Yarrp'ing the Internet: Randomized High-Speed Active Topology Discovery

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Yarrp (Yelling at Random Routers Progressively)

What:

Yarrp is a next-generation active topology discovery technique designed for rapid mapping at Internet scales. Yarrp has been shown to perform paris-traceroute measurements at over 100Kpps.

How:

Taking inspiration from ZMap and massscan, Yarrp is stateless and randomizes its probing order over the entire target and TTL domain, thereby distributing load and avoiding triggering ICMP rate-limiting. Topology reconstruction is decoupled from the probing, and can be performed offline.

Why:

Existing traceroute techniques are designed as a network diagnostic tool for testing a small number of paths, and were never designed for large-scale topology collection. As a result, production topology collection systems, e.g., Ark, require days to map the Internet using dozens of vantage points. Instead, Yarrp enables high-rate probing such that the entire Internet can be probed in minutes rather than hours.

Code:

- yarrp-0.1.tar.gz
  (MD5: ed78a391419551dae38f2c8f5c21cc84)
- man page: yarrp.1.pdf

Publications:

- Yarrp'ing the Internet: Randomized High-Speed Active Topology Discovery
  Robert Beverly
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Talks:

- Randomized High-Speed Active Topology Discovery
  Robert Beverly
  Akamai Seminar, September, 2016.
- Yarrp'ing the Internet
  Robert Beverly
  CAIDA AIMS Workshop, February, 2016.

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