RIPE Atlas in Pictures

Vesna Manojlovic
Measurements Community Building

MAT WG, RIPE68, May 2014, Warsaw
Probes Photos

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Growth Graphs

**Probe deployment**

**RIPE Atlas anchors**

**RIPE Atlas users**
Reasons to Celebrate...
Success Stories

Latency to 8.8.8.8 from RIPE Atlas probes in Turkey

DNSMON [test]

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Get Involved
Join the RIPE Atlas Community

Community Information

Find out more about the RIPE Atlas community, their contributions, and the hosts who stand out in the RIPE Atlas network.

<table>
<thead>
<tr>
<th>Always Up</th>
<th>Big Spenders</th>
<th>New Arrivals</th>
<th>Sponsors</th>
<th>Anchor Hosts</th>
<th>Photos</th>
</tr>
</thead>
</table>

New Arrivals are new hosts who connected a RIPE Atlas probe in the last ten days. (Note that the flags are representative of their probe locations and not necessarily their nationality.)

<table>
<thead>
<tr>
<th>Andrea Speranza</th>
<th>herdir anon</th>
<th>Ferdinand BOISSIER</th>
<th>Arky R</th>
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<tbody>
<tr>
<td>Angus Hay</td>
<td>Pop Marcel Marcel</td>
<td>Marc Lagrange</td>
<td>andre els</td>
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<td>fernando aversa</td>
<td>Mark Campbell</td>
<td>Jean Welman</td>
<td>mwizu sikanyika</td>
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<td>Diederik Vandevenne</td>
<td>Marty Strong</td>
<td>Geert Jan de Groot</td>
<td>Jeff Fletcher</td>
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<td>Sysadmin VRVis</td>
<td>Trevor Warwick</td>
<td>Rhys Smith</td>
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<td>CERT SWITCH</td>
<td>Pierre-Yves Gillier</td>
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<td>Marko Eling</td>
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<td>Lukas Vescidik</td>
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<td>Piotr Burzyński</td>
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<td>Martin Frager</td>
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Host a RIPE Atlas Anchor (part 2)
Become an Ambassador
Contribute to the GitHub Repository

February 3rd 2013 - May 4th 2014
Contributions to master, excluding merge commits

bortzmeyer
21 commits / 1,801 ++ / 405 --

kmkaplan
4 commits / 45 ++ / 13 --

wnagele
3 commits / 79 ++ / 20 --

sputnick-dev
3 commits / 170 ++ / 1 --
We are Grateful to our Sponsors!
## Roadmap for the Future

<table>
<thead>
<tr>
<th>Planned</th>
<th>In Progress</th>
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<tbody>
<tr>
<td>Additional features for RIPE</td>
<td>Improve procedure for probe distribution by RIPE</td>
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<tr>
<td>Atlas anchors</td>
<td>Atlas ambassadors</td>
</tr>
<tr>
<td>WiFi Measurements</td>
<td>Regularly publish metadata</td>
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<tr>
<td>Share my probe with a</td>
<td>Regularly publish Names</td>
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<tr>
<td>custom-made group</td>
<td>Improved Measurements Pages</td>
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<tr>
<td>Sharing credits with</td>
<td>Improve number of connected probes</td>
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<td>colleagues</td>
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<tr>
<td>Restarting previous measurements</td>
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<td>Vantage points dropping out of</td>
<td>Increase number of active RIPE Atlas anchors</td>
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<tr>
<td>existing user-defined</td>
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<tr>
<td>measurements</td>
<td></td>
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<td></td>
<td>Improve IPv6 probe selection</td>
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</tbody>
</table>
• 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
Questions?
Additional Information
RIPE Atlas in Numbers: May 2014

- 5,500+ probes connected
- 8,000+ active users
- 55+ RIPE Atlas anchors
- 5,000+ built-in measurements daily
- 5,000+ user-defined measurements daily
  - Four types of user-defined measurements available to probe hosts and RIPE NCC members: ping, traceroute, DNS, SSL
- Goals by end 2014:
  - 10,000 probes connected
  - 100 anchors
Growth of the Network

Probe deployment

Probe deployment -- 2014-05-08 08:41:42 UTC

- Activated
- Connected
- Disconnected
- Never seen
- GeoIP
- NoGeoIP
- Abandoned
- Written off
Growth in Anchors

