NLNOG DAY 2025

WHY WOULD ANYONE WANT TO RUN A PERSONAL ASN?!

PEEK BEHIND THE CURTAIN

- About 'personal ASNs'
- What are they doing?
  - AS 202585 - Nick
  - AS 212855 - Jelle
  - AS 200132 - Peter-Paul

WHOAMI

- root
- Nick Bouwhuis
- NOC engineer at Speakup by day
- Entrepreneur by night

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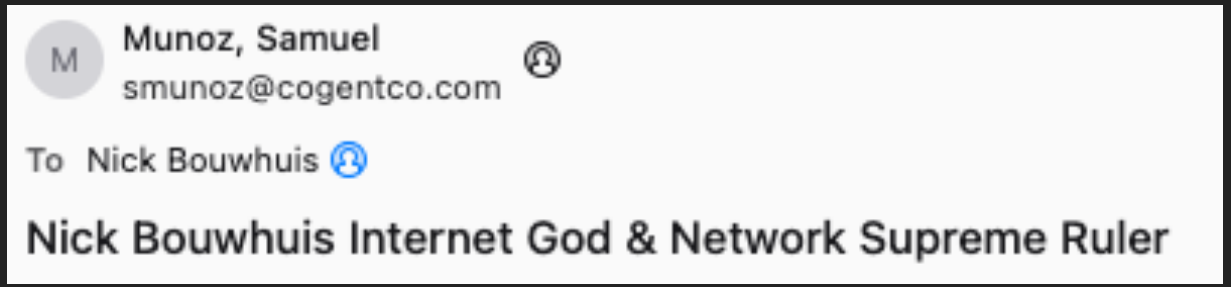


WHAT DEFINES A ‘PERSONAL ASN’?

This AS is ran by a single or very small group of people for either a hobby, educational, or infrastructure niche

