RIPE NCC
RIPE NETWORK COORDINATION CENTRE

DNS for Measurement Rendez-vous

Emile Aben | 2016-02 | CAIDA AIMS workshop

DNS as Rendez-Vous

- Problem: Measurements with large target list are hard to do in RIPE Atlas
- Solution: Use DNS to distribute the target list
- Hack: Custom DNS server
  - https://github.com/emileaben/scapy-dns-ninja
  - https://github.com/USC-NSL/RIPE2015HackAThon

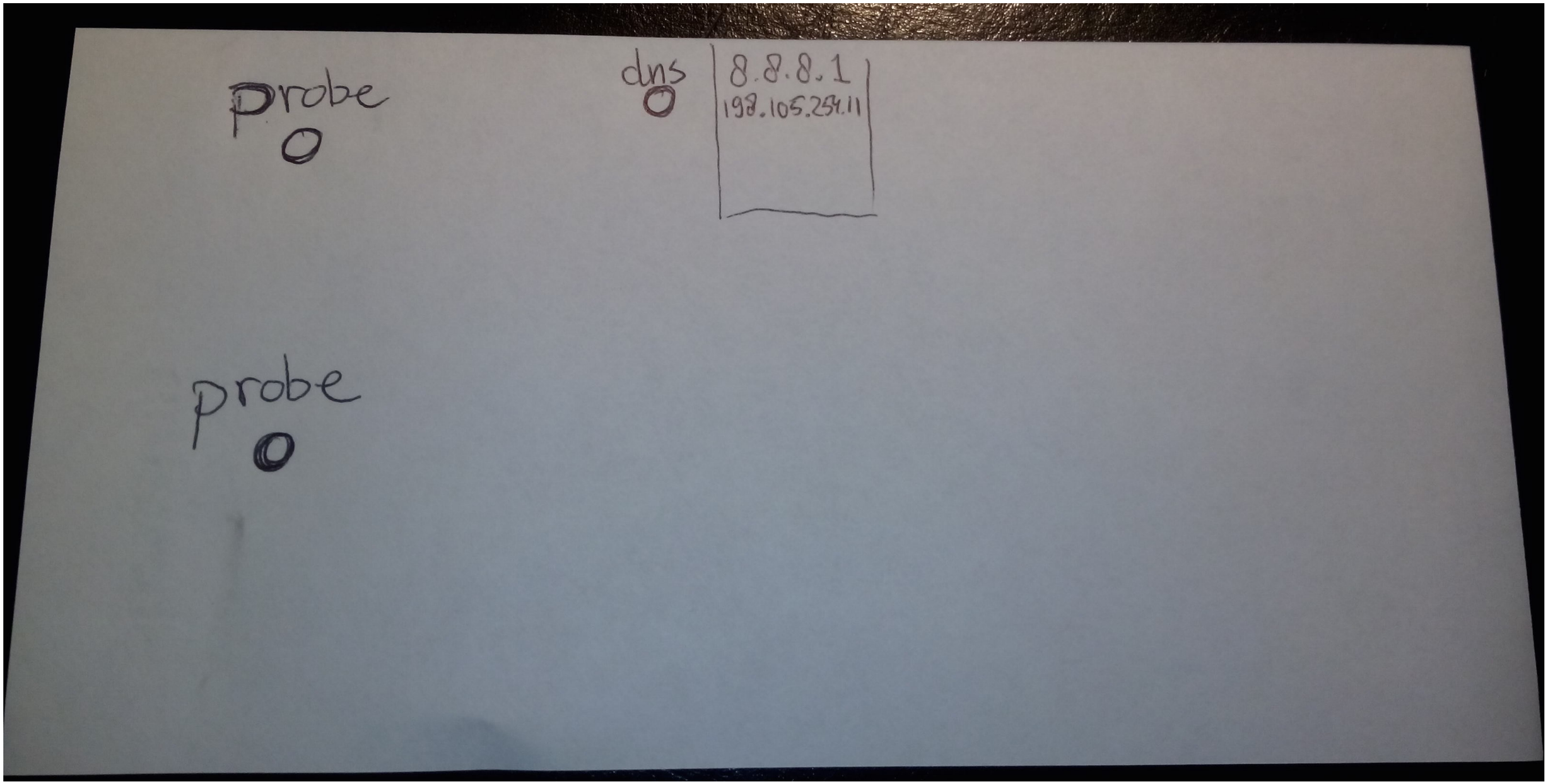
- https://labs.ripe.net/Members/emileaben/measuring-more-internet-with-ripe-atlas

How Does It Work?

