

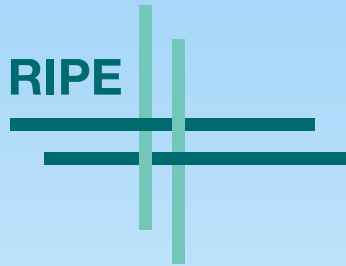
# RIPE Atlas

ICANN meeting 2014, Singapore

ccTLD Tech Day



# RIPE and RIPE NCC

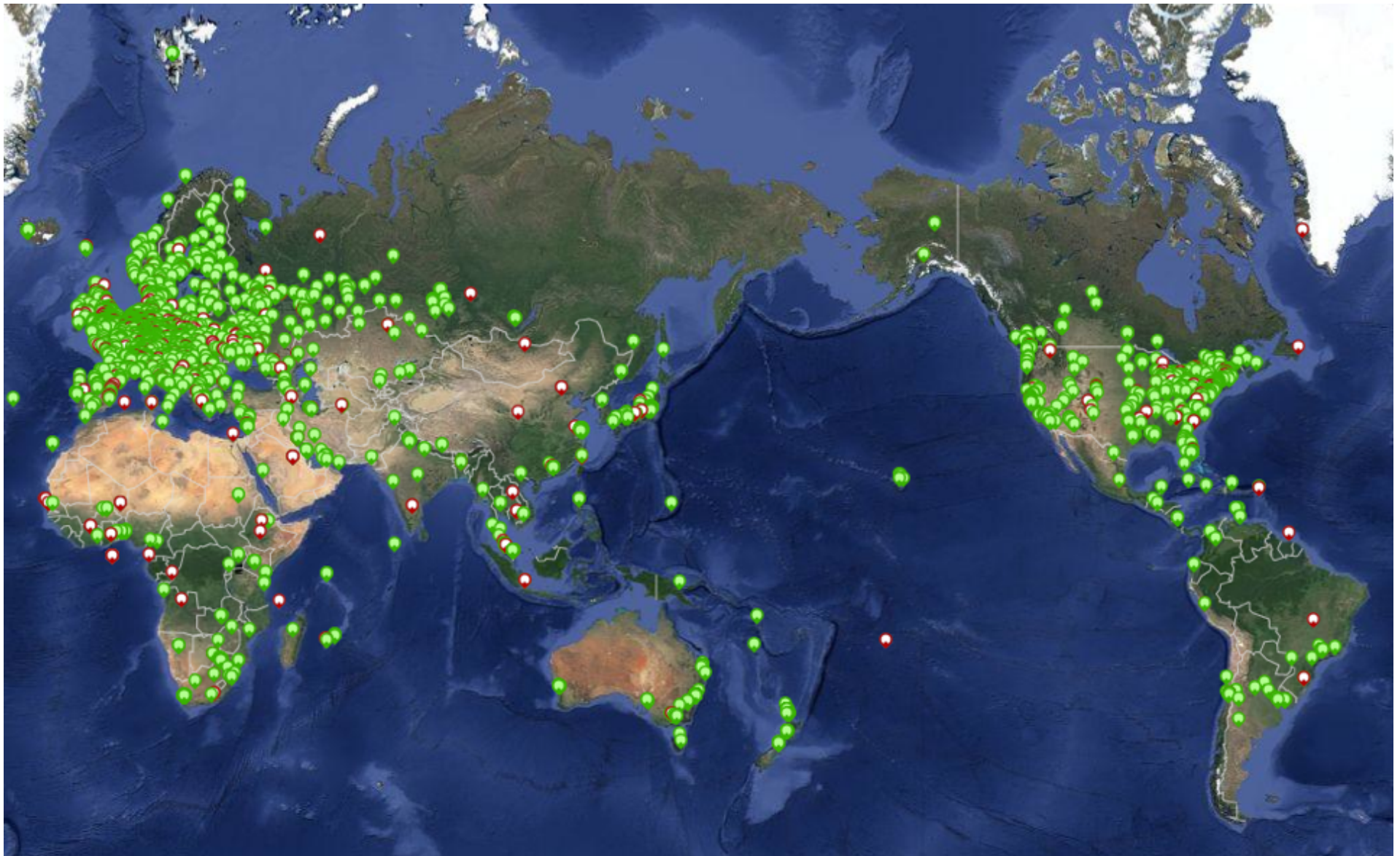


- Réseaux IP Européens
- Started in 1989
- Not a legal entity
- An open community
- No official membership
- Makes policies
- Meets twice a year
- Work is done in Working Groups on mailing lists



