



**RIPE
NCC**

The RIPE Atlas Global Internet Measurement Network

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Measurements Community Building

- Global active measurements network consisting of thousands of probes
- Data publicly available via Internet maps and API



- 8,200+ probes connected
- 150+ probes in LACNIC region
- 5,000+ active users in the last quarter
- 2,500+ results collected per second
- 35,000+ customised measurements weekly
- **Five** types of customised measurements available to probe hosts: ping, traceroute, DNS, SSL, **NTP** (new)

Country	Probes
Brazil	51
Argentina	27
Chile	24
Uruguay	15
Mexico	9
Dominican Republic	8
Venezuela	6
Trinidad and Tobago	5
Peru	4
Guatemala	4

- **RIPE Atlas streaming:** a new architecture that allows users to receive measurement results as soon as the probes send them
 - Real-time measurement results and connection events
 - Can specify filters
 - Possibility to replay history (prototype)
 - <https://atlas.ripe.net/docs/result-streaming/>
 - Results from RIPE Atlas hackathon:
<https://labs.ripe.net/Members/becha/ripe-atlas-hackathon-results>

- Impact of IXPs on keeping traffic local

<https://labs.ripe.net/Members/emileaben/measuring-ixps-with-ripe-atlas>

<https://labs.ripe.net/Members/emileaben/measuring-countries-and-ixps-in-the-sea-region>

<http://sg-pub.ripe.net/emile/ixp-country-jedi/CL+AR-2015-04/geopath/>



- New measurement type: NTP

https://labs.ripe.net/Members/philip_homburg/ntp-measurements-with-ripe-atlas

Create a New Measurement

Step 1 Definitions

Please select the type of measurement you want to create

+ Ping + Traceroute + DNS + SSL + NTP

Step 2 Probe Selection

Worldwide 50 x

+ New Set - wizard + New Set - manual + IDs List + Reuse a set from a measurement

Step 3 Timing

This is a One-off:

Start time: Stop time:

> Measurement API Compatible Specification

Create My Measurement(s)



RIPE Atlas Community



- For individuals:
 - Create a RIPE NCC Access account
 - Go to <https://atlas.ripe.net/apply>
 - You will receive a probe by post
 - Register your probe
 - Plug in your probe
- For organisations:
 - Host an anchor <https://atlas.ripe.net/anchors/apply/>
 - Sponsor RIPE Atlas
- Find out more in your language:
 - <http://www.lacnic.net/web/lacnic/ripe-atlas>

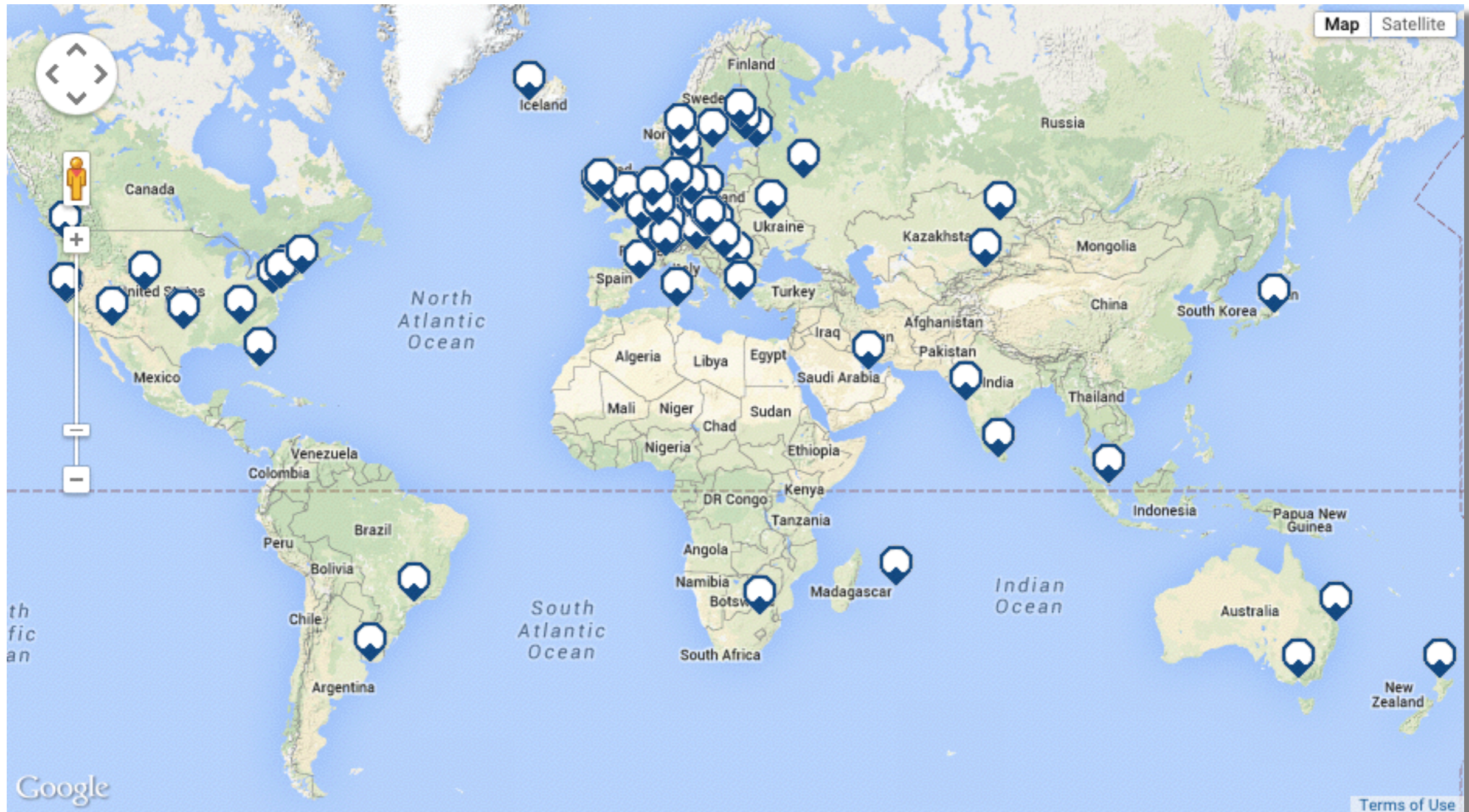
- Anchors: stable targets and powerful probes
- Benefits of hosting an anchor:
 - External view of your own network - all other anchors measure **you**
 - 400 probes also target each anchor with ongoing measurements
- 119 RIPE Atlas anchors
 - LACNIC will sponsor 10



