RIPE NCC
RIPE NETWORK COORDINATION CENTRE

RIPE Atlas Software Probe Deployathon

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RIPE Atlas and Probe Hosts

The RIPE Atlas Vision

- A collaborative, active measurement network
- Should potentially be on an ‘unprecedented’ scale, perhaps with vantage points in *every network*
- Community involvement - the RIPE NCC shouldn’t do this alone
- Focus on the “network level” measurements as much as possible
- Create and nurture an ecosystem of contributors and users
- Provide a long-term, sustainable platform

What's in it for me?

- For probe hosts
  - Baseline results; collect credits; provide a vantage point for others; feel-good;
- For anchor hosts
  - All of probe hosts benefits; be automatically measured;
- For network operators / RIPE NCC members
  - Use external vantage points; share results and tools; get alerts*;
- For researchers
  - Access to large volumes of collected data; extract new insights;

What's in it for me as a Probe Host?

- Baseline results
  - All probes are automatically involved in a number of measurements:
    - pings, traceroutes, DNS queries
    - Many of these are automatically graphed on the probe status page
  - All this data is available to you
  - We also provide historical data for:
    - Connection / disconnection history (note: it does not accurately describe the quality of your Internet connection!)
    - What measurements your probe participated in

What's in it for me as a Probe Host?

- Collect credits
  - Each probe gets 21,600 credits per day (assuming 100% uptime)
  - Each probe also gets "bonus" credits for results it provides for measurements
  - Bonus is typically a similar amount as for uptime (except for very busy probes)
  - You can spend these credits on your own measurements, using any probe(s)

What's in it for me as a Probe Host?

- Provide a vantage point for others
  - The ultimate reason to run a probe
  - Measurements done by other users will involve your probe
  - This means your probe will execute pings, traceroutes, DNS queries (directly to DNS servers or via your own DNS resolvers), TLS check and NTP queries to various places on the Internet
  - You can tag your probe (on its status page) to provide information about it, e.g.:
    - Your connection type (DSL, fibre, satellite, …)
    - Your provider
  - The system automatically discovers your ASN / prefix
  - The system auto-tags your probe with basic information (e.g. "DNS works", etc.)

What's in it for me as a Probe Host?

- Feel good! By providing a running probe, you:
  - Increase the footprint of RIPE Atlas, especially if your ISP / network doesn't have probes yet
  - Increase the network's capacity to run measurements
  - Help others monitoring their networks or resolving connectivity issues
  - May help improve the quality of your own connection (if your data is used for that)
  - Become part of our measuring community

Security Aspects

- Probes connect to the infrastructure using SSH
- The very reason to run a probe is to measure, so outgoing ping, traceroute, DNS, TLS, … to all over is the expected behaviour!
- The probes don’t have any publicly open ports
  - They only initiate connections
  - This works fine with NATs too
- Probes don’t listen to local traffic, no passive measurements are running
  - There’s no snooping around

Software Probes

Why Software Probes?

- Allow the community to run a RIPE Atlas probe on the platform of their choice
  - Source: https://github.com/RIPE-NCC/ripe-atlas-software-probe
- Deploy probes in places where it hard to ship or install hardware probes

Differences

- Registration involves uploading the probe's ssh public key
- Probe ID > 1000000
- System tag 'Software' to distinguish from hardware probes and anchors
- By default no traffic graphs to preserve the probe host's privacy
  - To enable see: https://github.com/phicoh/ripe-atlas-software-probe/blob/master/README.rst

Supported Platforms

- CentOS 7 and 8
  - Officially supported with binaries and automatic upgrades
  - See https://github.com/RIPE-NCC/ripe-atlas-probe-doc/blob/master/manuals/CentOS-7-binary.en.md
- Turris Routers
  - Maintained by CZ.NIC
  - See https://wiki.turris.cz/doc/en/howto/atlas-probe

Other Platforms

- Debian, Ubuntu
  - Bugs will be fixed, no support for binaries or automatic upgrades
  - See https://github.com/RIPE-NCC/ripe-atlas-software-probe/blob/master/INSTALL.rst
  - Currently, use the ‘devel’ branch for Ubuntu
- Docker
  - Maintained by the community

Do It Yourself

- Any other Linux-based platform
  - The Debian version typically works on a Raspberry PI
- *BSD
  - It may work, we’re curious to hear what happens if you try!
- Windows
  - It’s probably a lot of hard work to make it run, even if it’s possible.

Questions

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