

# What's new

## In the Turris world

Michal Hrušecký • [Michal.Hrusecky@nic.cz](mailto:Michal.Hrusecky@nic.cz)

# Turris MOX



# Indiegogo campaign

370k USD by 2 721 backers, 150% of requested goal

Maaaaany options:

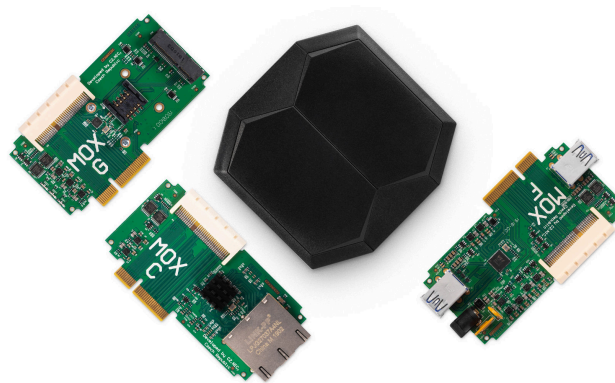
- 7 modules - 4 from start, 3 more during campaign
- two variants of CPU board
- boxed/board only version
- with/without uSD

Everything sent out by the end of June



# MOX Features

- customizable even in retail
- open-source
- automatic updates
- even more extensible then Omnia
- comes with Turris OS 4