- Seismograph:

- https://labs.ripe.net/Members/massimo_candela/seismograph-user-guide
- Multiple ping measurements in one view
- Stacked chart and interactive control panel





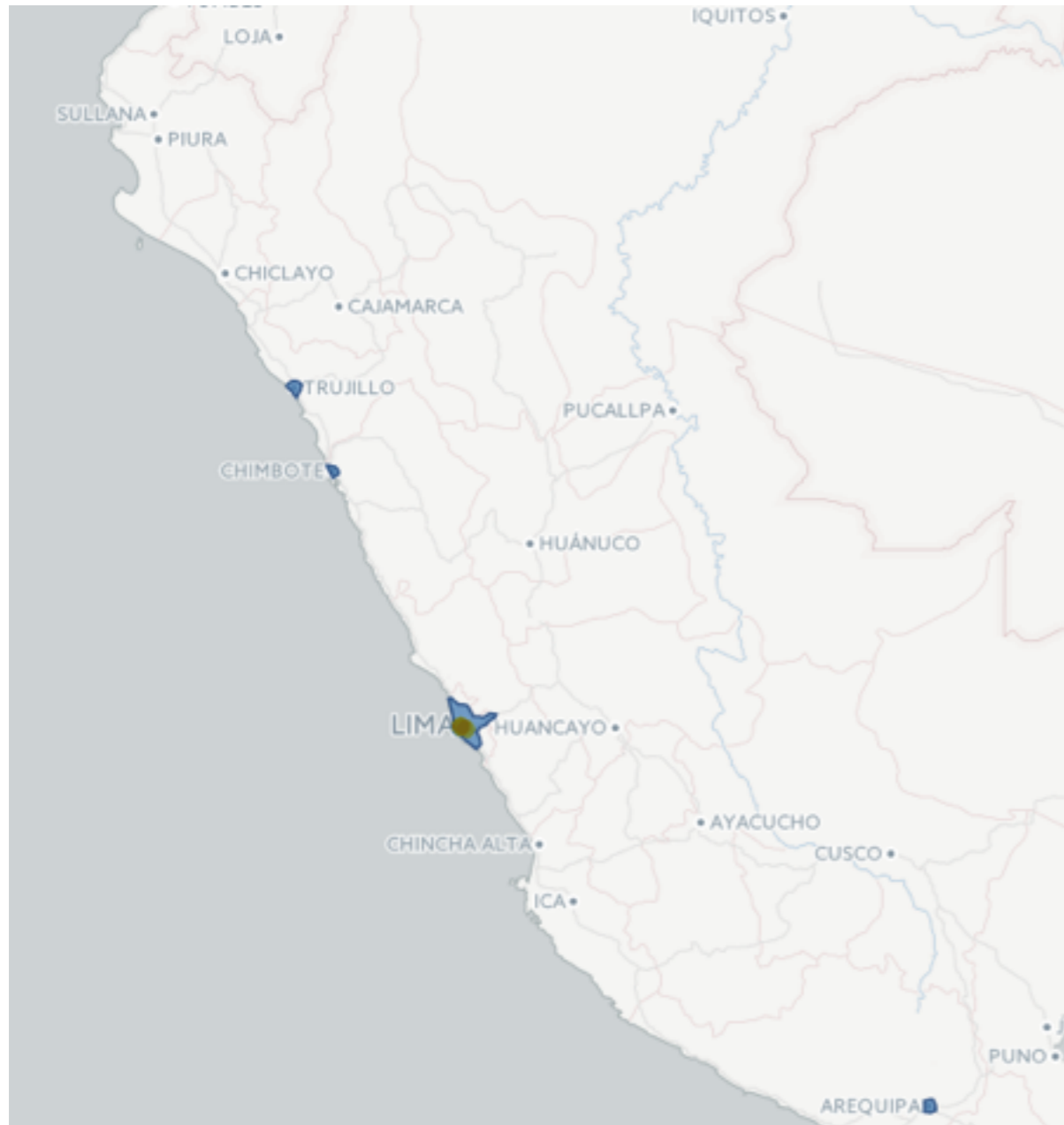
Some RIPE Atlas Anchor Hosts (20 / 110) RIPE Atlas | 12



- If you want to...
 - Help distribute probes outside RIPE NCC service region
 - Give workshops, tutorials and promote RIPE Atlas
- To become an ambassador:
 - <https://atlas.ripe.net/get-involved/become-a-ripe-atlas-ambassador/>
 - email mcb@ripe.net: we will ship you some probes



We Need Your Help!



