RIPE NCC
Routing Information Service (RIS)

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What is RIS?

What is RIS?

- Routing Information Service

- Worldwide network of BGP collectors

- Deployed at Internet Exchange Points

- Collects raw BGP data from peers

- Stores BGP updates and routing table dumps

- 15+ years of history
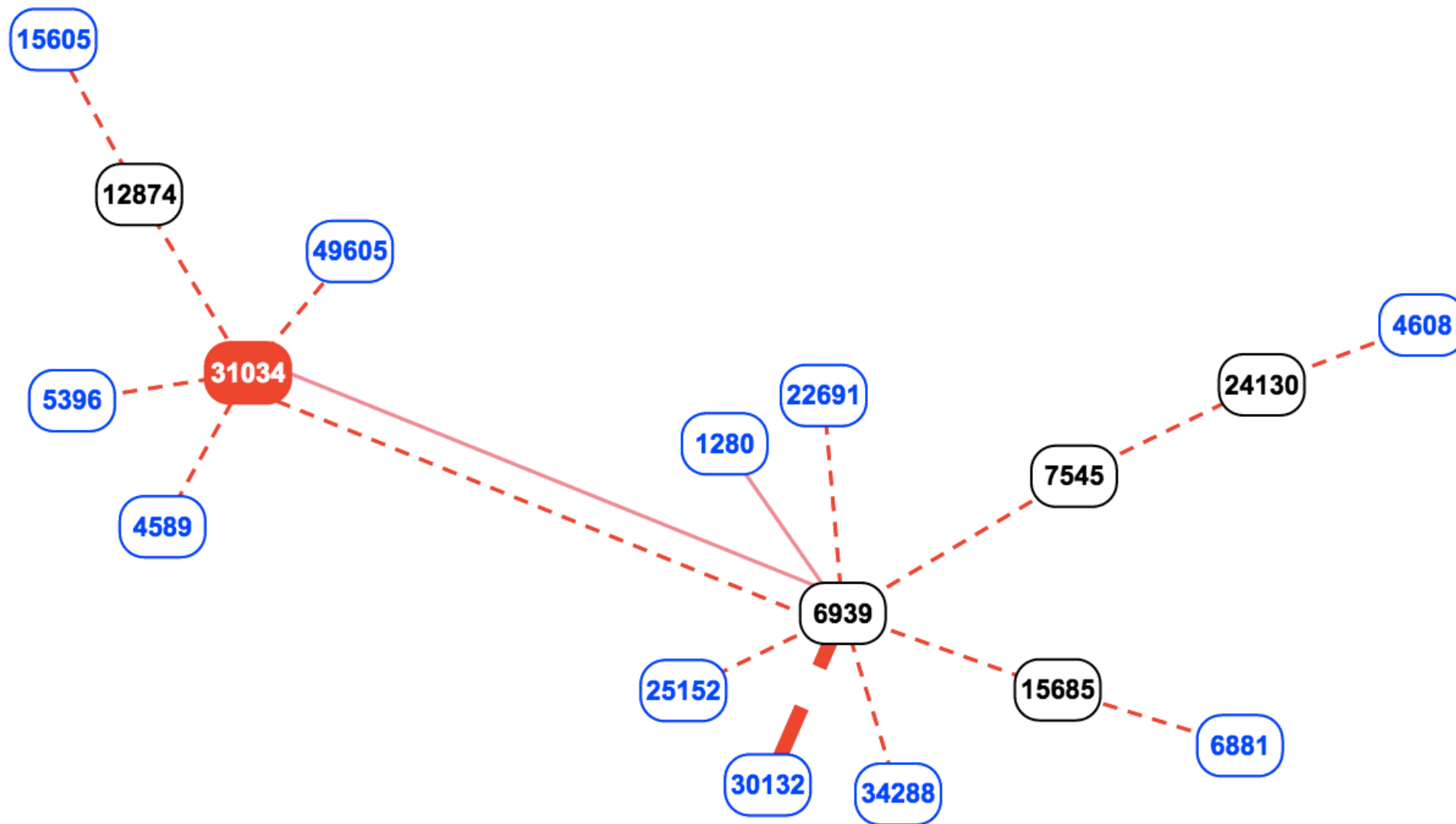
- Used by network operators and researchers every day

Collector locations

- 19 collectors and growing
- 600+ peers
- 150+ full-feed peers

What you can see

Why RIS?

Why are we doing this?
A bit of history

Why RIS?

- Original project was defined in 1999:

  "In other words, it can be regarded as one integrated Looking-Glass for the entire Internet that includes history information"

- Looking glasses are instantaneous

- Routing problems are also instantaneous

- BGP history is recorded to track what is happening and what has happened

- Also to provide statistics and reporting on routing table metrics

Why the RIPE NCC RIS?

- RIPE NCC is a neutral body

- Experience running measurement and data collection platforms

  - Test Traffic Measurement project

  - RIPE Atlas (40k+ results on Google Scholar)

  - IPmap

  - RIPEstat (50M queries/day)

- Supporting operators and researchers around the world

RIS data access

What can you get?
And how do you get it?

Raw data!

- 15+ years of raw data (5.8 TB) available to download

  - https://www.ripe.net/analyse/internet-measurements/routing-information-service-ris/ris-raw-data

- Data stored in MRT (RFC6396) format

- Readable using BGPdump utility

  - open source, maintained by RIPE NCC

  - https://bitbucket.org/ripencc/bgpdump

  - Other third party tools also available

RIPEstat (https://stat.ripe.net)

- RIPEstat is a portal that provides everything you ever wanted to know about IP address space, Autonomous System Numbers (ASNs), and countries with easy to use visualisations.