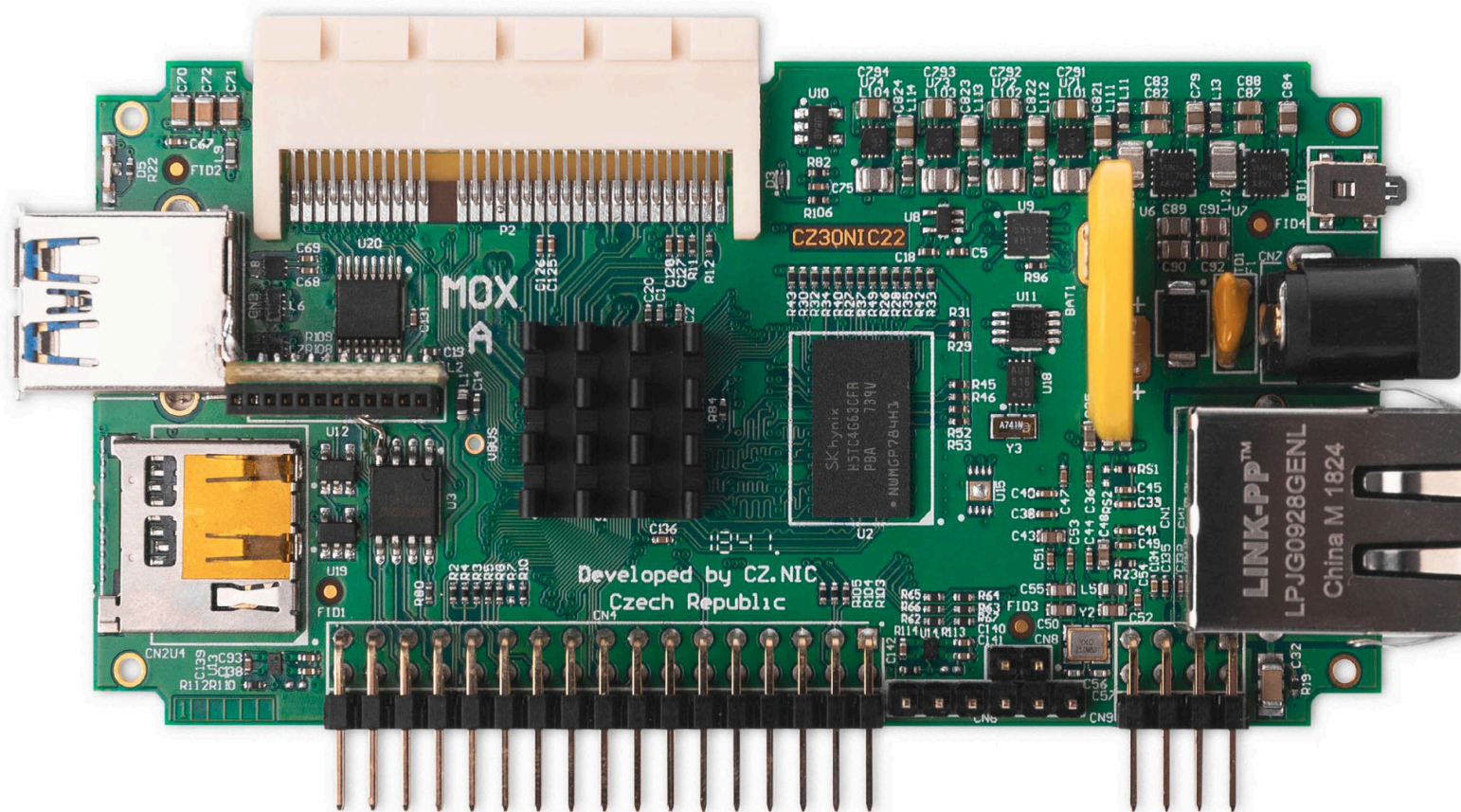
# MOX A

- just a CPU board
- dual core armv8 @ 1 GHz
- 512M/1G RAM
- microSD slot
- 1 GBit Ethernet, one USB3
- PCI-like connector for extensibility
  - own wiring described in documentation



