

# Alice-LG at ECIX

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DENOG9

lg.ecix.net  
github.com/ecix/alice-lg

IRC: freenode/#birdseye

# lg.ecix.net

Stichting NLNOG

Alice - The friendly bird looking glass

localhost:8001/alice/

AppsGetting StartedImported From FNew Tab

Alice

Your friendly bird looking glass

ROUTESERVERS

rs1.lab (IPv4)

Bird 1.6.3

rs1.lab (IPv6)

Bird 1.6.3

## Welcome to Alice!

Your friendly bird looking glass

Q

10

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)

Displaying 4 of 4 routes

Query took 0.07 ms to complete

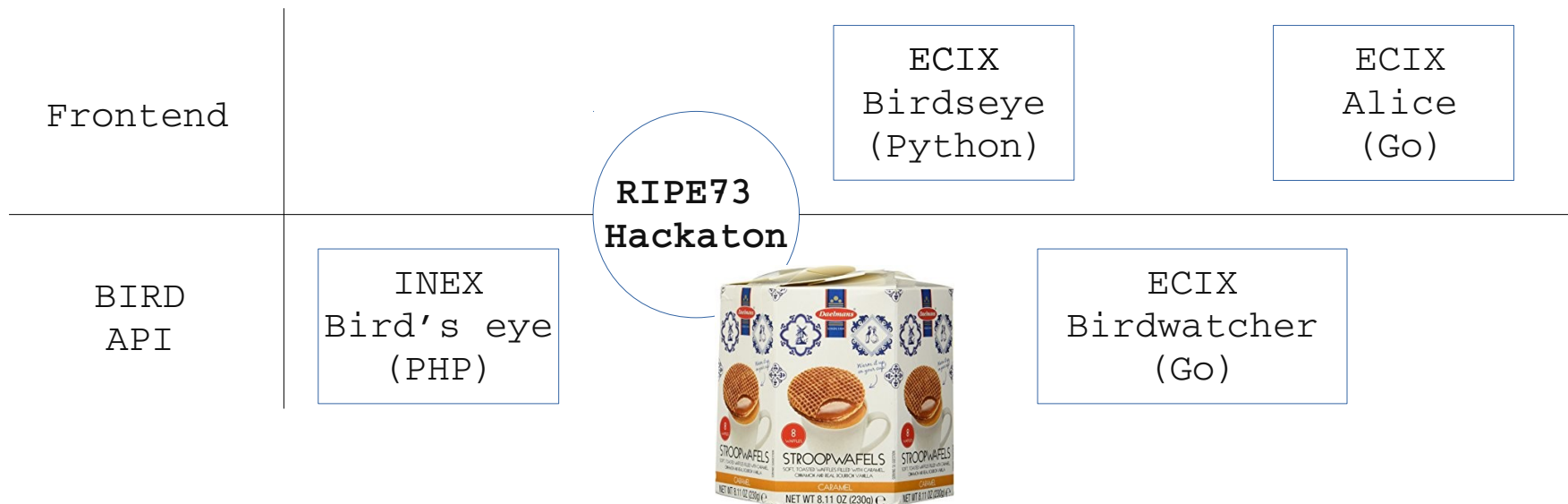
# (short) History

- RIPE73 :