Routing History

Routing History + Free Time
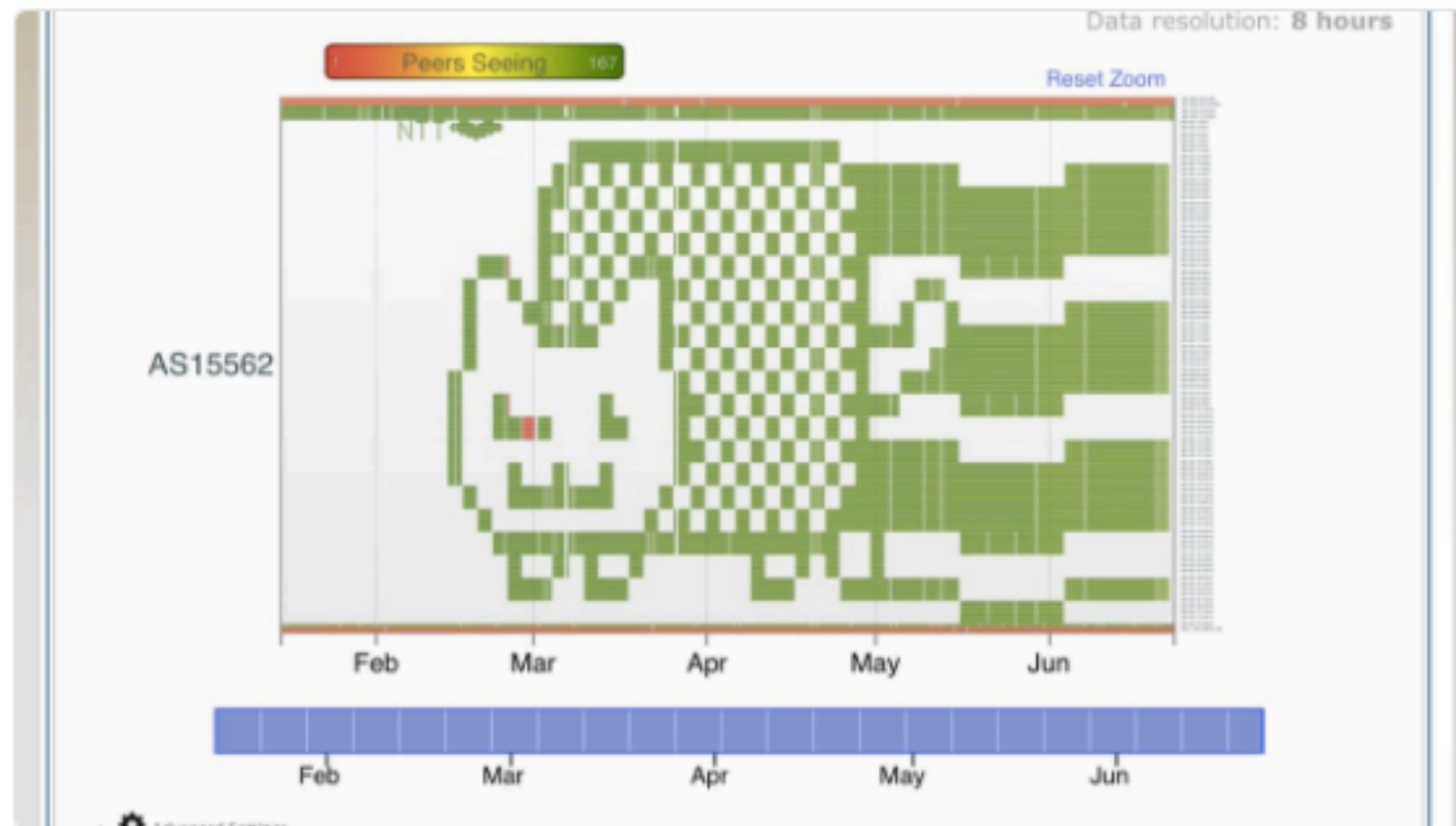
Looking Glass

BGP Looking Glass (195.137.160.0/24)

14 RRCs see 115 peers announcing 195.137.160.0/24 originated by AS6697.

[EXPAND EVERYTHING]

▶ RRC11 in **New York City, New York, US** sees 1 ASN originating *195.137.160.0/24.*
(AS6697)

▶ RRC10 in **Milan, Italy** sees 1 ASN originating *195.137.160.0/24.* (AS6697)

▶ RRC00 in **Amsterdam, Netherlands** sees 1 ASN originating *195.137.160.0/24.*
(AS6697)

▶ RRC01 in **London, United Kingdom** sees 1 ASN originating *195.137.160.0/24.*
(AS6697)

▼ RRC15 in **Sao Paulo, Brazil** sees 1 ASN originating *195.137.160.0/24.* (AS6697)

▼ AS6697 is seen as the origin by 14 peers.

