

Entering the 21st century of Route servers.



100%
Uptime
since 2002



Route Servers

- Route servers are good for smaller players
- Can be good for larger players.
- Easy on-boarding for new customers and good way to find new peers.
- **One solution does not fit all**

Current setup

- **Configured in rsconf.pm**
- No connection between customer data and implementation
- Running bird 1.6.3
- Different revisions of hardware.
- **No stats or looking glass.**

BiRD vs OpenBGPd vs GoBGP

	BiRD 1.6.*	BiRD 2.*.*	GoBGP	OpenBGPd
ARouteServer	Yes	No	No	Yes
RPKi Integrated (RTR)	No	Yes	Yes	No
RPKi Static (ARS)	Yes	Yes	No	Yes
BGP Flowspec	No	No	Yes	No
Netnod production ready?	Yes	No	Yes	No
Alice-LG	Yes	N/A	No	No
Programming Language	C	C	Golang	C

BiRD vs OpenBGPD vs GoBGP

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Why we picked Arouteserver

- Code base shared with many IXPs
- High quality documentation
- We did not build it! Collaboration is far more efficient
- Abstracts the implementation from our customer data

What we needed to do

- Implement GoBGP support into Arouteserver
 - Currently maintained by Carlo Chiodli
 - <https://github.com/pierky/arouteserver>
- Implement support for GoBGP in Alice-LG
 - Currently maintained by Matthias Hannig sponsored by DE-CIX
 - <https://github.com/alice-lg/alice-lg>

What we have done

- Implemented GoBGP support into Arouteserver
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 - <https://github.com/netnod/arouteserver>
- Implemented support for GoBGP in Alice-LG
 - Currently maintained by Matthias Hannig sponsored by DE-CIX
 - <https://github.com/alice-lg/alice-lg>
 - <https://github.com/netnod/alice-lg>
 - This alice-lg instance is dependent on a GoBGP patch <https://github.com/netnod/gobgp>

We are working on getting all of these into the mainline repos.

So back to PERL

```
# {
#   as => 8674,
#   assets => [
#     'AS-NETNOD',
#     'AS-NETNOD-ANYCAST',
#     'AS8674',
#   ],
#   customer => 'Netnod <peering@netnod.se>',
#   passwd => 'xxxxxx', # OPTIONAL, defaults to no password
#   routelimit => 1000, # OPTIONAL, defaults to 1000
#   addresses => [ # One or more addresses must be specified.
#     '194.68.123.73',
#     '195.245.240.73',
#     '194.68.128.172',
#     '195.69.119.172',
#     '2001:7f8:d:ff::73',
#     '2001:7f8:d:fc::73',
#     '2001:7f8:d:fe::172',
#     '2001:7f8:d:fb::172',
#   ],
# },
```

So back to PERL; HOW ABOUT NO

```
# {  
#   as => 8674,  
#   assets => [  
#     'AS-NETNOD',  
#     'AS-NETNOD-ANYCAST',  
#     'AS8674',  
#   ],  
#   customer => 'Netnod (Lars-Johan Liman) <peering@netnod.se>',  
#   passwd => 'xxxxxx', # OPTIONAL, defaults to no password  
#   routelimit => 1000, # OPTIONAL, defaults to 1000  
#   addresses => [ # One or more addresses must be specified.  
#     '194.68.123.73',  
#     '195.245.240.73',  
#     '194.68.128.172',  
#     '195.69.119.172',  
#     '2001:7f8:d:ff::73',  
#     '2001:7f8:d:fe::73',  
#     '2001:7f8:d:fe::172',  
#     '2001:7f8:d:fb::172',  
#   ],  
# }
```

Arouteserver and YAML

```
# curl https://derk.derk.netnod.se/routeserver/sth/green/clients.yml
```

```
- asn: 8674
  ip:
  - 194.68.123.73
  - 2001:7f8:d:ff::73
  - 195.245.240.73
  - 2001:7f8:d:fc::73
  description: Netnod Internet Exchange AB <peering@netnod.se>
  password: xxxx
  cfg:
    filtering:
      irrdb:
        as_sets:
          - AS-NETNOD
```