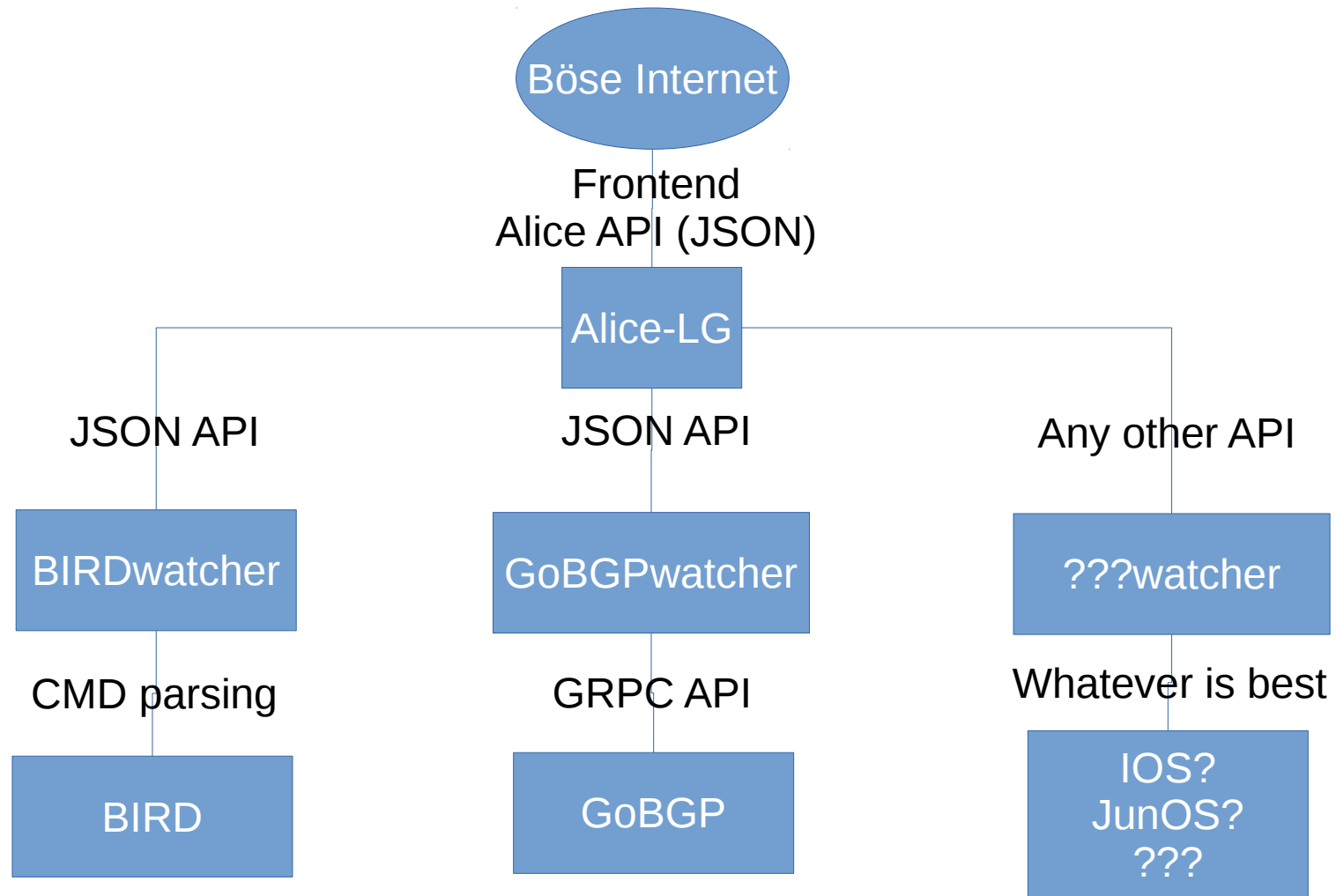
<https://ripe73.ripe.net/archives/video/1505/>

