State of the Network

BornHack 2018
NOC Team
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Important stuff

So, we think you should know!

- We do NOT collect data for “fun” (or profit)
- We respect your privacy
- NO packet captures, except for solving problems
  We dont even have central mirror port for sniffing pre-configured – none done in 2018 :-D
- NO IDS or traffic analysis, not even netflow, only SNMP
- DHCPD has the MAC addresses, use mac changer
- WiFi controller has MAC addresses, use mac changer
- Note: Upstream ISP required by law to do some logging in DK

Preparations

Before getting here, we did:

- Asked RIPE NCC for IPv4, IPv6 and AS number
- Asked Bornfiber Peter Krupl for assistance in configuring uplink, thank you Peter
- Gathered some devices, cables, found the ones from last year
- Created a NOC team on the BornHack page
  We had a great team this year :-)

Hardware used

- Core switching Juniper EX3300
- Core routing Juniper SRX220 with selective stateless filtering
- PoPs made with boxes from the BRK municipality
- Wired Brocade switches in PoPs Three series and OLD, SSH needs insecure config to connect
- Wifi Ruckus handled by John from Zibra Wireless, THANKS!
- Service VMs on a laptop

Major problems

Beginning:

- ~~DHCP floods, ARP floods, duplicates AP=> switchport misconfiguration and wirelessly uplinked APs~~
- ~~Power outages, rain and water~~
- ~~Fiber converter, fried by thunder~~
- We got around to making the 802.1x – except does not work on Windows :-(