- RIPE Network Coordination Centre
- Started in 1992
- Not-for-profit organisation
- Located in Amsterdam
- Has members called Local Internet Registries (LIRs)
- Implements policies
- Facilitates two RIPE Meetings each year
- Provides services to both members and non-members
- Governed by an Executive Board elected by membership
- Neutral, Impartial, Open, Transparent

# RIPE Atlas Deployment





# RIPE Atlas: mid-February 2014

- 4,900+ active probes
  - 2,100+ probes do IPv6
- 10,000+ registered users
- Four types of customised measurements available to **probe hosts**: ping, traceroute, DNS, SSL
  - And of course, ping6 and traceroute6 :-)



# RIPE Atlas Participation and Benefits

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- Anyone can become a RIPE Atlas probe host
- Major personal and operational benefit:  
See your network from the outside!
  - Have at your fingertips ~5,000 external vantage points to do customised measurements towards the destination of your choice
- Data of built-in measurements available to **everyone**
  - Maps, data from public probes, API to download raw data

# Measurement Devices

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- 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



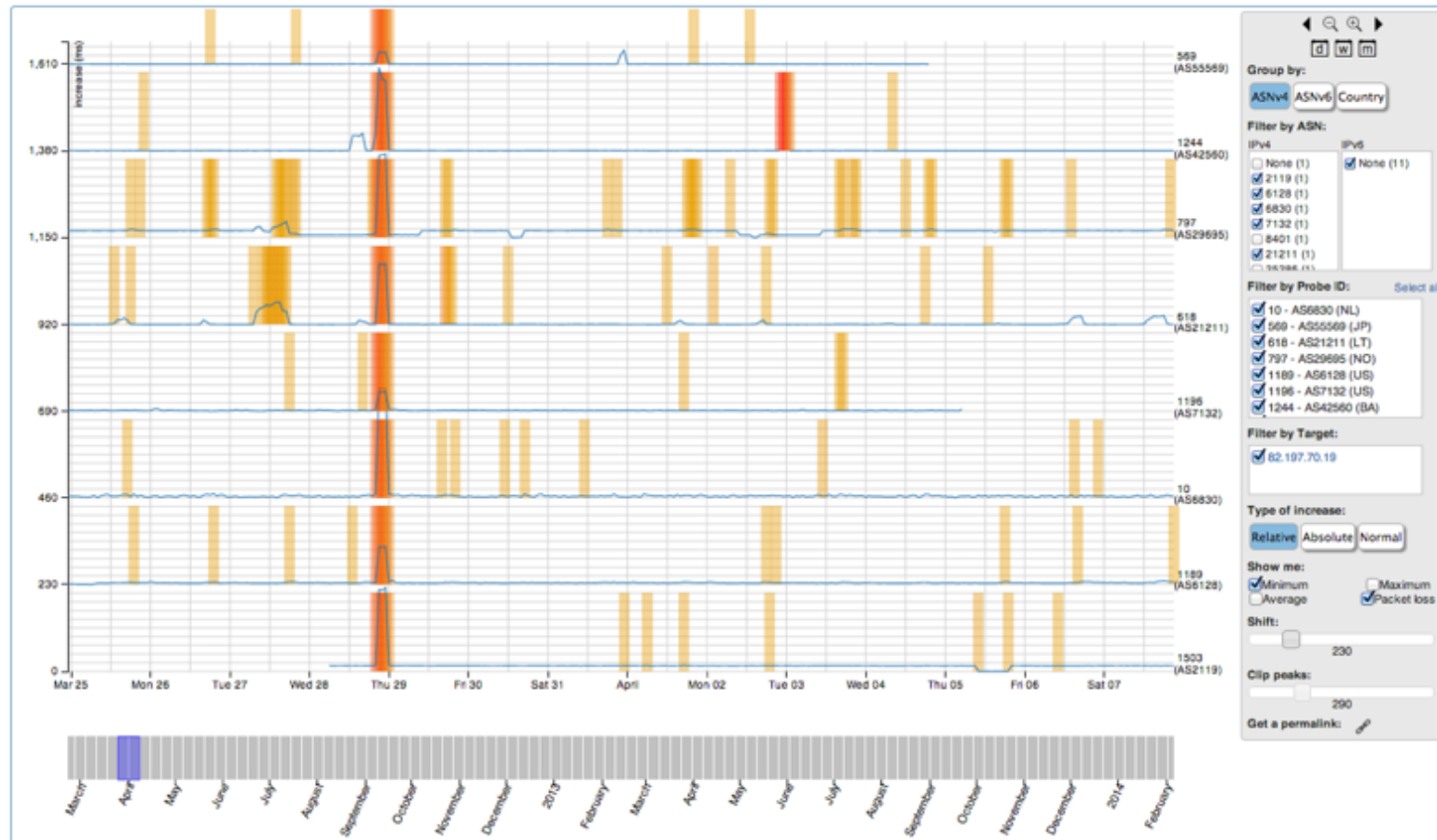
# RIPE Atlas Anchors

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- Anchors: well-known targets and powerful probes
  - Regional baseline & “future history”
- 41 anchors installed
- Anchoring measurements
  - Measurements between anchors
  - 200 probes targeting each anchor with measurements
  - Each probe measures 4-5 anchors
- Apply: <https://atlas.ripe.net/about/anchors/>



