News about RIPE NCC tools

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RIPE NCC

RIPE Atlas Update

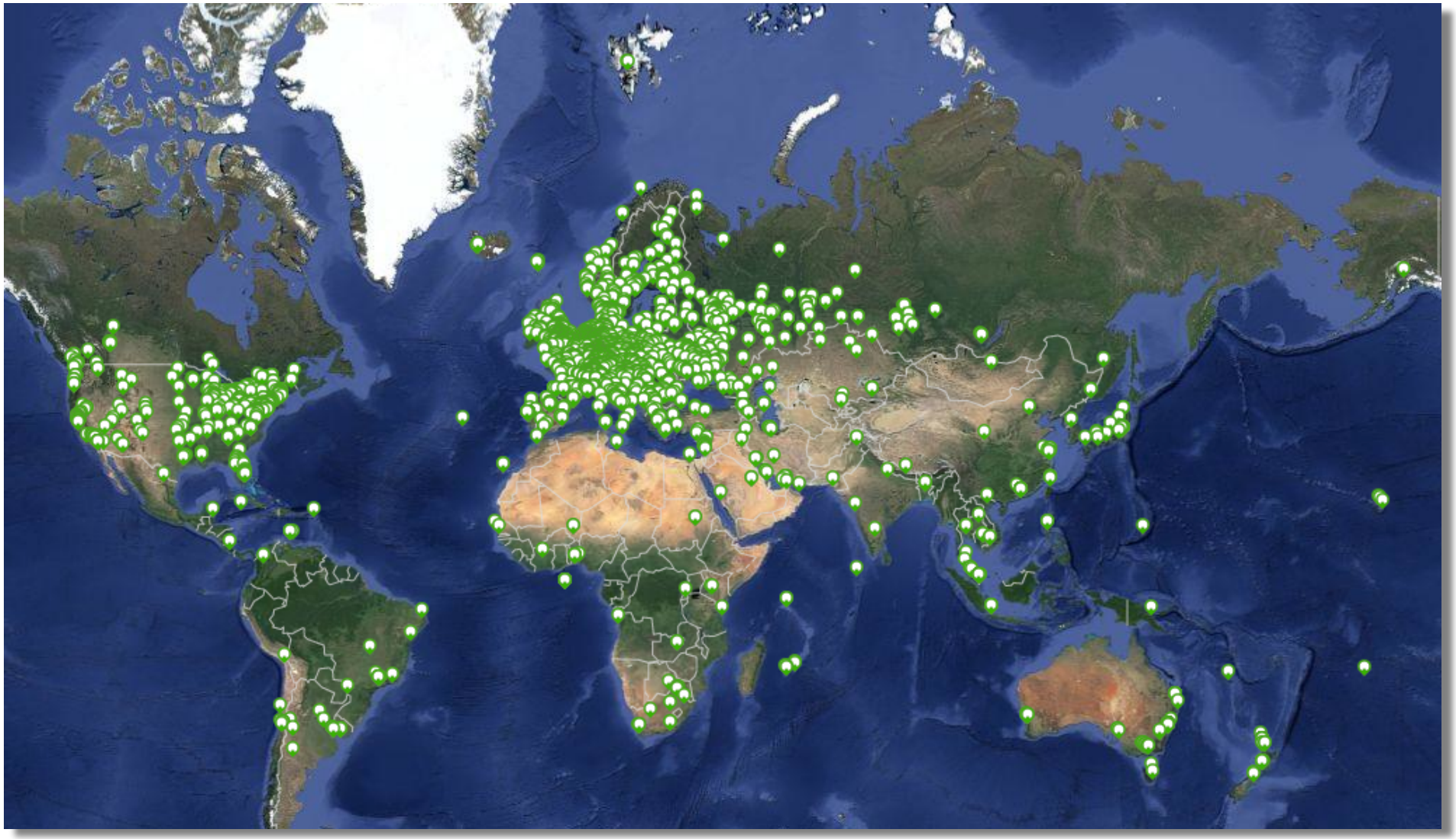
RIPE NCC

RIPE Atlas in Numbers: June 2014

- 6,100+ probes connected
- 8,000+ active users this year
- 5,000+ user-defined measurements daily
  - Four types of user-defined measurements available to probe hosts and RIPE NCC members: ping, traceroute, DNS, SSL
- Goal by end of 2014:
  - 10,000 connected probes

