ONE PI TO RULE THEM ALL?

Phillipa Gill
Assistant Professor, Stony Brook University
Based on discussions with:
Mark Allman (ICSI), Srikanth Sundaresan (ICSI), Brian Trammell (ETH)
Measurements from the edge are critically important

- Broadband is a critical resource
  - Not a luxury anymore

- View from the network edge is just as important as the view from the core

- The edge is as complex as the core
  - If not more – problems are devilishly difficult to pinpoint, let alone solve

- We want to understand many aspects of broadband
  - Performance + QoE
  - Reliability
  - Network interference (censorship, traffic shaping)
... Which explains why there are so many platforms
Can we merge into a single platform? Should
Why merging may not make sense

ONE DOES NOT SIMPLY

MEASURE THE INTERNET
Why merging may not make sense

- Different user-bases
  - Different **tolerance** for risk
    - activists vs. network operators vs. home users
  - Different **expectation** for risk
    - E.g., don’t expect RIPE Atlas to ping a bunch of Jihad-related hosts
- Different supported capabilities
  - To HTTP GET or not to HTTP GET?
  - Bismark that is in-path vs. off path devices
- Different auditing models
  - RIPE credit system vs. manual review on other platforms
- How to manage scheduling
  - Ensuring measurements don’t conflict
  - How to prioritize conflicting measurements?

Ok... so what can/should we do?
...baby steps

• Can we get the platforms to ``play nicely” with each other?

Basics:
• Same output formats
• Common measurement code (common “quirks”)
  – Don’t want to have to remember that this is the RIPE Atlas vs. Dasu vs. OONI version of tracert

Common tools usable across all platforms!
...bigger steps

**Less basics:**

- Common experiment interface
  - How to specify what should run
  - Same API across platforms, just specify credentials
    - Still subject to the blessing procedure of the platform
    - Each platform still responsible for managing consent process

**Even less basics:**

- Make rolling measurement platforms easier
- Common codebase anyone can pick up and use
  - Basic pieces: scheduler, client, server, etc.
Where we are at...

• … created a mailing list
  – camp@icsi.berkeley.edu
  – CAMP = Common Active Measurement Platform
  – …also a GitHub repo: https://github.com/cam-platform

• Surveying relevant tools/frameworks
  – Scamper, scriptroute, RIPE Atlas, ICLab, etc.

• Trying to understand what ought to be supported
  – Idea: Historical requirements gathering
  – What is the minimal functionality that would enable 80/90% of IMC papers in the past X years?

Looking for comments + feedback + people who want to be involved!