▼ 187.16.217.48 is announcing route AS16735 AS41095 AS6697.

```
187.16.217.48 from 187.16.217.48 (200.225.196.252)
  Origin IGP, localpref 100, valid, external, best
  Community: 16735:5 16735:6101
  Last update: Mon Sep 25 13:17:37 2017
```

▼ 187.16.220.193 is announcing route AS263584 AS263321 AS7738 AS41095 AS6697.

```
187.16.220.193 from 187.16.220.193 (177.129.136.254)
  Origin IGP, localpref 100, valid, external
  Last update: Tue Oct  3 04:19:37 2017
```

BGPlay
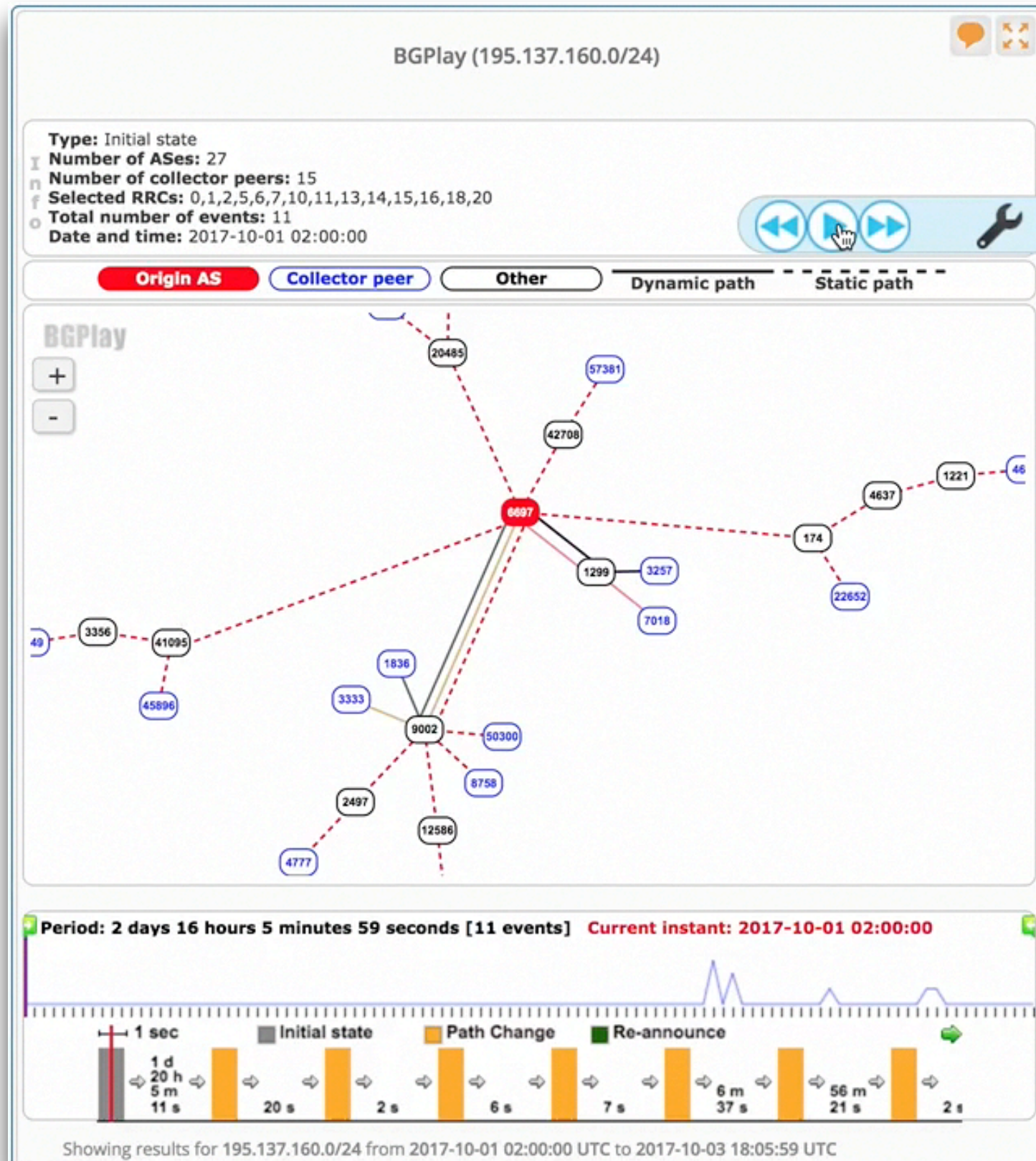
Preview of something new!
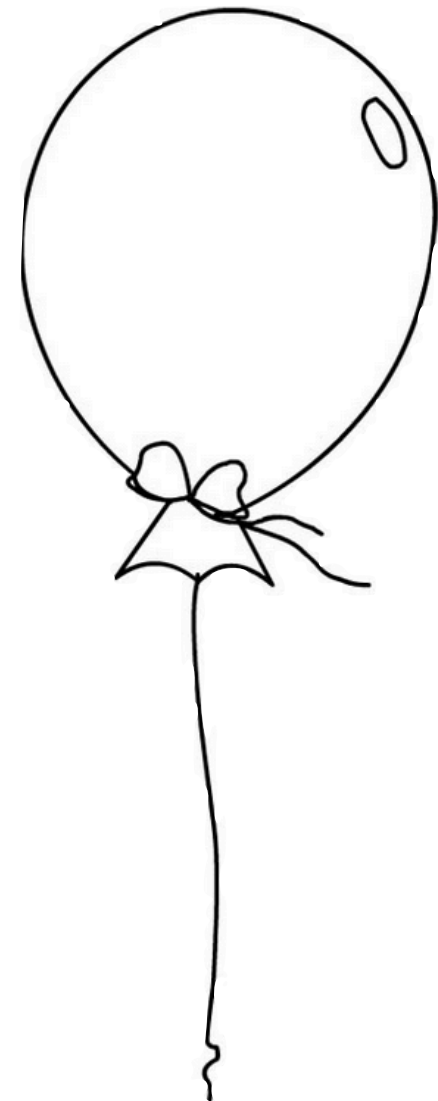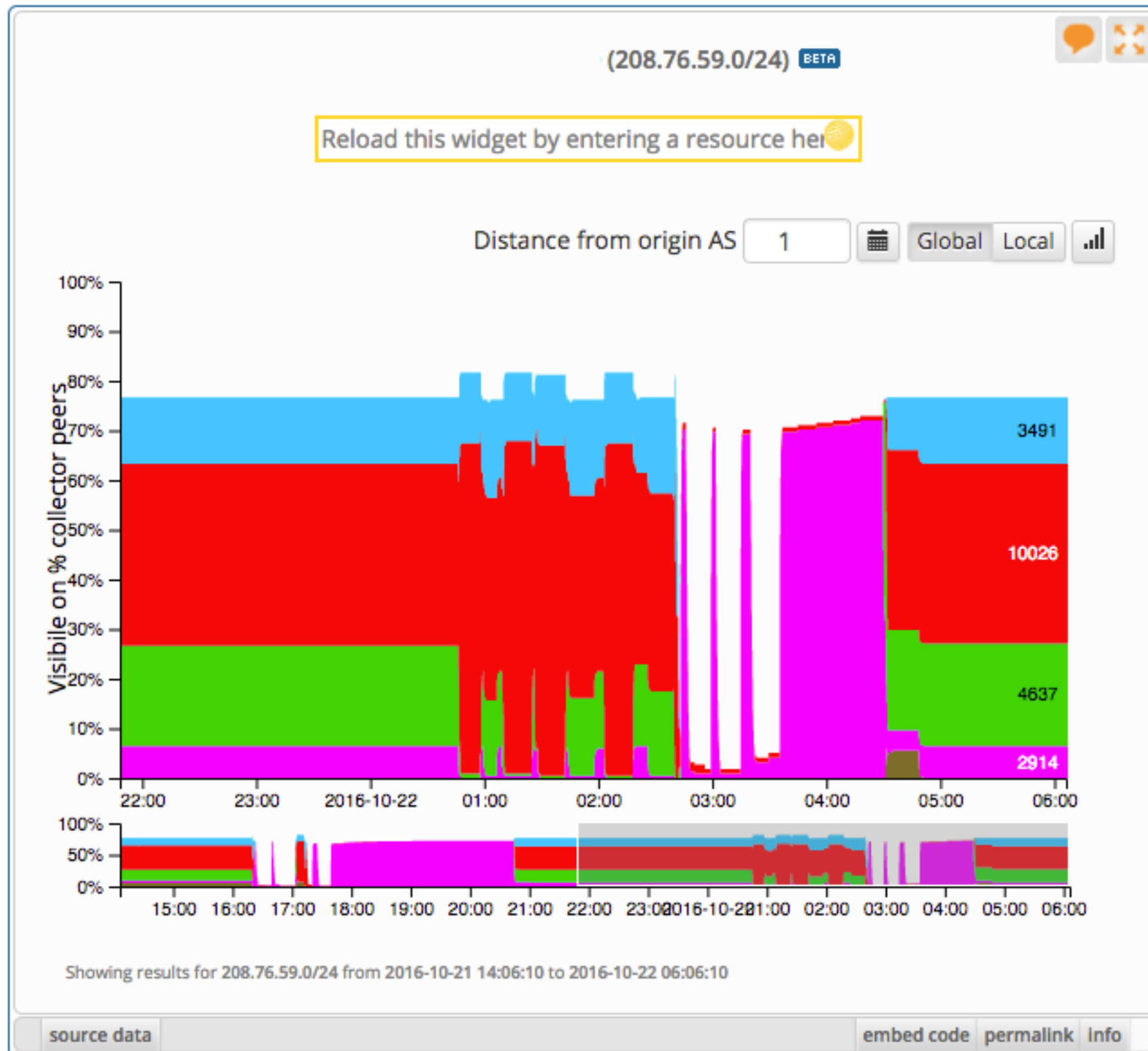
RIPEstat Data API

