Measurement and Analysis for Protocols

Research Group (maprg)
Chicago, March 28, 2017

co-chairs <maprg-chairs@ietf.org>:
Mirja Kühlewind <mirja.kuehlewind@tik.ee.ethz.ch>
Dave Plonka <dave@plonka.us>

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Administrivia

- Charter: https://datatracker.ietf.org/group/maprg/charter/

- Mailing List: maprg@ietf.org
  Subscriptions: https://www.ietf.org/mailman/listinfo/maprg

- Today's slides: https://datatracker.ietf.org/meeting/98/session/maprg/

- Remote participation
  Audio: http://ietf98streaming.dnsalias.net/ietf/ietf986.m3u
  Meetecho: http://www.meetecho.com/ietf98/maprg
  Jabber: xmpp:maprg@jabber.ietf.org?join

Charter Notes

The *Measurement and Analysis for Protocols Research Group (maprg)* will focus on two topics:

(1) Discussion of measurements and techniques that would inform *the development, deployment, and/or operation of existing IETF-defined protocols.*

(2) Presentation of measurement results that inform *same.*

Presentations and work items must be obviously or explicitly "mapped" to those aspects of IETF-defined protocols, existing or works-in-progress.

Agenda (i)

- **Introduction & Overview** – Dave Plonka and Mirja Kühlewind, 5m

- **Refresing MLab: www.measurementlab.net** – Matt Mathis, 5m

- **LE codepoint: preliminary results and ongoing work in the IETF** – Gorry Fairhurst, 10m

- **TCP ECN: Experience with Enabling ECN on the Internet** – Padma Bhooma, 20m
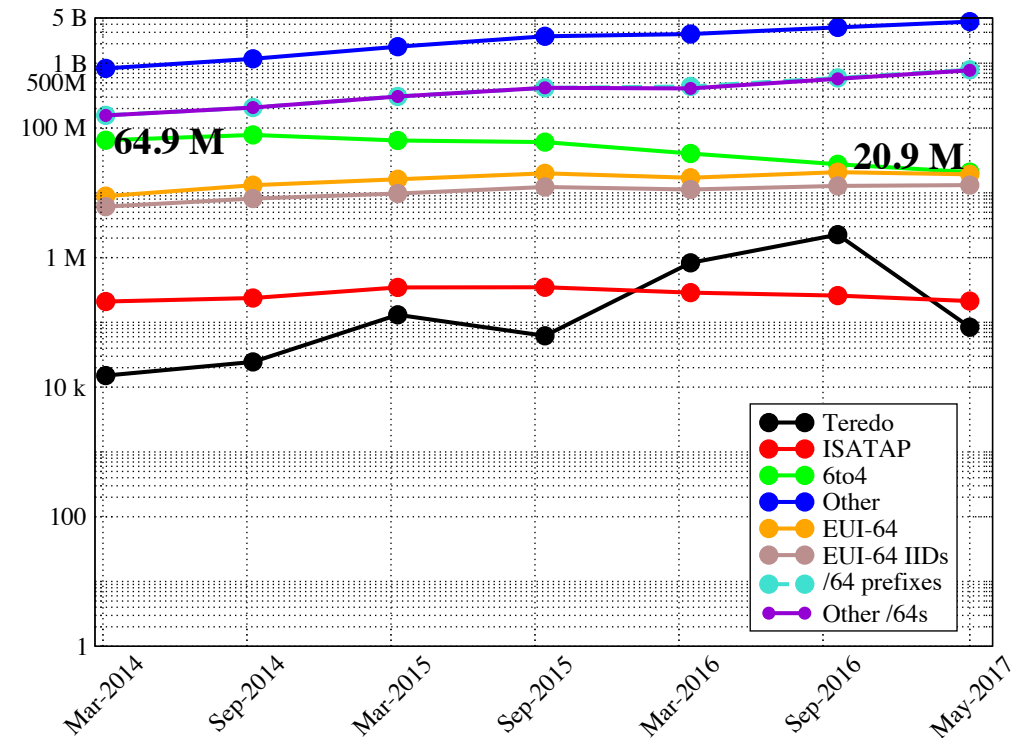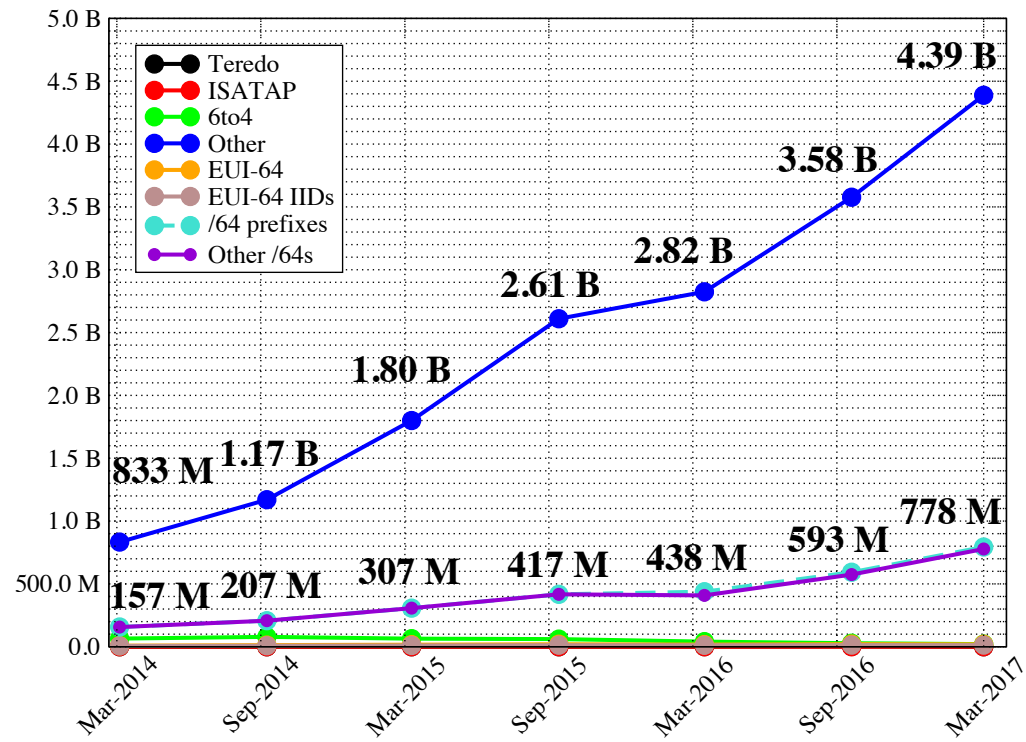
Agenda (ii)