<https://labs.ripe.net/Members/emileaben/distribution-of-ripe-atlas-probes>

- Benefits:
 - Promotion on RIPE Atlas website
 - Community recognition
 - Double credits for every probe distributed



- Become a sponsor:

<https://atlas.ripe.net/get-involved/become-a-sponsor/>

- Current sponsors:



Previous Sponsors

2014



2013



- Programmers contribute analysis code:

<https://github.com/RIPE-Atlas-Community/>

- Measurements source code available

https://labs.ripe.net/Members/philip_homburg/ripe-atlas-measurements-source-code

- <https://atlas.ripe.net>
- Mailing list for active users: ripe-atlas@ripe.net
- Roadmap: <http://roadmap.ripe.net/ripe-atlas/>
- Articles and updates on RIPE Labs:
<https://labs.ripe.net/atlas>
- Questions: atlas@ripe.net
- Twitter: [@RIPE_Atlas](https://twitter.com/RIPE_Atlas) and [#RIPEAtlas](https://twitter.com/hashtag/RIPEAtlas)



Additional Slides





RIPE Atlas Use Cases



- Which instance is queried?
 - Per country
 - Per ASN
- What's the fastest response?
- TCP/UDP performance

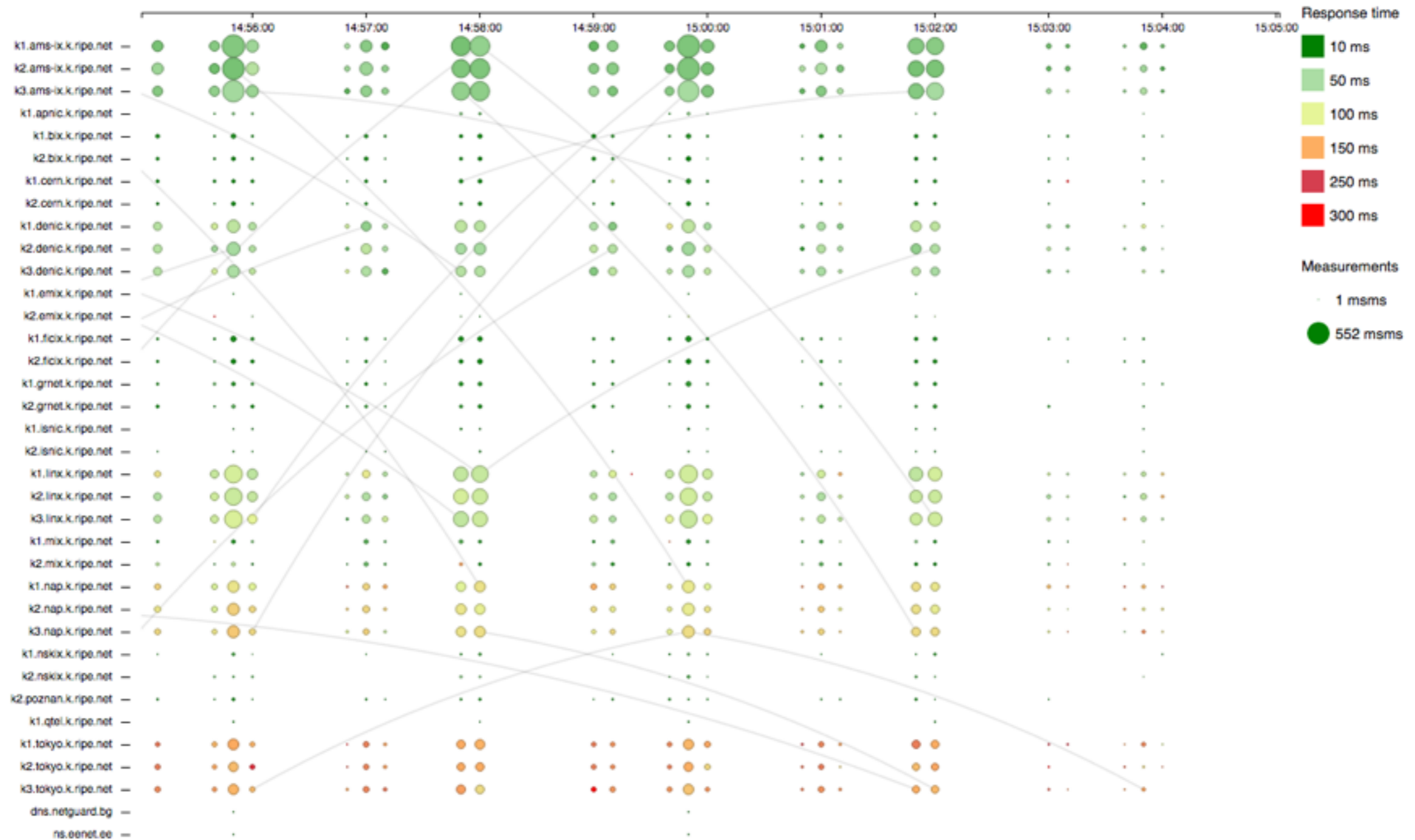
Japan (jp) 94 connected, 9 disconnected,

Address Family:

Filter by ASN, prefix, or country:

