I run Debian Linux right on them, not a routing OS. I use external WiFi access points as I find using on-board stuff (even of my own choosing) seems fraught with complications, and an external one is easier to upgrade when new technologies come.

So my vote:

- a fast enough CPU to handle OpenVPN tunnels, and the like, at full port speed

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- 2.5 Gbps NICs seem near essential at this point, since gigabit Internet connections are available in so many places and faster ones are on the doorstep for many (and already available for some, not even to mention data centre applications).
 - USB 3.2 with a C connector seems wise at this point (so flexible), and a couple of 3.0/3.1 A ports would be nice.
 - RAM-wise, we're already good. I bought my first APU1 with 4 GB to make it future-proof, but the reality is that 2 GB would have been lots.
 - I like the current mSATA slot plus SATA port, but mSATA seems to be disappearing so at least dual SATA would be nice, and/or M.2 slots. Having at least two different data connections is desirable because then RAID1 becomes an option to create redundancy.
 - Whatever hardware is chosen should have a nice long lifespan, as in previous PC Engines products.

I like that the two PC Engines purchases I've made have both been long-term ones - devices that I've owned for many years with satisfactory results. Keeping that philosophy will pay dividends going forward.

I never did buy something in the APU2 range (the APU1 was really quite adequate for me; I'd have gone APU2 if I'd upgraded later of course). But I imagine there are more and more APU1/2 customers who would like something with more meat on the bones.

Keeping the APU2 family around for awhile, if practical (I'm aware of the Intel NIC availability issues) would be great - I think for many applications, these boards are still quite adequate performers. (Certainly for mine, for now, though I'm about to get gigabit connectivity at home and it'll be interesting to see how my APU1 does...)

Jim



rahlquist

[Beginner]

Jun 22nd 2022

No matter what comes next, I gotta say, PCEngines is the only real player in the mid-cost range for this type of hardware. The closest competition feature wise are all significantly higher cost or weaker platforms.

I don't want to name names but the cheapest device I can see that I would willingly replace my APU2 with is 549 euro.

Posts:

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luna

[Beginner]

Aug 24th 2022

My own request is for gigabit routing capability. I had to purchase one of those competitor machines instead of an APU because, to the best of my knowledge, APU devices don't have the power to route gigabit connections. And, with Comcast offering 6 Gbps (!!) residential connections in my area, I'm sure Verizon (which I'm using right now) will start expanding to similar speeds soon.

Posts:

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