



**RIPE NCC**

RIPE NETWORK COORDINATION CENTRE

# RIPE NCC Tools Update



**RIPE Labs**



- Join us in celebrating 10 Years of RIPE Labs
- 11,050 articles since 2009
- Time for a revamp!
- We're considering new design, content, features and functions
- Take part in reimagining RIPE Labs and share your ideas with us
  - @RIPELabs
  - labs@ripe.net



# Tools on RIPE Labs



The screenshot shows a web browser window with the URL `labs.ripe.net/tools`. The page is titled "Tools" and contains a list of four tools, each with a thumbnail, title, status, description, and interaction options (comments, likes, dislikes).

- IXP Country Jedi** (PROTOTYPE): Provides visualisations of Internet traffic paths (tracerooutes) between RIPE Atlas probes located in the same country to show whether those paths take out of country detours, and what IXPs they pass through. 0 comments, 0 likes, 0 dislikes.
- RIPE IPmap** (PRODUCTION): The RIPE NCC's tool for mapping core Internet infrastructure. Through collaboration with various researchers, RIPE IPmap integrates several ground breaking methods for geolocation whilst also using crowd-sourced data to modify and correct its results. 0 comments, 0 likes, 0 dislikes.
- User to User Connections** (PROTOTYPE): These visualisations sketch out the different ways in which end-users are interconnected within the same country. Each sketch represents a snapshot of user to user connections at a single given point in time to provide insight into how networks interconnect their users. 0 comments, 0 likes, 0 dislikes.
- RIS Live** (PRE-PRODUCTION): RIS Live is a feed that offers BGP messages in real-time. It collects information from the RIS Route Collectors (RRCs) and uses a WebSocket JSON API to monitor and detect routing events around the world. A non-interactive full stream ("firehose") is also available. 0 comments, 0 likes, 0 dislikes.

<https://labs.ripe.net/tools>



# Research and Prototyping

# Articles on RIPE Labs



Some articles from the recent past:

- [25,000 LIRs - An End to the Milestone Highs?](#)
- [How Diverse is RIS?](#)
- [Routing to and from the Netherlands](#)
- [RPKI Test](#)
- [Inter-RIR Collaboration Produces new Product Prototype](#)
- [RIPEstat is Getting Ready for a Face-Lift](#)
- ... and more on [RIPE Labs](#)

# Research, Tools and Collaboration



```
SELECT day, status, count(status) AS count
FROM `data-test-194508.probes`
WHERE longitude >= -123.5 AND longitude <= -120.5
AND latitude >= 36 AND latitude <= 40
AND day >= "2019-10-01"
AND (status = 1 OR status = 2)
GROUP BY day, status
ORDER BY day, status
```