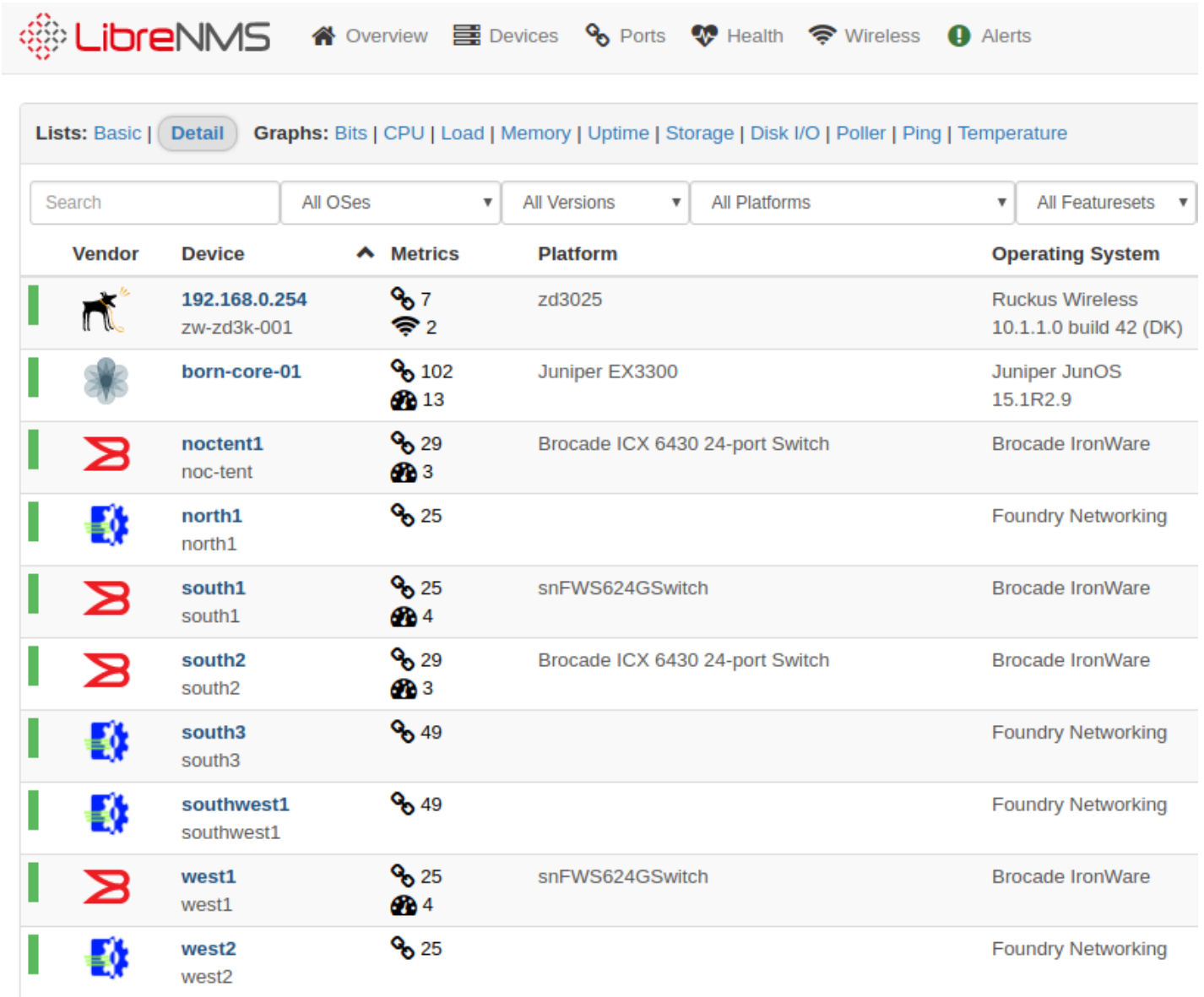
Minor problems

- Some users report they are disconnected
  Hard to diagnose when standing with a beer
  Will perhaps do a NOC support desk next year?
- GeoIP puts us in Netherlands,
  always a problem for temp networks