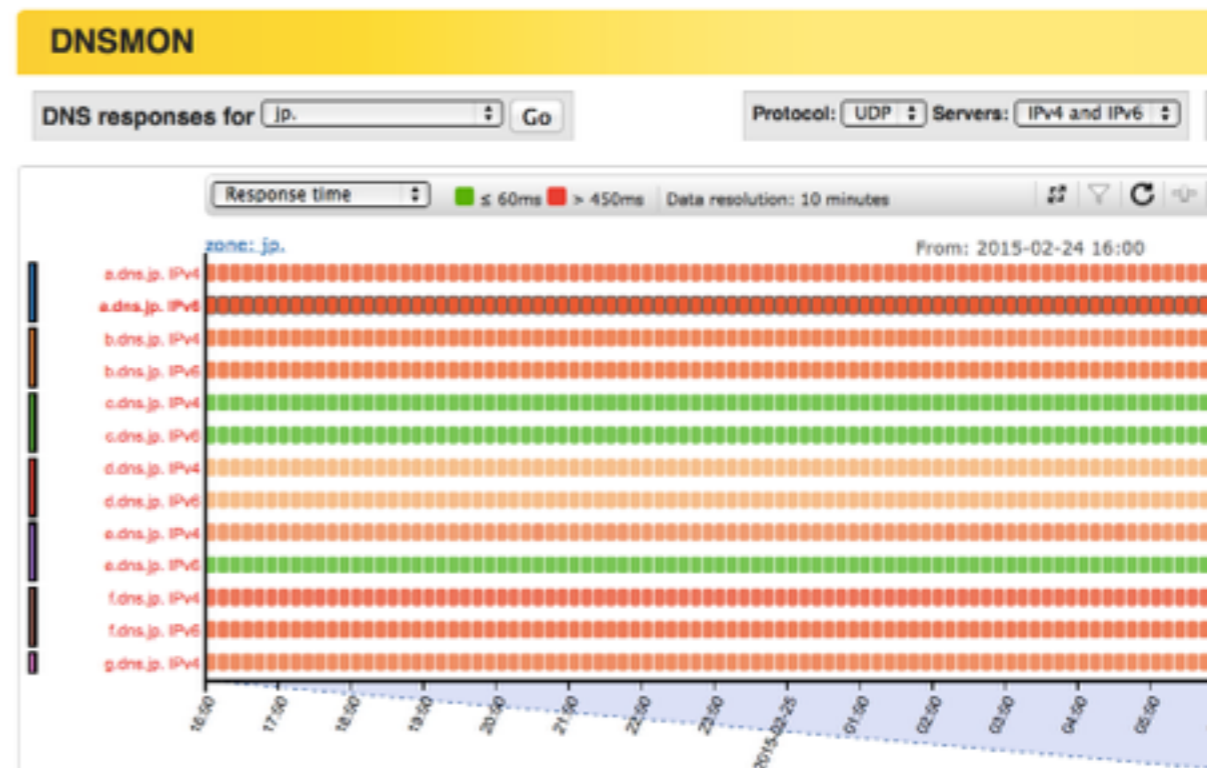


Monitoring K-root Performance

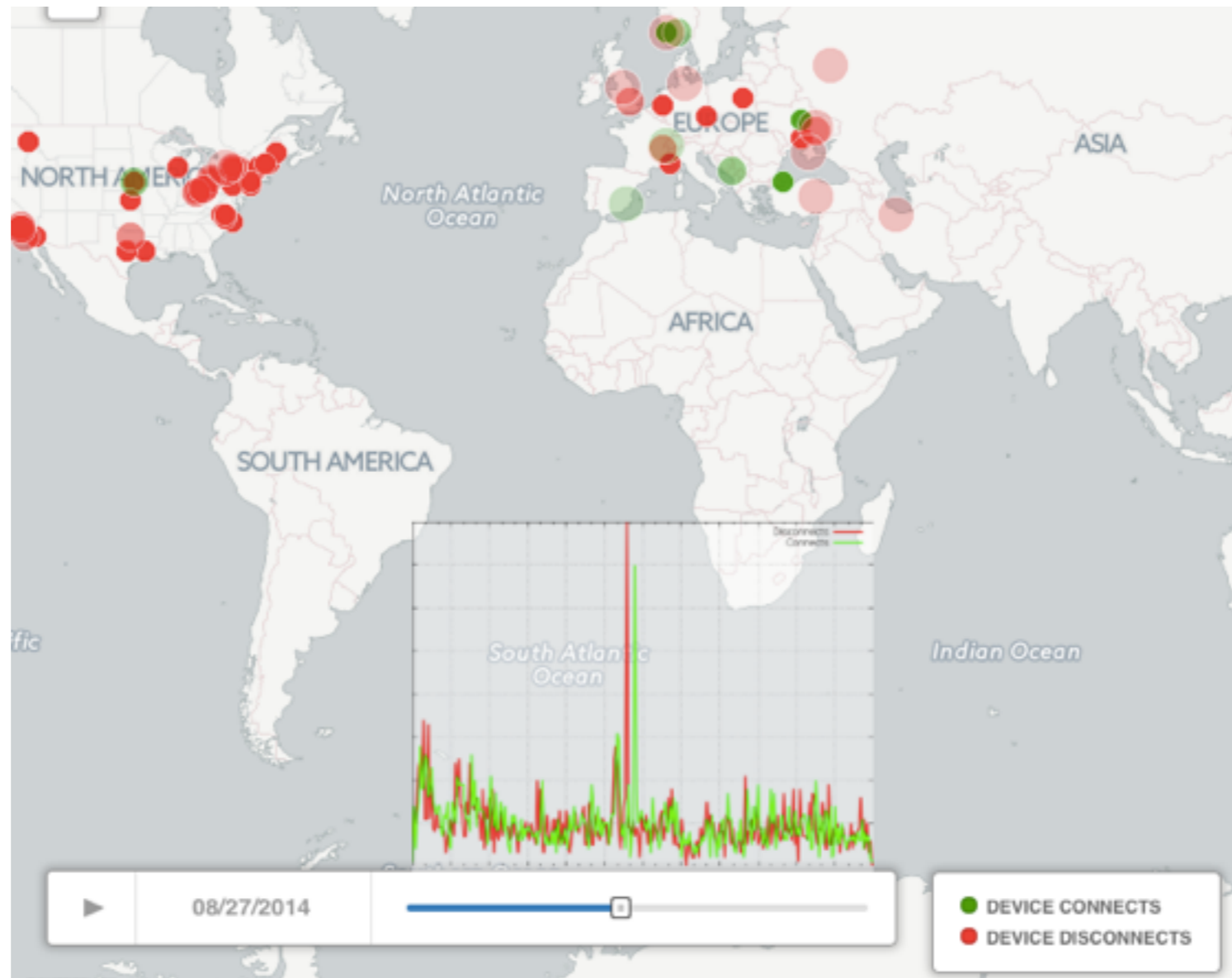


- Currently monitoring small selection of TLD zones
 - Root name servers, 30 ccTLDs and few gTLDs
 - New zones added later this year
- On the roadmap: “domain checks”
- <https://atlas.ripe.net/dnsmon>

https://labs.ripe.net/Members/fatemah_mafi/an-updated-dns-monitoring-service

