



**RIPE NCC**  
RIPE NETWORK COORDINATION CENTRE

# Open-sourcing RIPE Atlas

Vesna Manojlovic  
Internet New Year Event 2016

14 January 2016 | Amsterdam



RIPE Atlas – Wikipedia, the free encyclopedia

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Reader

Apple iCloud Facebook Twitter Wikipedia Yahoo! News Popular

Becha

0

Talk

Sandbox

Preferences

Beta

Watchlist

Contributions

Log out

Article

Talk

Read

Edit source

Edit

★

More

Search

Q



WIKIPEDIA  
The Free Encyclopedia

Main page

Contents

Featured content

Current events

Random article

Donate to Wikipedia

Wikipedia store

Interaction

Help

About Wikipedia

Community portal

Recent changes

Contact page

RIPE Atlas

From Wikipedia, the free encyclopedia

RIPE Atlas

 is a global, open, distributed Internet measurement platform, consisting of thousands of measurement devices that measure Internet connectivity in real time.

Contents

 [hide]

1 History

2 Technical details

3 Community

4 Research papers

5 Similar projects

6 References

7 External links

8 Categories

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2



# RIPE Atlas Coverage

- Countries: 181
- Originating ASNs:
  - 3,333 (IPv4) = 6,33% coverage
  - 1,212 (IPv6) = 11,22% coverage



Country	Probes
United States of America	1032
Germany	966
France	772
United Kingdom	610
Netherlands	514
Russia	481
Czech Republic	262
Italy	260
Switzerland	256
Ukraine	220

# Community Participation



- 9,200 active probes hosted by volunteers
- Active users: 10,000 in 2015; 5,000 last quarter
- 166 RIPE Atlas anchors hosted by operators
- Nine sponsors in 2015; two already for 2016
- 300 active ambassadors, at many conferences
- Using GitHub for multilingual documentation
- Collecting code contributions on GitHub
- Sharing learning material on GitHub



# Most Popular Features

- Six types of measurements: ping, traceroute, DNS, SSL/TLS, NTP and HTTP (to anchors)
- APIs to start measurements and get results
- Powerful and informative visualisations
- Streaming data: real-time results
- Plus: “Time Travel”, LatencyMON, DomainMON
- Newest feature: CLI tools
- Roadmap

# FLOSS: CLI Tools



- Command-line interface for RIPE Atlas API
  - Simple, familiar terminal use and human-readable results
- Open-source development: code on GitHub
- Documentation
- Included in the Linux / \*BSD distributions: OpenBSD, FreeBSD, Gentoo & Arch
  - In progress: Debian & Fedora
- Join this open-source project! (mailing list)



# Crowdsourced Infrastructure Geolocation: OpenIPMap

- Visualising traceroutes on the map is difficult!
  - Routers' geolocation data is often very inaccurate
  - RIPE Atlas performs many traceroutes through Internet core
- Community of operators contributes data to Open IP Map (think: OpenStreetMap for IPs)
  - <https://marmot.ripe.net/openipmap/>
- You can modify, reuse and improve the code
  - <https://github.com/RIPE-Atlas-Community/openipmap>