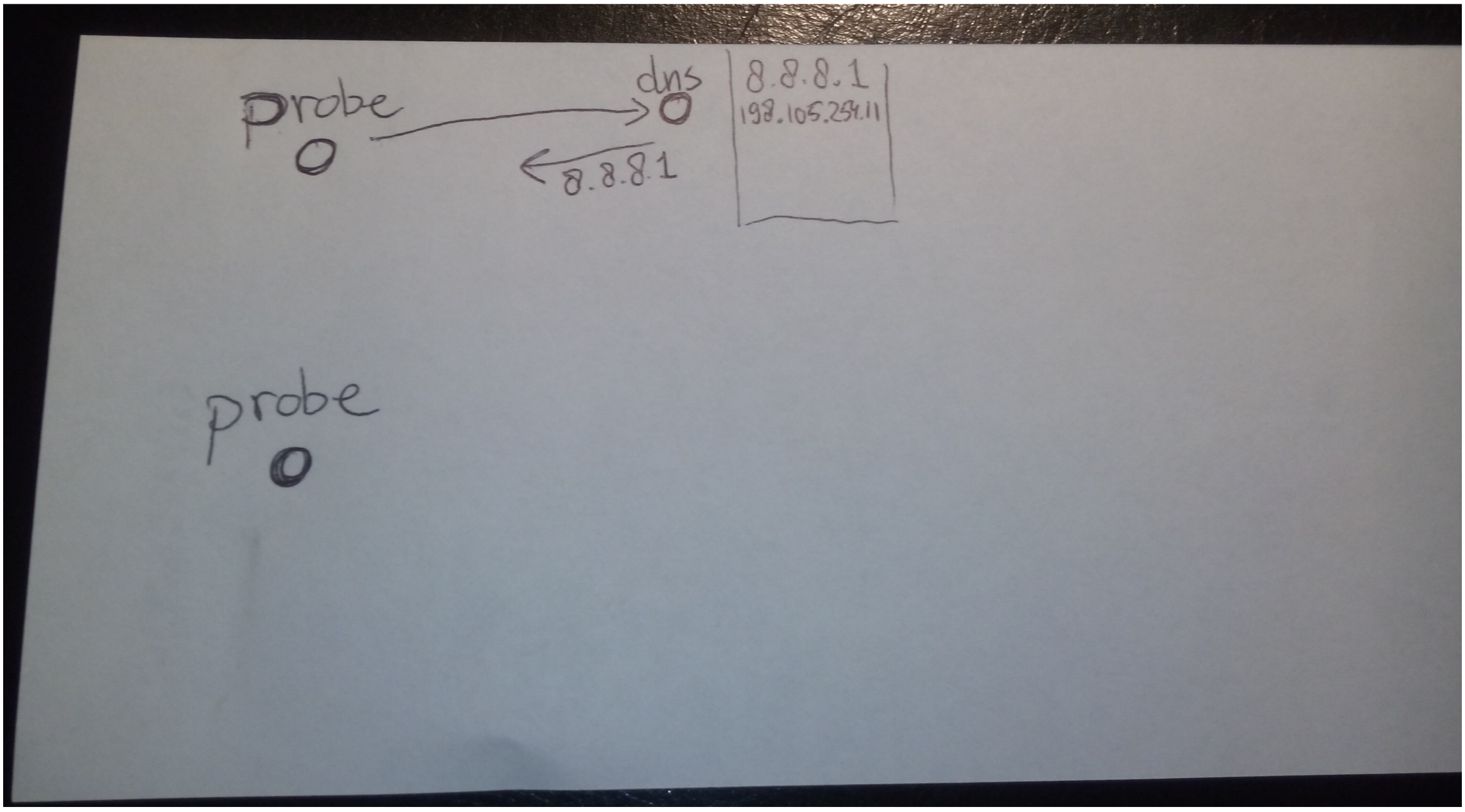
- Measurement in RIPE Atlas
  - hostname: ip-list.emileaben.com
  - resolve on probe
- Custom DNS server
  - recognises the hostname
  - returns the next IP on the list

- Test list:
  - .1 in all routed prefixes (iPlane-like)