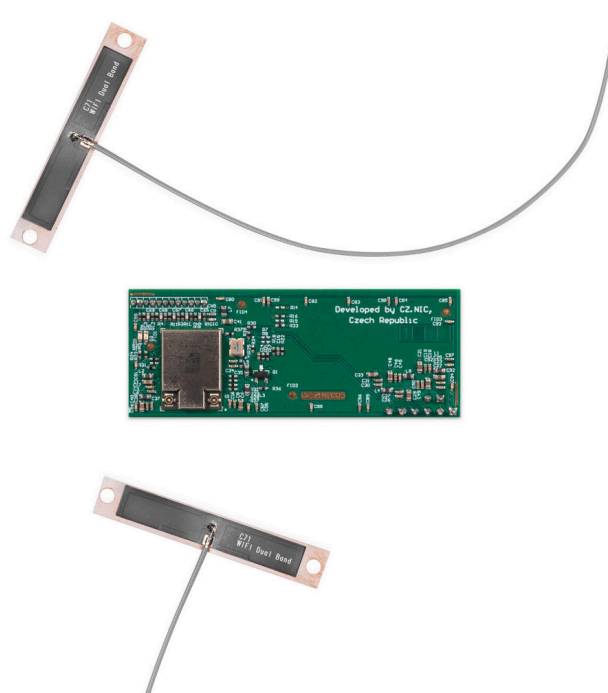


# MOX A - board



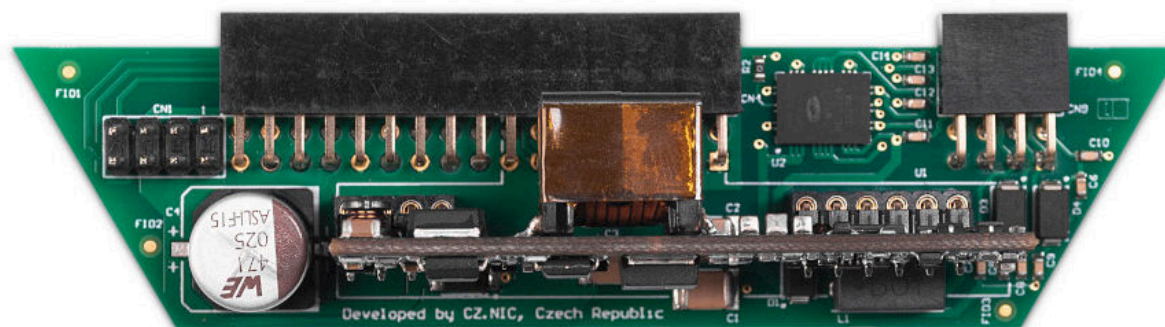
# SDIO WiFi Addon

- 2x2 MIMO dual band card
- Bluetooth 4.1



# PoE Addon

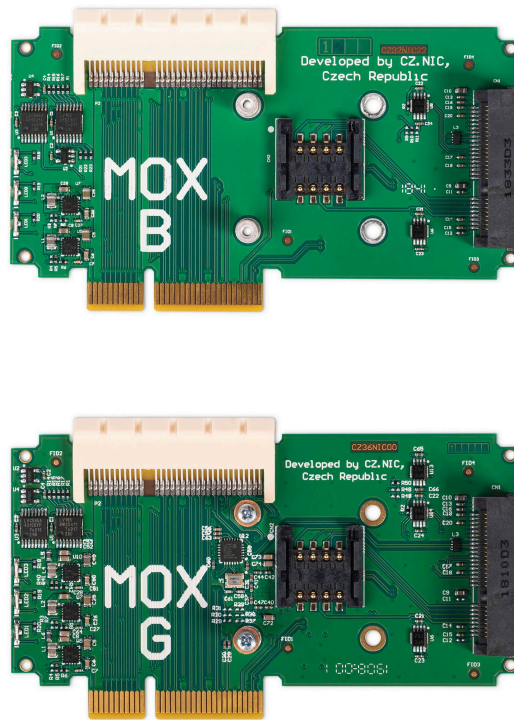
- powering MOX through PoE
- 802.3at and 802.3af compatible





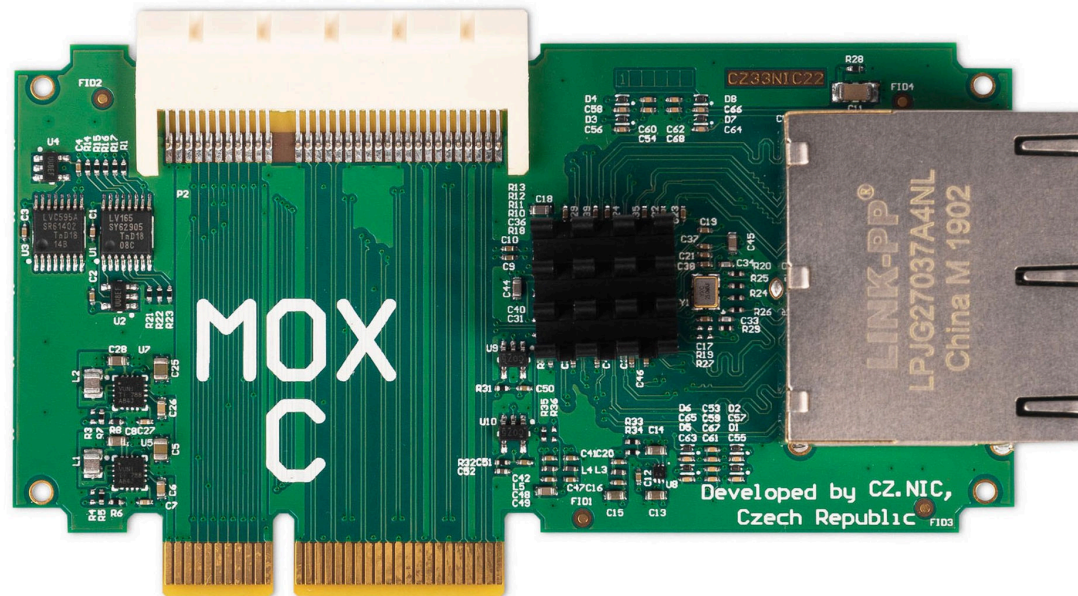
# MOX B & MOX G

- addon with mPCIe (USB also available)
- SIM slot on board
- B terminates PCI bus, G passes it through



