

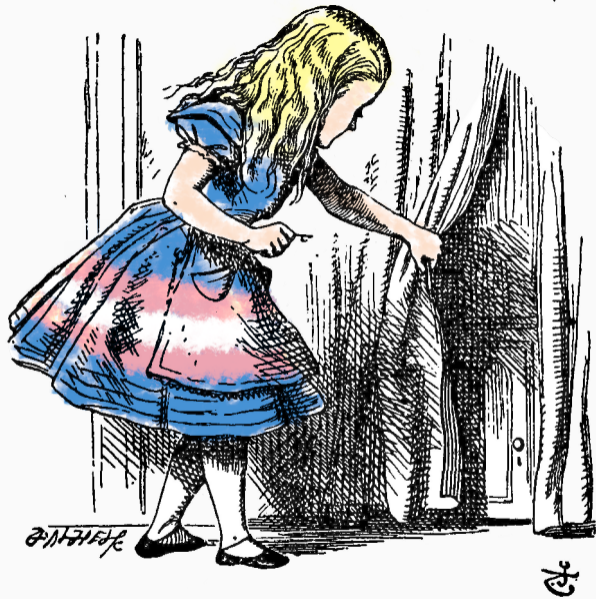
Alice

Through The Looking Glass

Annika Hannig

November 25, 2021

RIPE83



Alice

This is Alice

The screenshot shows a web browser window with the URL `localhost:8001/alice/`. The page title is "Welcome to Alice!" and the subtitle is "Your friendly bird looking glass". A search bar contains the number "10". Below the search bar, there are two tables: "ROUTES FILTERED" and "ROUTES ACCEPTED".

ROUTES FILTERED

Network	AS Path	Gateway	Neighbour	ASN	RS
10.0.0.0/24 An IP Bogon was detected	1337	1.2.3.11	PEER AS1337 1.2.3.11 lab-isp-1	1337	rs1.lab (IPv4)
101.0.0.0/25 The prefix is longer than 24	1337	1.2.3.11	PEER AS1337 1.2.3.11 lab-isp-1	1337	rs1.lab (IPv4)
102.0.0.0/24 The advertised nexthop address is not the same as the peer	1337	1.2.3.12	PEER AS1337 1.2.3.11 lab-isp-1	1337	rs1.lab (IPv4)

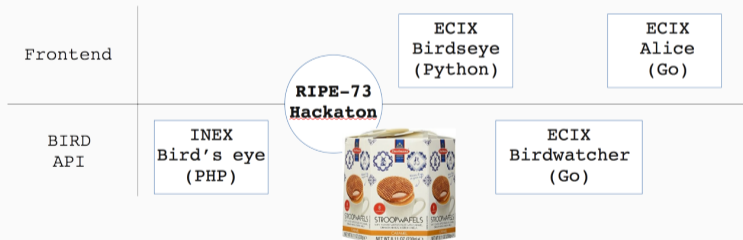
ROUTES ACCEPTED

Network	AS Path	Gateway	Neighbour	ASN	RS
100.0.0.0/24	1337	1.2.3.11	PEER AS1337 1.2.3.11 lab-isp-1	1337	rs1.lab (IPv4)

On the right side of the page, a box indicates "Displaying 4 of 4 routes" and "Query took 0.07 ms to complete". At the bottom right, there is a faint illustration of a girl in a dress, resembling Alice.

A little bit of history

- RIPE73 - An approach for an API for Bird (API + *Birdseye Looking Glass*)
- Implementation of the API in Go: *birdwatcher*
- Port of the birdseye backend to Go at ECIX



What happened next?

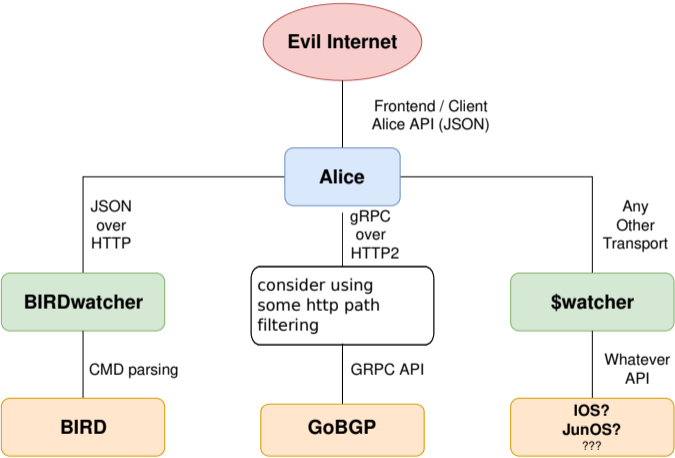
- Put it in production
- We added support for human readable *filter* and *reject* reasons through BGP large communities
- Changed the name to Alice

Some Technical Stuff

- *Modular*: Other BGP daemons can be easily¹ supported
- *API first*: Alice can be used in scripts!
- *Open Source*: Built by the community for the community


¹some programming work required

Alice Architecture



Features!