Communities

- **All standard communities are supported**
 - **52005:0 - Do not send routes to any**
 - **52005:PEER_AS - Send routes to specific AS**
 - **And so on.**

Documentation will be published on netnod.se soon TM

Communities

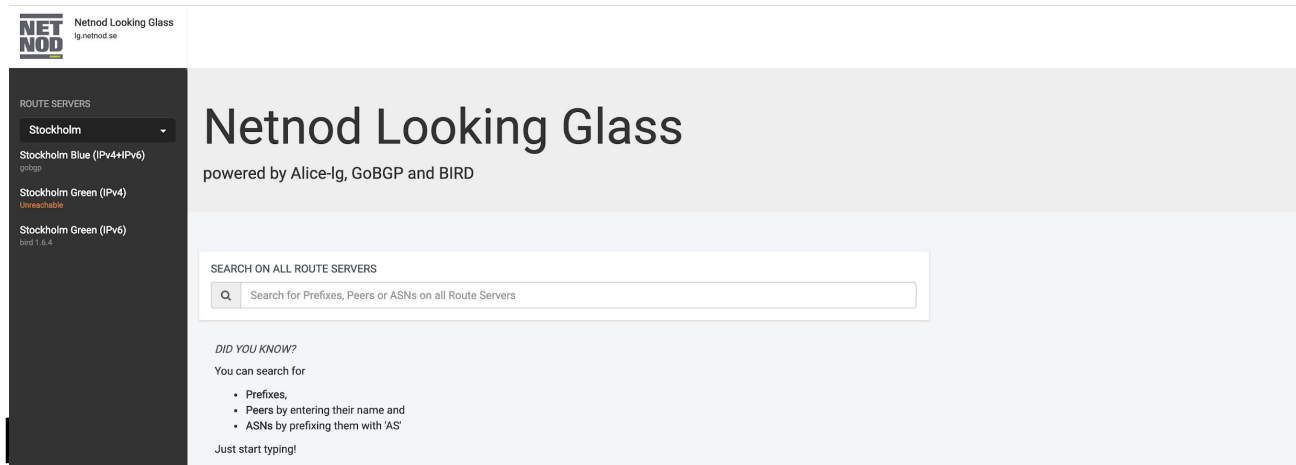
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- **RPKI**
 - Implemented day one
 - Community tagging of unknown prefixes. 52005:
 - **Will drop invalids on day one.**

Looking glass

- Alice-LG
 - Maintained by Matthias Hannig and sponsored by DE-CIX
 - Primary developed for bird using birdwatcher
 - Golang based with a react frontend.



The screenshot shows the Netnod Looking Glass website. The header includes the NET NOD logo and the text "Netnod Looking Glass lg.netnod.se". The main content area is titled "Netnod Looking Glass" and is powered by Alice-lg, GoBGP, and BIRD. A search bar is present with the text "SEARCH ON ALL ROUTE SERVERS" and "Search for Prefixes, Peers or ASNs on all Route Servers". A sidebar on the left lists route servers: "Stockholm", "Stockholm Blue (IPv4+IPv6)", "Stockholm Green (IPv4)", and "Stockholm Green (IPv6)". A "DID YOU KNOW?" section provides search instructions: "You can search for" followed by a list: "Prefixes", "Peers by entering their name and", and "ASNs by prefixing them with 'AS'". It concludes with "Just start typing!".

Will be live after first migration of route servers.

Timeline

- **Today**
Running in lab environment and first physical servers are installed in CPH.
- **The coming weeks**
We are starting off with a Friendly User Test in CPH

And rollout in Copenhagen and Stockholm shortly after.
- **Next coming months**
Gothenburg
Sundsvall
Luleå

News from Netnod

- Access between regional IXes for an additional fee.
 - Peering in the Stockholm IX with your connection in Copenhagen
 - Peering in Copenhagen IX with your connection in Gothenburg
 - ..etc
- Optical-IX has evolved
 - Buy a wavelength between any data centre where we are present
 - either in a metro environment or between cities or even countries
 - will also provide connectivity to different cloud providers.
- Netnod Meeting on the 3-4 April in Stockholm, Sweden
 - Broadcasted on Youtube.

netnod.se