# OpenIPMap interactive interface

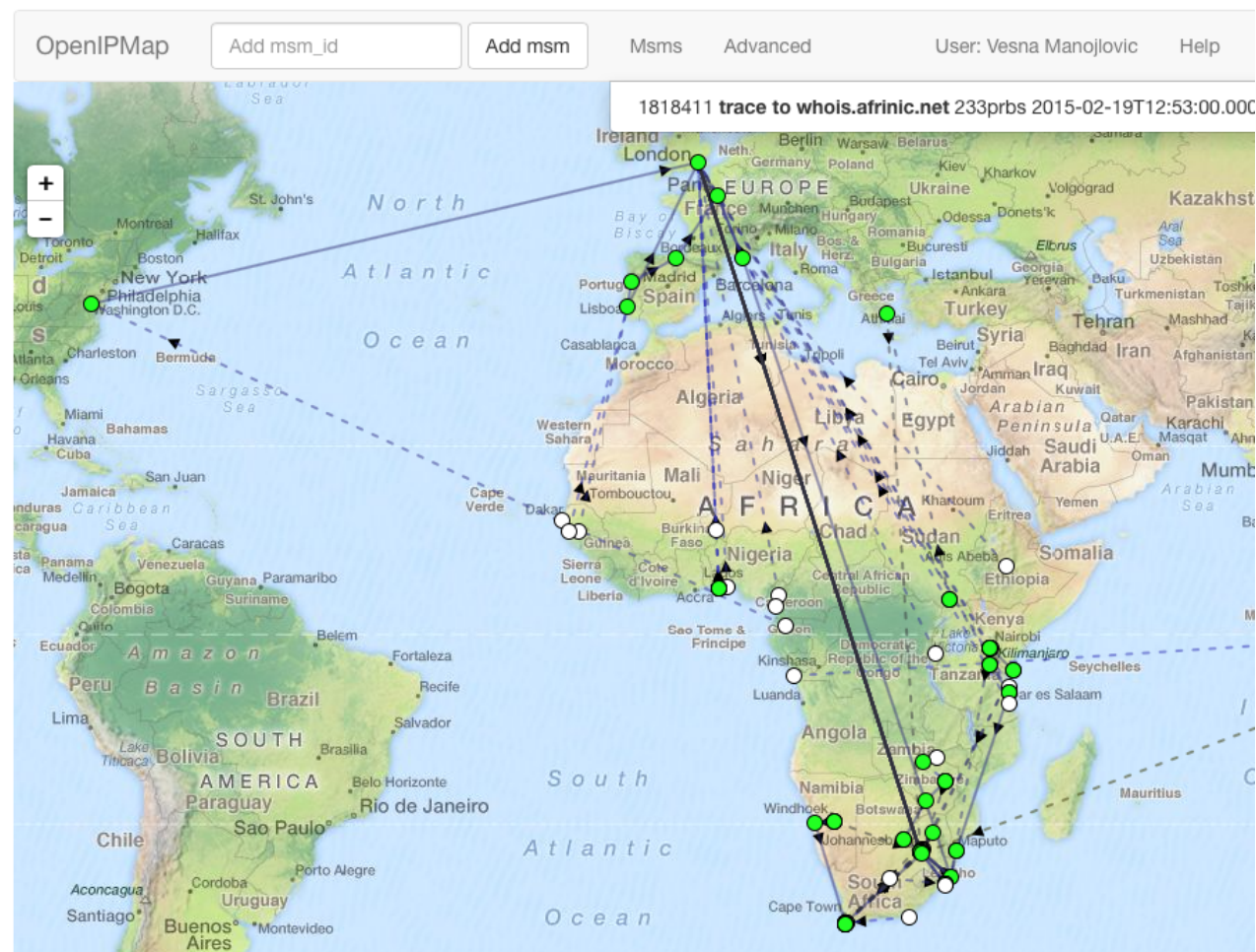


⚡ trace to whois.afrinic.net

General Information	Probes	Map	Latencymon (beta)	OpenIPMap Prototype	Results	Modification Log
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Traceroute results on a geographical map.

OpenIPMap is a prototype visualisation that's attempting to visualise traceroute results geographically. The code is available publicly on [GitHub](#), and the [complete project](#) is available [separately](#) for those who might want to experiment with it.



# IXP Country Jedi



- Tool and concept by Emile Aben
  - <https://github.com/emileaben/ixp-country-jedi>
  - <https://labs.ripe.net/Members/emileaben/measuring-ixps-with-ripe-atlas>
- Method
  - Traceroute mesh between RIPE Atlas probes
  - Hops geolocated using “OpenIPMap” database

