

# Netnod Update

28 February 2023

Emil Palm, Netnod

# Netnod staff at LINX 118



**Emil Palm**  
**Network Engineer**



**Leo Bernava**  
**Global Interconnection Relations Manager**

# Netnod background

A neutral organisation with more than 25 years working at the core of the Internet

- Operates the largest Internet Exchange (IX) in the Nordics
- Manages I-root, one of world's 13 root name DNS servers
- Provides DNS services to enterprises and some of the largest Top Level Domains in the world
- Develops Time and frequency services with the highest levels of accuracy and security





## **IX**

**200+ ASNs, 2+Tbps  
traffic**



## **DNS**

**Anycast network of  
80+ global locations**

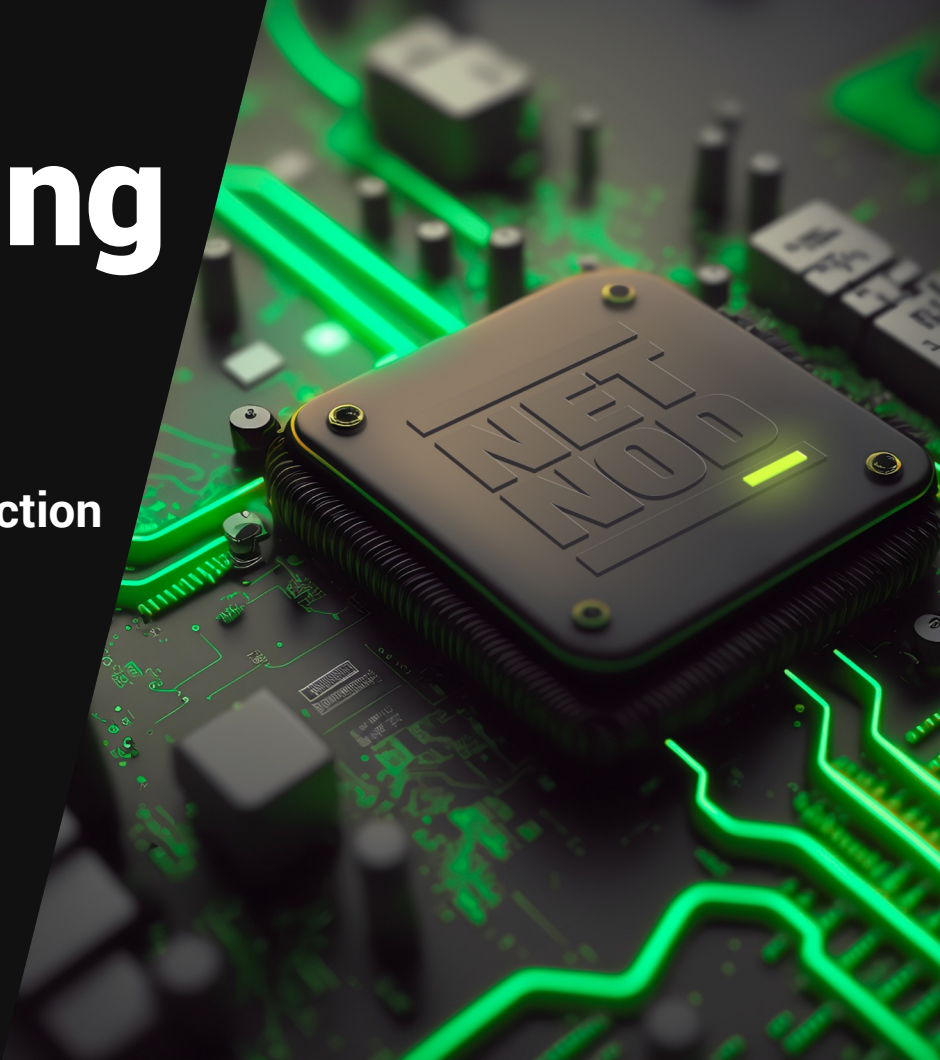


## **Time**

**Distributes Swedish  
national time  
30 $\mu$ s accuracy over  
IX**

# Interconnecting the Nordics

Flexible, reliable and secure interconnection  
across the Nordics.