Country	Probes
United States	947
Germany	908
Russian Federation	773
France	721
United Kingdom	705
Netherlands	518
Ukraine	376
Belgium	214
Czech Republic	193
Italy	190

https://atlas.ripe.net



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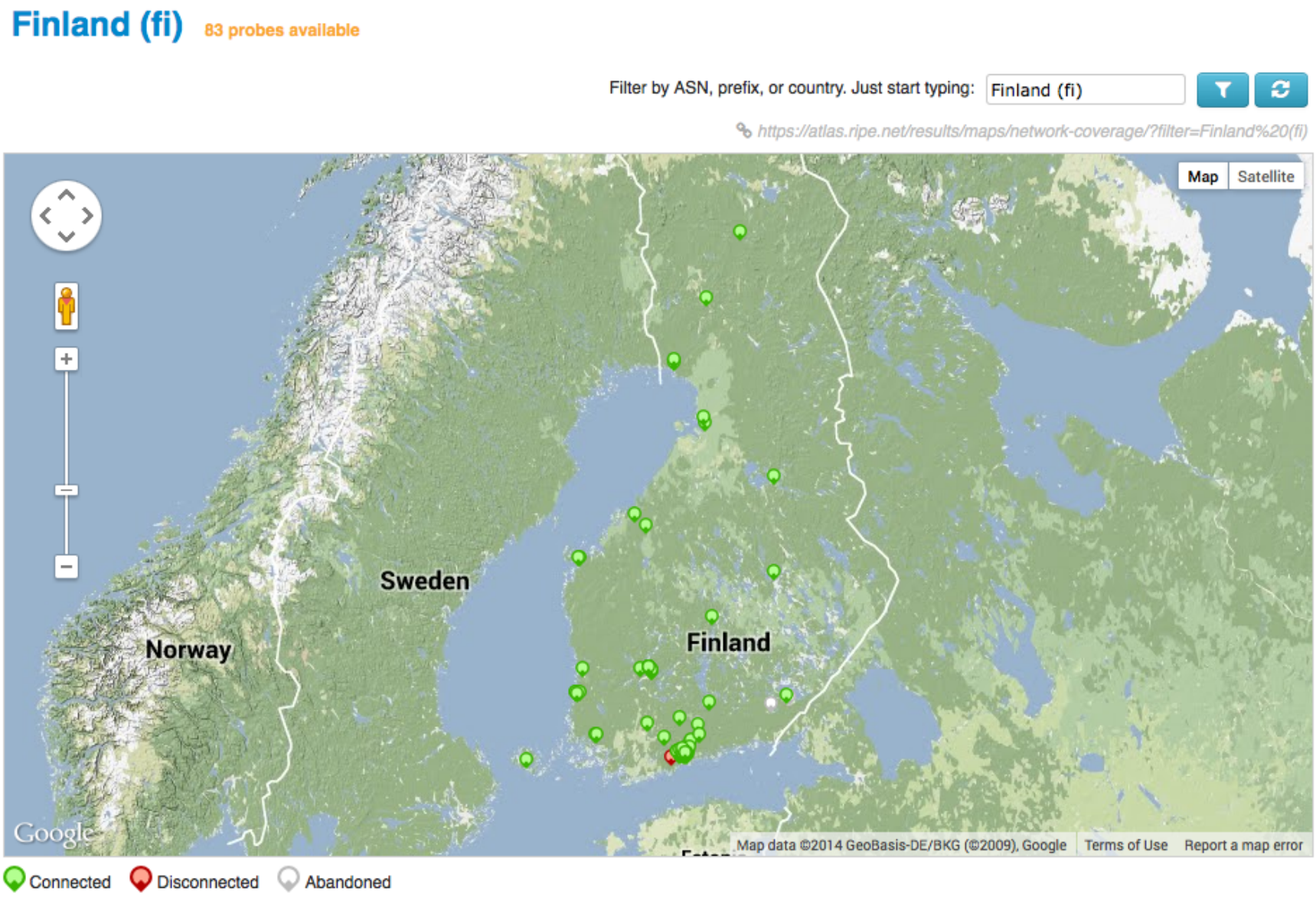