- **Measuring Trends in IPv6 Support**– Tommy Pauly, 10m

- **You can -j REJECT but you can not hide: Global scanning of the IPv6 Internet**– Tobias Fiebig, 15m

- **No domain left behind: is Let's Encrypt democratizing encryption?** – Giovane C. M. Moura, 20m

Agenda (iii)

- **How Broadcast Data Reveals Your Identity and Social Graph** – Rolf Winter, 15m

- **Weak keys remain widespread in network devices** – Marcella Hastings, 20m

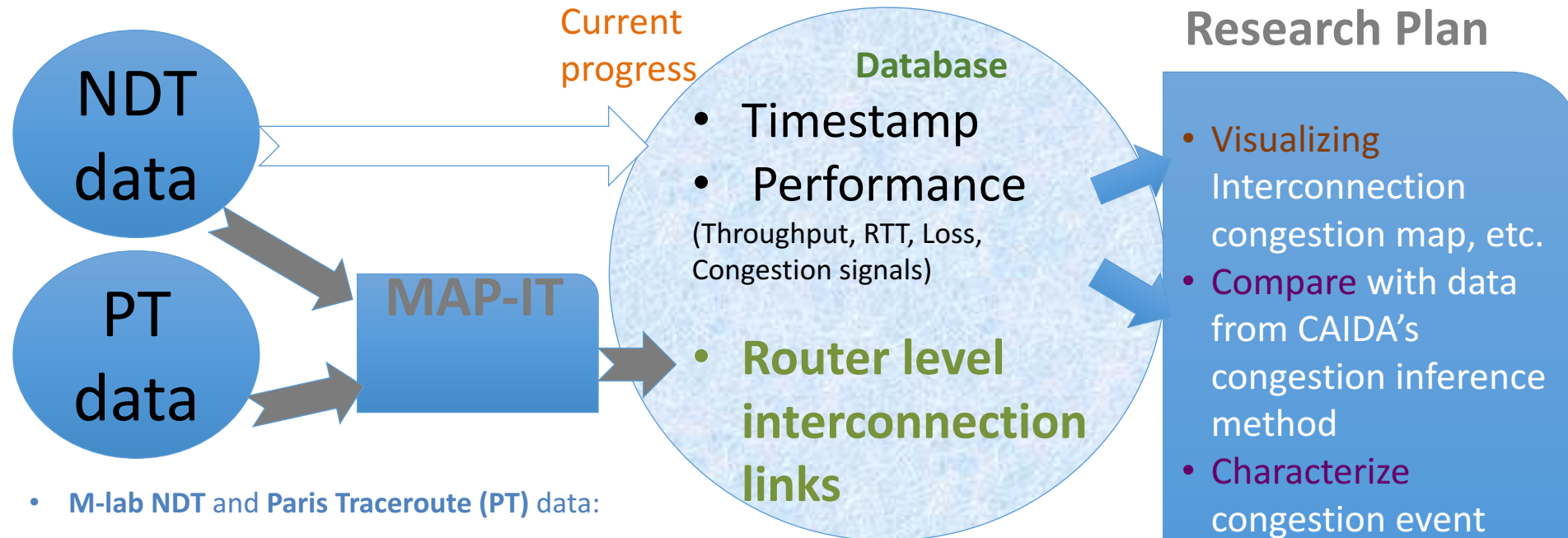- **Open Measurement of Internet Censorship**– Will Scott, 20m

Recent Related Works "Advertisements"

- Active IPv6 client address counts per week (Akamai):

- Sunsetting SixXS: https://www.sixxs.net/sunset/

Inferring Interconnection congestion using M-lab NDT and Paris Traceroute data

NDT data

PT data

MAP-IT

Current progress

Database

- Timestamp
- Performance

(Throughput, RTT, Loss, Congestion signals)

- **Router level interconnection links**

Research Plan

- Visualizing Interconnection congestion map, etc.
- Compare with data from CAIDA's congestion inference method
- Characterize congestion event across AS boundaries
- Capture hidden confounding factors (distance, host buffer, speed tier) by applying statistical and machine learning tools

- **M-lab NDT** and **Paris Traceroute (PT)** data:

  https://www.measurementlab.net/

- **MAP-IT:** Multipass Accurate Passive Inferences from Traceroute

  https://github.com/alexmarder/MAP-IT

- **CAIDA project:** Mapping Interconnection in the Internet: Colocation, Connectivity and Congestion, Funding source: NSF CNS-1414177

CAIDA Center for Applied Internet Data Analysis

X. DENG, A. DHAMDHERE K. CLAFFY
CAIDA/UC San Diego