# IXP Country Jedi



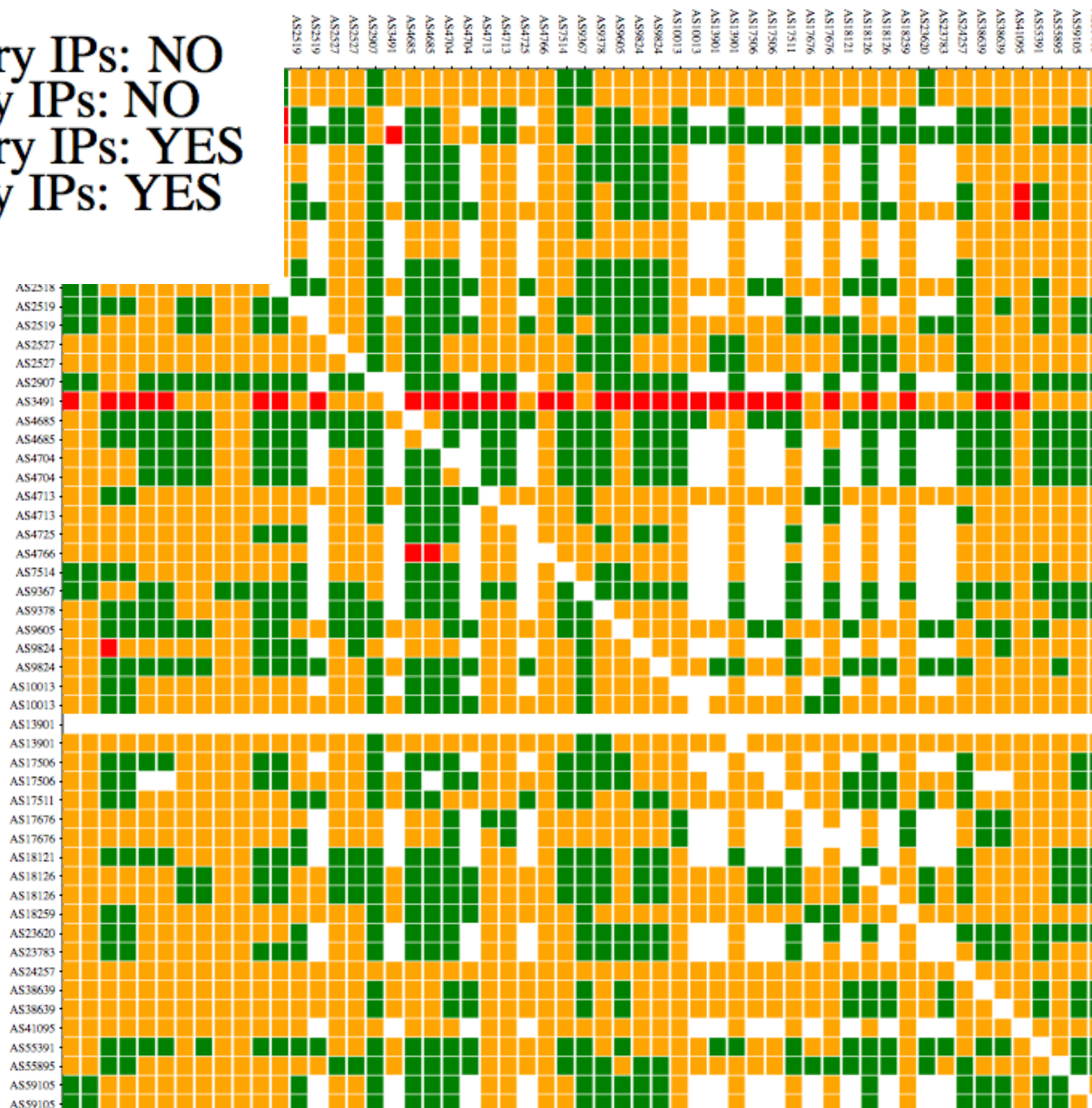
- Benefits:
  - Shows how IXPs help to keep traffic local and regional
  - Comparing countries' performances with each other
  - Routing and traffic optimisation
  - Comparing IPv6 and IPv4

# How many paths go via local IXP?



IXP IPs: YES, out-of-country IPs: NO  
 IXP IPs: NO, out-of-country IPs: NO  
 IXP IPs: YES, out-of-country IPs: YES  
 IXP IPs: NO, out-of-country IPs: YES

- Red or blue: the path is going out of the country (as far as OpenIPmap can tell!)



# Open Data



- All measurement results are available
  - Via API, website and visualisations
- Probe (measurement) source code published
  - [https://labs.ripe.net/Members/philip\\_homburg/ripe-atlas-measurements-source-code](https://labs.ripe.net/Members/philip_homburg/ripe-atlas-measurements-source-code)
  - <https://github.com/RIPE-Atlas-Community/RIPE-Atlas-probe-fw-code-4520>

# Hackathons



- Two RIPE Atlas hackathons in 2015
  - <https://labs.ripe.net/Members/becha/ripe-atlas-tools-hackathon-results>
  - <https://labs.ripe.net/Members/becha/ripe-atlas-hackathon-results>
- All the code is contributed by and given to the community
  - <https://github.com/RIPE-Atlas-Community/ripe-atlas-community-contrib>



# Moar Hackathons!!!1

- Two more hackathons in 2016
  - Before each RIPE Meeting - save the dates!
  - 21-22 May, Copenhagen
  - 22-23 October, Madrid



# Get involved with RIPE Atlas



- <https://atlas.ripe.net>
- <https://github.com/RIPE-Atlas-Community/>
- Mailing list for active users: ripe-atlas@ripe.net
- Articles and updates: <https://labs.ripe.net/atlas>
- Questions: atlas@ripe.net
- Twitter: @RIPE\_Atlas and #RIPEAtlas