- All these queries are available through an API

- Actually, all those shiny web interfaces use the API anyway

- You can use it too!! Write your own scripts, etc.

- https://stat.ripe.net/docs/data_api

- There are also some extra API calls which are not yet visualised

Live stream (prototype)
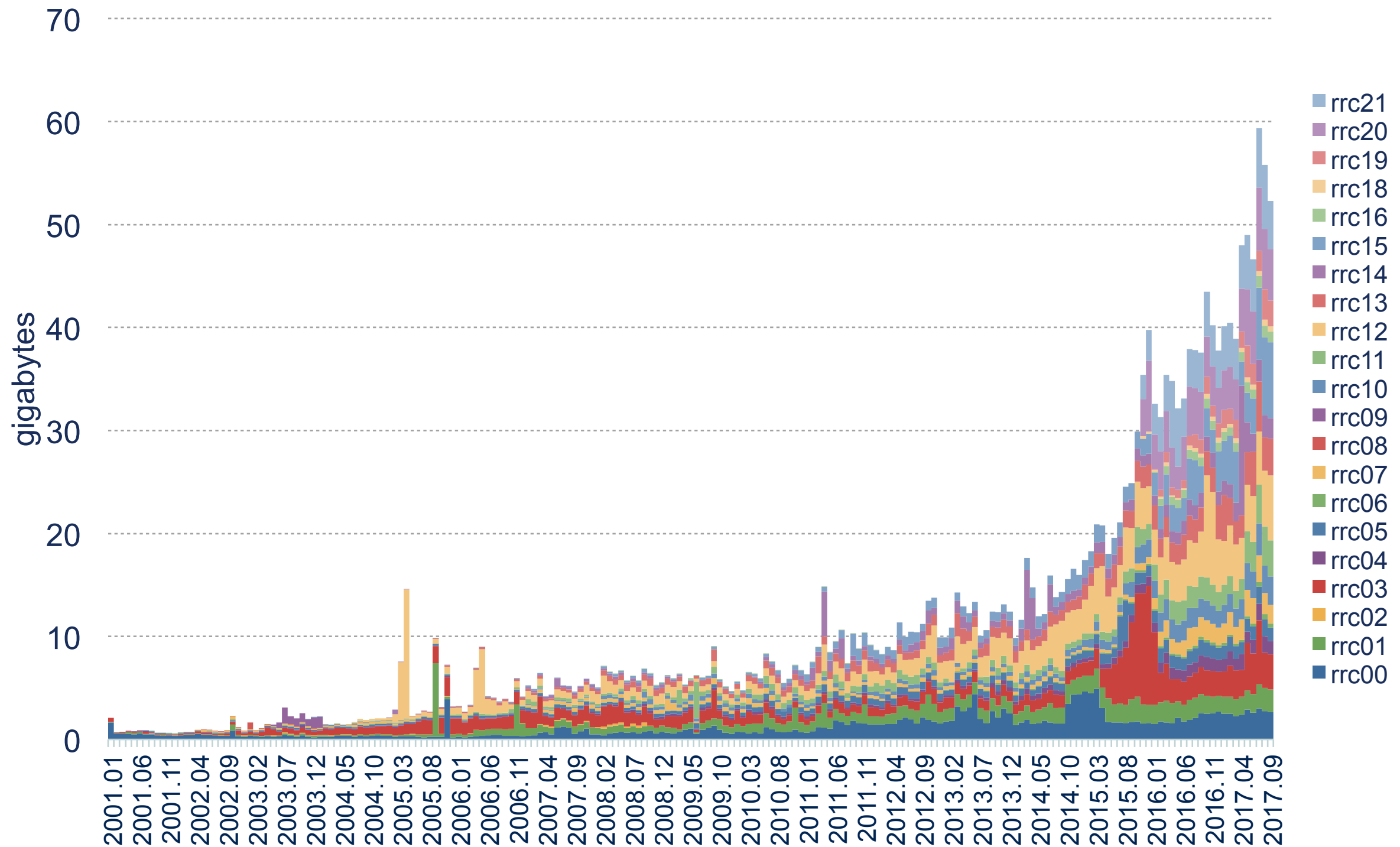

- http://stream-dev.ris.ripe.net/demo

- Live stream enables new applications

  - Real time anomaly analysis and BGP hijack detection

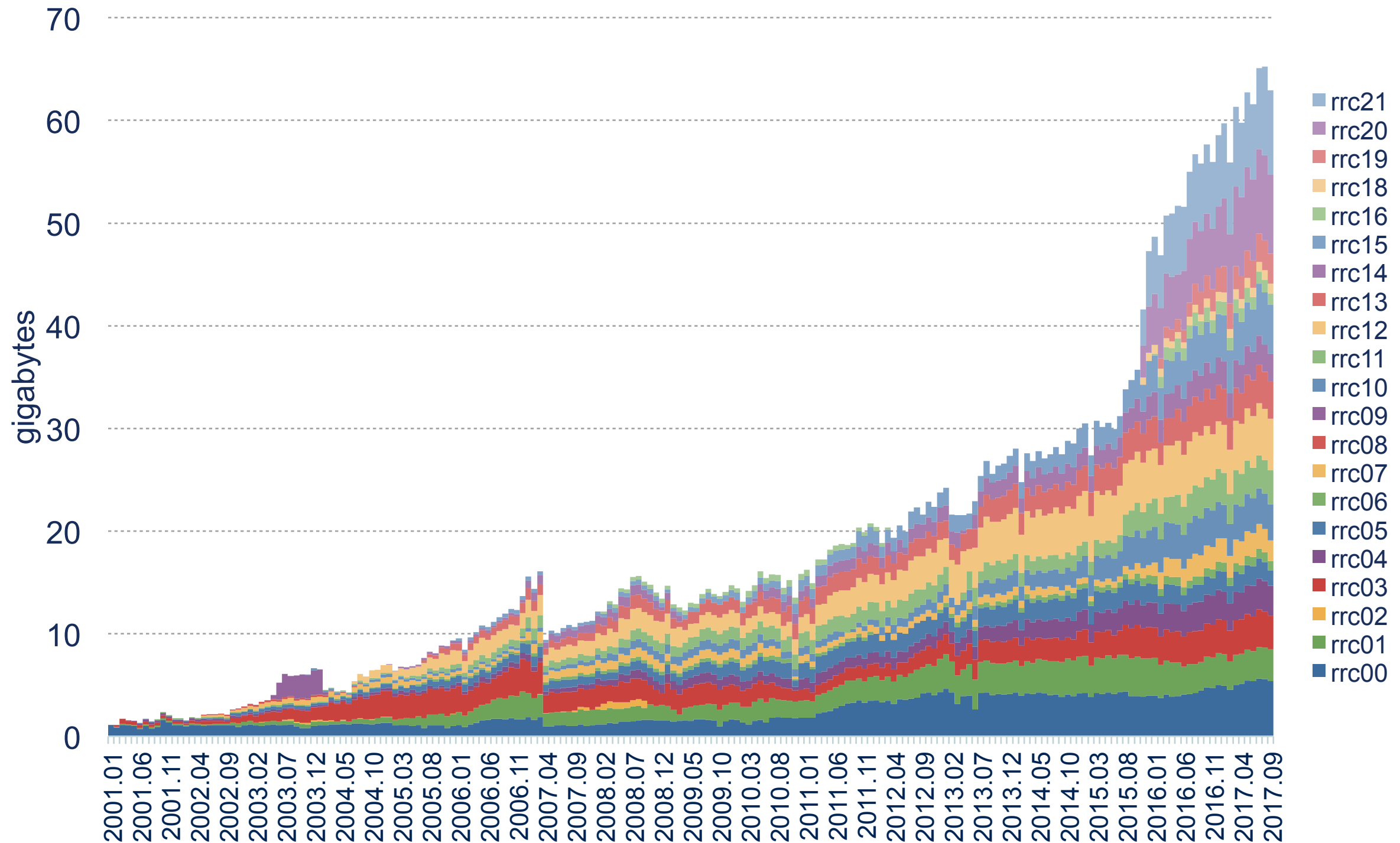 - Live dashboards (live BGPlay!)