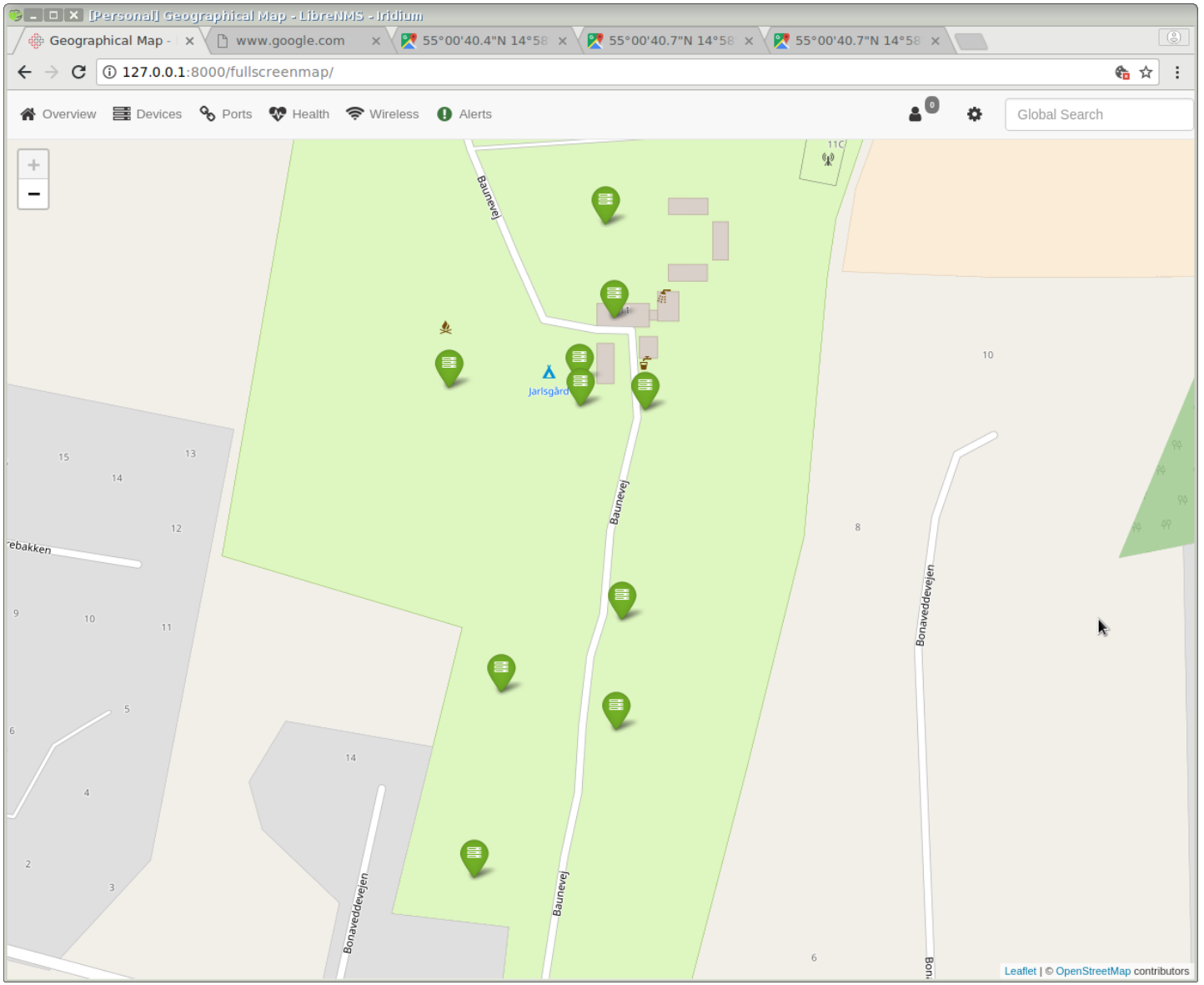
Succes and achivements

- Built a network spanning 350m from North1 PoP to South1 speakertent
- 9 PoPs including the core room with server hosting
- Put out MORE than 1km of network cable to connect main sites, achievement unlocked :-) around 900m fiber, rest copper
- Provided a reasonable stable network with some people reporting 8ms/800Mbps/800Mbps speedtest to Copenhagen at times – wired network
- Provided PBX network for DECT, Klondike
- Provided OHM Led network again for Eightdot

