RIPE Atlas

Global Internet Measurement Network

Contributor, Emile Aben

July 2016 | IDNOG
Overview

• RIPE Atlas
• Coverage: July 2016
• Features
• New features
• Plans for the future
• RIPE Atlas view of Indonesia
• RIPE Atlas Community
What is RIPE Atlas

- RIPE Atlas
- Thousands of measurement nodes
- Hosted by volunteers globally
- Distributed partly by RIPE Atlas ambassadors
  - APNIC staff, Budiwijaya, Anurag Bhatia and many more!
- Probes run different measurements
  - ping, traceroute, DNS, SSL
- [https://atlas.ripe.net](https://atlas.ripe.net)
RIPE Atlas Infrastructure

- Probe distribution
  - 14,000 RIPE Atlas probes distributed
  - 9,300+ RIPE Atlas probes active
  - 206 RIPE Atlas anchors active - 12 sponsored by APNIC
Coverage
RIPE Atlas Coverage, July 2016

### Coverage

<table>
<thead>
<tr>
<th>Coverage</th>
<th>Country</th>
<th>Probes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPv4 ASNs covered</td>
<td>United States of America</td>
<td>1053</td>
</tr>
<tr>
<td>3379 (6.266%)</td>
<td>Germany</td>
<td>997</td>
</tr>
<tr>
<td>IPv6 ASNs covered</td>
<td>France</td>
<td>752</td>
</tr>
<tr>
<td>1222 (10.621%)</td>
<td>United Kingdom</td>
<td>621</td>
</tr>
<tr>
<td>Number of countries covered</td>
<td>Netherlands</td>
<td>543</td>
</tr>
<tr>
<td>184 (93.878%)</td>
<td>Russia</td>
<td>509</td>
</tr>
<tr>
<td></td>
<td>Czech Republic</td>
<td>269</td>
</tr>
<tr>
<td></td>
<td>Switzerland</td>
<td>257</td>
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<tr>
<td></td>
<td>Ukraine</td>
<td>214</td>
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### Measurements currently running

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Built-in</th>
<th>User-defined</th>
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<tbody>
<tr>
<td>Ping</td>
<td>40</td>
<td>3788</td>
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<tr>
<td>Traceroute</td>
<td>43</td>
<td>2969</td>
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<tr>
<td>DNS</td>
<td>144</td>
<td>4325</td>
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<tr>
<td>SSL Certificate</td>
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<td>163</td>
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<td>NTP</td>
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<tr>
<td>HTTP</td>
<td>4</td>
<td>417</td>
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</table>
RIPE Atlas Anchors

- 42 more anchors in 2016
- From 164 to 206
- Renewal of support contracts: one replaced!

RIPE Atlas Anchors
Growth in the number of RIPE Atlas anchors over time
RIPE Atlas features
Features

• CLI Toolset (Magellan)
• DNSMON
• DomainMON
• LatencyMON
• Status Checks
• DNS Root Server Streaming Visualisation
• IXP Jedi
• Open IP Map
Available Visualisations: Ping

List of probes: sortable by RTT

Map: colour-coded by RTT

LatencyMON: compare multiple latency trends
New features
Newest Features

• Always posted here:
  - https://atlas.ripe.net/resources/announcements/

• Improving security: two external reviews done:
  - https://atlas.ripe.net/docs/security/

• Increased limits: 1,000 probes per measurement

• Dealing with probes lifecycle
  - https://labs.ripe.net/Members/philip_homburg/a-visual-impression-of-probe-lifetimes
Newest Features

- 15 more ccTLD zones added to DNSMON
- For the rest of us: DomainMON
  - Monitoring second-level domains
  - Simple to set up, powerful visualisation of received data
  - https://atlas.ripe.net/domainmon/
- Documentation, documentation, documentation
  - New version of API (v2)
  - Helping users to troubleshoot own probe (SOS messages)
  - Website menu restructure
Only Towards Anchors: HTTP

- IPv4/IPv6 LatencyMON comparison for anchoring measurements (ping, traceroute, HTTP)
For the Community