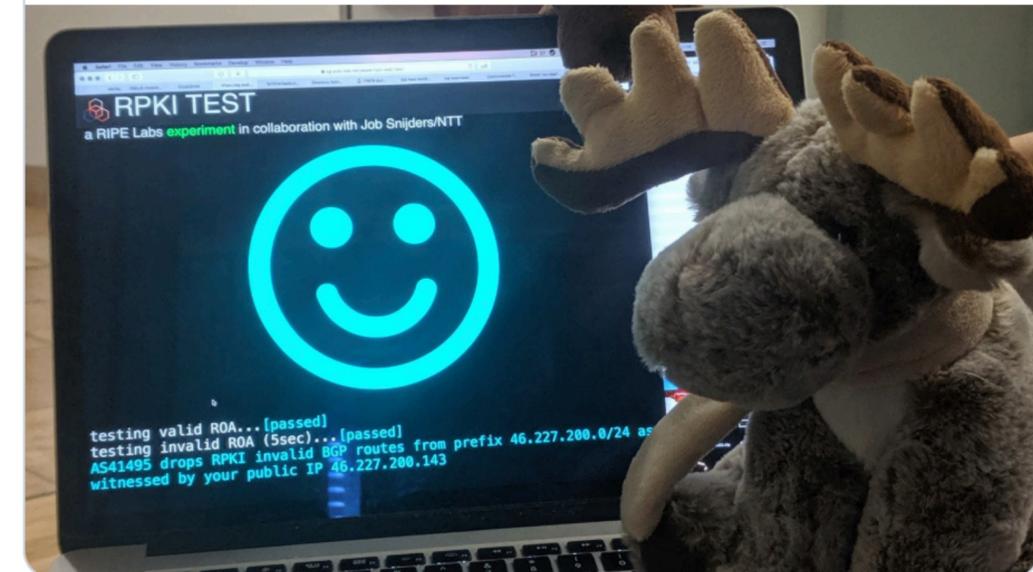
**Marek Isalski** @maznu · Oct 9

This Thursday @net\_mcr I'll be explaining how the @networkmoose achieved IRR-based prefix-list generation, #BCP38 as part of @RoutingMANRS, #RPKI validation using @routinator3000, #BGP control-plane security, and #Netbox-driven automation for @vyos\_dev routers with @SaltStack.



**Network Moose** @NetworkMoose · Sep 25

AS41495 is now rejecting RPKI invalids! Thanks to @vyos\_dev, @routinator3000 and our helpers @faelix #rpk





**RIPE Atlas**

# At a Glance



- Probe population is stable at 10K+
- We have over 500 connected anchors now
  - 145 are virtual
  - Amazon AWS anchors were done before, Google GCP anchors are coming
  - Apply for your own at <https://atlas.ripe.net/get-involved/become-an-anchor-host/>
- Hardware probe stock is being replenished
- Major internal works are about to conclude
- Software probes are coming!



# Software Probes



- Just like the hardware probes - but without the need to ship and install dedicated hardware!
  - On servers, VMs, (home) routers, etc.
- We use dedicated controlling infrastructure for these probes
  - This is transparent to the users: probe hosts and “measurers”
  - Using probe tags to let users select to use these or not
- Application/registration procedure is somewhat different
  - Because there’s no physical manifestation, proof of ownership is different
  - We’d like to welcome software probes from all networks
  - We can add throttling to applications if needed

# Software Probes



## Randy/Seattle Deb10

General **Network** Built-ins UDMs Status (beta)

### General Information

Id	1000004
MAC Address	N/A
Architecture	software
Host	<a href="#">Randy Bush</a>
Sponsor	<a href="#">RIPE Atlas</a>
Firmware Version	5000
Router Type	
Bandwidth Limit	Not set
DNS Entry	Off
Shared Publicly	Yes

**User Tags**

- Fibre
- Datacentre
- Academic
- No NAT
- Native IPv6
- dual-stack
- IPv4
- IPv6
- Multihomed
- Native IPv4
- iwantbcp38compliancetesting

**System Tags**

- Resolves A Correctly
- Resolves AAAA Correctly
- IPv4 Works
- IPv6 Works
- IPv4 Capable
- IPv6 Capable
- Software