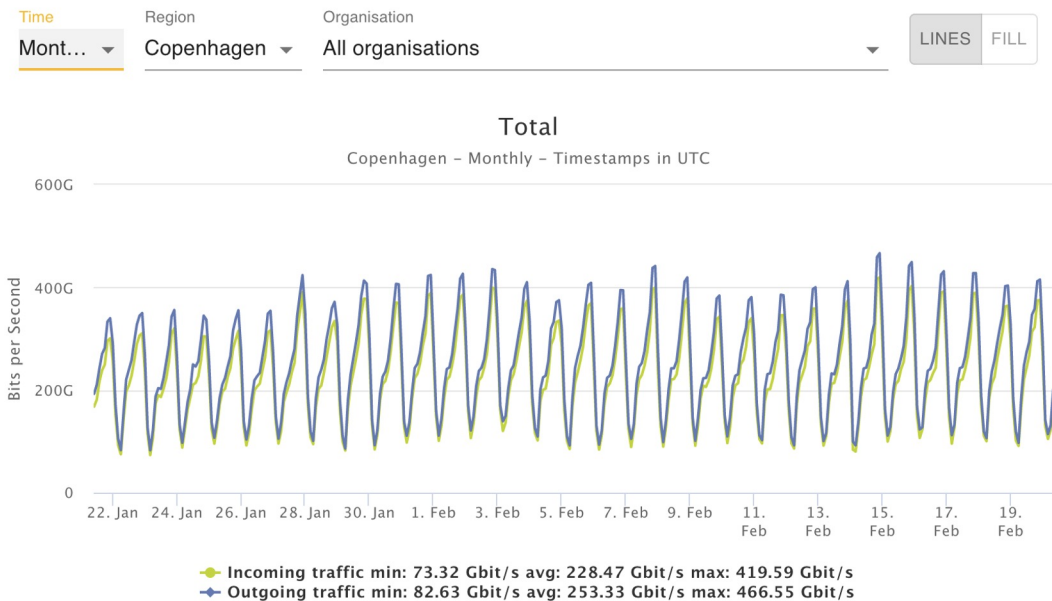
# The largest IX platform in the Nordics

- Peak traffic 2+ Tbps
- 200+ connected ASNs
- 100% uptime since 2002



# Netnod IX Copenhagen

- Fastest growing IX in the Nordics
- 60+ networks
- 460+ Gbps peak traffic
- Malmö / Copenhagen interconnected with multiple, redundant paths



# Netnod Helsinki

## 3 PoPs:

- Digita Helsinki  
Pasila
- Equinix HE7
- Telia Helsinki





## Remote peering

Use your Netnod IX port to peer throughout the Nordics with 200+ networks exchanging more than 2 Tbps of traffic.



## Shaped port

Pay only for the capacity you need with a flexible connection that scales with your network.



## Metro access

Get fully managed, immediately provisioned point-to-point transport in metro areas with multiple, redundant routes.

Dashboard

Services

Internet Exchange - IX

Domain Name System - DNS

Time & Frequency - T/F

Billing

Contact us

Settings

Sign Out

## Hello Emil!

Welcome to Netnod's customer portal. Here you can administer and monitor the different services you have at Netnod.

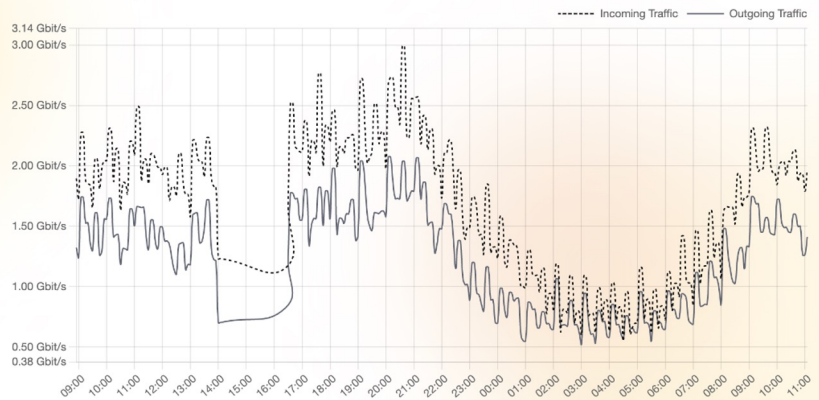
### Statistics: IX Metrics

TRAFFIC

BROADCAST

Daily

All regions



Reset zoom

Hold Shift to move when zoomed

### IX Products

10G Göteborg (IX / Single)