RIPE NCC

Measurement Devices

- v1 & v2: Lantronix XPort Pro

- v3: TP-Link TL-MR3020 powered from USB port
  - Does not work as a wireless router
  - Same functionality as the old probe

- RIPE Atlas anchor: Soekris net6501-70

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Easier to Use RIPE Atlas

- New release: Python library for measurement scheduling
  - https://github.com/RIPE-NCC/ripe-atlas-cousteau
- New release: get to the “latest results” for your measurement quickly
  - https://atlas.ripe.net/api/v1/measurement-latest/<measurement-id>/
- New release: Python parsing library for results
  - https://github.com/RIPE-NCC/ripe.atlas.sagan
- New release: status checks

New: Easy Network Monitoring

- Network operators use tools for monitoring health of networks
  - Nagios & Icinga
- Tools can receive input from RIPE Atlas, via API
- Benefits:
  - Doing pings from a subset of 6,000+ probes around the world
  - Looking at your network from the outside
  - Plug into your existing practices

Integration with Monitoring Systems

- Three easy steps:

1. Create a RIPE Atlas ping measurement

2. Go to “Status Checks” URL

3. Add your alerts in Icinga or Nagios

1. How to Schedule a Measurement

- General case - applicable for ping, too!
- Log in to atlas.ripe.net
- Go to “My Atlas” and “Measurements”
- Choose “New Measurement” or “One-off”
  - Most measurements are periodic & 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/

2. Creating Status Checks

- 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 % of probes that successfully received a reply
  - How many most recent measurements to base the status on
  - What the maximum acceptable packet loss is
- Documentation
  - https://atlas.ripe.net/docs/status-checks/

3. Icinga Examples

- Community of operators contributed configuration code!
  - Making 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/

Credit System

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

The RIPE Atlas Community GitHub

- If you are a programmer, contribute your code:
  - https://github.com/RIPE-Atlas-Community/
- If you are researcher, look & contribute here:
  - https://github.com/RIPE-Atlas-Community/RIPE-Atlas-data-analysis
- Measurements source code available:
  - https://labs.ripe.net/Members/philip_homburg/ripe-atlas-measurements-source-code

Plans For The Future

- Tagging probes and measurements; using tags for scheduling measurements
  - "Give me 50 home, IPv6 tunelled probes from Finland"
- More IPv6-related features
  - IPv6 extension headers are now supported
- Tell us your feature requests:
  - http://roadmap.ripe.net/ripe-atlas/

Success Stories

- Investigating problems of slow servers:
  - http://engineering.freeagent.com/2014/01/24/atlas-probes/
- Measuring packet loss to determine congested networks
- 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-l-root-name-server

Become an Ambassador

- If you want to...
  - Help distribute probes
  - 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
- Or become a sponsor:
  - https://atlas.ripe.net/get-involved/become-a-sponsor/

RIPE Atlas Anchors

- Anchors: well-known targets and powerful probes
  - Regional baseline & “future history”
- Anchoring measurements
  - Measurements between anchors
  - 300 probes targeting each anchor with measurements
  - Each probe measures 4-5 anchors
- Vantage points for new DNSMON service
- 60+ RIPE Atlas anchors
  - Goal for end of 2014: 100 anchors worldwide

RIPE Atlas Anchors

Total number of RIPE Atlas anchors: 62

Contact RIPE Atlas

- RIPE Atlas website: https://atlas.ripe.net
- Mailing list for active users: ripe-atlas@ripe.net
- Articles on RIPE Labs: https://labs.ripe.net/atlas
- Questions: atlas@ripe.net
- Twitter: @RIPE_Atlas and #RIPEAtlas