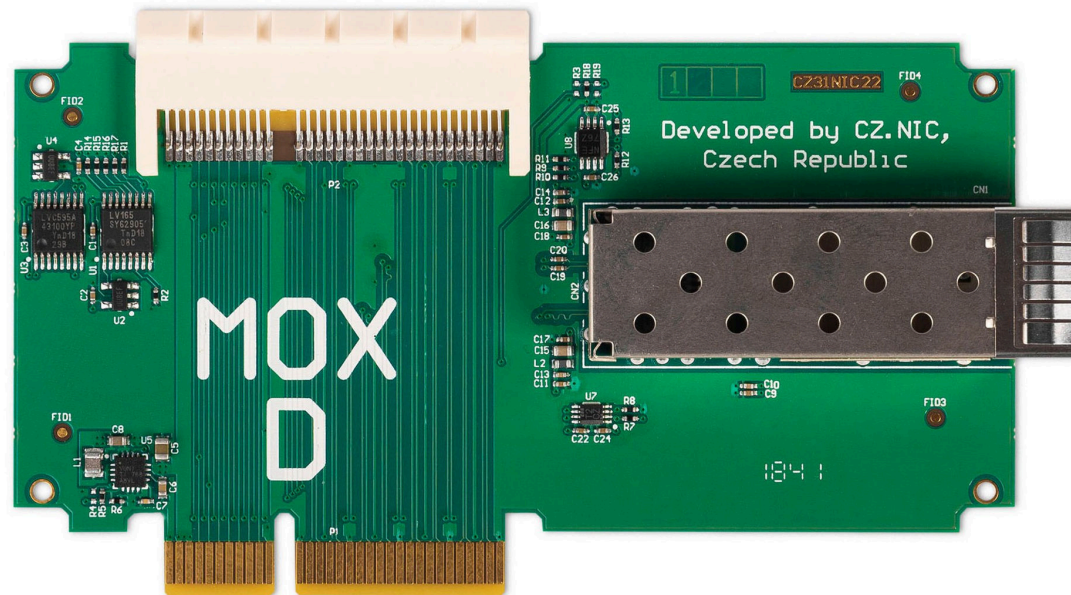
# MOX C

- 2.5 Gbit line to CPU
- terminates SGMI bus



# MOX D

- 2.5 GBit SFP module
- terminates SGMI bus



# MOX E

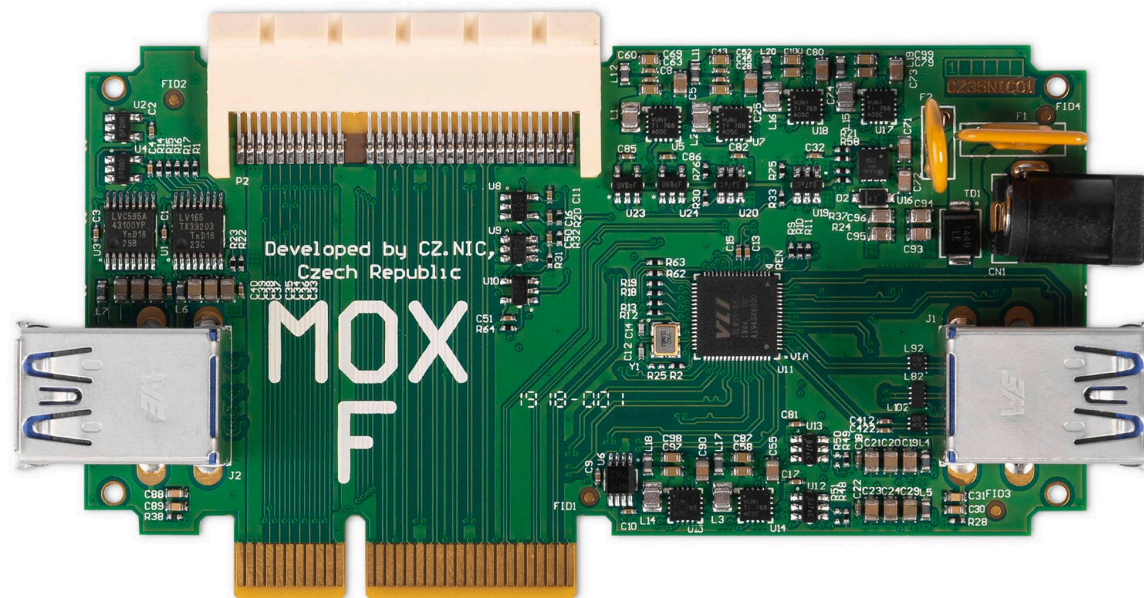
- 2.5 Gbit line to CPU and other modules
- passes through SGMI bus