Turn Alice from this...

 Alice
Your friendly bird looking glass.

ROUTE SERVERS

rs1.example.com (IPv4)

rs1.example.com (IPv6)

Welcome to Alice!

Your friendly bird looking glass




DID YOU KNOW?

You can search for

- **Network Addresses,**
- **Peers** by entering their name and
- **ASNs** by prefixing them with 'AS'

Just start typing!



 **My Awesome Looking Glass**
Alice rocks!

ROUTE SERVERS

- rs1.example.com (IPv4)
- rs1.example.com (IPv6)

My Awesome Looking Glass


powered by Alice, your friendly BIRD Looking Glass

DID YOU KNOW?

You can search for

- **Network Addresses**,
- **Peers** by entering their name and
- **ASNs** by prefixing them with 'AS'

Just start typing!



Related Peers

king

rs1.labor.de-cix.net (IPv4) » Vodafone AG & Co. KG

172.31.193.117 172.31.192.117

Filter by Network or BGP next-hop

Go to: **Filtered** Accepted Not Exported

ROUTES FILTERED

Showing 1 - 4 of 730 total routes

Network	Gateway	Interface	Metric	AS Path
134.101.32.0/19 IRRDB origin AS lookup doesn't include prefix	172.31.192.117	eno2	100	3209 12693
135.14.213.0/24 IRRDB origin AS lookup doesn't include prefix	172.31.192.117	eno2	100	3209 19637

- Last Re
- Last Re
- Daemo
- Genera
- Next rel

Routes Flags

★	65.22.183.0/24	172.31.194.42	eno2	100	42
★	65.22.187.0/24	172.31.194.42	eno2	100	42
★🚫	65.22.19.0/24	172.31.193.66	eno2	100	42
★	65.22.191.0/24	172.31.194.42	eno2	100	42
★	65.22.195.0/24	172.31.194.42	eno2	100	42
★	65.22.199.0/24	172.31.194.42	eno2	100	42

Human Readable BGP Communities

BGP Attributes for Network:
109.233.156.0/22

Origin: IGP

Local Pref: 100

Next Hop: 172.31.192.22

MED: 0

AS Path: 286 50343

Communities:

- do not redistribute (0:6695)
- 286:286
- 286:3031
- 286:4010
- 286:4990
- redistribute to AS47541 (6695:47541)
- edge01.fra12 (65101:1082)
- FRA (65102:1000)
- Germany (65103:276)
- Europe (65104:150)

Close

What's new?

What's new?

- Improved GoBGP support
- Bugfixes
- Improved Bird 2.x support


Modernized Project Structure



























alice-lg / alice-lg Public

Unwatch 11 Unstar

Code Issues 22 Pull requests 16 Discussions Actions Projects Wiki Security 29 Insights Settings

4.0.2 alice-lg / backend / Go to file

 **annikahannig** fixed bug in getMasterPipeName 85a8a16 on Sep 9, 2019 History

..		
 api	Implemented support to query the live neighbor status from the store	3 years ago
 caches	Save memory by periodically expiring cache entries	3 years ago
 sources	fixed bug in getMasterPipeName	2 years ago
 testdata/api	use state_changed as timestamp	3 years ago
 .gitignore	added static file handling	5 years ago
 Dockerfile	make backend build with docker	3 years ago
 Makefile	enable GO111MODULE for all	3 years ago
 Makefile.docker	versionbump	3 years ago
 api.go	introduce resource not found error	3 years ago
 api_endpoints_meta.go	introduce resource not found error	3 years ago
 api_endpoints_neighbors.go	a safer getInstance, and more graceful error handling	3 years ago
 api_endpoints_routes.go	a safer getInstance, and more graceful error handling	3 years ago
 api_endpoints_routeservers.go	refactored url / path handling	3 years ago
 api_endpoints_search.go	include filter props in filters applied	3 years ago
 api_errors.go	introduce resource not found error	3 years ago
 api_logging.go	refactored url handling	3 years ago
 api_logging_test.go	refactored url handling	3 years ago
 api_pagination.go	rewrote paginated routes lookup	3 years ago
 api_pagination_test.go	added tests for pagination	3 years ago
 api_query.go	use lowercase prefix lookup (workaround)	3 years ago
 api_query_test.go	added tests	3 years ago
 api_validators.go	accept longer source ids. Fixes #9	3 years ago
 banner.go	use configuration from flag	5 years ago
 bgo_communities.go	include reject candidates in config	3 years ago
 bgo_communities_test.go	updated config parsing for bgo communities	3 years ago
 config.go	Merge remote-tracking branch 'upstream/master' into gobgp_integration	3 years ago