RIS growth

Because the internet keeps growing
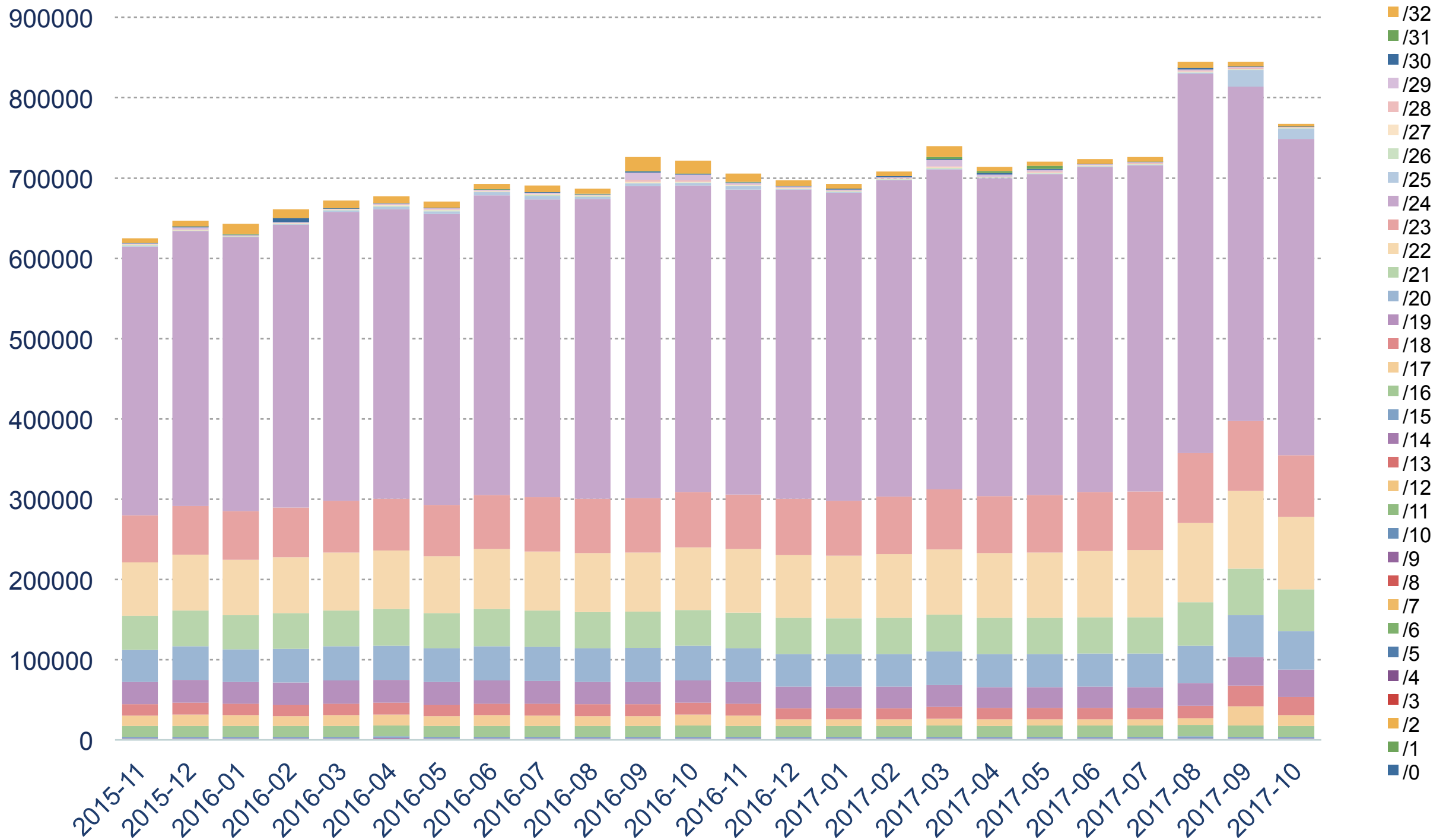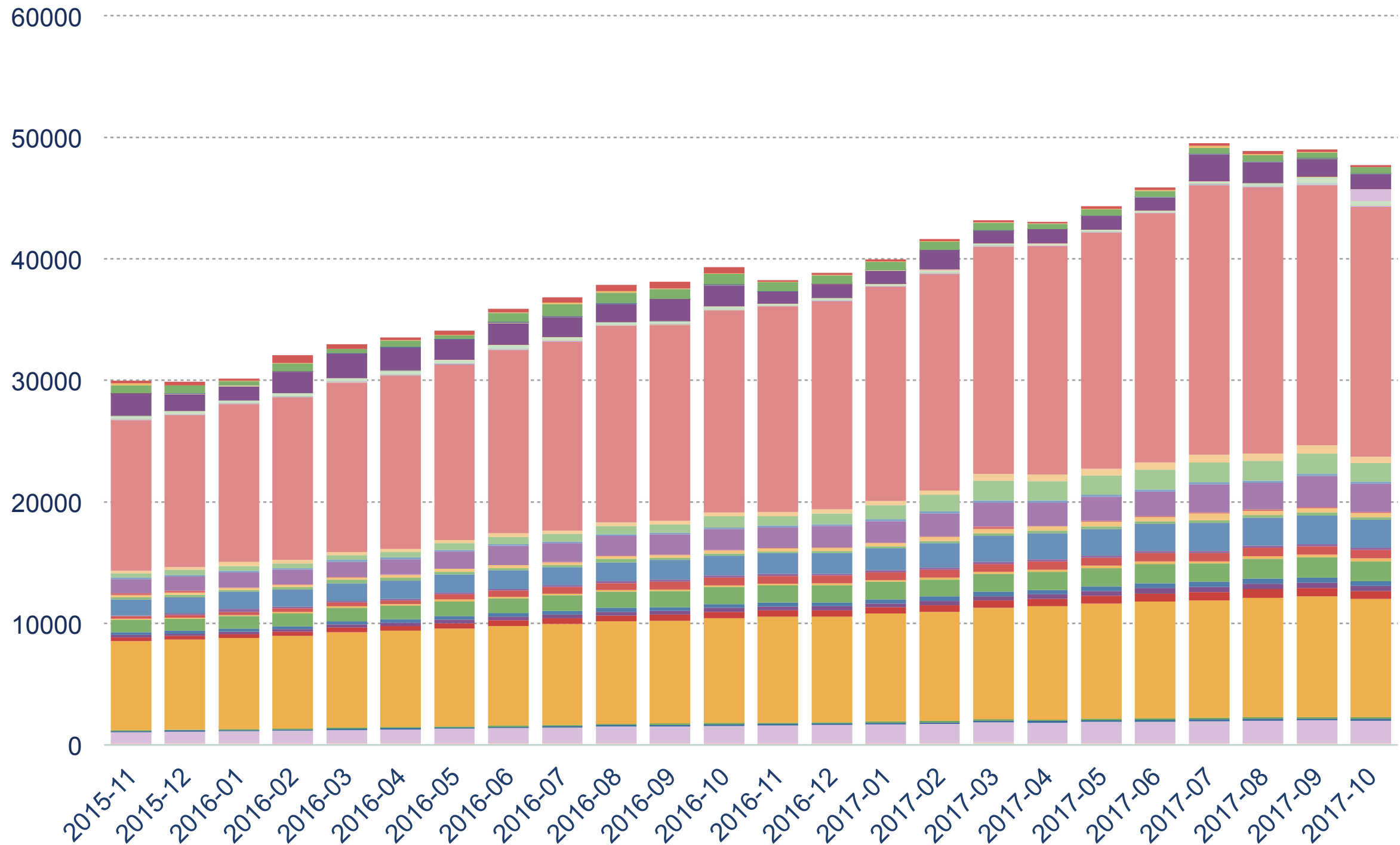
Size of compressed raw BGP updates per month