- Bird's eye by Barry O'Donovan, INEX

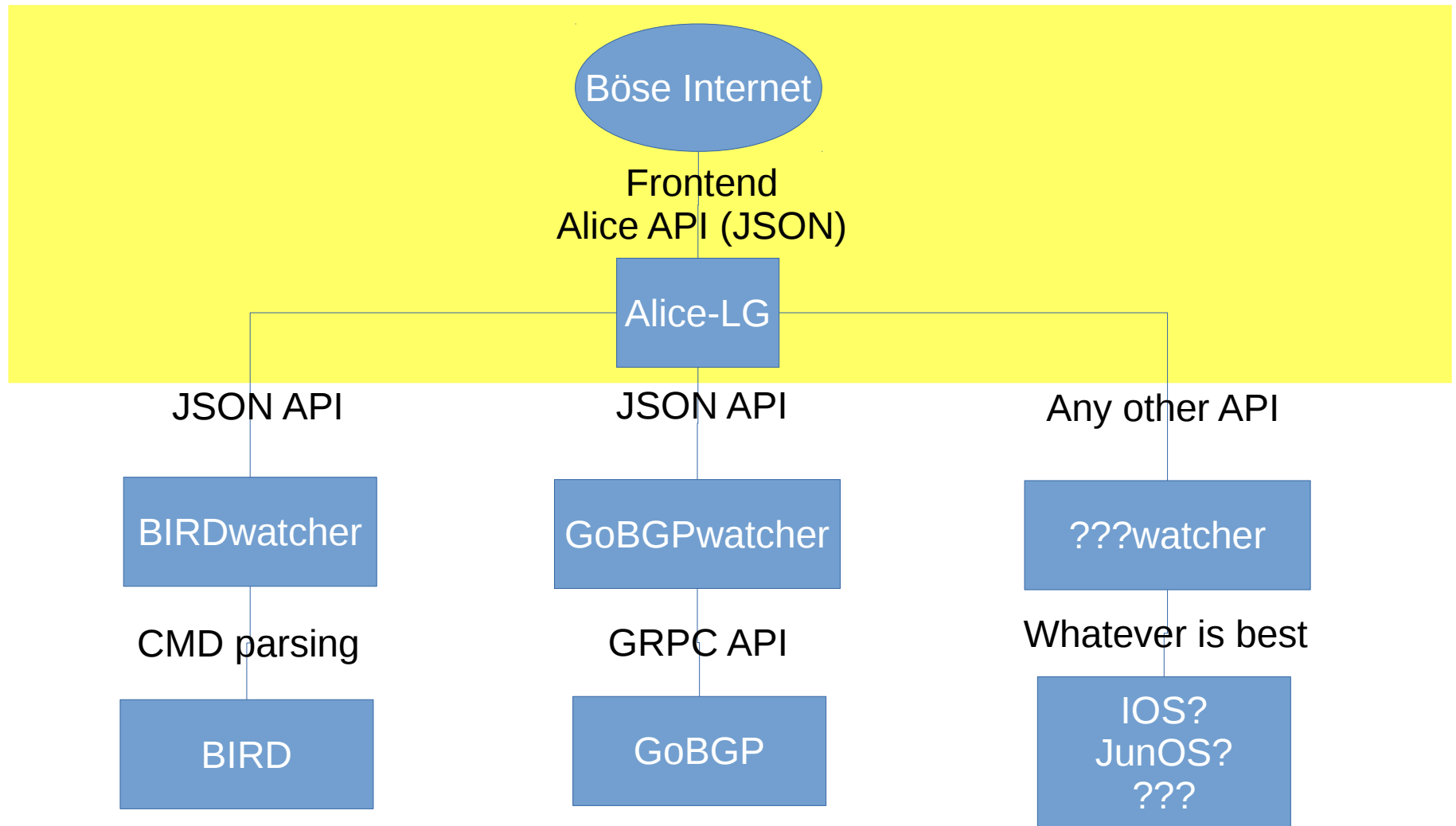
<https://github.com/inex/birdseye>



# Alice-LG

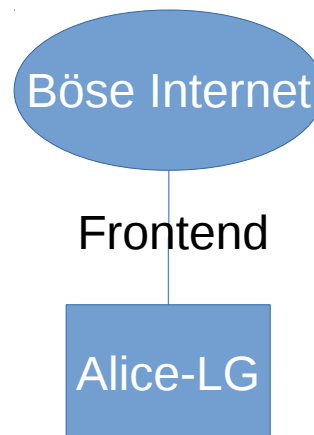


# Alice-LG



# Alice-LG

- A User Interface / Frontend
- Unified API for accessing Bird, GoBGP, etc...