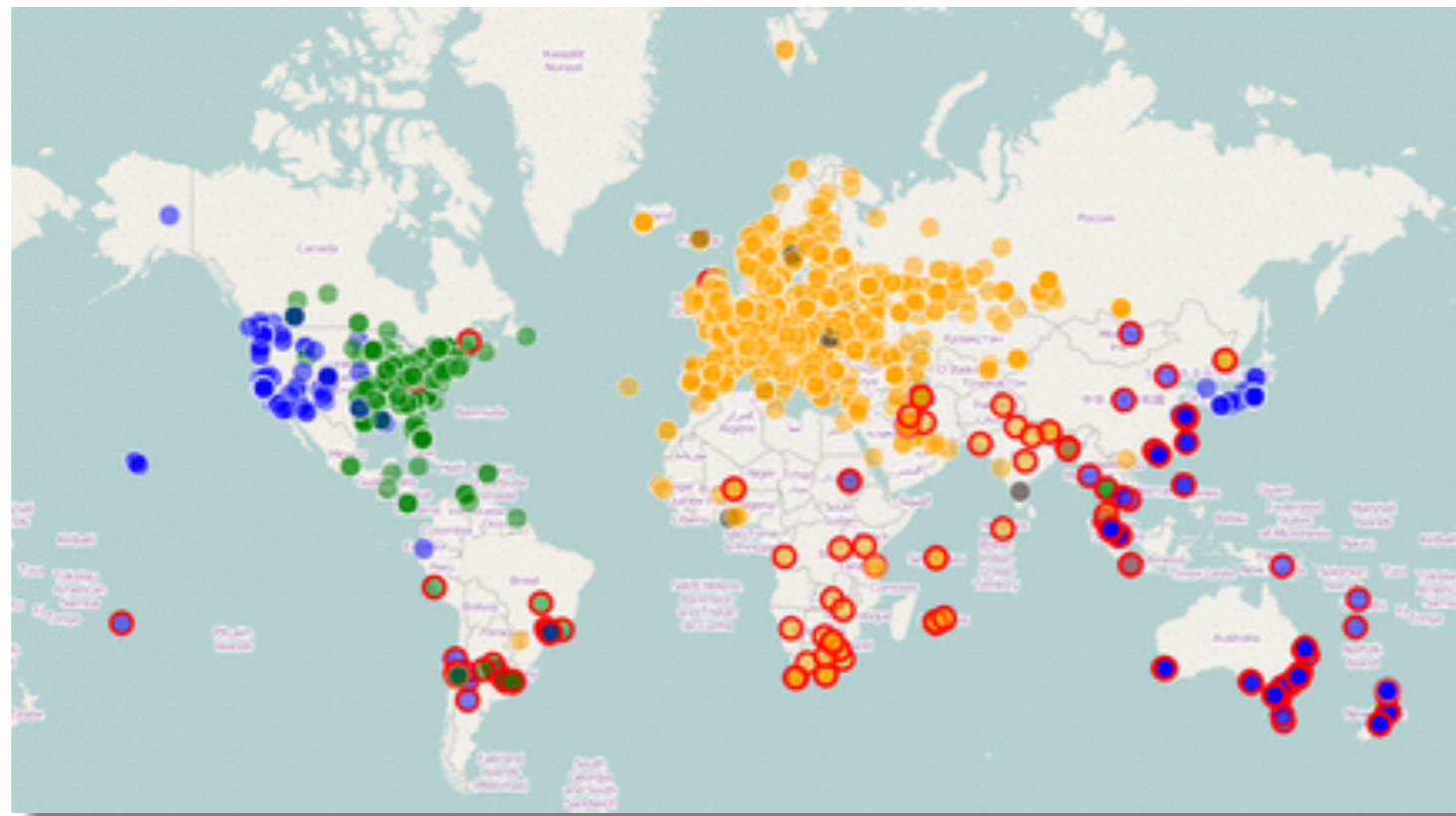


- Generating alerts via “status checks”
 - Based on ping measurements
 - User defines alert parameters
 - Integrate into existing tools like Icinga and Nagios
 - <https://atlas.ripe.net/docs/status-checks/>
- GitHub examples, contributed by operators:
 - <http://bit.ly/1BSi1Fu>
- Post on Icinga blog:
 - <http://bit.ly/1EPERLC>