RIPE Atlas Anchors

Growth in the number of RIPE Atlas anchors over time

Number of Anchors

Jan '13 Mar '13 May '13 Jul '13 Sep '13 Nov '13 Jan '14 Mar '14 May '14

2014-03-05
us-pac-as1280
anchors: 42
Number of User Defined Measurements

Last 180 days

UDMs based on the Type 2014-05-15 11:41:42 UTC

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RIPE Atlas Use Cases
Integration with Monitoring Systems

• Benefits of using RIPE Atlas for monitoring
  - Doing pings from 1,000 out of 5,000+ probes around the world
  - Looking at your network from the outside
  - Plug into your existing practices

• Three easy steps for automatic alarms:
  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/
1.5 Credit System

• By hosting a probe, you earn credits
• To perform measurements, you spend credits
  - pings cost 10 credits, traceroutes cost 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
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 the % of probes that successfully received a reply
  - How many most recent measurements to base the status on
  - What is the maximum packet loss acceptable

- 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

- Post on Icinga blog
  - https://www.icinga.org/2014/03/05/monitoring-ripe-atlas-status-with-icinga-2/
Monitoring for DNS TLD operators


Unanswered queries: < 4%  > 22%  Data resolution: 1 day

From: 2014-04-02 00:00  To: 2014-05-08 00:00 UTC

Use your mouse wheel or click and drag a selection to zoom, press the left/right arrow keys to shift the time window, press the shift key to remove rows from the displayed results.

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Monitoring DNS

- “Old” DNSMON service migrated to RIPE Atlas
- RIPE Atlas anchors used as vantage points
  - Replacing TTM boxes
- Currently monitoring small selection of zones
  - root name servers
  - 30 ccTLDs and few gTLDs
- New zones will be added next year
- Give us feedback about DNS alerts!
- https://labs.ripe.net/Members/fatemah_mafi/an-updated-dns-monitoring-service
Success Stories

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

- DNS: Looking for most popular instances of .FR anycast servers

- Operators: investigating network disruptions
  
  [Link](http://engineering.freeagent.com/2014/01/24/atlas-probes/)
• A RIPE Atlas View of Internet Meddling in Turkey
RIPE Atlas Anchors

• Anchors: well-known targets and powerful probes
  - Regional baseline & “future history”

• Anchoring measurements
  - Measurements between anchors
  - 200 probes targeting each anchor with measurements
  - Each probe measures 4-5 anchors

• Vantage points for new DNSMON service

• Host are responsible for the hardware

• Benefits: https://atlas.ripe.net/about/anchors/
Visualization: Seismograph

- Seismograph
  - Multiple ping measurements in one view
  - Stacked chart and interactive control panel
Visualization: Zoomable ping graph

- Zoomable ping graph
  - Replacing multiple RRDs graphs: zoom in/out in time, in the same graph
  - Easier visualisation of an event’s details
  - Selection of RTT class (max, min, average)
• If you are a programmer: contribute your code
  - https://github.com/RIPE-Atlas-Community/

• If you are researcher, look & contribute here:

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

• New! Parsing library:
  - https://github.com/RIPE-NCC/ripe.atlas.sagan
Become an Ambassador

• We’re looking for volunteers to help us:
  - Distribute probes
  - Give workshops, tutorials and promote RIPE Atlas

• To become an ambassador:
  - [https://atlas.ripe.net/get-involved/become-a-ripe-atlas-ambassador/](https://atlas.ripe.net/get-involved/become-a-ripe-atlas-ambassador/)
  - email mcb@ripe.net to find out how to obtain some probes

• Or become a sponsor:
  - [https://atlas.ripe.net/get-involved/become-a-sponsor/](https://atlas.ripe.net/get-involved/become-a-sponsor/)
Contact RIPE Atlas

- https://atlas.ripe.net
- Apply for a probe: https://atlas.ripe.net/apply
- Apply for an anchor: https://atlas.ripe.net/anchors/apply/
- Mailing list for active users: ripe-atlas@ripe.net
- https://atlas.ripe.net/get-involved/community/
- Articles & updates on RIPE Labs: https://labs.ripe.net/atlas
- Roadmap: http://roadmap.ripe.net/ripe-atlas/
- Questions: atlas@ripe.net
- Twitter: @RIPE_Atlas and #RIPEAtlas