bgp.tools

THERE ARE DOZENS OF US
DOZENS!
imgflip.com

THERE ARE DOZENS OF US

- 1354 listen on bgp.tools
- 61 in the Netherlands

BUT WHY?!
imgflip.com

THE ‘WHY’

- Total freedoms
- Learn & experiment
- Gain real world experience
- Get a head start on your networking career

“DRIVING THE ASN TRUCK WITHOUT A LICENSE”

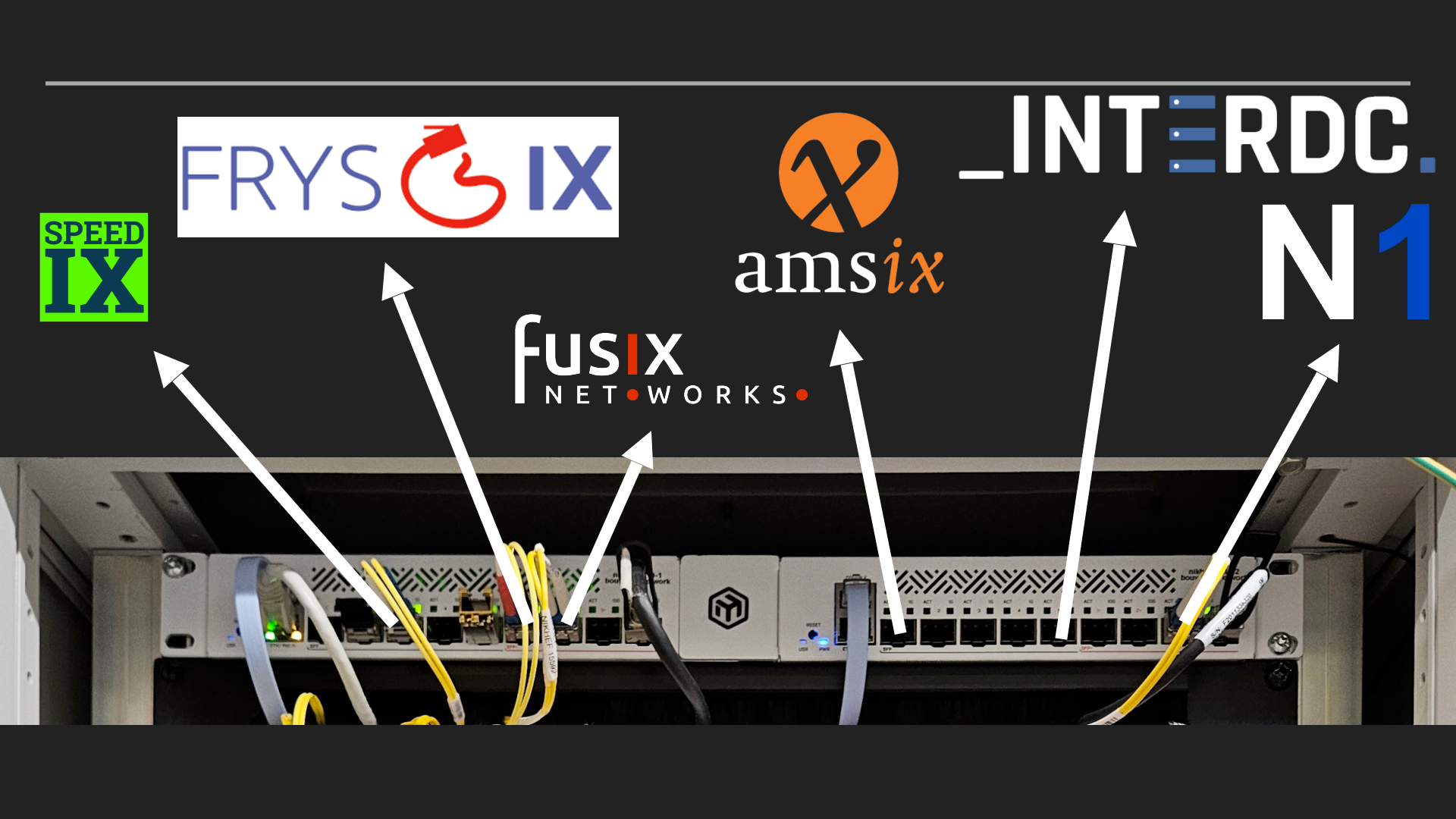
- “Hobby nets are irresponsible and mistakes affect everyone”
- “Just use DN42, private ASNs, GNS3 or ContainerLab”
- “They pollute the RIPE database”