# Alice-LG

Stichting NLNOG

Alice - The friendly

localhost:8001/alice/routerservers/0

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Alice

Your friendly bird looking glass

ROUTESERVERS

rs1.lab (IPv4)

Bird 1.6.3

rs1.lab (IPv6)

Bird 1.6.3

rs1.lab (IPv4)

QFilter by Neighbour, ASN or Description

Neighbour	ASN	State	Uptime	Description	Routes Recv.	Routes Filtered
1.2.3.11	1337	up	3 days	PEER AS1337 1.2.3.11 lab-isp-1	1	3
1.2.3.12	1338	up	4 days	PEER AS1338 1.2.3.12 lab-isp-2	1	1
1.2.3.15	1339	up	4 days	PEER AS1339 1.2.3.15 lab-isp-5	2	0
1.2.3.16	1340	up	4 days	PEER AS1340 1.2.3.16 lab-isp-6	2	0

Neighbour	ASN	State	Since	Description	Routes Recv.	Routes Filtered
1.2.3.109	1340	start	4 days	PEER AS1340 1.2.3.109 lab-isp-6	0	0
1.2.3.56	1340	start	4 days	PEER AS1340 1.2.3.56 lab-isp-6	0	0
1.2.3.89	1340	start	4 days	PEER AS1340 1.2.3.89 lab-isp-6	0	0
1.2.3.99	1340	start	4 days	PEER AS1340 1.2.3.99 lab-isp-6	0	0
1.2.3.78	1340	start	4 days	PEER AS1340 1.2.3.78 lab-isp-6	0	0
1.2.3.86	1340	start	4 days	PEER AS1340 1.2.3.86 lab-isp-6	0	0
1.2.3.50	1340	start	4 days	PEER AS1340 1.2.3.50 lab-isp-6	0	0
1.2.3.31	1340	start	4 days	PEER AS1340 1.2.3.31 lab-isp-6	0	0
1.2.3.112	1340	start	4 days	PEER AS1340 1.2.3.112 lab-isp-6	0	0
1.2.3.40	1340	start	4 days	PEER AS1340 1.2.3.40 lab-isp-6	0	0

Last Reconfig: Monday, January 1, 0001 1:00 AM

Daemon is up and running

# Alice-LG

Stichting NLNOG

Alice - The friendly bird looking glass

localhost:8001/alice/routeservers/0/protocols/ID7346\_AS1338/routes

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Alice  
Your friendly bird looking glass

ROUTESERVERS

rs1.lab (IPv4)  
Bird 1.6.3

rs1.lab (IPv6)  
Bird 1.6.3

rs1.lab (IPv4) » PEER AS1338 1.2.3.12 lab-isp-2

Filter by Network, Gateway or Interface

ROUTES FILTERED

Network	AS Path	Next Hop
110.0.0.0/25 The prefix is longer than 24	1338	1.2.3.12

ROUTES ACCEPTED

Network	AS Path	Next Hop
12.0.0.0/8	1338	1.2.3.12

ROUTES NOT EXPORTED

Network	AS Path	Next Hop
100.0.0.0/24 The sender has specifically refused export to the target peer, either through sending 65000:AS, or through the portal	1337	1.2.3.11

Last Reconfig: Monday, January 1, 0001 1:00 AM

Daemon is up and running



# Alice-LG

Stichting NLNOG x Alice - The friendly bird looking glass

localhost:8001/alice/routerservers/0/protocols/ID7346\_AS1338/routes

Apps Getting Started Imported From F New Tab

Alice  
Your friendly bird looking glass

rs1.lab (IPv4) » PEER AS1338 1.2.3.12 lab-ign-2

Filter by Network, Gate

ROUTES FILTERED

**Network**

110.0.0.0/25  
The prefix is longer than 24

ROUTES ACCEPTED

**Network**

12.0.0.0/8

1338

1.2.3.12

ROUTES NOT EXPORTED

Network	AS Path	Next Hop
100.0.0.0/24 The sender has specifically refused export to the target peer, either through sending 65000:AS, or through the portal	1337	1.2.3.11