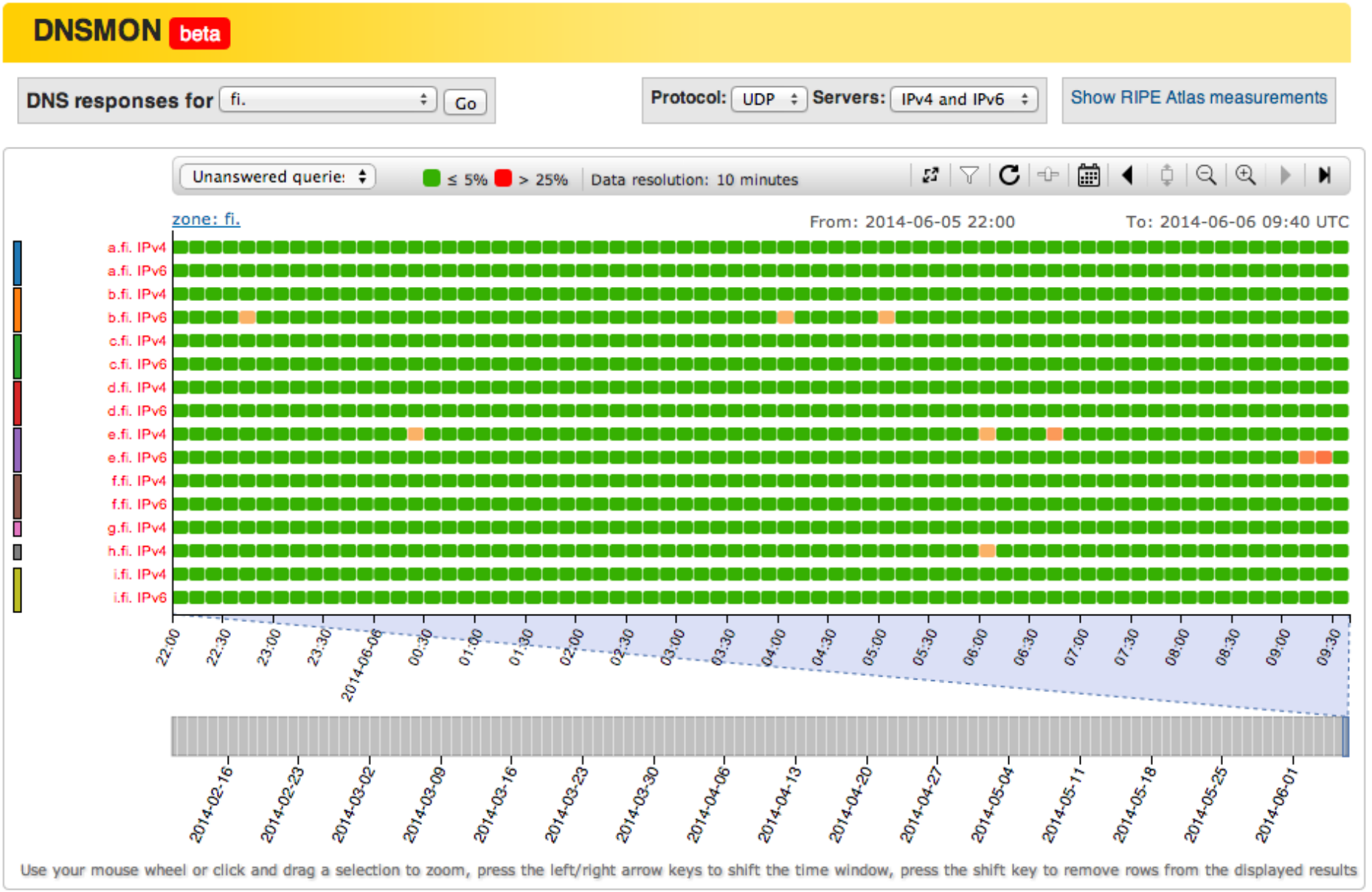
DNSMON Update

RIPE NCC

Monitoring DNS

- “Old” DNSMON service migrated to RIPE Atlas
- RIPE Atlas anchors used as vantage points
  - Replacing of TTM boxes
- Currently monitoring small selection of zones
  - root name servers
  - 30 ccTLDs and few gTLDs
- New zones will be added next year
- https://atlas.ripe.net/dnsmon
- More details: https://labs.ripe.net/Members/fatemah_mafi/an-updated-dns-monitoring-service