### Connection & Traffic

No data available for Probe # 1000004 for this time period

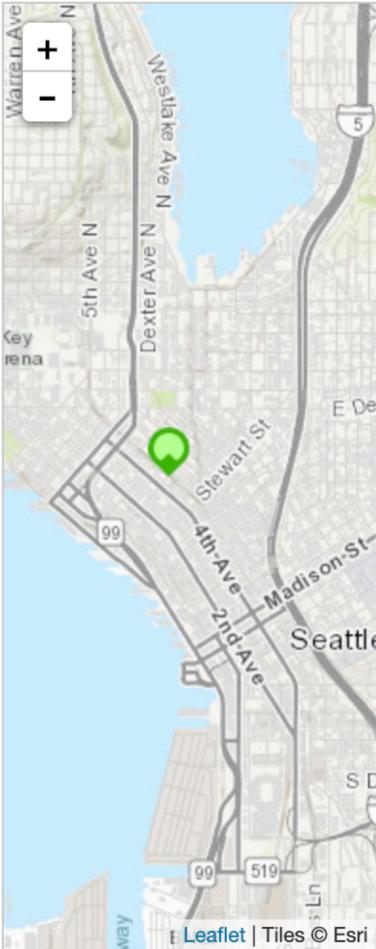
**Connected Time** 3 days, 17 hours

🇺🇸 3 days, 17 hours

Firmware #1000004  
5000

Architecture software

MAC Address N/A



# Software Probes



- Entering testing phase now! If you want to help us, fill in the survey:
  - <https://www.ripe.net/participate/forms/apply/atlas-probes/>