BGP Attributes for Network:  
100.0.0.0/24

**Origin:** IGP

**Local Pref:** 100

**Next Hop:** 1.2.3.11

**MED:** 0

**AS Path:** 1337


**Communities:** 65011:15 9033:3251

**Large Communities:** 9033:65000:1338 9033:65033:10 9033:65666:9 9033:65667:4

Close

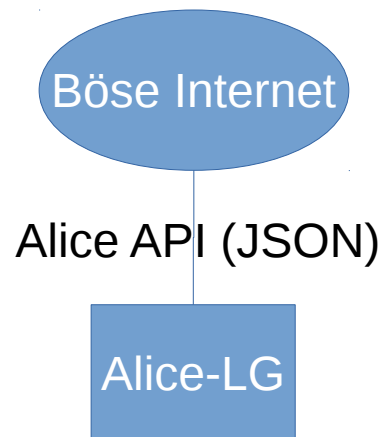
Last Reconfig: Monday, January 1, 0001 1:00 AM

Daemon is up and running



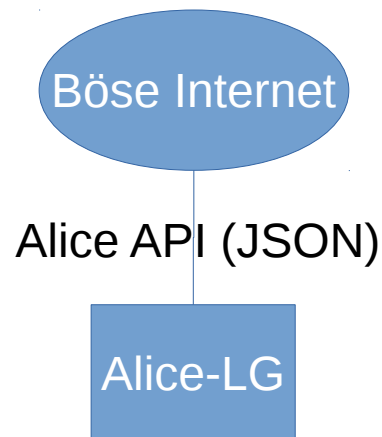
# Alice-LG API

- Provide minimal set of required fields for the UI to work
- Provide as much details as desired for scripting



# Alice-LG API

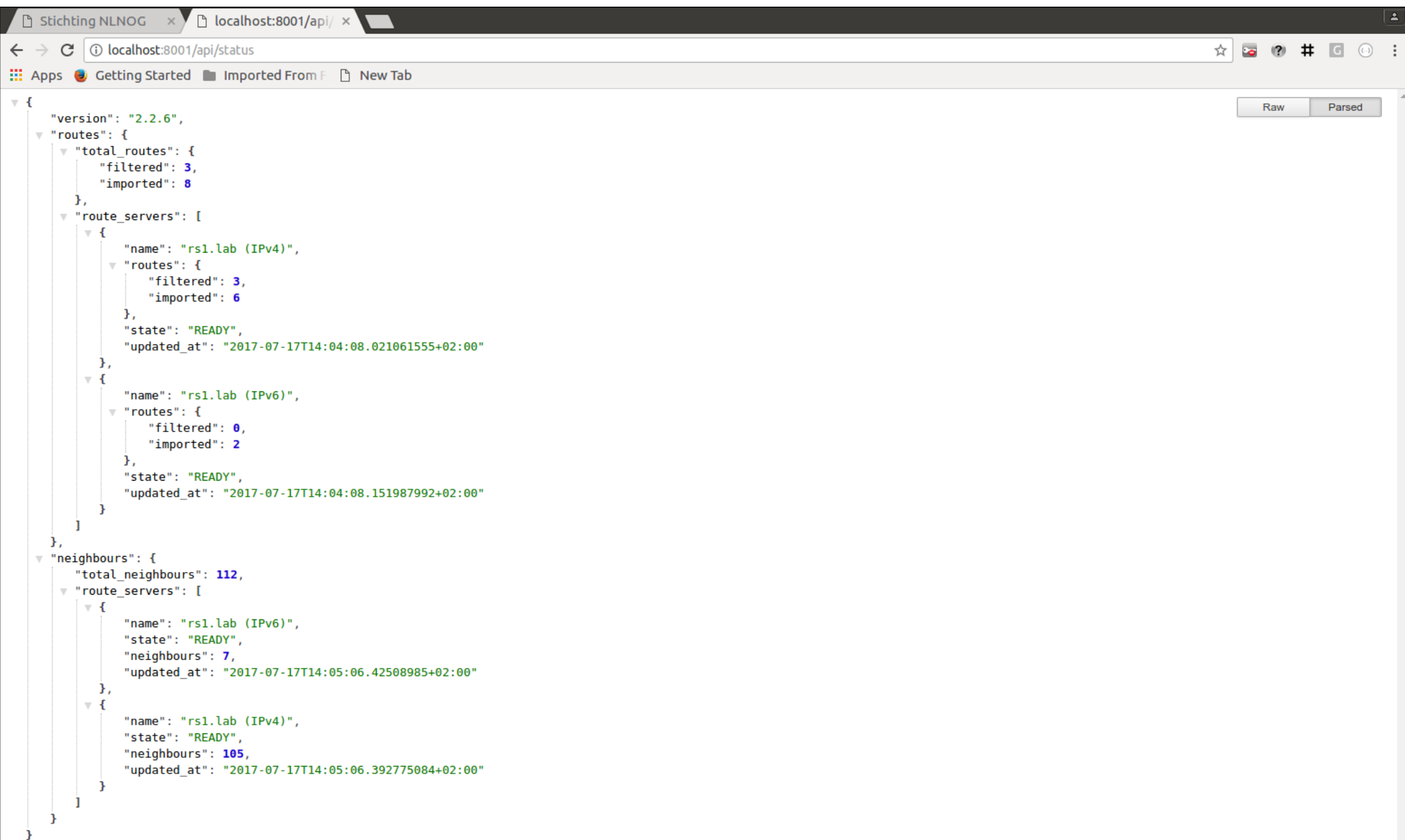
- Golang
- Transforms results from backend APIs
- Implements local routes and neighbours store for fast lookups