Monitoring for DNS TLD Operators



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Monitoring for DNS TLD Operators

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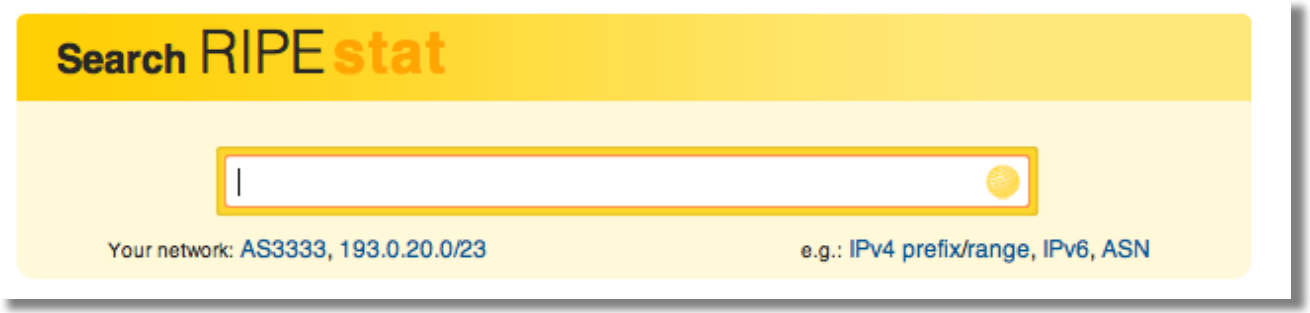
RIPEstat Update

RIPE NCC

Introduction : https://stat.ripe.net

- RIPEstat is a “one-stop shop” for information about Internet number resources
  - From the RIPE NCC: registration data and RIPE Database, routing (RIS), reverse DNS, RIPE Atlas measurements
  - External sources: RIRs, routing registries (IRR), geolocation, blacklists, M-Lab network activity
- Search by: IPv4, IPv6 address/prefix; AS Number; hostname; country; keywords (new)



Assisted Registry Checks

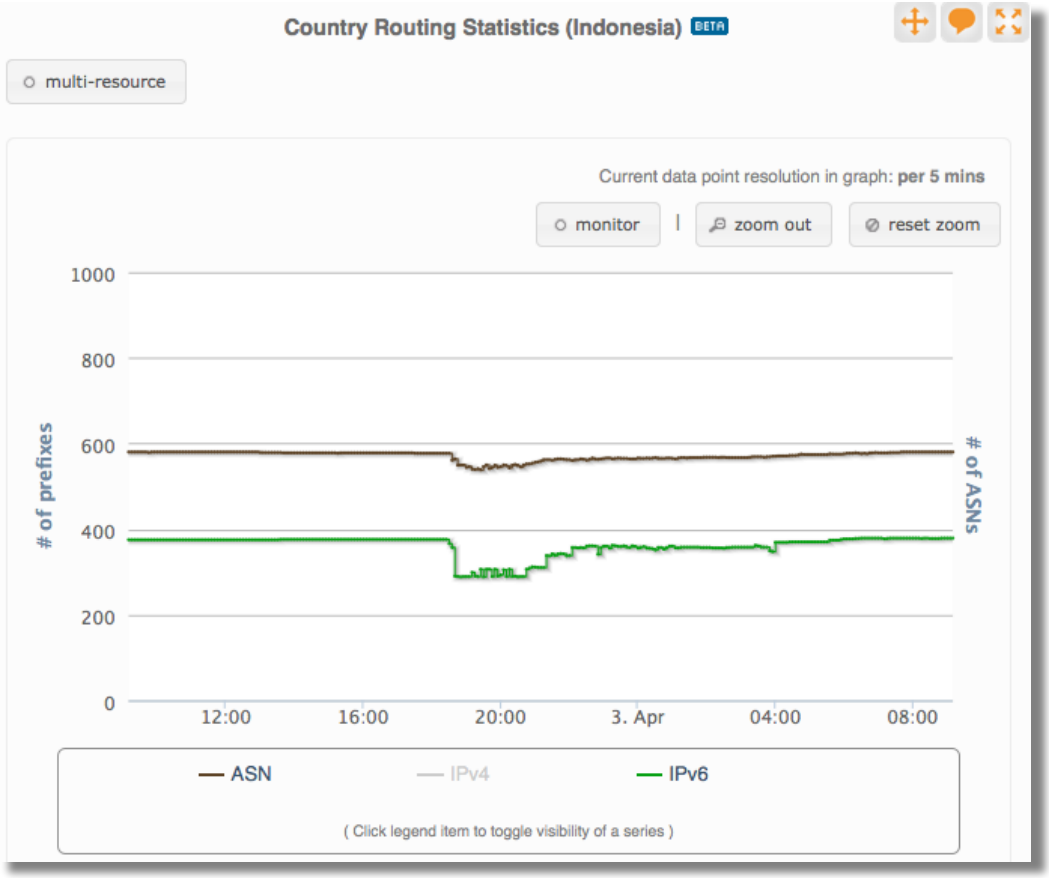
- RIPEstat is used extensively for Assisted Registry Checks with LIRs