AS202585 - PERSONAL CONTENT NETWORK

MikroTik

DELL

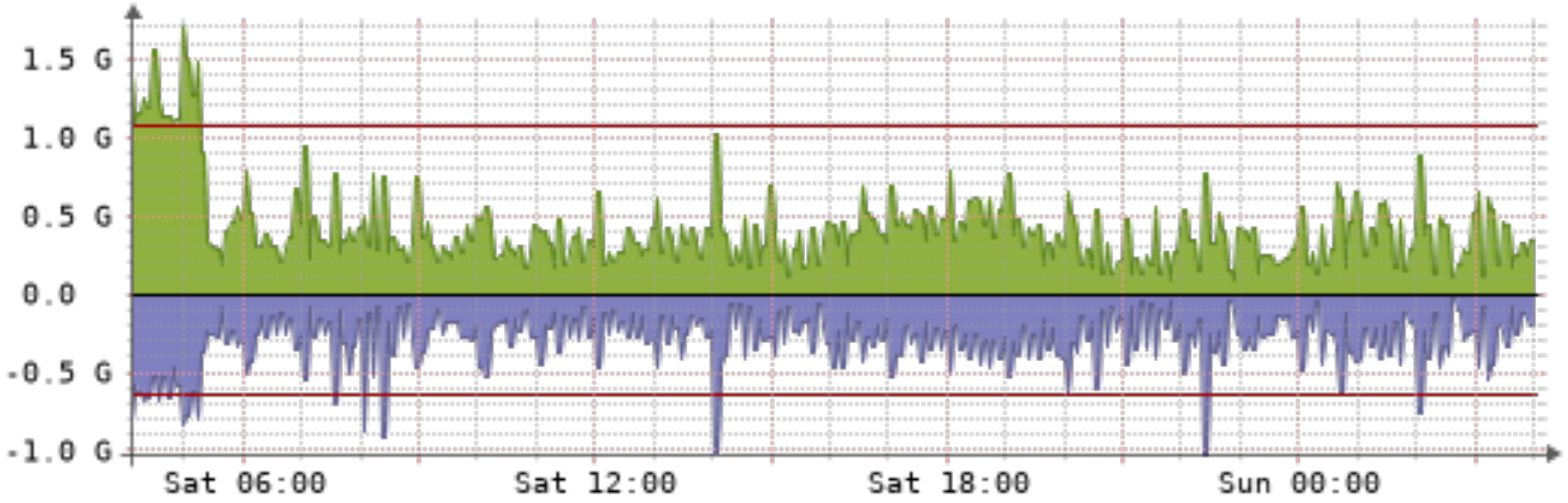
PowerEdge R630


FRYS IX
SPEED IX
amsix
_INTERDC.
N1
fusix
NETWORKS

ensix
Enschede Internet Exchange

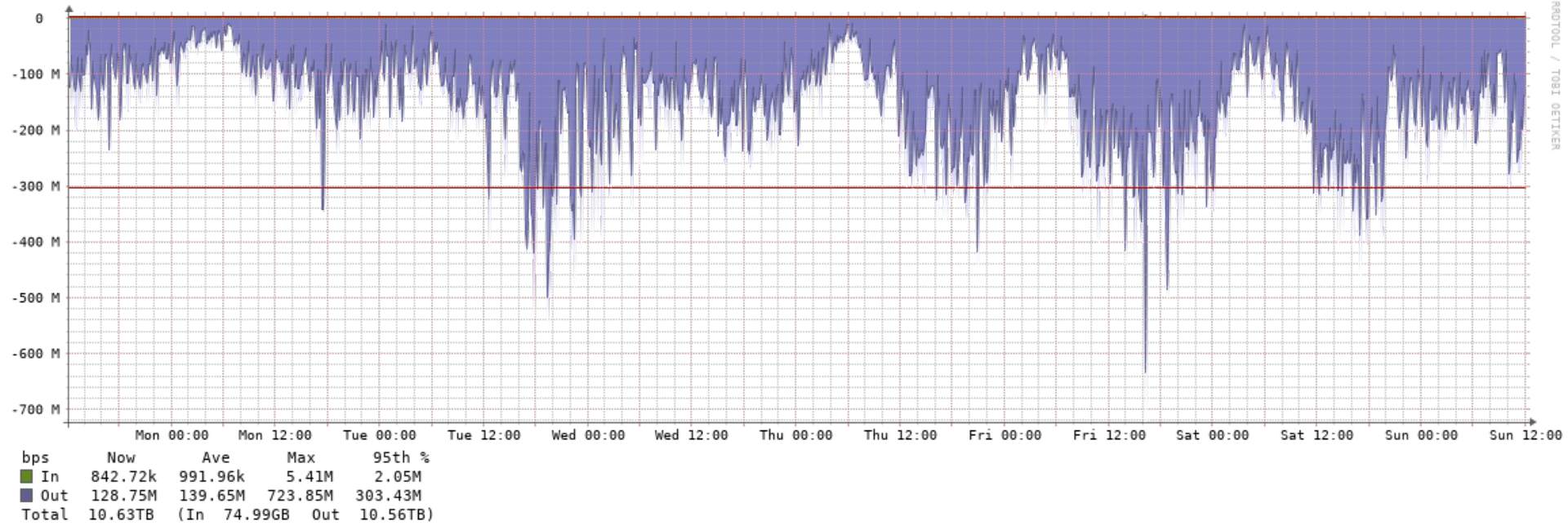
SOFTWARE

- CZ.NIC BIRD 2 for routing
  - Automated using KEES
- Debian Bookworm and/or Trixie
- Netbox for IPAM
- KVM/QEMU
  - libvirt
  - Proxmox



bps	Now	Ave	Max	95th %
In	344.85M	415.92M	1.71G	1.08G
Out	198.39M	302.29M	1.03G	649.87M
Total	7.76TB	(In 4.49TB	Out 3.26TB)	

mirror.bgp.rodeo



bps	Now	Ave	Max	95th %
In	842.72k	991.96k	5.41M	2.05M
Out	128.75M	139.65M	723.85M	303.43M
Total	10.63TB	(In 74.99GB	Out 10.56TB)	