- We make the probe source code public (on GitHub) and maintain an RPM (CentOS) package
- We're contacting (and still looking for) other package maintainers
  - The good folks at CZ.NIC are kindly helping with OpenWRT / Turris ports
  - Including other Linux distributions, Docker, Raspberry Pis... would be useful!
- We expect to conclude the testing phase at the end of the year

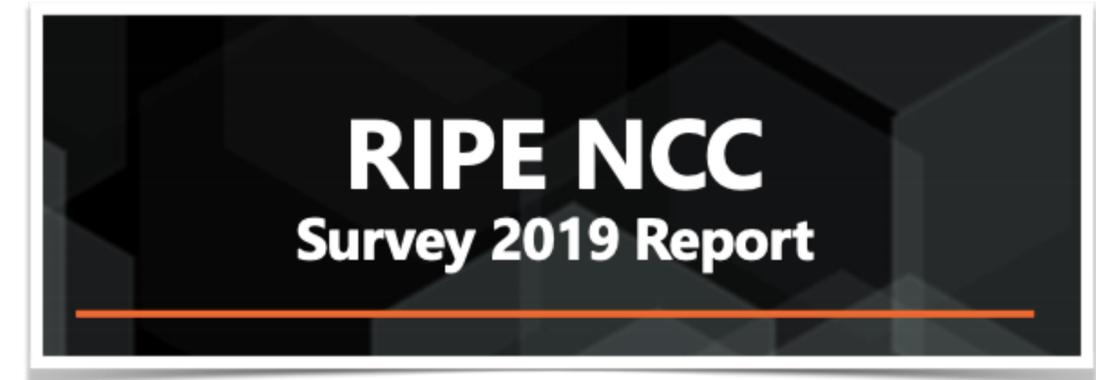
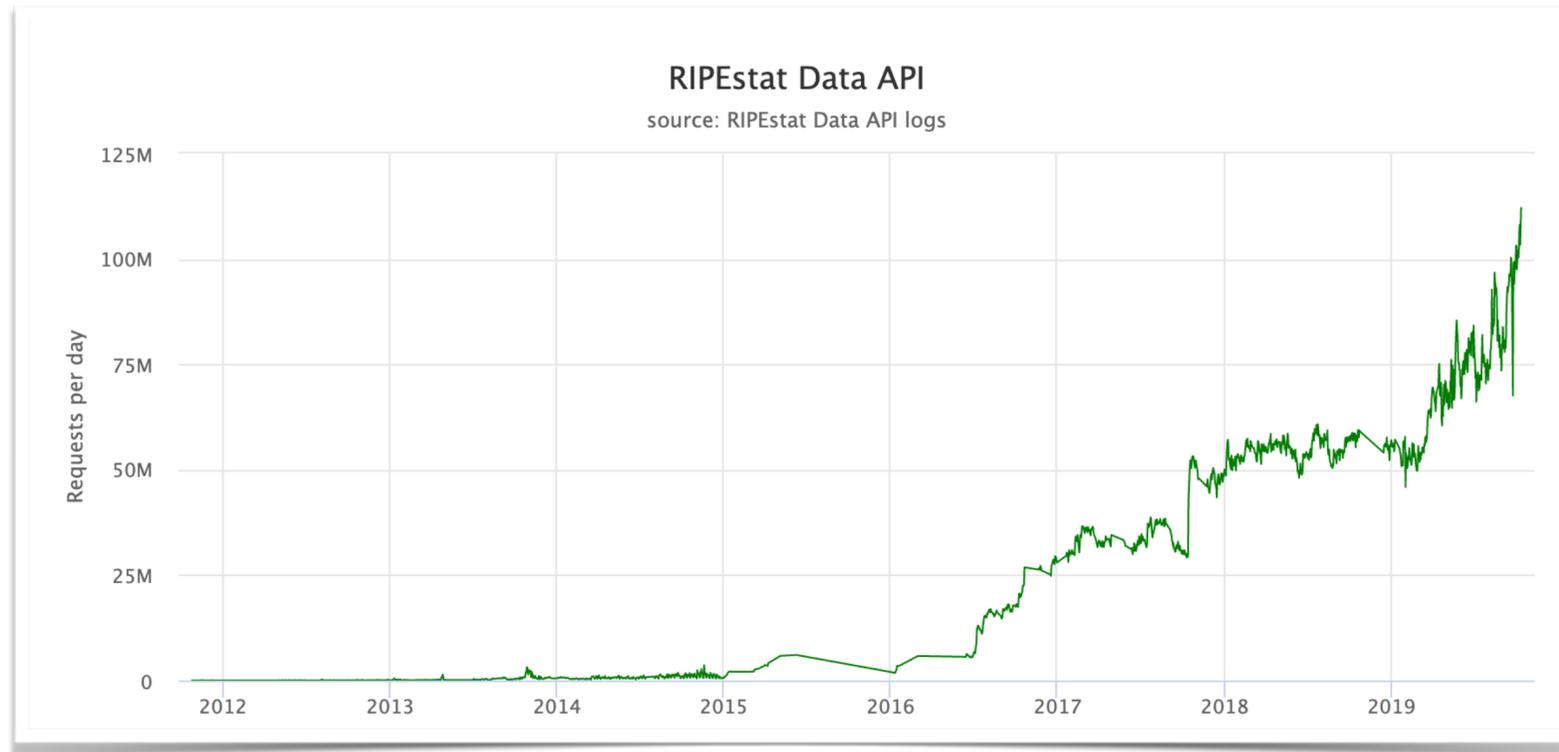
# Software Probes