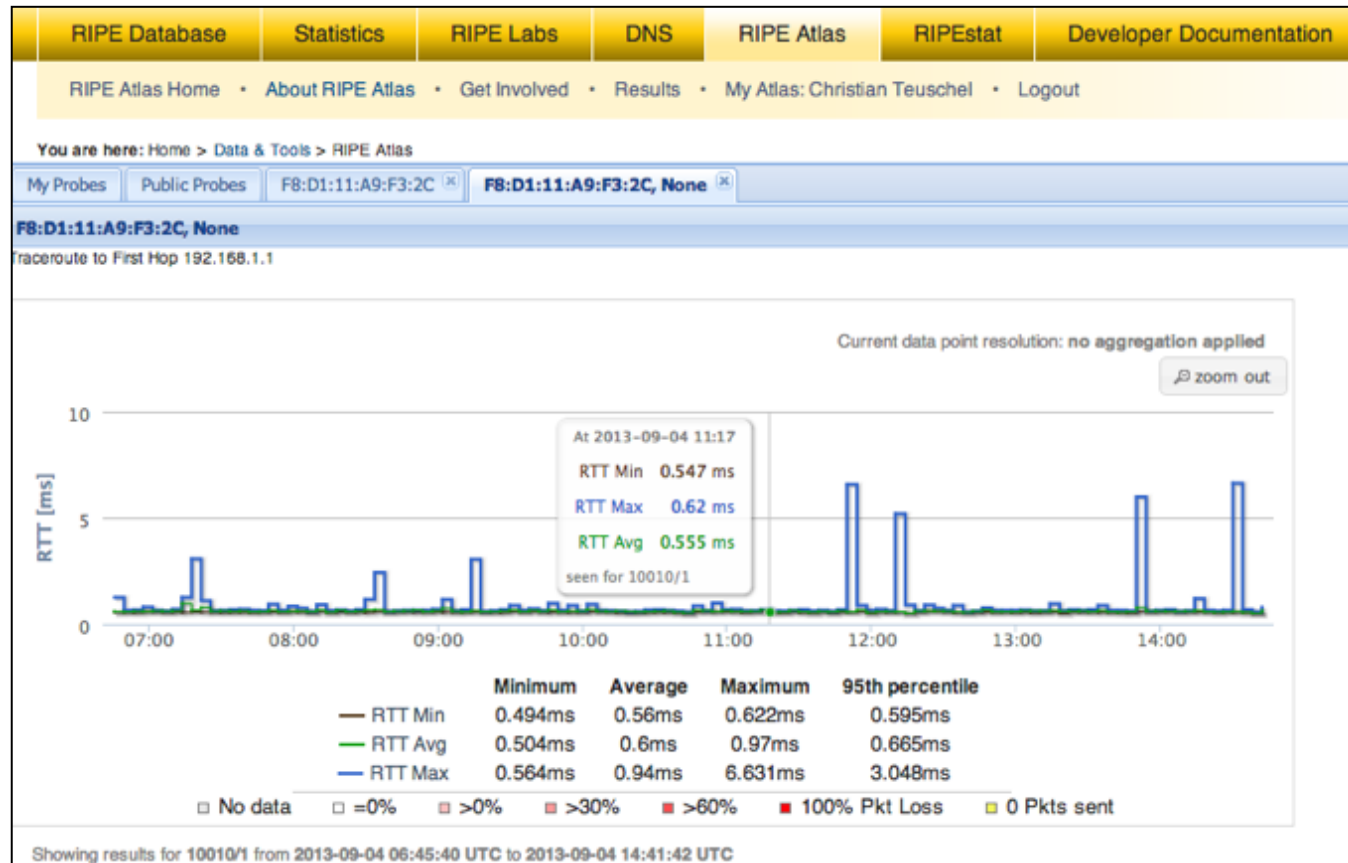
# Seismograph



[https://labs.ripe.net/Members/massimo\\_candela/seismograph-user-guide](https://labs.ripe.net/Members/massimo_candela/seismograph-user-guide)



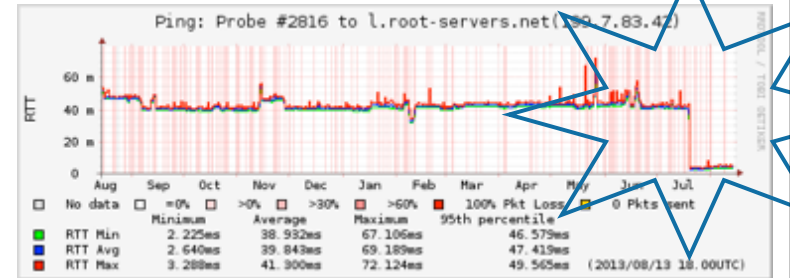
# Zoomable Ping Graph



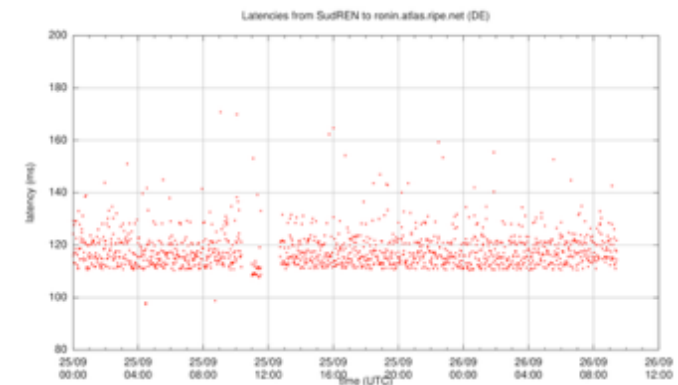
<https://labs.ripe.net/Members/becha/seismograph-and-other-new-ripe-atlas-features>

# RIPE Atlas Success Stories

- IXP: Measuring the effect of installing L-root in Belgrade / SOX
- DNS: Looking for most popular instances of .FR anycast servers
- Events: Measuring Internet outage in Sudan



Name server instance	Nr. of probes connecting to instance	Percentage
dns.th2.nic.fr	173	36%
dns.fra.nic.fr	173	36%
dns.lon.nic.fr	47	10%
dns.lyn2.nic.fr	29	6%
dns.lyn1.nic.fr	25	5%
dns.bru.nic.fr	19	4%
dns.ix1.nic.fr	18	4%



