<DNS Home Appliance V1.0>

- Hardware: very low power for always-on (<4W = 5€/year)
  - i.e. ARM/Raspberry PI Zero or RISC-V/Mango.
- Install an OS of choice and a local recursive resolver
  - i.e. KnotResolver, unbound or similar
- Load “.” Root-zone for faster startup and offload Root-servers
  - https://www.iana.org/domains/root/files
- Overall number of DNS requests served in 2022: 6,7Mio (!)
  - For only 4-5 devices (PC, Mobile, TV and Notebook)
- Change local gateway/DHCP server to new DNS-Server: done

Keep DNS requests inhouse

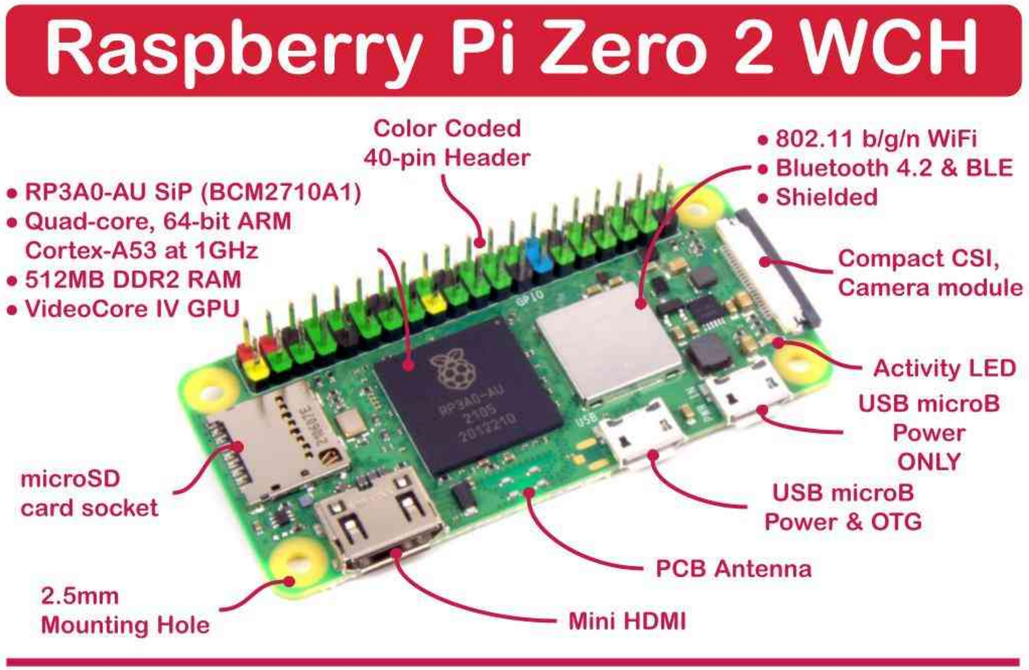
- Do not send local requests to slow/sluggish provider services or to big operators such as Google/and the like
- Speed DNS lookup
  - feels like 2-3 times faster for complex news pages that may contain 100+ elements
- Avoid DNS censorship and maximize local control
- Analysis is fun (LED flashing on DNS requests!)
  - i.e. when changing channels on a smart TV
  - LED hardware is 1x150Ohm resistor and an LED +10 lines of python code on 2 dedicated GPIO pins

Effects

- Really fast Webpage loading
- Really fast Mobile-Apps loading
- Really fast SW-updates
- General feeling of more control (perception and security?)
- Check about IPv6 connectivity (+ Browser Plugin IPfoo)
- Block unwanted destinations locally (i.e. 8.8.8.8/8.8.4.4 ?)

FUTURE WORKS

- Compare commercial solutions
- Build a real appliance or a full-image (live-OS no install?)
- Look for errors and strange behavior



Link collection 4 reference and start

- HW: RISC-V
  - https://mangopi.org/mqpro
- HW: ARM
  - https://www.raspberrypi.com/products/raspberry-pi-zero-w/
  - https://www.berrybase.de/en/raspberry-pi-zero-wh
- SW: OS
  - Raspbian/Armbian, Debian or Ubuntu
- SW: DNS
  - https://www.linuxlinks.com/best-free-open-source-dns-servers/
  - https://cloudinfrastructureservices.co.uk/top-20-best-open-source-dns-servers-for-linux-windows/
  - https://www.nlnetlabs.nl/projects/unbound/about/
  - https://www.knot-resolver.cz/