Active

Contract End Date 2022-12-31

### Invoices



You have no invoices yet

[Go to billing page](#)

### Latest news



Tue, 13 Sep 2022 13:00:00 GMT

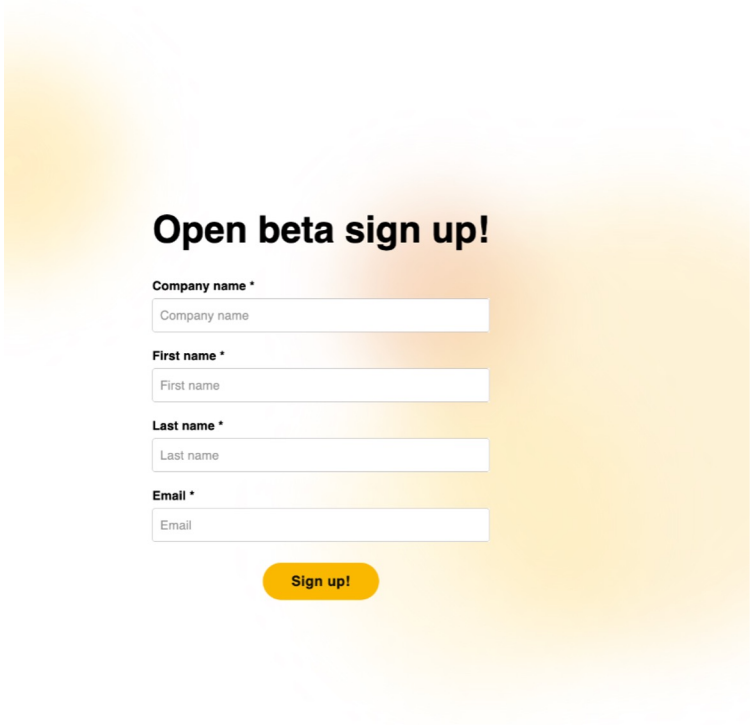
**New time service brings ultra-precise and robust time to companies in Sweden**





Sign up

<https://signup.portal.netnod.se>



## Open beta sign up!

Company name \*

First name \*

Last name \*

Email \*

Sign up!



**ROUTE SERVER SUPPORT FOUNDATION**

# There are 13 root name DNS servers in the world.

The world trusts Netnod to operate one.







## TLD service

Get robust, secure and fast DNS with 100% uptime, one of the most advanced anycast networks in the world, and DNS expertise from the provider of choice for some of the largest ccTLDs.



## DNS enterprise service

Guarantee your customers 100% uptime by using one of the largest and most robust DNS services in the world.



## I-root service

There are only 13 DNS root name servers in the world. The world trusts Netnod to operate one.

# We always know what time it is

Sweden trusts Netnod to distribute  
national time.





# Swedish distributed time service

- Operated by Netnod, monitored by RISE and financed by PTS
- 6 time nodes placed in secure bunkers throughout Sweden (Stratum-1 time servers)
- Time traceable to UTC
- Free and commercial service with SLA



# Netnod's clock nodes: accurate and secure time

- Dual nodes with all critical equipment duplicated for redundancy (2x caesium clocks)
- Dedicated battery backup for all time components
- NTP/NTS servers use a custom-built FPGA-based hardware implementation





## **NTP service**

**Connect for free to one of the most advanced and secure NTP services available which also includes...**



## **NTS service**

**Connect for free to ensure you are receiving secure and accurate time from a trusted source**



The logo consists of twelve yellow five-pointed stars arranged in a circle, set against a dark blue background. The stars are slightly blurred, giving a sense of depth.

# European Peering Forum

IXP-Country-Jedi  
Peer-to-Peer Fabric

# Questions?



Visit us at [netnod.se](https://netnod.se)