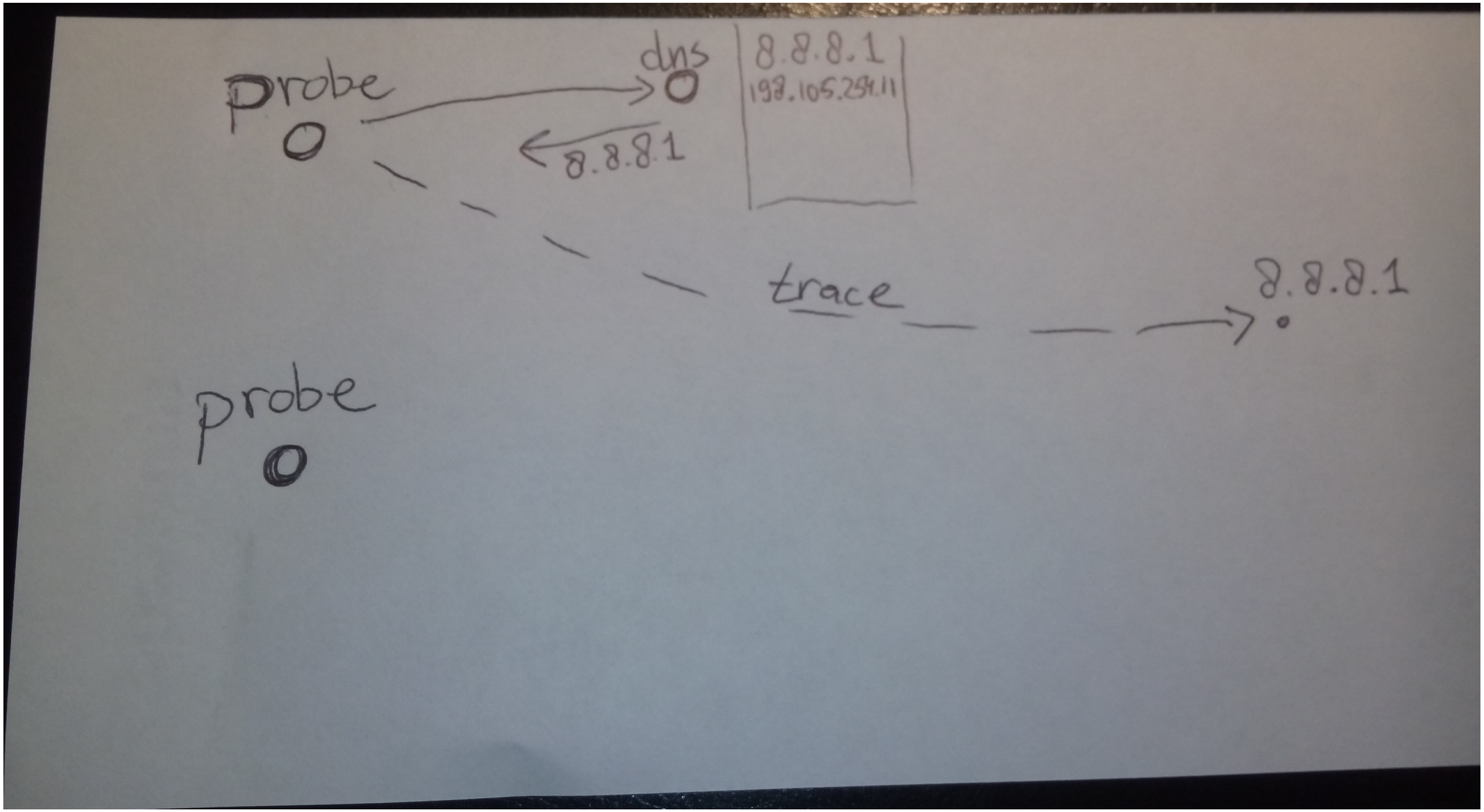
In Pictures



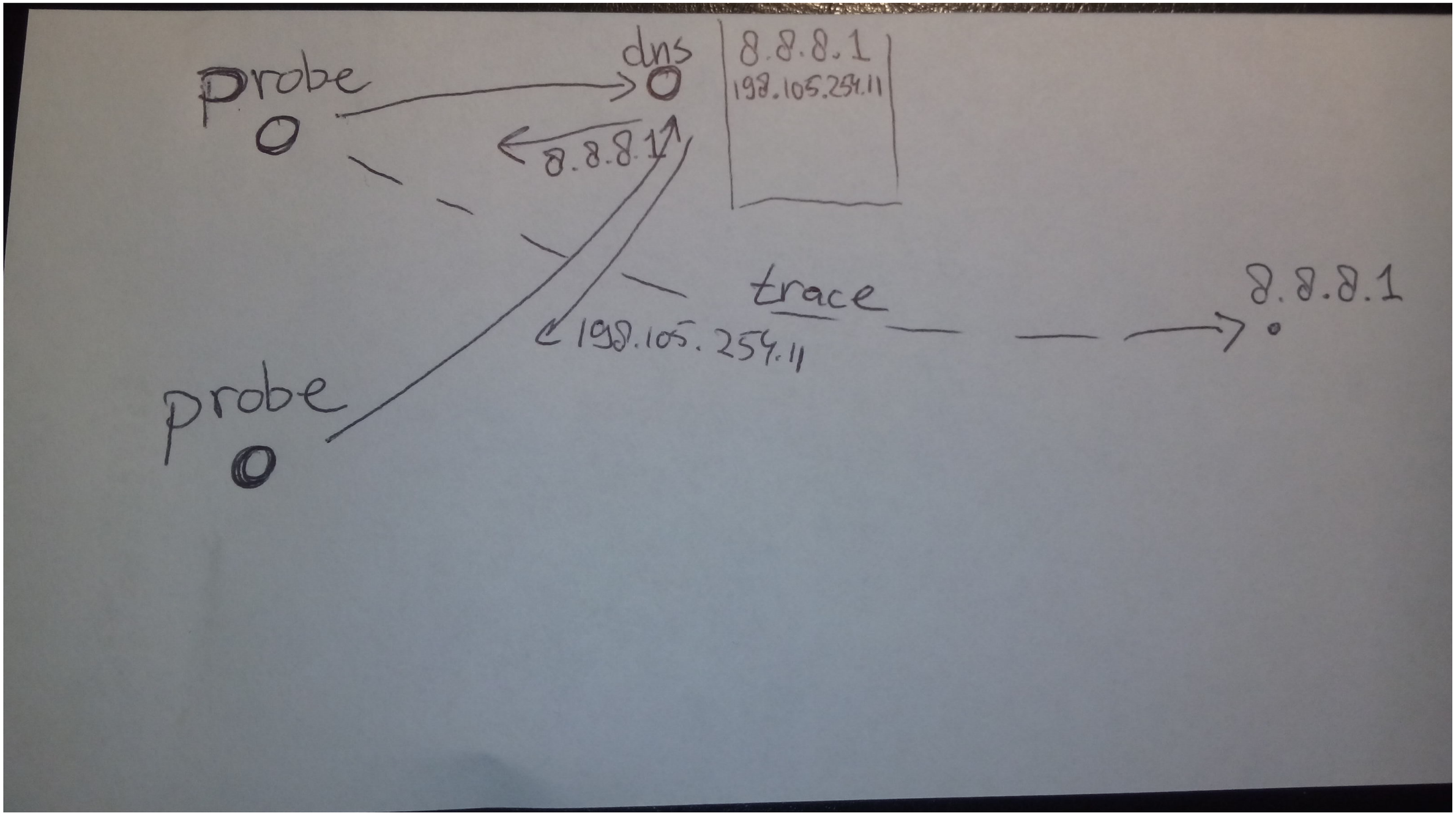
In Pictures



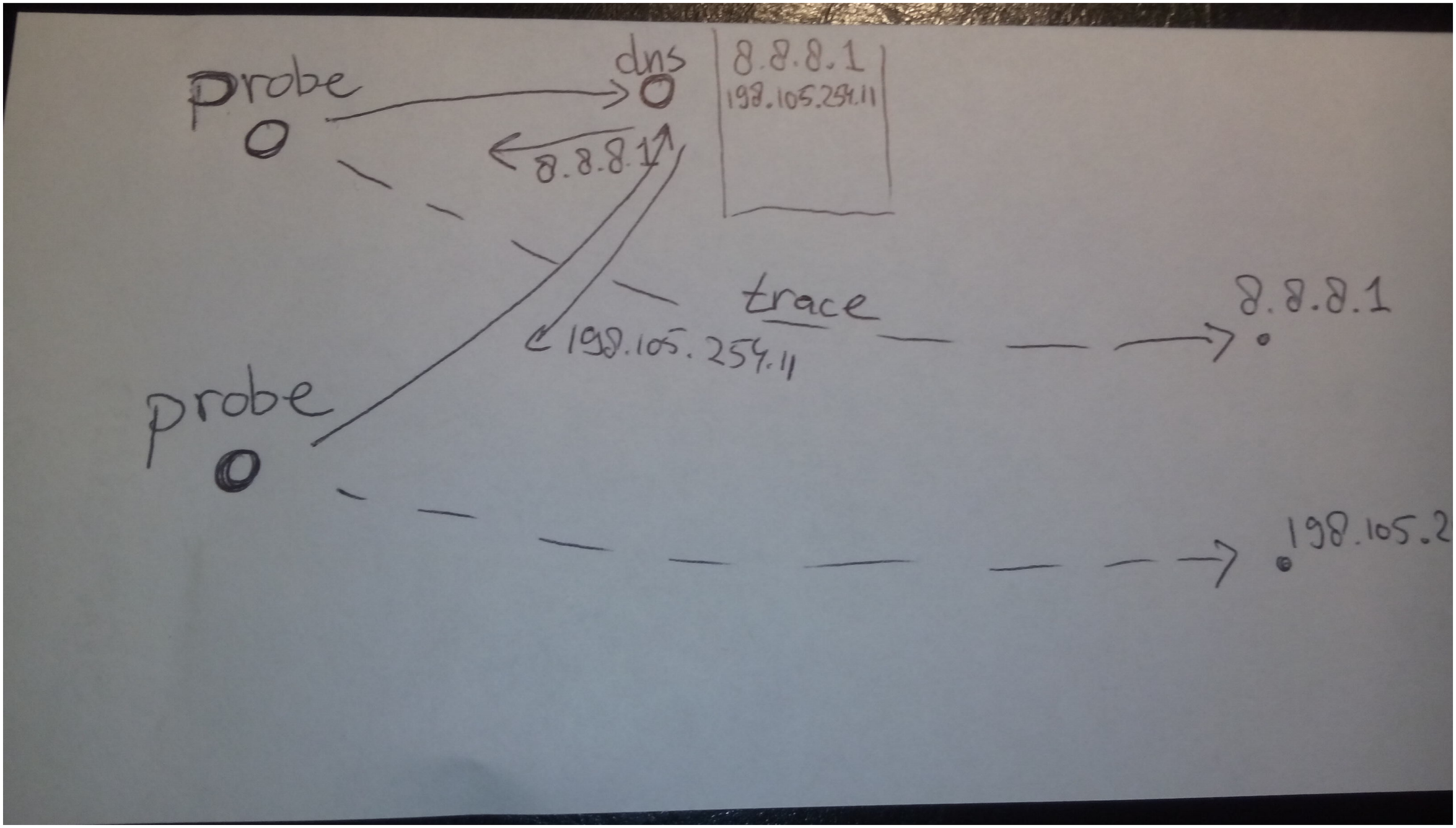
In Pictures



In Pictures

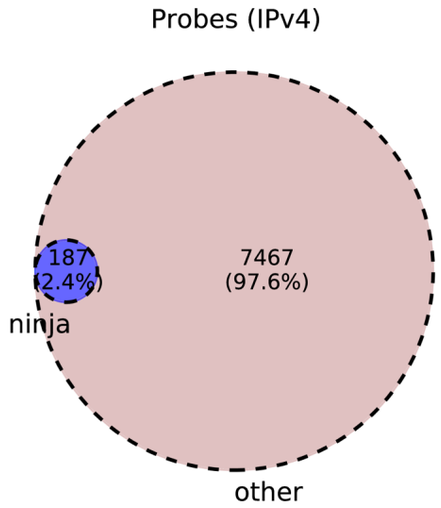

probe
dns
8.8.8.1
198.105.254.11
8.8.8.1