# MOX F

- PCI attached USB 3 controller
- can be separately powered

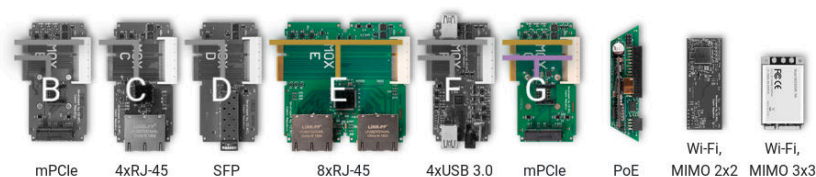


# MOX Configurator

<https://mox-configurator.turris.cz>

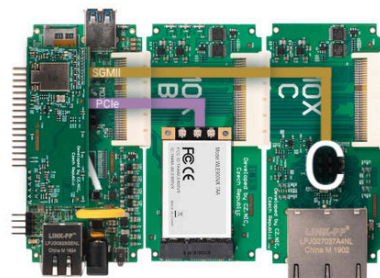
## Turris MOX Configurator

### Available modules



### Your configuration

[Start](#) [Pocket Wi-Fi](#) [Power Wi-Fi](#) [Classic](#) [M0000000X](#)



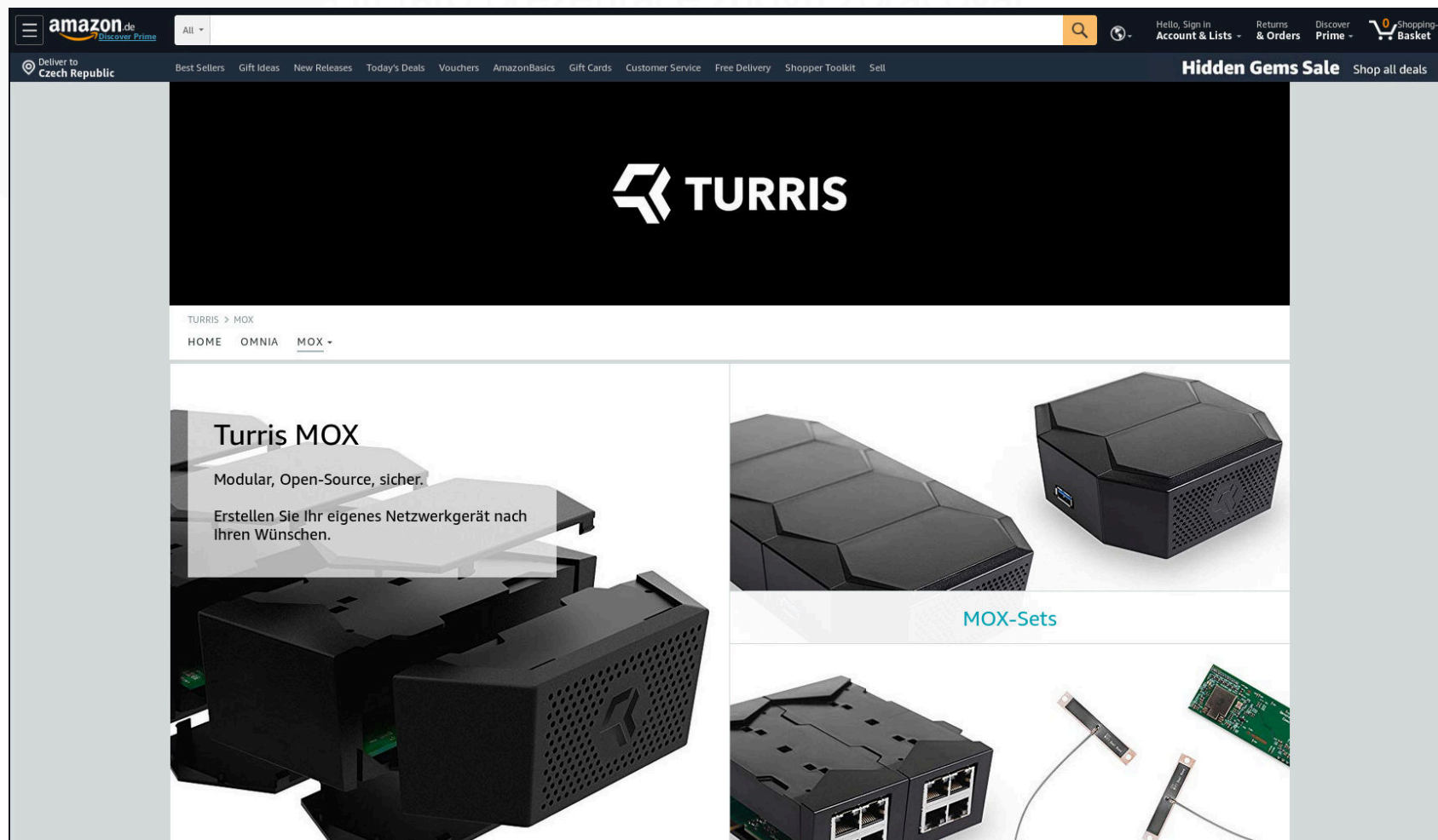
### Features overview

RJ-45	5
USB3.0	1
Wi-Fi	2





# Retail



# Retail items

- individual boxed modules
- sets
  - MOX Start - 1G RAM, MOX A with accessories