- <https://labs.ripe.net/Members/emileaben/visualising-network-outages-with-ripe-atlas>
- <https://labs.ripe.net/Members/emileaben/facebookdown-and-what-internet-data>
- <https://labs.ripe.net/Members/emileaben/time-warner-cable-outage>

- Together with Wikimedia we identified ways to decrease latency and improve performance
 - <https://labs.ripe.net/Members/emileaben/how-ripe-atlas-helped-wikipedia-users>





RIPE Atlas Success Stories

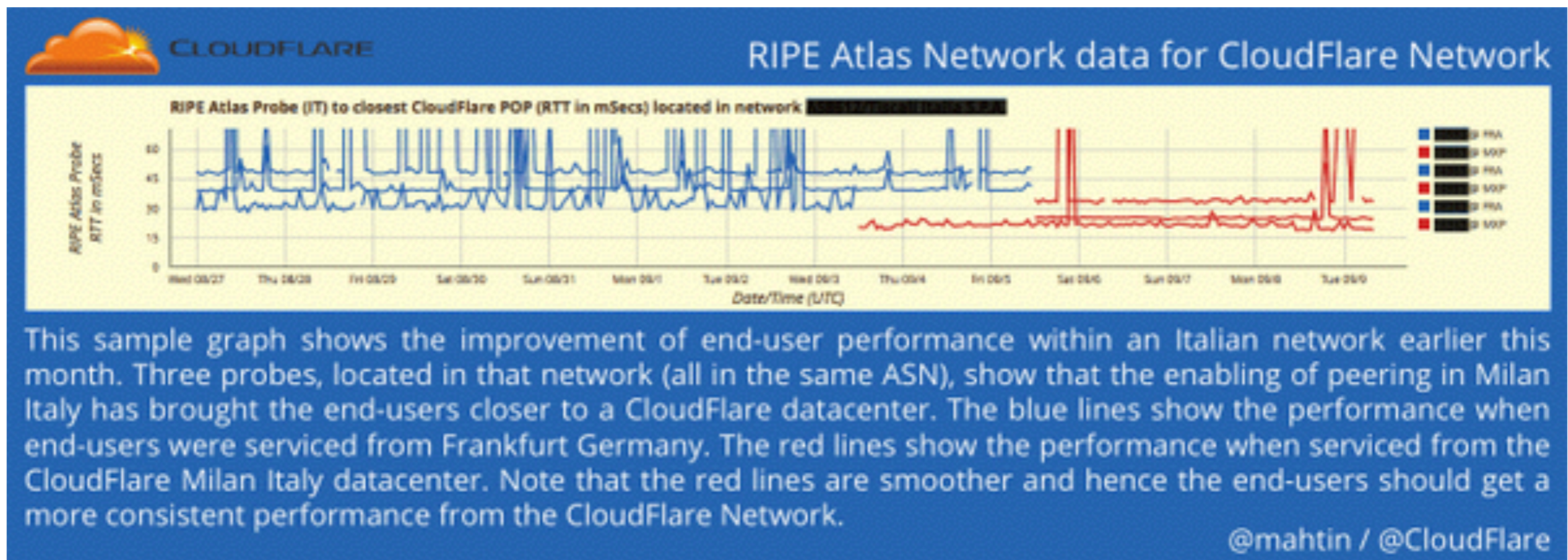
Operators



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RIPE ATLAS

atlas.ripe.net



<http://t.co/9IX7Jvk5nl>

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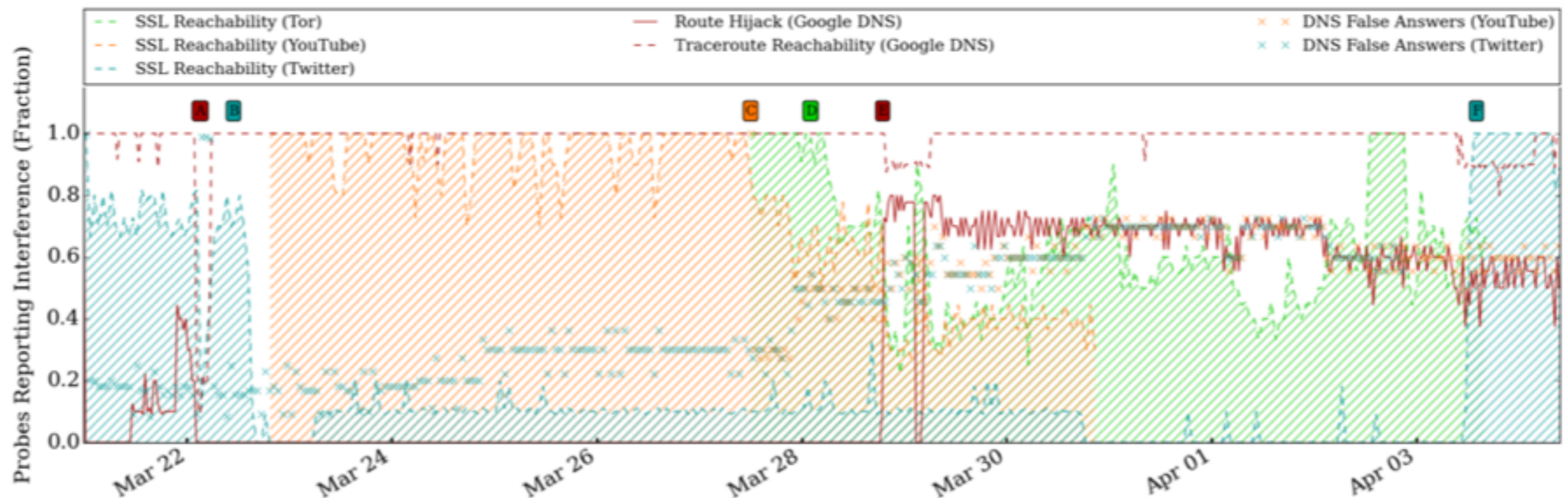
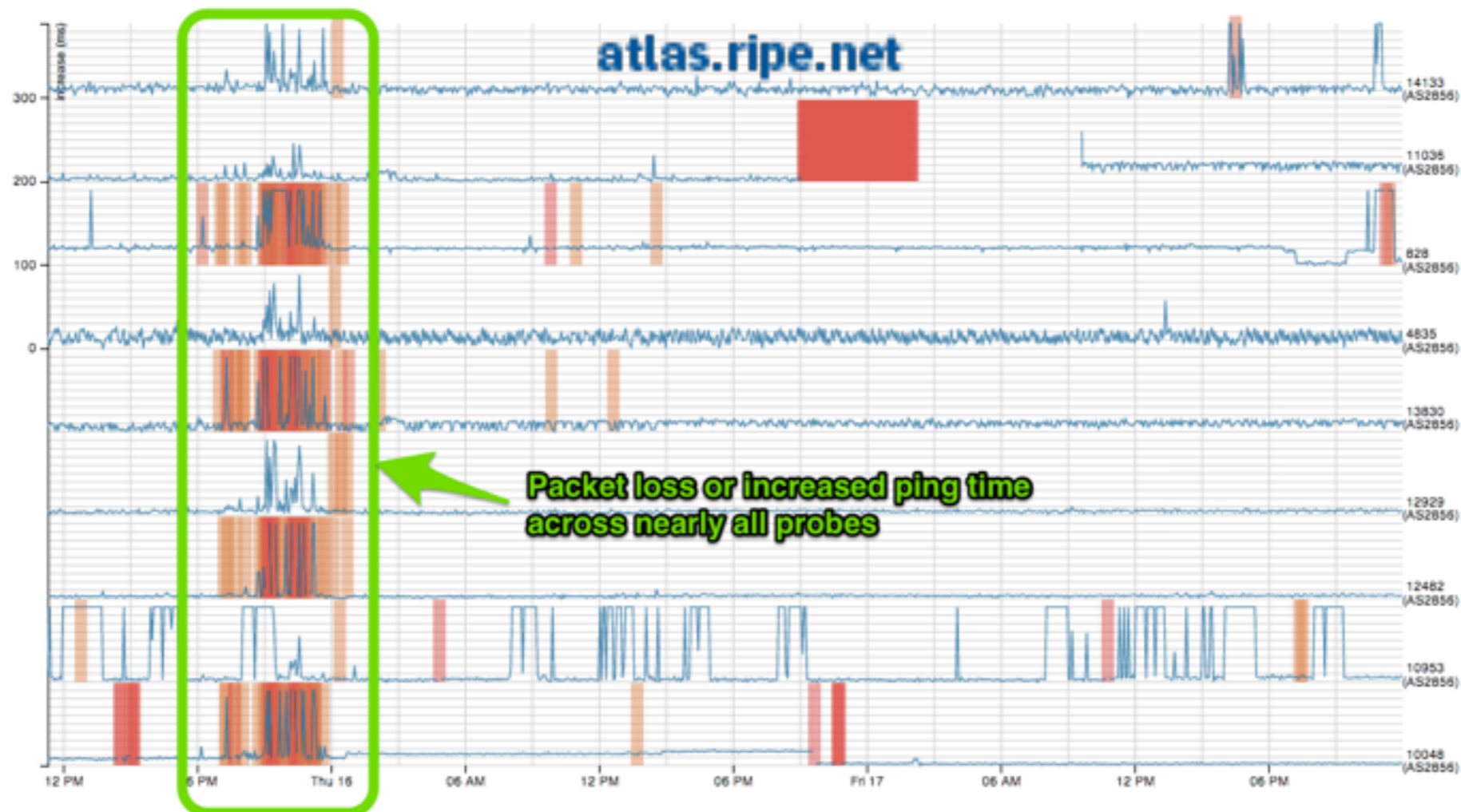