AS212855 - PERSONAL ENTERPRISE NETWORK

LUJE.net

WHOAMI

➔ Jelle Luteijn

➔ Software developer specialized in infrastructure automation

GOAL

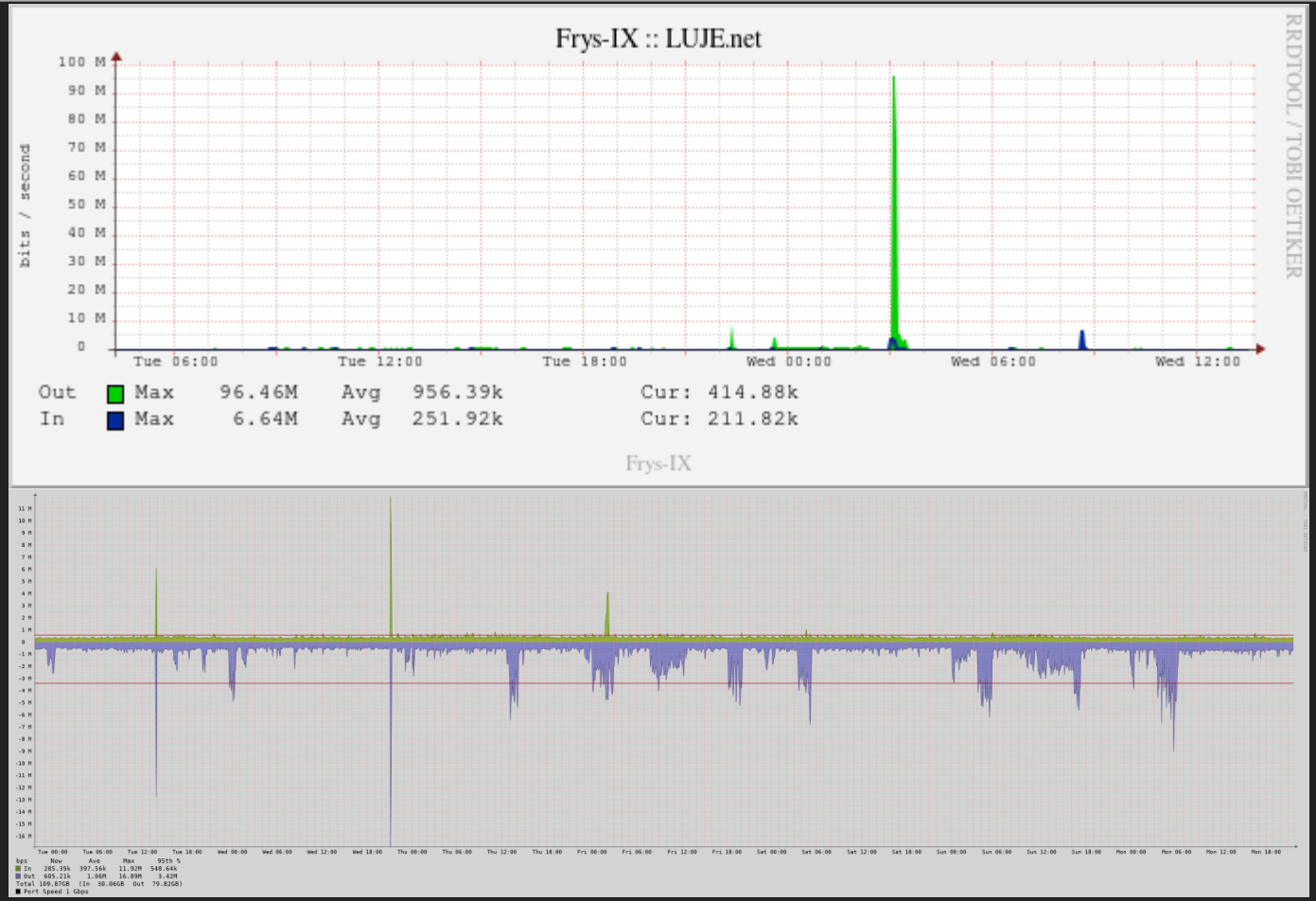
| Running my own services autonomous |

Enterprise?

Enterprise!