  - MOX Pocket Wi-Fi - 512M RAM, MOX A + SDIO Wi-Fi
  - MOX Power Wi-Fi - Pocket Wi-Fi + MOX B + mPCIe Wi-Fi
  - MOX Classic WiFi - Power Wi-Fi + MOX C



# Feedback?

- quite complex for end users
  - novel approach - might take some time
- sparked some business interest
  - companies looking for something smaller
    - IoT gateway
    - other embedded gateways
  - companies looking for something larger
    - Telco looking for a big smart switch



# What about Omnia?

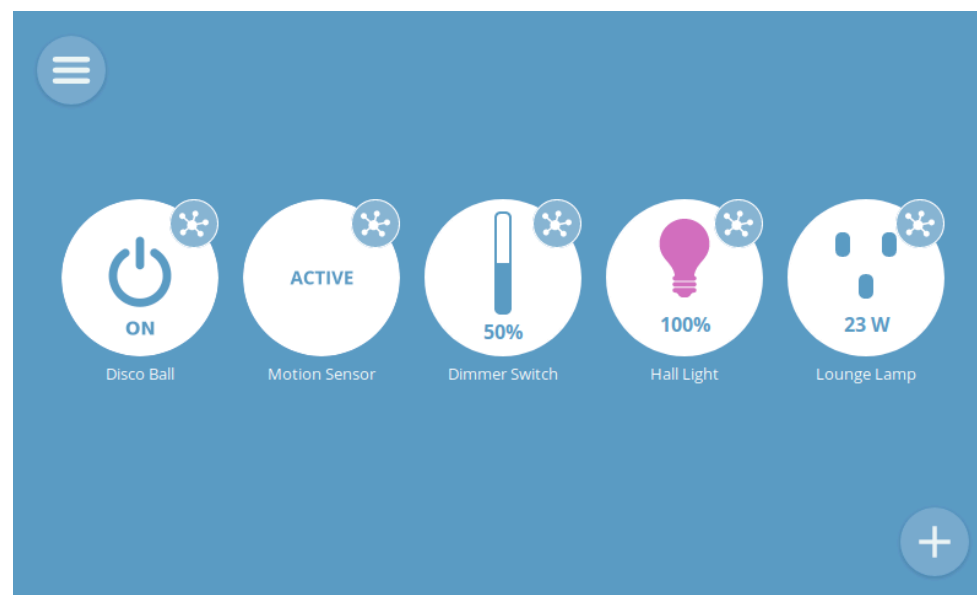


Silver is back...