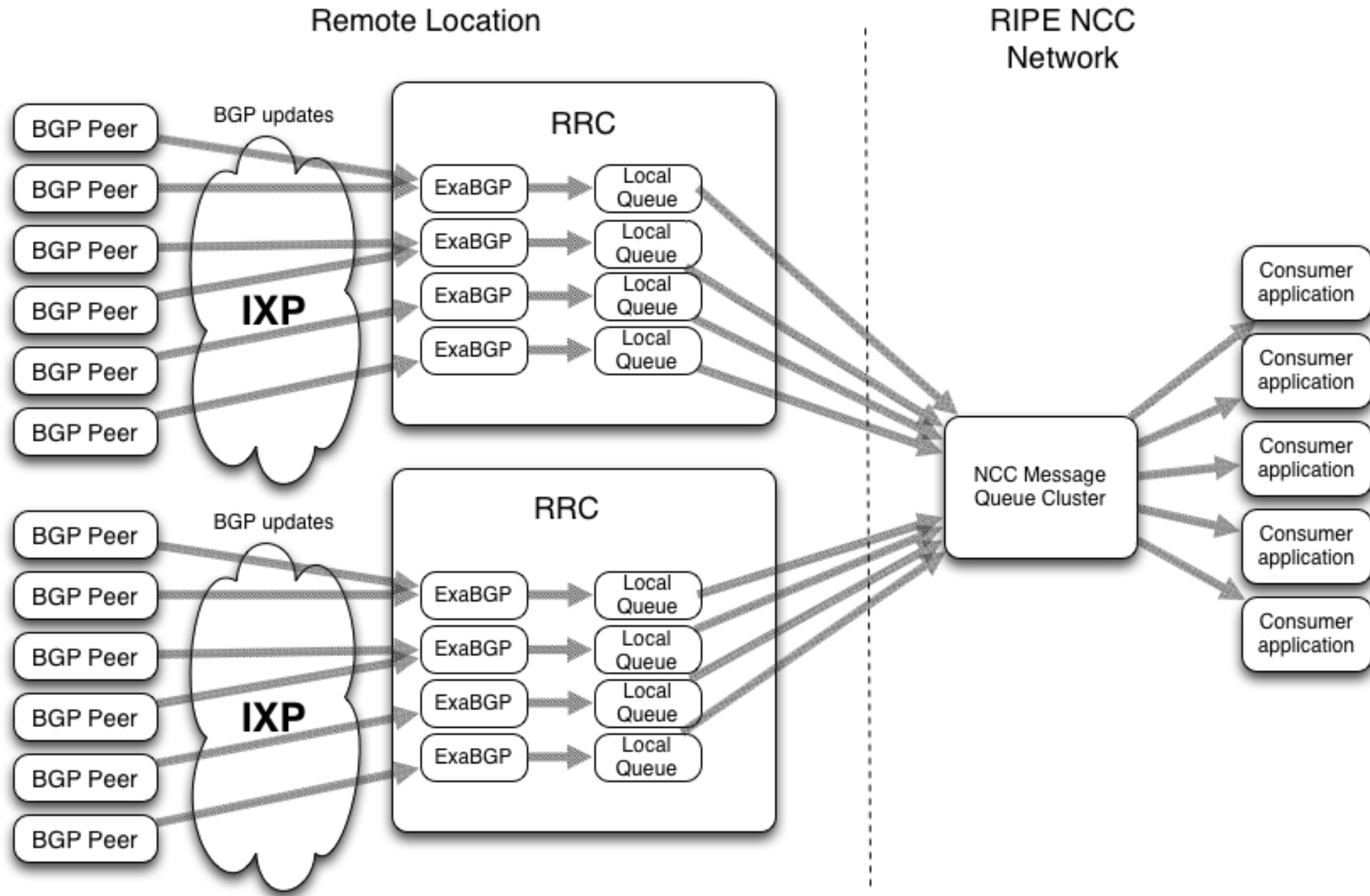# Size of compressed BGP dumps per month

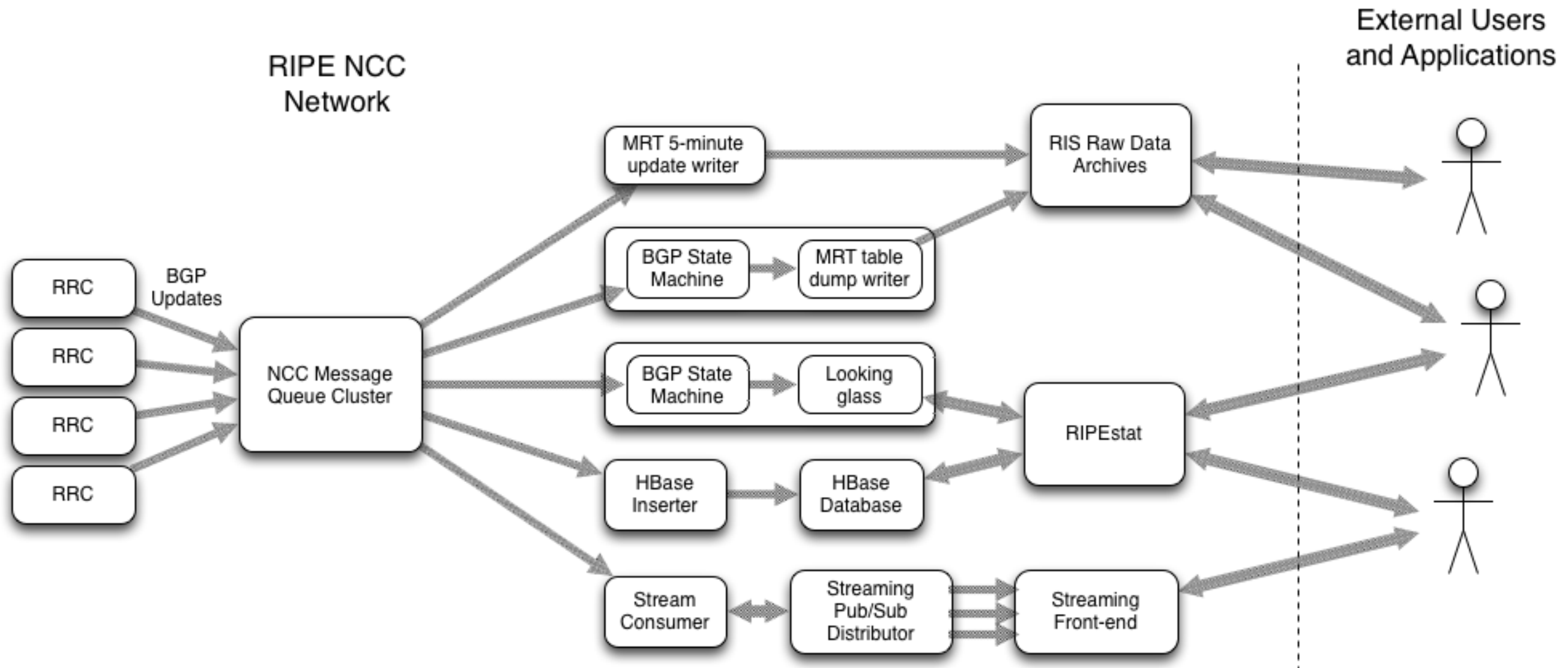# Number of IPv4 prefixes seen

Number of IPv6 prefixes seen

RIS Architecture

Data collection

Back-end data distribution

How can you help?

How can you help?

- Peer with us!!!

  - AS12654

  - http://www.ris.ripe.net/cgi-bin/peerreg.cgi

- Send us your routes

  - If you can send us your full BGP table, please do!

  - If not, send us what you can!

  - We will be recording them forever ;-)

CIXP, Geneva (RRC04)

DIX-IE, Tokyo (RRC06)

Netnod, Stockholm (RRC07)

MIX, Milan (RRC10)

NYIIX, New York City (RRC11)

MSK-IX, Moscow (RRC13)

PAIX, Palo Alto (RRC14)

PTTMetro, Sao Paulo (RRC15)

NOTA, Miami (RRC16)

Catnix, Barcelona (RRC18)

NAP Africa JB, Johannesburg (RRC19)

SwissIX, Zurich (RRC20)

France-IX, Paris (RRC21)

Interested in hosting an RRC?

Questions

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