Architecture highlights

- 2 routers in Amsterdam (Nikhef & euNetworks)
  - Bird 2.17.2
  - Based on KEES Coloclue (thanks guys!) -> RPKI / ASPA / BGP Communities
    - Dropped IRR
  - Peering Portal!
- Compute at home
- Proxmox VE


Frys-IX :: LUJE.net
bits / second
100 M
90 M
80 M
70 M
60 M
50 M
40 M
30 M
20 M
10 M
0
Tue 06:00
Tue 12:00
Tue 18:00
Wed 00:00
Wed 06:00
Wed 12:00
Out Max 96.46M Avg 956.39k Cur: 414.88k
In Max 6.64M Avg 251.92k Cur: 211.82k
Frys-IX
RRDTOOL / TOBI OETIKER

THANK YOU

- AMS-IX (BNC)
- FrysIX / Eritap
- IPng Networks GmbH
- NetOne NL
- Netwerkvereniging Coloclue

AS200132 - PERSONAL CARRIER NETWORK

N1

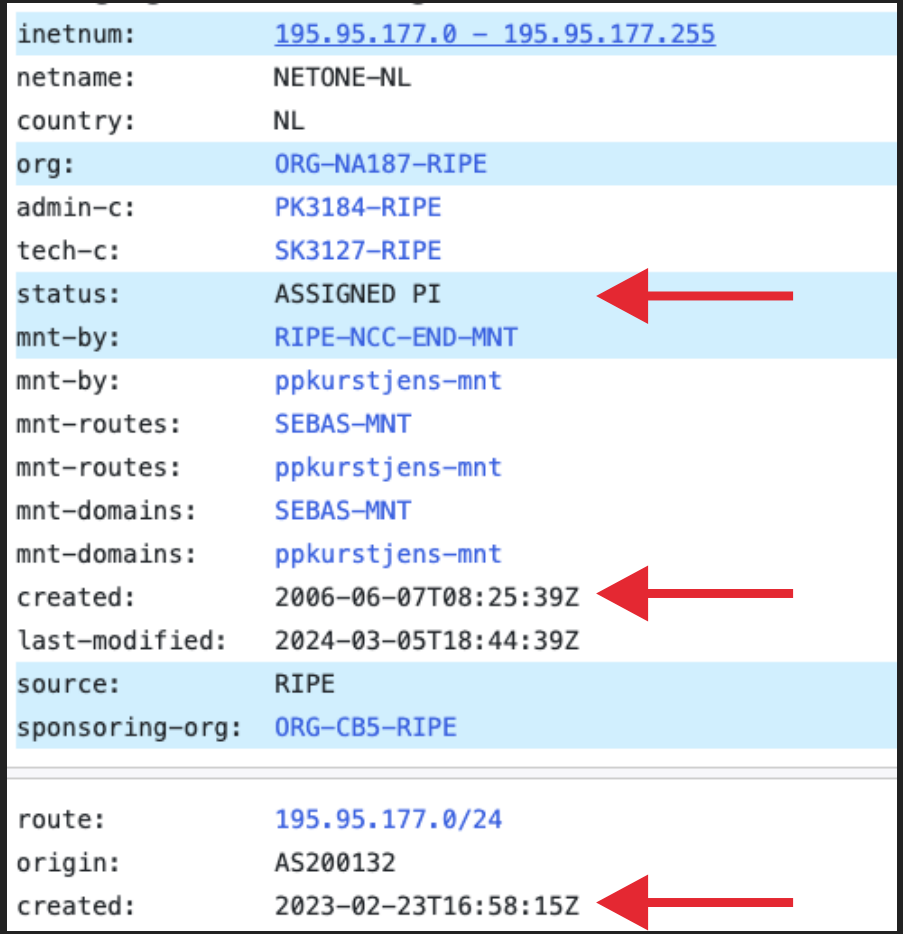
WHOAMI

➔ Peter-Paul Kurstjens

➔ Principal strategist / architect @ Red Hat
➔ Connect with me

➔ #drinkshisownchampagne

A long time ago in a galaxy far,
far away....



```
inetnum:        195.95.177.0 - 195.95.177.255
netname:        NETONE-NL
country:        NL
org:            ORG-NA187-RIPE
admin-c:        PK3184-RIPE
tech-c:         SK3127-RIPE
status:         ASSIGNED PI
mnt-by:         RIPE-NCC-END-MNT
mnt-by:         ppkurstjens-mnt
mnt-routes:     SEBAS-MNT
mnt-routes:     ppkurstjens-mnt
mnt-domains:    SEBAS-MNT
mnt-domains:    ppkurstjens-mnt
created:        2006-06-07T08:25:39Z
last-modified:  2024-03-05T18:44:39Z
source:         RIPE
sponsoring-org: ORG-CB5-RIPE

route:          195.95.177.0/24
origin:         AS200132
created:        2023-02-23T16:58:15Z
```