trace
8.8.8.1
198.105.254.11
probe

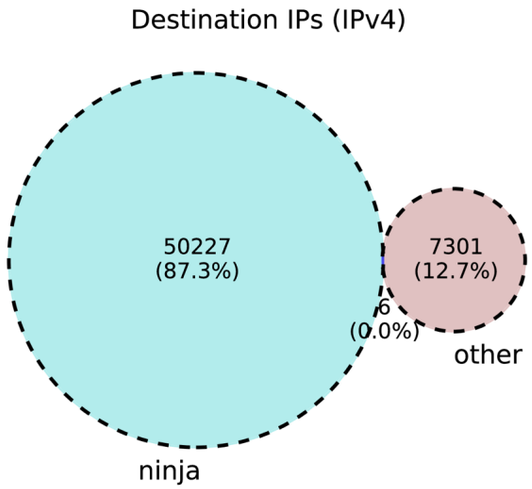
In Pictures

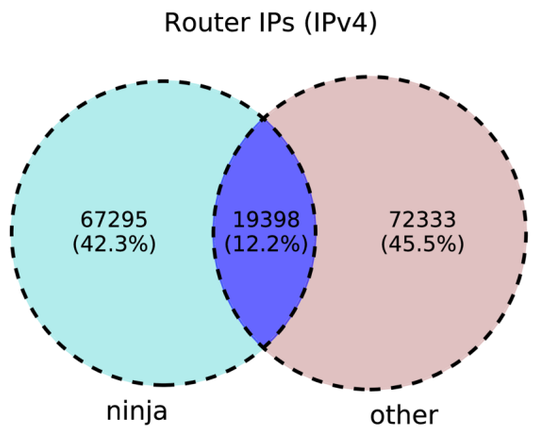

probe
dns
8.8.8.1
198.105.254.11
8.8.8.1
trace
198.105.254.11
8.8.8.1
probe
198.105.2

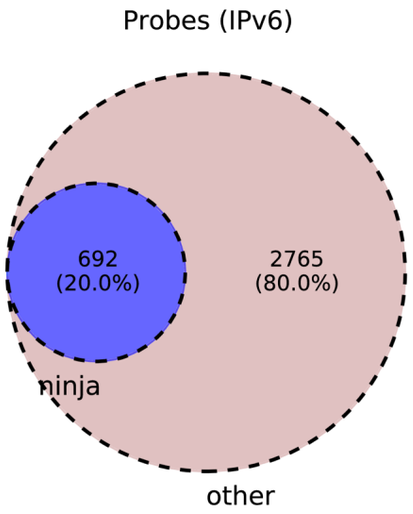