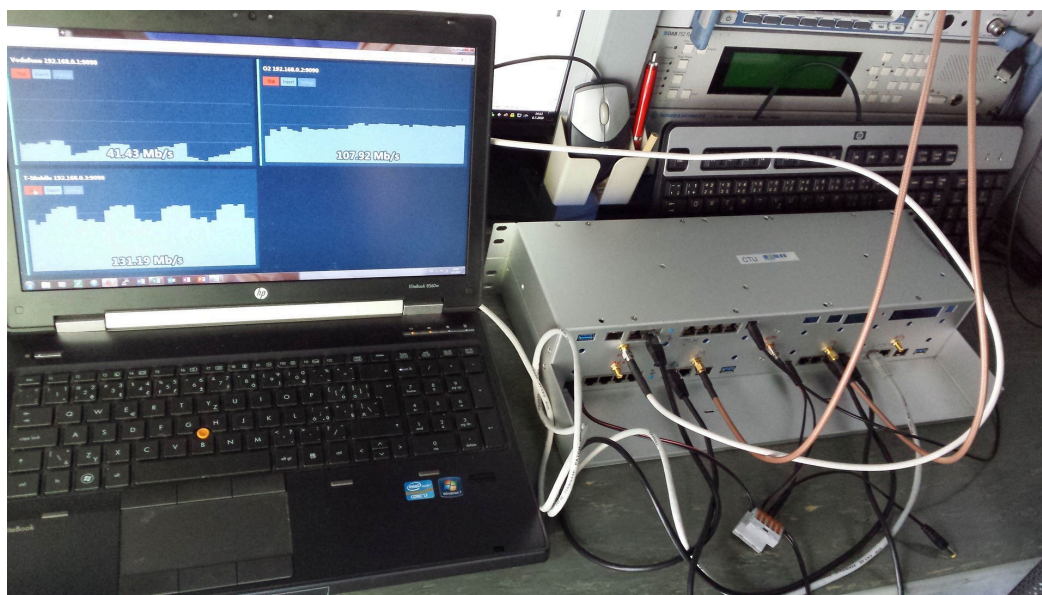
# Omnia as a platform - Mozilla

- custom firmware for Turris Omnia
- focused on securing IoT devices



# Omnia as a platform - CTU

- Czech Telecommunication Office
- Omnia with LTE cards deployed to measure LTE bandwidth
- several cars and trains to measure signal quality