# Alice-LG API

- `api/config`
- `api/routeservers`
- `api/routeservers/0/status`
- `api/routeservers/0/neighbours`
- `api/routeservers/0/neighbours/ID109  
_AS31078/routes`
- `api/lookup/prefix?q=217.115.0.0`

# Alice-LG API



```
{
  "version": "2.2.6",
  "routes": {
    "total_routes": {
      "filtered": 3,
      "imported": 8
    },
    "route_servers": [
      {
        "name": "rs1.lab (IPv4)",
        "routes": {
          "filtered": 3,
          "imported": 6
        },
        "state": "READY",
        "updated_at": "2017-07-17T14:04:08.021061555+02:00"
      },
      {
        "name": "rs1.lab (IPv6)",
        "routes": {
          "filtered": 0,
          "imported": 2
        },
        "state": "READY",
        "updated_at": "2017-07-17T14:04:08.151987992+02:00"
      }
    ]
  },
  "neighbours": {
    "total_neighbours": 112,
    "route_servers": [
      {
        "name": "rs1.lab (IPv6)",
        "state": "READY",
        "neighbours": 7,
        "updated_at": "2017-07-17T14:05:06.42508985+02:00"
      },
      {
        "name": "rs1.lab (IPv4)",
        "state": "READY",
        "neighbours": 105,
        "updated_at": "2017-07-17T14:05:06.392775084+02:00"
      }
    ]
  }
}
```

# Alice-LG API



**stoepsel** 11:16 AM

!lg rs1.ham --name iphh



**errbot** APP 11:16 AM

[rs1.ham.ecix.net \(IPv4\)](#)

AS12731 193.42.155.30 IPHH Internet Port Hamburg GmbH

up since 2017-01-26 23:25:31

Imported: 36

Filtered: 0

Exported: 33460

[rs1.ham.ecix.net \(IPv6\)](#)