KEEP
CALM
AND
JUST GET
IT DONE

GOAL

| Providing a superfast community network,
offering (almost for) free
transit / carrier services for non-commercial / learning / hobby |

Architecture highlights #1

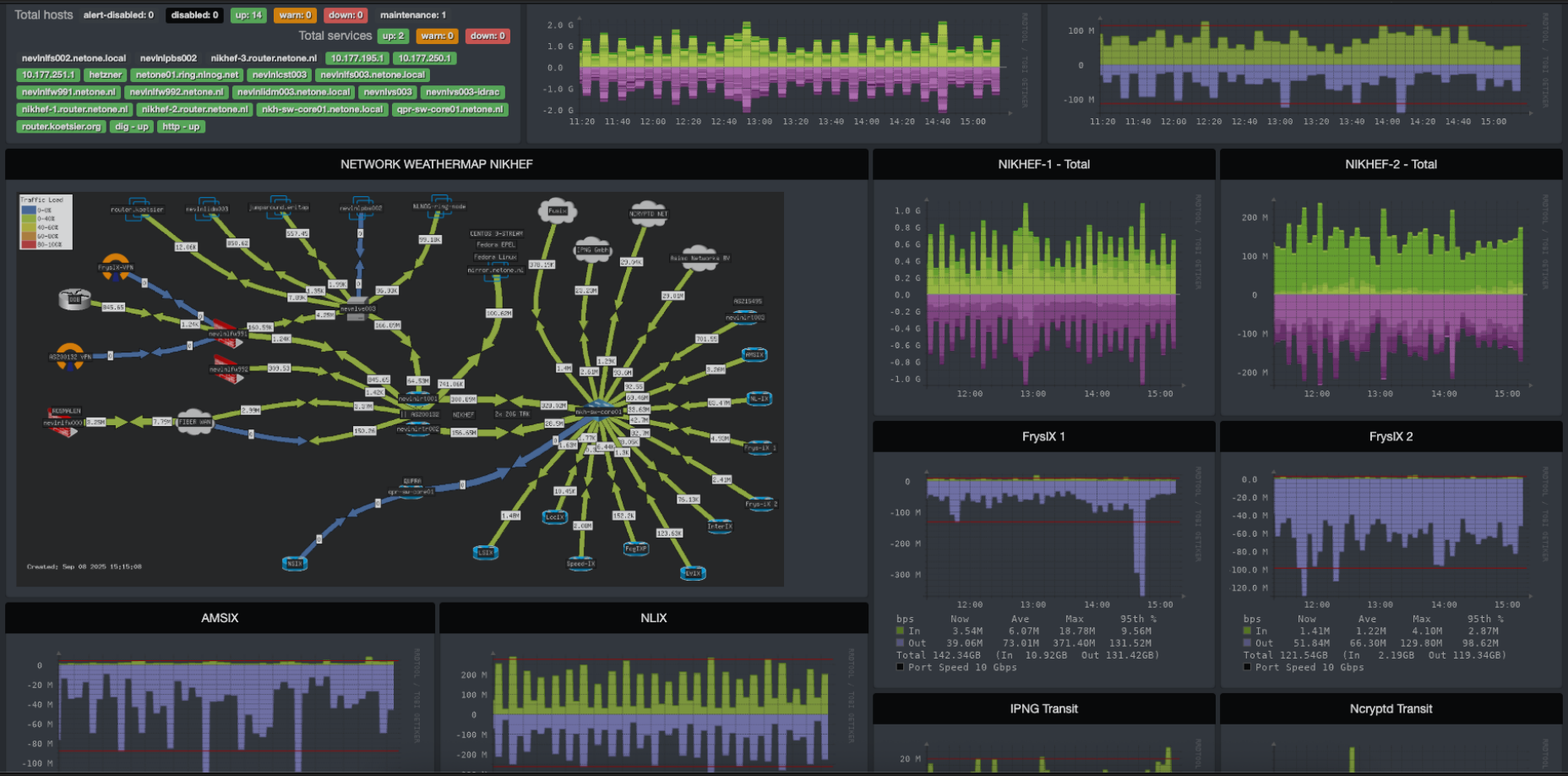
- PowerEdge R640 2x16C, 256G RAM, 10x SSD, 6x10G SFP)
- Arista 7280SE-64 (Nikhef)
- Mikrotik CRS317 (Qupra DC1)
- Proxmox VE
  - 2 vm routers running RHEL 9.6
  - VPP
  - Bird 2.13/16
  - Fork / KEES (thanks Coloclue) -> RPKI / IRR / BGP Communities
  - Resource isolation (PCI Passthrough / CPU L2 isol+taskset / etc)
- +/- 160gbits capacity
- https://bgp.tools/as/200132 && https://www.peeringdb.com/net/32117