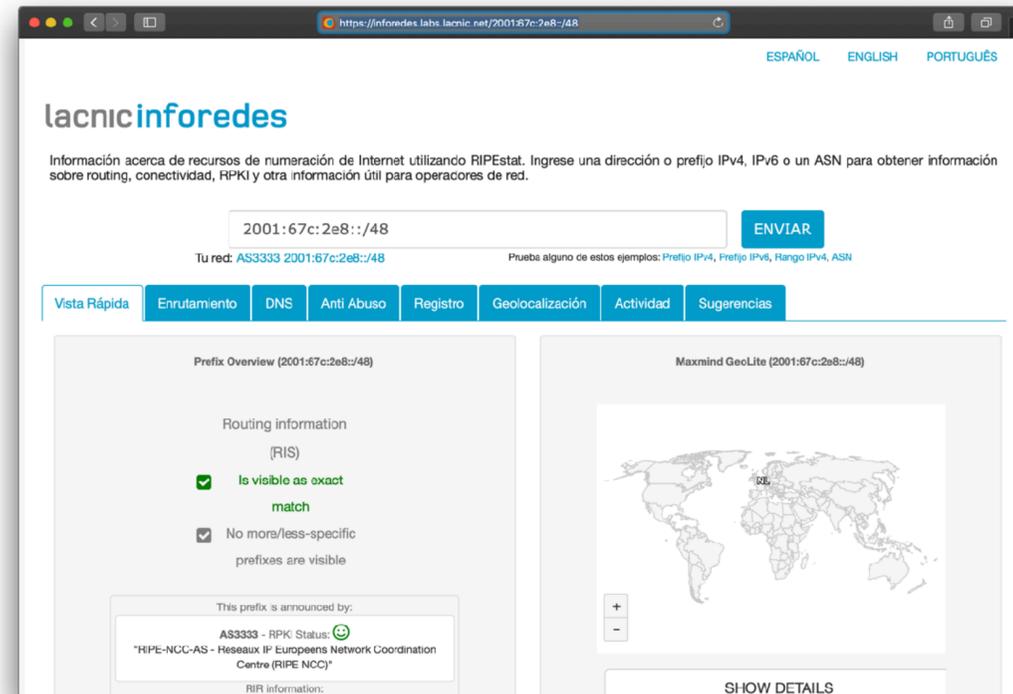
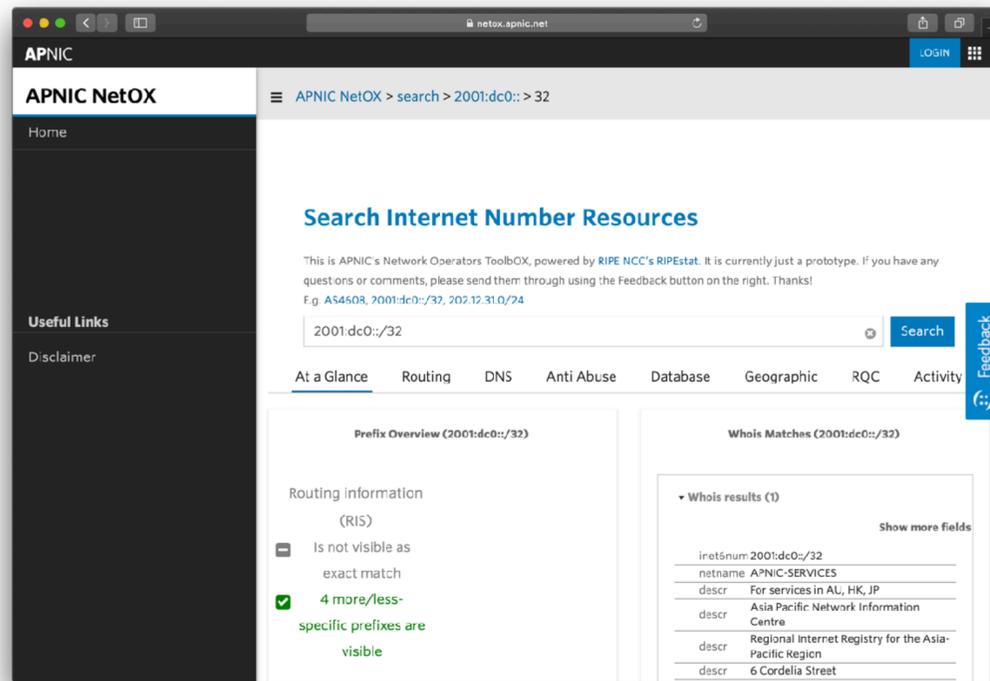
**RIPEstat**