Modernized Project Structure

5.0.1 16 branches 12 tags

Go to file Code

annikahannig updated changelog ✓ 0329338 23 days ago 1,028 commits


📁 .github/workflows	Add pushing the image to GitHub registry	2 months ago
📁 bin	keep build directory	5 years ago
📁 client	fixed irrexplorer links (fixes: #78)	2 months ago
📁 cmd/alice-lg	build a local binary using docker	7 months ago
📁 doc/images	image format	3 years ago
📁 etc/alice-lg	Merge pull request #63 from daswafford/http-timeout	27 days ago
📁 install	Consequent use of 'alice-lg' instead of 'aliceg'	3 years ago
📁 pkg	fixed ext. community decoding error	23 days ago
📁 testdata/api	moved testdata	8 months ago
📄 .dockerignore	ignore build artifacts	2 years ago
📄 .gitignore	Consequent use of 'alice-lg' instead of 'aliceg'	3 years ago
📄 CHANGELOG.md	updated changelog	23 days ago
📄 Dockerfile	fixed dockerfile	7 months ago
📄 LICENSE	updated license template, license is the same	5 months ago
📄 Makefile	Merge branch 'develop' into feature/sources/openbgpd	7 months ago
📄 Makefile.docker	make a frontend production build	7 months ago
📄 README.md	Add lg.ix.br (IX.br) to the list of production examples of Alice-LG	last month
📄 VERSION	versionbump	23 days ago
📄 go.mod	removed rice.box dependency	8 months ago

Rel
1
Crea
Pac
Usr
Coi
Lar

```
$ podman pull ghcr.io/alice-lg/alice-lg:master
```

alice-lg

Alice - Through the Looking Glass <https://lg.de-cix.net> <https://lg.ecix.net>

 Install from the command line: [Learn more](#)

```
$ docker pull ghcr.io/alice-lg/alice-lg:master
```

Recent tagged image versions

[master](#) ↓ 0





Published 8 days ago · Digest ...

[View and manage all versions](#)

README.md

Alice-LG - Your friendly looking glass

Details


-  [alice-lg](#)
-  [alice-lg](#)
-  BSD 3-Clause "New" or "Revised" License
-  [Readme](#)

Last published **8 days ago**

Discussions	Issues
1	38

Total downloads **0**

Collaborators 5

-  [annikahannig](#) Annika Hannig

Alice
Your friendly bird looking glass.

ROUTE SERVERS

- rs-example
openbgpd
- rs-example.bgp4d
openbgpd

rs-example

Filter by Neighbor, ASN or Description


Go to: **Established** Down

BGP SESSIONS ESTABLISHED

Neighbor	ASN	State	Uptime	Description	Routes Recv.	Routes Filtered
2001:504:2f::42:1	42	established	8 months	PEER AS42 2001:504:2f::42:1	22	0
206.126.225.16	42	established	8 months	PEER AS42 206.126.225.16	44	0
206.126.225.7	112	established	8 months	PEER AS112 206.126.225.7	1	0
206.126.225.50	852	established	8 months	PEER AS852 206.126.225.50	0	0
2001:504:2f::852:1	852	established	8 months	PEER AS852 2001:504:2f::852:1	0	0
206.126.225.22	1645	established	8 months	PEER AS1645 206.126.225.22	1	0
2001:504:2f::1645:1	1645	established	8 months	PEER AS1645 2001:504:2f::1645:1	1	0
2001:504:2f::3856:1	3856	established	8 months	PEER AS3856 2001:504:2f::3856:1	1	0
206.126.225.17	3856	established	8 months	PEER AS3856 206.126.225.17	1	0

👍 **openbgpd up and running**

🔄 Generated a **minute ago**.
Next refresh in **4 minutes**.



What's next?

Refactoring

- 5 year old code base
- Some ideas just have not aged well
- A ton of linter errors needed fixing

```
)  
    --var AliceConfig *Config  
    --var AliceRoutesStore *RoutesStore  
    --var AliceNeighboursStore *NeighboursStore  
  
    func main() {  
        var err error
```

Cleanup

```
// Make route
lookup := &api.LookupRoute{
    Id: route.Id,

    NeighbourId: route.NeighbourId,
    Neighbour:   neighbour,

    Routeserver: api.Routeserver{
        Id:   source.Id,
        Name: source.Name,
    },

    State: state,

    Network:   route.Network,
    Interface: route.Interface,
    Gateway:   route.Gateway,
    Metric:    route.Metric,
    Bgp:       route.Bgp,
    Age:       route.Age,
    Type:      route.Type,
    Primary:   route.Primary,
}
```

```
// Make route
lookup := &api.LookupRoute{
    Route:   route,
    State:   state,
    Neighbor: neighbor,
    RouteServer: &api.RouteServer{
        ID:   source.ID,
        Name: source.Name,
    },
}
```


What's next?

- Parallel refresh of Route Server backends
- Postgres backend for improved memory footprint and fast recovery after crashes
- Migrating the frontend to modern React

<https://github.com/alice-lg/alice-lg>

annika@hannig.cc

@dlsym