LibreNMS switches



Geolocation



Approximate – updated after screenshot :-D

PoPs / datenklos

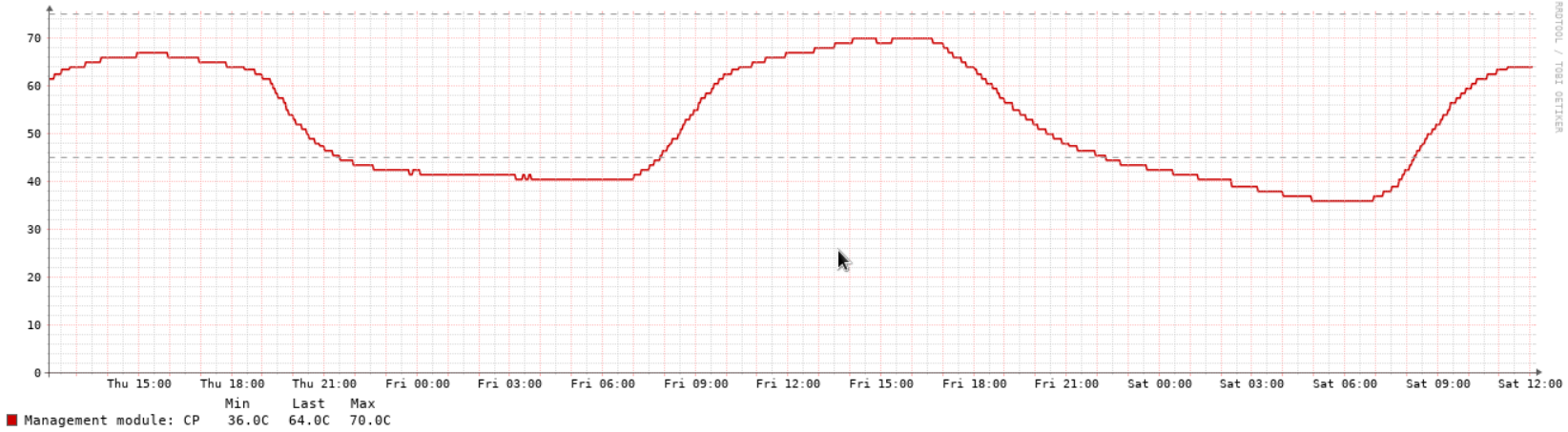
=1534413900/

Alerts 0 Global Search

wo Weeks | One Month | Two Months | One Year | Two Years

From 2018-08-16 12:05 To 2018-08-18 12:05 Update

Hide Legend | Show Previous | Show RRD Command

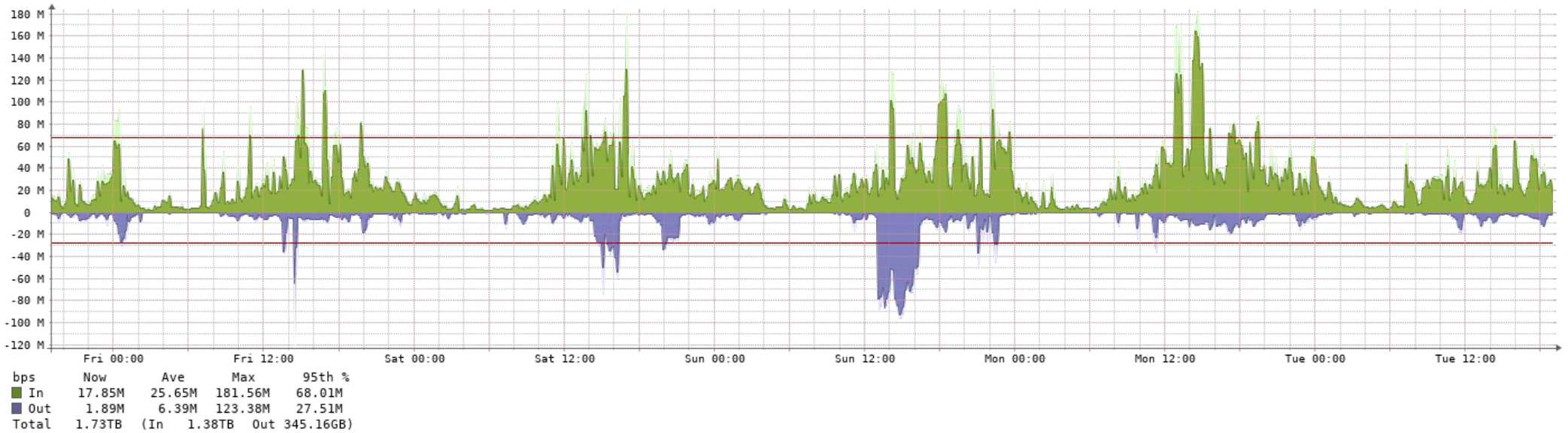


Yup, it said 70 degrees celcius in one PoP

Wireless Clients

Maximum of about 165 concurrent clients

Bandwidth



Regular usage is not high, averaged over 5 minutes.

Lessons learned

- Second year, was not prepared enough
- Third year, had a lot of hands moving boxes out into field
- Project requires less hard core network people – 2 is enough – and we have a Github repo with main configs :-D
- NOC Helpdeskers would be appriciated, maybe next year do support hour
- Goal next year, have 2x network people, +5 NOC support
- AND again have a person or group doing the wifi
- Bring more fiber converters, one fried and cheap

Conclusion

- We did it, there was a pretty stable network
- We got tents connected
- We provided services to others

Some software tools used

- OpenBSD conserver http://conserver.com/ - serial connections
- LibreNMS for stats – autodiscover yay! https://www.librenms.org/
- RANCID for gathering configs
- Oxidized for getting config from devices https://github.com/ytti/oxidized
- Plus usual suspects, ~~tcpdump, wireshark~~, ping, nmap, traceroute