# RIPEstat Usage



- 100% increase in 2019 (~50M to ~100M requests/day)
- RIPE NCC Survey 2019: “*RIPEstat is the most used tool of the RIPE NCC tools and services...*”

# RIPEstat - RIR Collaboration

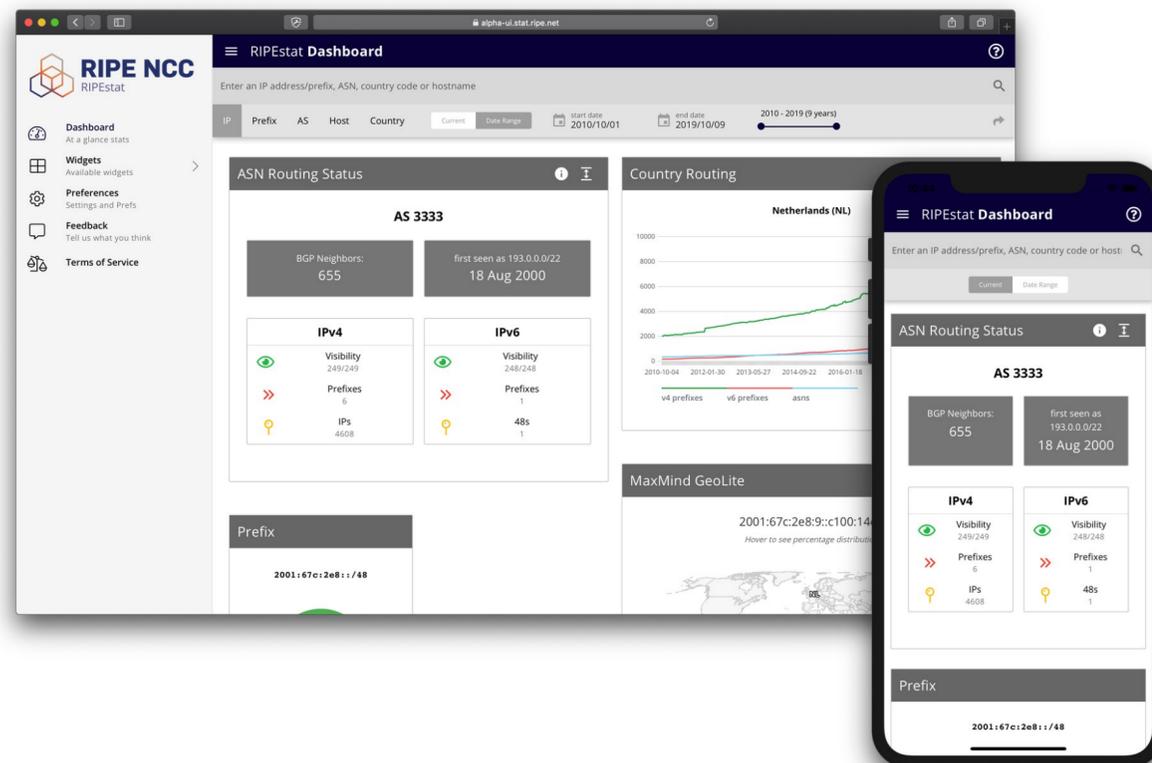


- APNIC's **NetOX** team working on new widgets
- 2nd RIR collaboration: **InfoRedes** at LACNIC
  - <https://inforesdes.labs.lacnic.net>
  - Language support for English, Portuguese and Spanish

# RIPEstat - UI Concept



- Development update on new UI
  - Dashboard view
  - More widgets
  - [https://labs.ripe.net/Members/stephen\\_suess\\_1/ripestat-next-generation-ui](https://labs.ripe.net/Members/stephen_suess_1/ripestat-next-generation-ui)
  - <https://beta-ui.stat.ripe.net/dashboard>



# RIPEstat - New Features



- RIPEstat Service Terms and Conditions
  - Regulating also commercial use
  - <https://www.ripe.net/about-us/legal/ripestat-service-terms-and-conditions>
- New data call providing meta information for RIS RRCs
  - [https://stat.ripe.net/docs/data\\_api#rrc-info](https://stat.ripe.net/docs/data_api#rrc-info)



# Other Projects

# RIS Live



- The service is being prepared for production - watch this space!
- <https://ris-live.ripe.net/>
- <1s latency end to end
- JSON format
- WebSocket/HTTP stream
- Enthusiasts at NTT have already built an alerter tool on top of this:
  - <https://github.com/nttgin/BGPalerter>

```
ive RIS BGP messages
▶ Connected 6165 matching messages ⓘ
/ Received at 14:05:05 (0.25 second delay)
{"timestamp": 1550235905.09,
 "peer": "91.206.52.130",
 "peer_asn": "58299",
 "id": "91.206.52.130-1550235905.09-3854212",
 "host": "rrc20",
 "type": "UPDATE",
 "path": [58299, 6939, 2914, 12859, 12654],
 "community": [[58299, 1100]],
 "origin": "igp",
 "announcements": [
  {
    "next_hop": "2001:7f8:24::82",
    "prefixes": [
      "2001:7fb:ff02::/48"
    ]
  },
  {
    "next_hop": "fe80::4e5e:cff:fe25:40c4",
    "prefixes": [
      "2001:7fb:ff02::/48"
    ]
  }
 ]
}
```



# Questions



[robert@ripe.net](mailto:robert@ripe.net)  
@kistel