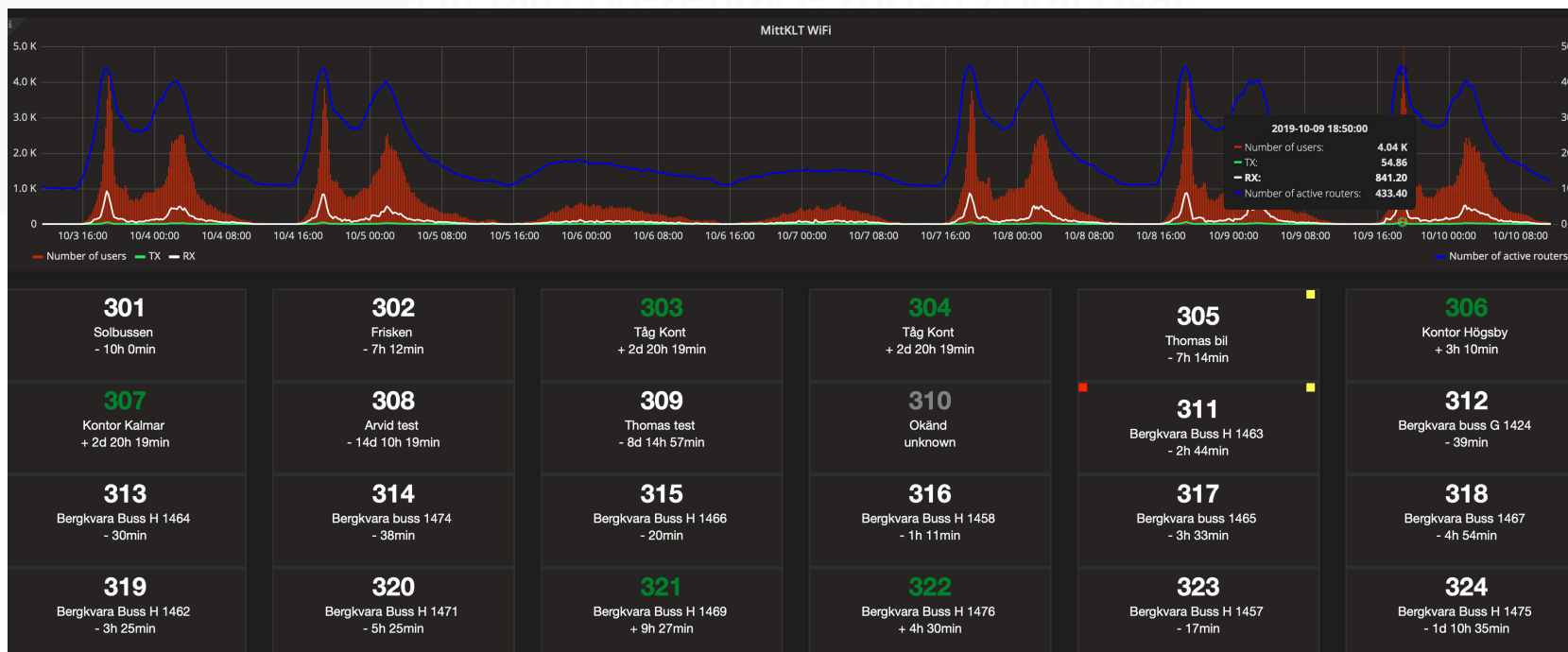
# Omnia as a platform - Kalmar



- about thousand buses, trains and taxis
- providing Wi-Fi onboard
- connectivity for ticketing system
- onboard information display
- location and in vehicle IoT



# Omnia as a platform - Kalmar



- cloud monitored and controlled
- regularly over 4 thousand users on 400 routers
- 841 Mb/s download, 54 Mb/s upload



# Turris OS 4.0

Announced last year

- based on OpenWrt 18.06
- our own feed with our software
- set of patches against OpenWrt
- set of patches against feeds
- much closer cooperation with upstream



# Turris OS ZOO

- HBS - Here Be Snails - 🐌
  - slow and stable - for normal users
- HBT - Here Be Turtles - 🐢
  - lite faster - testing stuff before release
- HBK - Here Be Kittens - 🐱
  - fast with fangs - fixes development branch
- HBL - Here Be Lions - 🦁
  - fast with big fangs - features development branch
- HBD - Here Be Dragons - 🐉
  - even more dangerous - future development branch
  - currently 5.0 based on 19.07



# Nextcloud integration

- package list
- plugin in Foris
- easy setup

NETWORK INTERFACES

WAN

LAN

GUEST NETWORK

REGION AND TIME

DNS

WI-FI


MAINTENANCE

UPDATER

STORAGE

DIAGNOSTICS

ABOUT

ENGLISH  LOG OUT

Device	Description	Filesystem	UUID
<input type="checkbox"/> sda	WD Elements 1078 (931.5 GiB)		
<input type="checkbox"/> sda1	Size 931.5 GiB	ext4	7223e7ab-92da-4ef6-b804-5c275b16ddea
<input type="checkbox"/> sdb	SanDisk' Cruzer Fit (14.7 GiB)		
<input checked="" type="checkbox"/> sdb1	srv (14.7 GiB)	btrfs	85075369-dace-4d8c-ac39-0c73b51bdd29

Changes to this setting will take effect on next reboot!

## Nextcloud

[Format & Set](#)

Nextcloud puts your data at your fingertips, under your control. Store your documents, calendar, contacts and photos on a server at home.

You still need to configure your Nextcloud, please set your admin credentials bellow:

Login:

Password:

Setup




# ReForis

- Web frontend redesign
- no more Bottle
- Flask + Bootstrap + React
- modern technologies
- easier to understand and extend





# ReForis - screenshot



reForis version 0.4.4

Notifications

Network Settings ▾

Administration ▾

Password

Region & Time


Notification Settings

Reboot

Package management ▾


Advanced administration

About

 en Logout

## Notifications

Dismiss all




October 4, 2019, 8:25:33 AM

×

- Installed version git-19.276.84187-82b9d61-1.0 of package luci-app-openvpn
- Installed version git-19.276.84187-82b9d61-1.0 of package luci-lib-jsonc
- Installed version git-19.276.84187-82b9d61-1.0 of package luci-lib-ip
- Installed version git-19.2...

[Show more](#)



September 30, 2019, 7:01:13 AM

×

New device appeared on your network (MAC address [REDACTED], hostname [REDACTED].i)



# New documentation

- old documentation looked dated
- it was hard to navigate
- hard to distinguish official vs community

Now we have two:

- <https://wiki.turris.cz>
  - old one, will transform to community wiki
- <https://docs.turris.cz>
  - new one, official stuff only



# Thank you

## Links

<https://www.turris.cz>

<https://docs.turris.cz>

<https://mox-configurator.turris.cz>

## Questions?