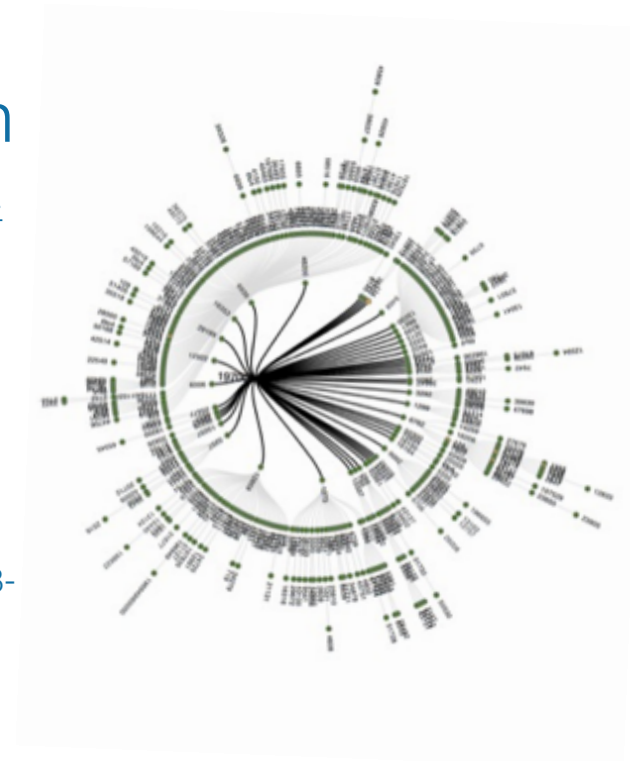
# RIPE Atlas IPv6 Use-Cases

- IPv6 reachability: traceroute visualization

<https://labs.ripe.net/Members/emileaben/visualise-your-ipv6-connectivity-using-ripe-atlas>

- 1% BGP route filtering based on prefix size  
<https://labs.ripe.net/Members/emileaben/ripe-atlas-a-case-study-of-ipv6-48-filtering>

- 10% of probes have fragmentation problems in IPv6  
<http://www.nlnetlabs.nl/downloads/publications/pmtu-black-holes-msc-thesis.pdf>



# RIPE Atlas Plans for the Future

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- Integrating DNSMON into RIPE Atlas and RIPEstat
- Tagging probes and measurements as “My Favourites” for easy viewing
- Improving traceroute visualisation: T-play
- Increasing probe distribution via RIR cooperation
- Tell us your feature requests:
  - **<http://roadmap.ripe.net/ripe-atlas/>**

# How to Use Measurements

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# User-Defined Measurements

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- Probe hosts and RIPE NCC members perform customised measurements using the targets and frequency of their choice
- API available for creating measurements
  - <https://atlas.ripe.net/docs/measurement-creation-api/>
- REST APIs for analysing measurements, too
  - <https://labs.ripe.net/Members/wilhelm/ripe-atlas-code-for-analysis-and-statistics-reporting>

# Credit System

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- By hosting a probe, you earn credits as a reward for making your probe available to others
  - Hosts earn 21,600 credits per day, as long as the probe is connected
- To perform customised measurements, you spend credits
  - Use them to perform measurements from your probe towards any target
  - Ping costs 10 credits, traceroute costs 20, etc.
  - Daily limit applies

# Credit System

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- Credit system introduced to ensure fairness and protect system from overload
- By hosting a probe, you earn credits as a reward for making your probe available to others
- To perform customised measurements, you spend credits
- More details: <https://atlas.ripe.net/doc/credits>

# Status Checks: Creating Alerts in “Icinga”

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- Uses the built-in check\_http plugin
- Documentation and examples:
  - <https://atlas.ripe.net/docs/status-checks/>

# How to Take Part in the RIPE Atlas Community

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# RIPE Atlas on GitHub

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

# Become a RIPE Atlas Ambassador

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- If you want to...
  - Help distribute probes
  - Give workshops, tutorials, and promote RIPE Atlas
- To become an ambassador:
  - Get in touch; we'll ship you some probes
  - Join the mailing list:
  - <https://www.ripe.net/mailman/listinfo/ripe-atlas-ambassadors>
- Or become a sponsor:
  - <https://atlas.ripe.net/get-involved/community/#!tab-sponsors>

# RIPE Atlas 2013 Sponsors

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# Questions to the Community

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- HTTP measurements: limitations and guidelines?
- System Checks: what level of ease or sophistication?
- Only for researchers? Operators' needs?
- Open publication of measurement data
  - To have private measurements or not?
- Testing BCP38 compliance
  - Requires breaking standard protocol

# RIPE Atlas Contact

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**<https://atlas.ripe.net>**

- Get a probe: **<https://atlas.ripe.net/apply>**
- Mailing list for active users: **[ripe-atlas@ripe.net](mailto:ripe-atlas@ripe.net)**
- Articles & updates on RIPE Labs:  
**<https://labs.ripe.net/atlas>**
- Questions: **[atlas@ripe.net](mailto:atlas@ripe.net)**
- Twitter: **[@RIPE\\_Atlas](https://twitter.com/RIPE_Atlas)** and **[#RIPEAtlas](https://twitter.com/hashtag/RIPEAtlas)**



# Questions?