AS12731 2001:7f8:8:10:0:31bb:0:1 IPHH Internet Port Hamburg GmbH

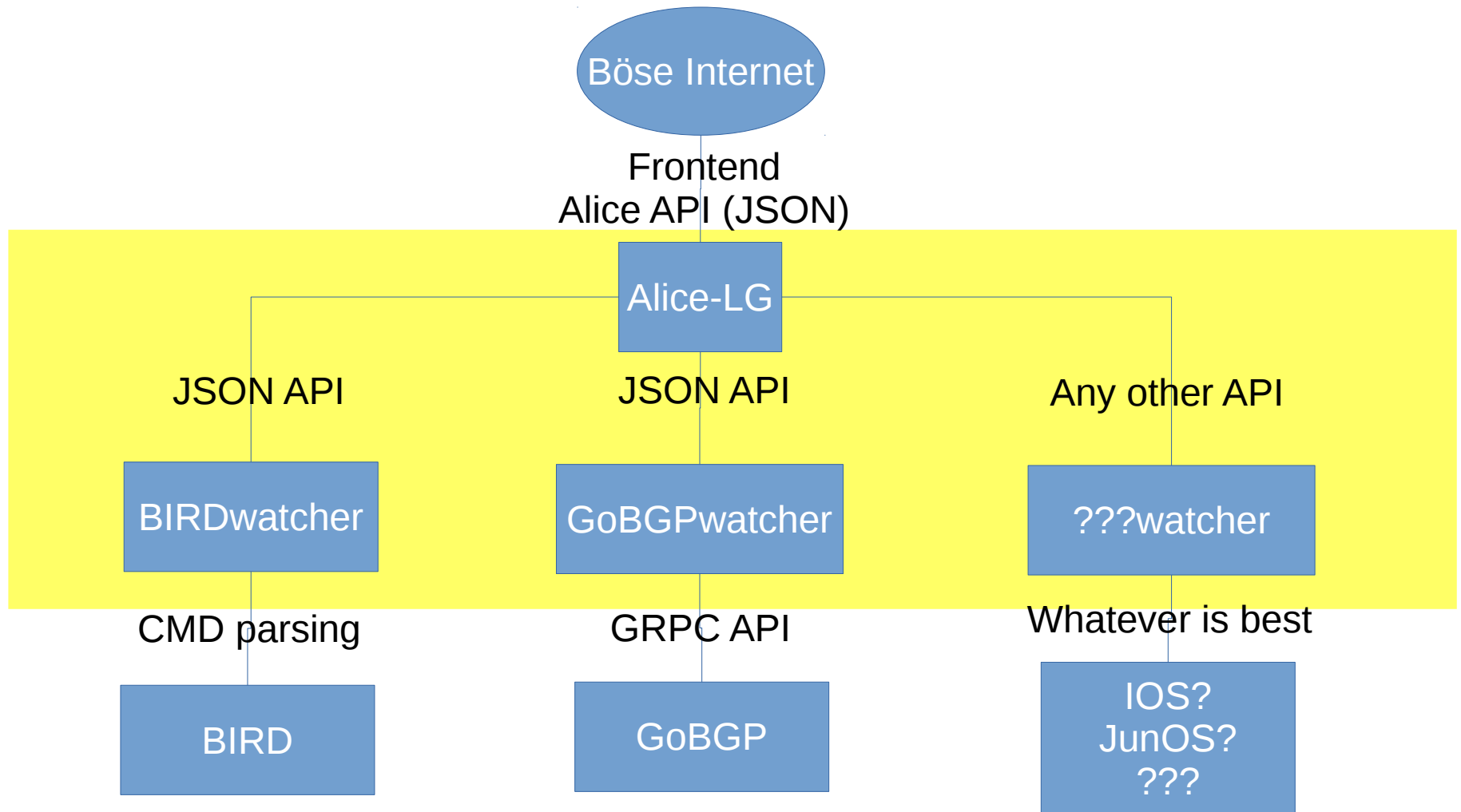
up since 2017-01-26 23:25:32

Imported: 20

Filtered: 0

Exported: 8811

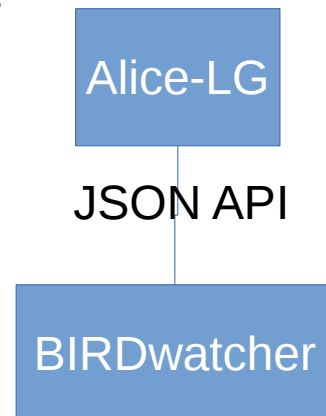
# Alice-LG



# BIRDwatcher API

Ornithologist was too hard to write

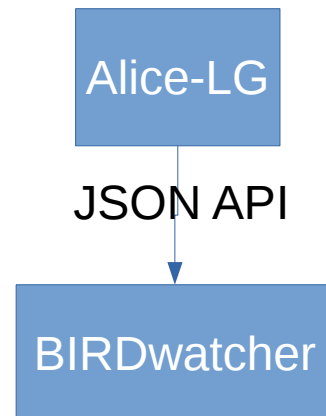
- Golang
- Provides a REST API over HTTP
- On the BIRD host
- ACL (IP) restriction
- Only show commands
- Rate limiting





# Alice-LG API

- Perform request to Backend-API
- Transforms results from backend APIs
- Provide unified API



# Alice-LG API

- Backends implement a common interface in Alice:

```
package sources

import (
    "github.com/ecix/alice-lg/backend/api"
)

type Source interface {
    Status() (api.StatusResponse, error)
    Neighbours() (api.NeighboursResponse, error)
    Routes(neighbourId string) (api.RoutesResponse, error)
    AllRoutes() (api.RoutesResponse, error)
}
```

- backend/api/sources/source.go

# Alice-LG API

Stichting NLNOG x localhost:8001/api/ x

localhost:8001/api/routeservers/0/neighbours

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Raw Parsed

```
{
  "api": {
    "version": "1.10.2",
    "cache_status": {
      "cached_at": "0001-01-01T00:00:00Z",
      "orig_ttl": 0
    },
    "result_from_cache": true,
    "ttl": "2017-07-17T12:30:07.253743618Z"
  },
  "neighbours": [
    {
      "id": "ID7623_AS1337",
      "address": "1.2.3.11",
      "asn": 1337,
      "state": "up",
      "description": "PEER AS1337 1.2.3.11 lab-isp-1",
      "routes_received": 1,
      "routes_filtered": 3,
      "routes_exported": 4,
      "routes_preferred": 105,
      "uptime": 254258295501462,
      "last_error": "",
      "details": {
        "action": "restart",
        "bgp_state": "Established",
        "bird_protocol": "BGP",