Figure 2: Disruption of Social Media Platforms in Turkey, March – April 2014

<http://cartography.io/foci2014.pdf>

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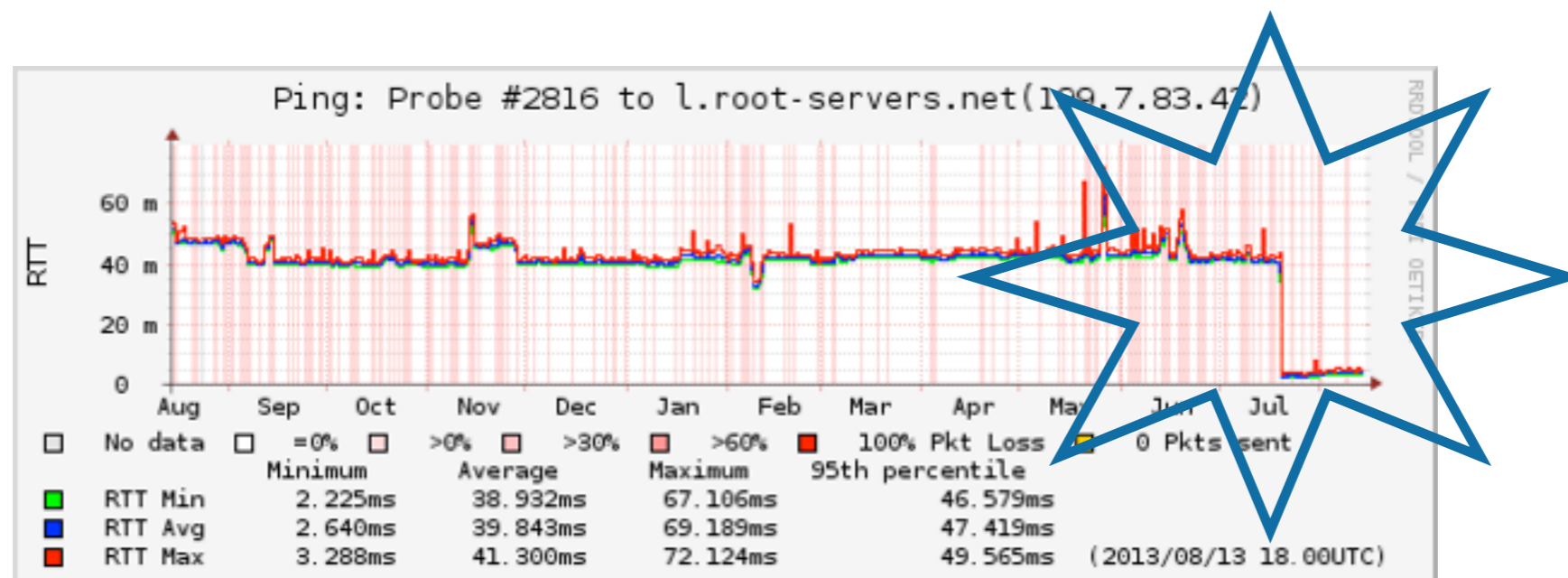
- Investigating problems of slow servers

<http://engineering.freeagent.com/2014/01/24/atlas-probes/>

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atlas.ripe.net



- IXP: Measuring the effect of installing L-root in Belgrade / SOX

- Investigating problems of slow servers:
 - <http://engineering.freeagent.com/2014/01/24/atlas-probes/>
- Measuring packet loss to determine congested networks, Jared Mauch, NTT
- Selective blackholing (examples based on RIPE Atlas)
 - https://ripe68.ripe.net/presentations/176-RIPE68_JSnijders_DDoS_Damage_Control.pdf
- Anycast analysis:
 - https://labs.ripe.net/Members/stephane_bortzmeyer/the-many-instances-of-the-I-root-name-server

- Measuring K-root performance
 - https://labs.ripe.net/Members/suzanne_taylor_muzzin/experiment-proposal-to-improve-k-root
- Time-Warner Cable Outage
 - <https://labs.ripe.net/Members/emileaben/time-warner-cable-outage>
- How Fast the RIPE Atlas Anchor has Paid Off
 - https://labs.ripe.net/Members/tim_kleefass/how-fast-the-ripe-atlas-anchor-has-paid-off
- Basic Evaluation of new IXP Peering Partners with RIPE Atlas and Zabbix
 - https://labs.ripe.net/Members/daniel_gomez/basic-evaluation-of-new-ixp-peering-partners-with-ripe-atlas-and-zabbix



Network Monitoring with RIPE Atlas



- Network operators use tools to monitor network health
 - Such as Nagios & Icinga
- Tools can receive input from RIPE Atlas via API
- Benefits:
 - Pings from 500 out of 6,000+ probes around the world
 - See your network from the outside
 - Plugs into your existing tools and practices

Three easy steps:

1. Create a RIPE Atlas ping measurement
2. Go to “status checks” URL
3. Add your alerts in Icinga or Nagios



- General case - applicable for ping, too!
- Log in to <https://atlas.ripe.net>
- Go to “My Atlas” and “Measurements”
- Choose “New Measurement” or “One-off”
 - Most measurements are periodic and last a long time
 - Choose type, target, frequency, # of probes, region...
 - You will spend credits (next slides)
- More details: <https://atlas.ripe.net/doc/udm>
- Or use the API:
 - <https://atlas.ripe.net/docs/measurement-creation-api/>

- To perform measurements, you spend credits
 - Ping costs 10 credits, traceroute costs 20, etc.
- Credit system introduced to ensure fairness and protect system from overload
- By hosting a probe, you earn credits
- Extra credits can be earned by:
 - Being a RIPE NCC member
 - Hosting a RIPE Atlas anchor
 - Sponsoring probes
- More details: <https://atlas.ripe.net/doc/credits>

- Status checks work via RIPE Atlas' RESTful API
 - https://atlas.ripe.net/api/v1/status-checks/MEASUREMENT_ID/
- You define the alert parameters, for example:
 - Threshold for percentage of successful replies
 - How many of the most recent measurements to evaluate
 - Maximum acceptable packet loss
- Documentation:
 - <https://atlas.ripe.net/docs/status-checks/>

- Community of operators contributed configuration code!
 - Make use of the built-in “check_http” plugin
- GitHub repo examples:
 - https://github.com/RIPE-Atlas-Community/ripe-atlas-community-contrib/blob/master/scripts_for_nagios_icinga_alerts
- Post on Icinga blog:
 - <https://www.icinga.org/2014/03/05/monitoring-ripe-atlas-status-with-icinga-2/>