Architecture highlights #2

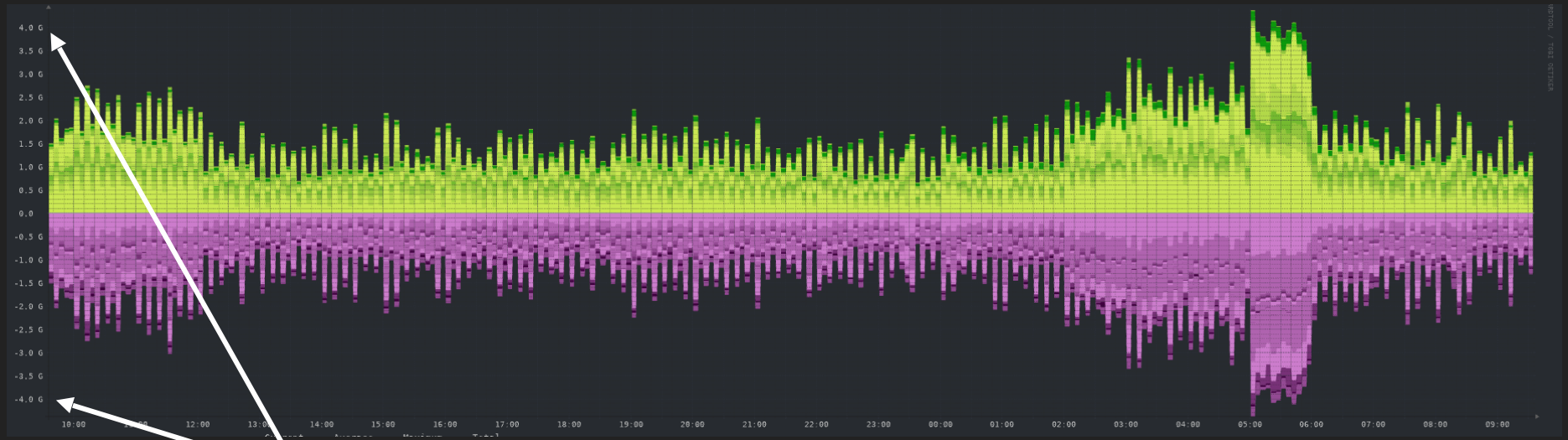
- LibreNMS
- Netbox
- Ansible (vlans, ports, config) + Semaphore UI
- Gitlab
- Matrix/Telegram/Signal
- RIPE Atlas
- Uptimerobot
- Smokeping
- NLNOG Ring
- mirror.netone.nl (CentOS Stream, Fedora, EPEL, ELN, Libreoffice)
- speedtest.netone.nl (Ookla/iPerf)
- Lab/test: AS215495

31 of 54 occupied

PERSONAL CARRIER NETWORK



Traffic … a bit …



4GBits

WAR STORIES & LESSONS

- RP Filter is a b*tch
- Typos more so….
- Doing routing on a Linux VM can be done
- Soft IRQ's was killing me
- No packages for RHEL / VPP
  - VPP takes lot of custom work … but rewarding
    - https://github.com/poweredgenl
  - Time time time!
  - Rabbit hole!

- We love oranges!

Architecture planned / wishes

- ➔ Akvorado
- ➔ VPP 25
- ➔ Peering / transit user portal
- ➔ DDoS offloading/upstream
- ➔ Rancid/Oxidized
- ➔ More locations … where people need me …

- ➔ Want to contribute ideas … ?

One more thing...

amazon

With a little help from my friends

- Frys-IX
- Asimo
- BIT
- Fusix
- Abantu Cloud Ltd
- IPng Networks GmbH
- AMS-IX
- NL-ix

THANK YOU

Contact us on IRC:

nullr0ute - Nick
zydronium - Jelle
Peter-Paul/poweredge - Peter-Paul