        "connection": "Established",
        "description": "PEER AS1337 1.2.3.11 lab-isp-1",
        "export_withdraws": "0",
        "hold_timer": "164/240",
        "import_limit": 160000000,
        "input_filter": "(unnamed)",
        "keepalive_timer": "54/80",
        "neighbor_address": "1.2.3.11",
        "neighbor_as": 1337,
        "neighbor_caps": "refresh enhanced-refresh restart-aware AS4 add-path-rx",
        "neighbor_id": "1.2.3.11",
        "output_filter": "ACCEPT",
        "preference": 100,
        "protocol": "ID7623_AS1337",
        "route_change_stats": "received rejected filtered ignored accepted",
        "route_changes": {
          "export_updates": {
            "accepted": 4,
            "ignored": 0,
            "received": 0,
            "rejected": 0,
            "filtered": 0,
            "ignored": 0,
            "accepted": 0
          }
        }
      }
    }
  ]
}
```

# Alice-LG API

- Example: `api.NeighboursResponse`

```
type Neighbour struct {
    Id string `json:"id"`

    // Mandatory fields
    Address      string `json:"address"`
    Asn          int    `json:"asn"`
    State        string `json:"state"`
    Description  string `json:"description"`
    RoutesReceived int   `json:"routes_received"`
    RoutesFiltered int   `json:"routes_filtered"`
    RoutesExported int   `json:"routes_exported"`
    RoutesPreferred int   `json:"routes_preferred"`
    Uptime       time.Duration `json:"uptime"`
    LastError    string       `json:"last_error"`

    // Original response
    Details map[string]interface{} `json:"details"`
}
```

# In progress

- Show exported routes
- Show peer to peer exports
- Track changes in routes
- Better memory management
- What do YOU need in a LG?

# Known Alices

- `lg.ecix.net`
- `lg.coloclue.net`
- `you?`