Measurement and Analysis for Protocols
Research Group (maprg)
Prague, July 20, 2017

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

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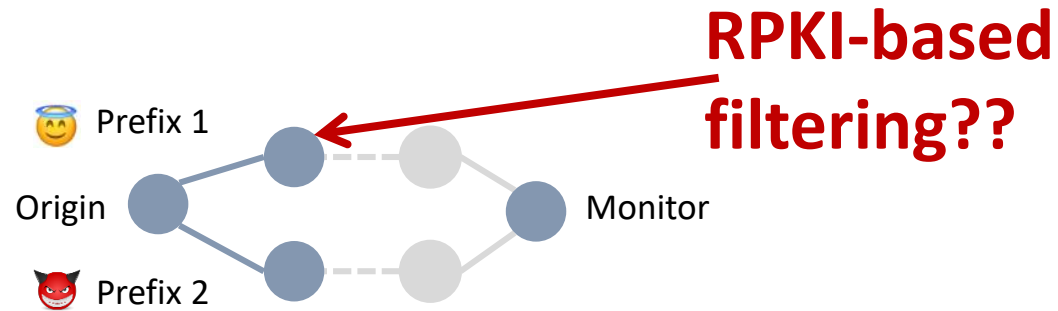
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Agenda

9:30 **Intro & Overview, Project "Advertisements"** *(chairs)*

9:35 **Identifying IPv6-Reluctance** *(Mikael Abrahamsson, chairs)*

9:45 **Fingerprint-based detection of DNS hijacks using RIPE Atlas** *(Pawel Foremski)*

10:05 **Rate-limiting of IPv6 traceroutes is widespread: measurements and mitigations** *(Pablo Alvarez)*

10:25 **kIP: a Measured Approach to IPv6 Address Anonymization** *(David Plonka)*

10:45 **Measuring Latency Variation in the Internet** *(Toke Hoiland-Jorgensen)*

11:05 **Measuring YouTube over IPv6** *(Vaibhav Bajpai)*

11:25 **Internet-Scale Deployment of QUIC** *(Jana Iyengar)*

Questions

- Which operators deploy RPKI origin validation and filtering?
- How does deployment change over time?

RPKI-based filtering??

Prefix 1

Origin

Prefix 2

Monitor

Towards a Rigorous Methodology for Measuring Adoption of RPKI Route Validation and Filtering

Andreas Reuter[1], Randy Bush[2], Ítalo Cunha[3],
Ethan Katz-Bassett[4], Thomas C. Schmidt[5], Matthias Wählisch[1]
[1]FU Berlin, [2]IIJ/Dragon Research, [3]UFMG, [4]USC/Columbia, [5]HAW Hamburg

2 Jul 2017

ABSTRACT

A proposal to improve routing security—Route Origin Authorization (ROA)—has been standardized. A ROA specifies which network is allowed to announce a set of Internet destinations. While some networks now specify ROAs, little is known about whether other networks check routes they receive against these ROAs, a process known as Route Origin Validation (ROV). Which networks blindly accept invalid routes? Which reject them outright? Which de-preference them if alternatives exist?

tion (ROV) verifying whether the AS originating an IP prefix announcement in BGP is authorized to do so [14] and labeling the route as valid or invalid. The validity of a route can be used as part of the router's local BGP policy decisions, *e.g.*, filtering routes that reflect invalid announcements or preferring valid ones. While the RPKI is fairly populated with ROAs and growing [9,15,23,24], adoption of ROV and filtering has been negligible, according to operator gossip.

A recent paper examined RPKI and ROV adoption

Key contributions of the paper:

We evaluate existing methodology
Result: Methodology of uncontrolled, passive experiments cannot reliably differentiate RPKI filtering from some traffic engineering.

We introduce and deploy new methodology
Jointly control which routes we announce (BGP) and which routes are valid (RPKI). Paper includes initial results, including ASes that confirmed they are filtering.

RIPE Atlas Daily Aggregates

- Public measurement data is always available via API
- Data **now also** available as daily aggregates
  - **https://ftp.ripe.net/ripe/atlas/data/**
  - **Data cycled out after ~30 days**
- Also: ~33% of probes have IPv6
  - **and, ~33% of measurements are of the v6 network**
- Please grab data, and tell us if you find it useful

More:
https://labs.ripe.net/Members/petros_gigis/announcing-daily-ripe-atlas-data-archives