

# Operation

- pfSense Monitoring PC Engines APU

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## APU Hardware

The PC Engines APU2, APU3 and APU4 have the same APM 4-core CPU integrated, the AMD G-Series GX-412TC.

APU Hardware is passive cooled so the temperature will be in idle about 60°C. When the hardware is under full load the CPU is about 70°C, this is normal. The CPU can go up to 90°C and is still working stable.

Enable AMD Thermal sensor on pfSense

When you use a pfSense installation on a APU hardware and you don't see the temperature in the GUI, then you can enable it.

Go to **System -> Advanced -> Miscellaneous -> Cryptographic & Thermal Hardware**

set the Terminal Sensors to "AMD K8, K10 and K11 CPU on-die thermal sensor" as shown on the screenshot.

image-1614415185296.png

Now the CPU temperature shows up in the dashboard without reboot:

image-1614415200926.png