Results

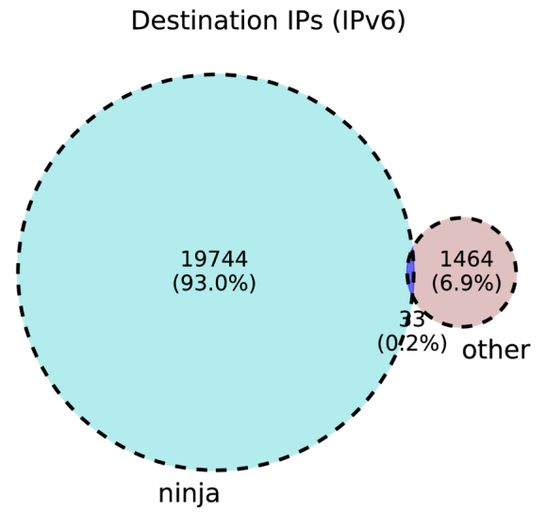
Metrics for ninja-measurements on 2015-01-01

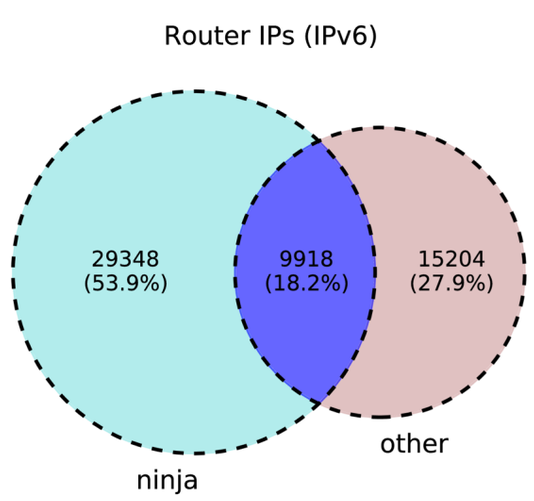












(0.51% of all RIPE Atlas traceroutes that day)

Playing Together?

- Can we make measurement infrastructures team-probe together?
  - 20 Ark vantage points + 40 RIPE Atlas probes + AMP + perfSonar + ??
- Can we make collaborative destination lists?
  - near-realtime
  - redirects to other destination lists?

Questions

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