• Sharing credits made easier
  - "Standing orders" and “shared access” to your credits

• Vouchers for claiming credits as “gifts”
  - Useful for ambassadors, trainings, workshops, other RIRs

• New communication channel: RIPE Forum
  - https://www.ripe.net/participate/mail/forum/ripe-atlas

• Coming up soon:
  - More credits for more contributions: the more popular your probe is, the more you earn!
RIPE Atlas
View of Indonesia
RIPE Atlas Probes and Anchors in ID

1 RIPE Atlas anchor, sponsored by APNIC

<table>
<thead>
<tr>
<th>Hostname</th>
<th>ProbeID</th>
<th>Company</th>
<th>City</th>
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<tbody>
<tr>
<td>id-jkt-as10208</td>
<td>6169</td>
<td>PT. Millenium Internetindo</td>
<td>Jakarta</td>
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<tr>
<td></td>
<td></td>
<td>Sponsored by: APNIC</td>
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Most Wanted Eyeball Networks

- Based on Emile Aben’s research and article

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<tr>
<th>ASN</th>
<th>CC</th>
<th>Users</th>
<th>Online</th>
<th>Discon</th>
<th>Other</th>
<th>%</th>
<th>Organisation</th>
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<td>45727</td>
<td>ID</td>
<td>8371789</td>
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<td>0</td>
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<td>1.49</td>
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<td>0</td>
<td>0.12</td>
<td>ORION-AS-ID Orion Cyber Internet</td>
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</table>
Measure Indonesia with IXP-Jedi?

- IXP-Country-Jedi
  - Are the paths between ASes staying in the country?
  - What is the difference between IPv6 and IPv4?
  - How many paths go via a local IXP?
  - Which peer could you add to improve reachability?

- Experimental tool
  - Depends on probe distribution in a country
  - Feature requests welcome!
IXP Country Jedi

• Tool and concept:
  - https://github.com/emileaben/ixp-country-jedi
  - https://labs.ripe.net/Members/emileaben/measuring-ixps-with-ripe-atlas

• Interactive diagnosis tool (hover over the cell)
  - http://sg-pub.ripe.net/emile/ixp-country-jedi/latest/NL/ixpcountry
Do Paths Stay in the Country?

- Snapshot of the paths that do, or don’t, stay local

IPv4

1 January 2016

*Paths in this experiment, i.e. NOT traffic
Do Paths Stay in the Country?

- Snapshot of the paths that do, or don’t, stay local

IPv6

*Paths in this experiment, i.e. NOT traffic
How Many Paths Go Via Local IXP?

*Paths in this experiment, i.e. NOT traffic*
Actions on Indonesia

• Find possible suboptimal routing with this tool
  - Find your ASN in the mesh, find the person from another ASN, have tea together :)

• Improve accuracy of this diagnostic tool!
  - Your ASN not on the graph?
  - Moved? Update your probe’s geolocation!

• Improve infrastructure geolocation: contribute data to OpenIPPMAP!
RIPE Atlas Community
Get involved!

- Use RIPE Atlas for your operations: monitoring, troubleshooting, measuring
- Do scientific **research**
- Participate in a **webinar**
- Add **multilingual** content
- Become an **ambassador** or a **sponsor**
- Host a **RIPE Atlas anchor**
Sponsors: We Thank You!

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AS34288 CONNECTING EDUCATION TO THE WORLD
Interfaces Hackathon 21-22 May 2016

- 20 participants
- Eight projects proposals
- Five final projects presentations
- Code available on GitHub

Next: IXP tools
- 22-23 October, Madrid
- Weekend before RIPE 73
Contact RIPE Atlas

• Use cases and updates: https://labs.ripe.net/atlas

• Mailing list for active users:
  - ripe-atlas@ripe.net
  - https://www.ripe.net/participate/mail/forum/ripe-atlas

• Questions: atlas@ripe.net

• Twitter: @RIPE_Atlas and #RIPEAtlas
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