- RIPE NCC's Registration Services are proactively identifying routing and reverse DNS inconsistencies

- https://labs.ripe.net/Members/matt_parker/assisted-registry-check-first-results

Researching BGP Leaks in Indonesia

- In April 2014, Indosat (AS4761) announced prefixes which were not allocated to them
- Many ASNs were affected and temporarily "disappeared"



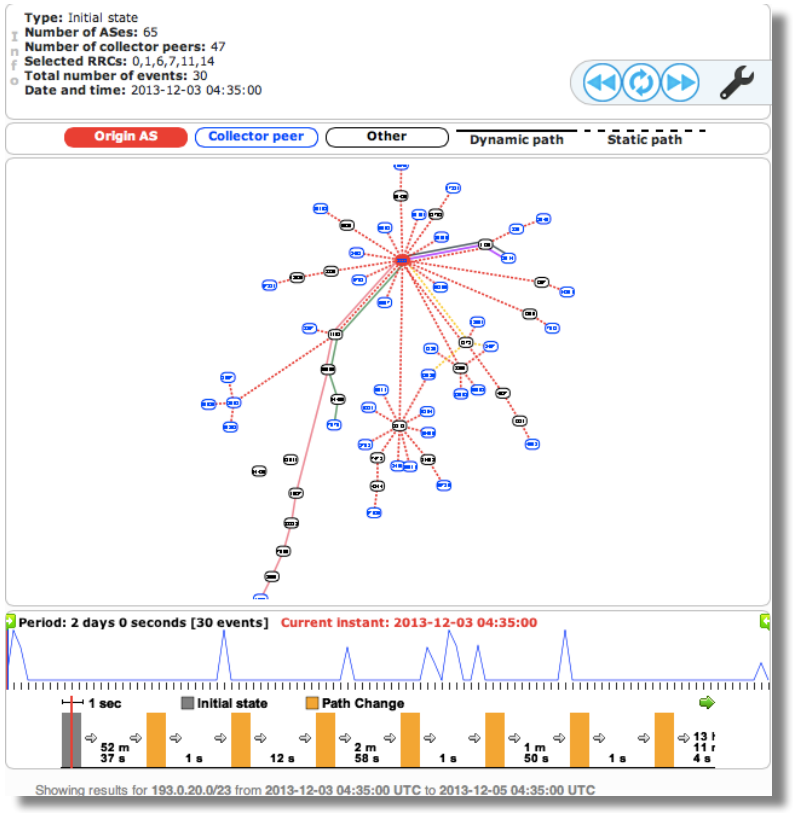
- https://labs.ripe.net/Members/wilhelm/bgp-leaks-in-indonesia

Let's BGPlay!

- Indonesian incident visible in BGPlay

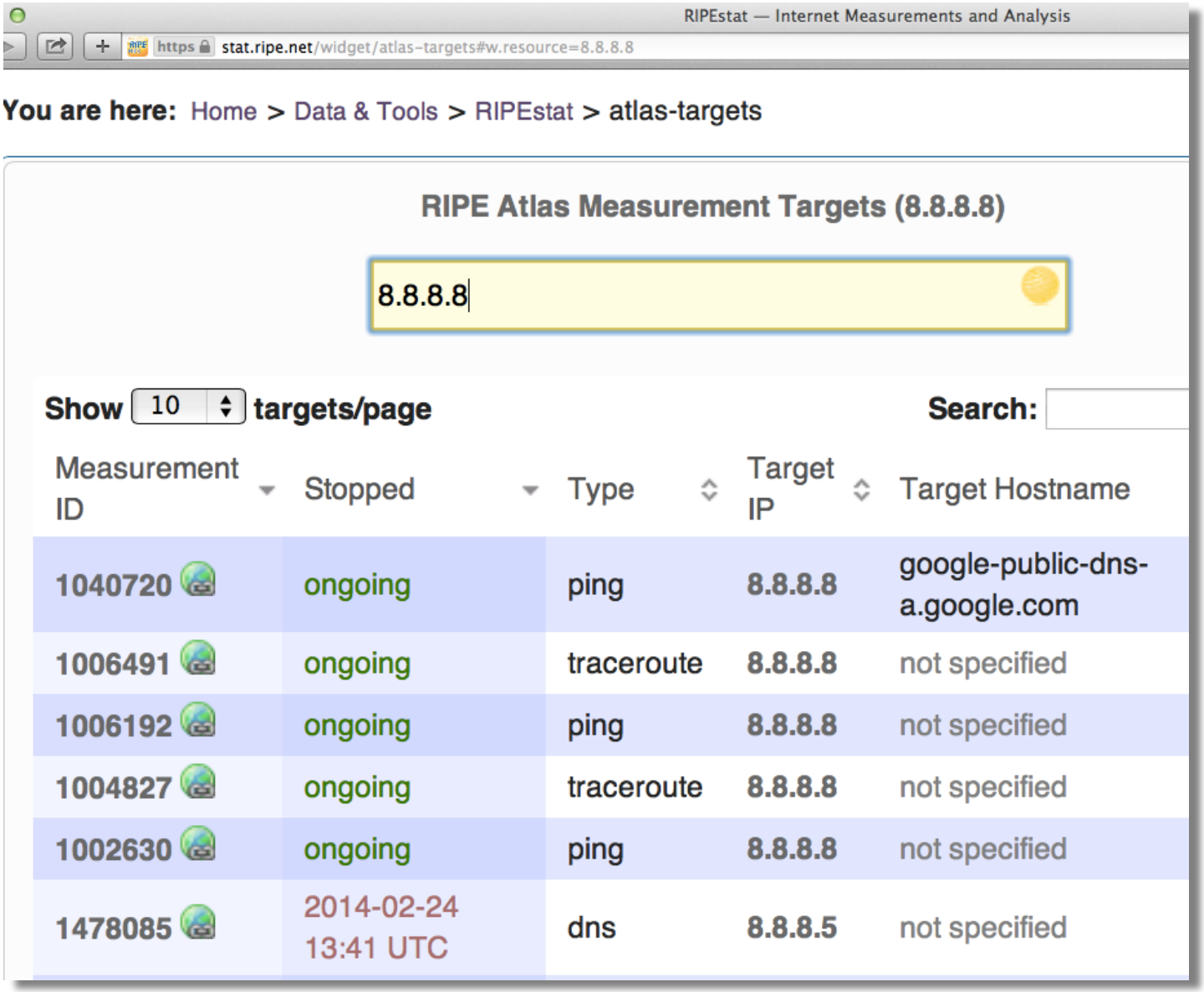
- The most famous incident: YouTube hijacked by Pakistan Telecom:

http://www.youtube.com/watch?v=IzLPKuAOe50



- BGPlay is available as part of RIPEstat

Looking up RIPE Atlas Activity



Plans for the Future and Feedback

- Improve back-end stability and performance to enable resilience of current services and scale for future growth
- Increase data quality and consistency
  - Plans to renew the RIS collection process
  - Increase freshness of collected routing data (“live”)

- Tell us your feature requests:
  - http://roadmap.ripe.net/ripe-stat/
  - stat@ripe.net
  - Twitter: @RIPE NCC / #ripestat

Questions?