



RIPE NCC
RIPE NETWORK COORDINATION CENTRE

~6 years of IPv6 on RIPE Atlas and the K-root

Two Halves to this



1: RIPE Atlas

2: The K-root



RIPE Atlas

RIPE Atlas: the platform



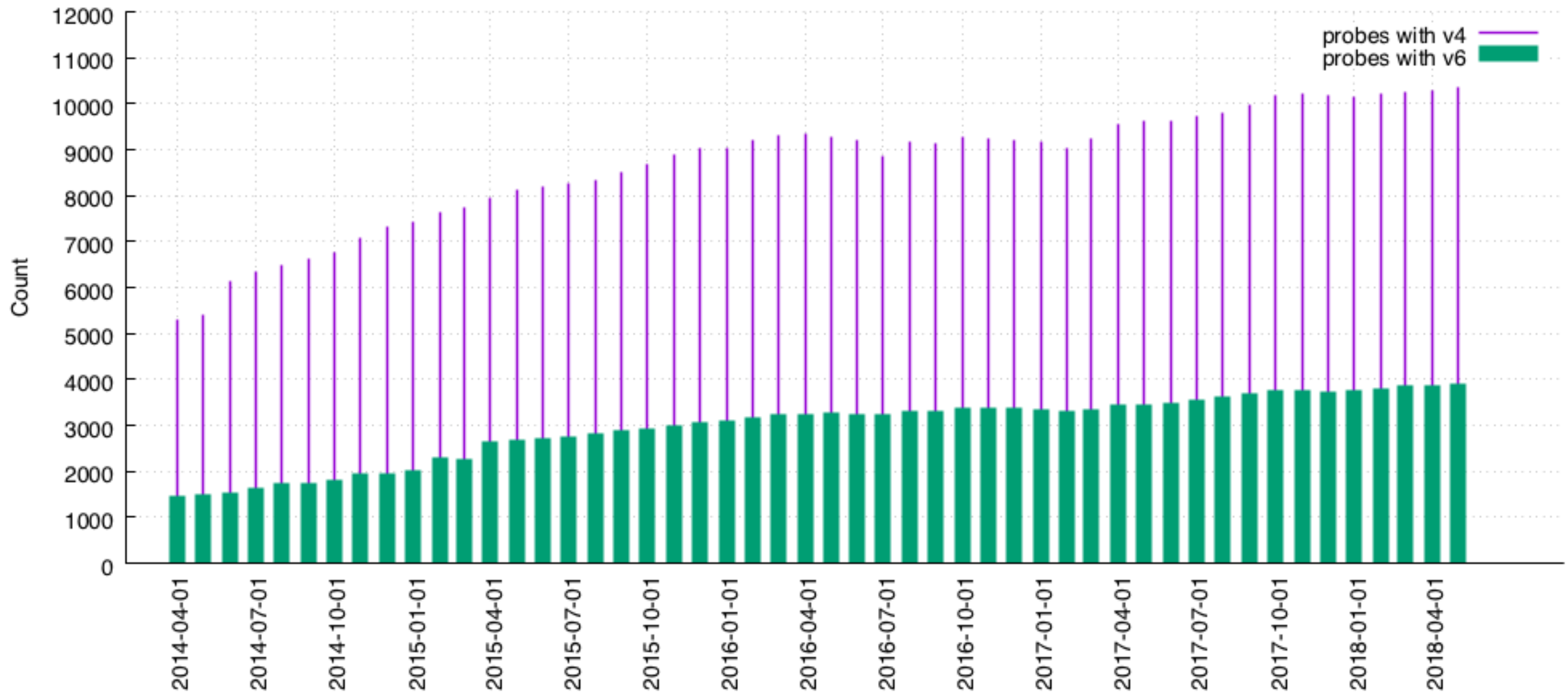
- We run a measurement platform
 - you should totally participate
<https://atlas.ripe.net/get-involved/become-a-host/>

RIPE Atlas: the platform

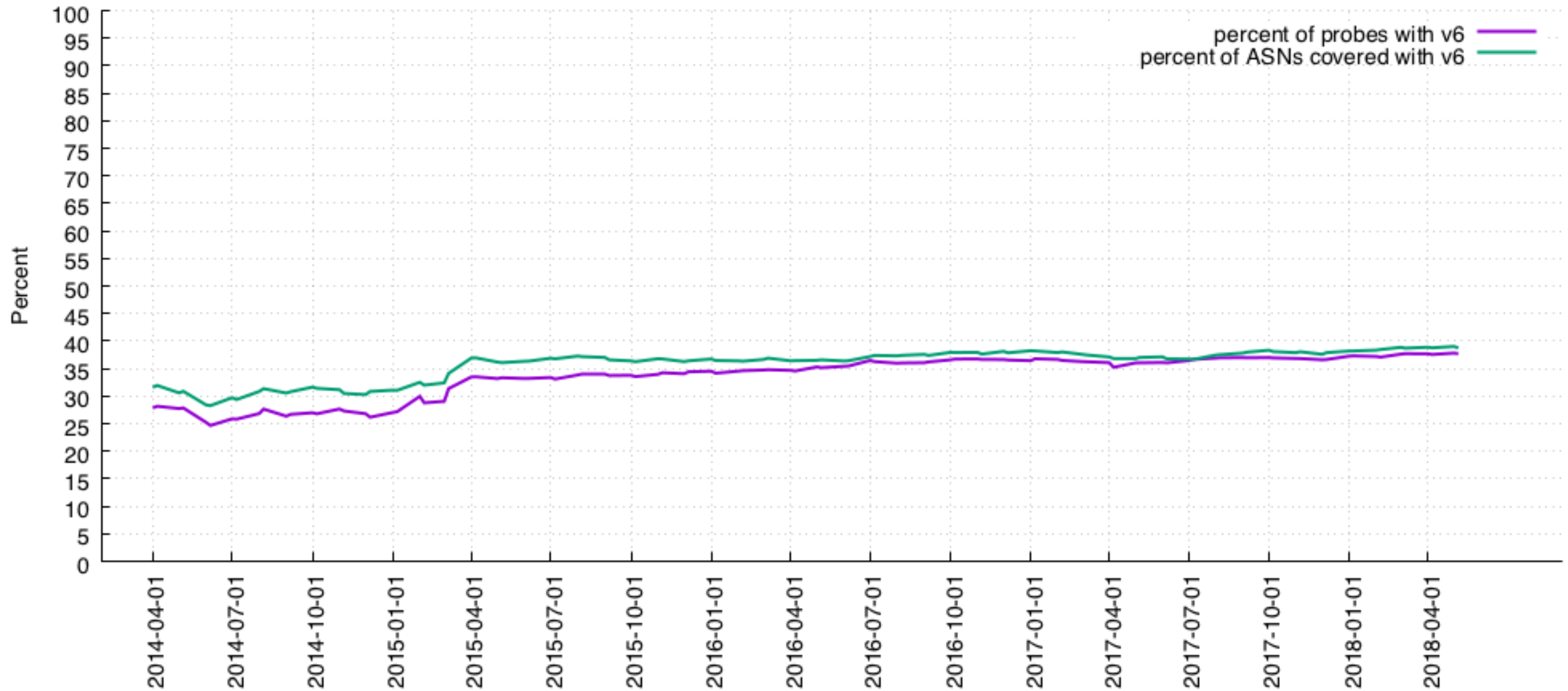


- Question:
 - IPv6 deployment on the CDNs keeps going up
 - Is that reflected in the fleet of Atlas probes?

RIPE Atlas: the platform



RIPE Atlas: the platform



RIPE Atlas: the platform



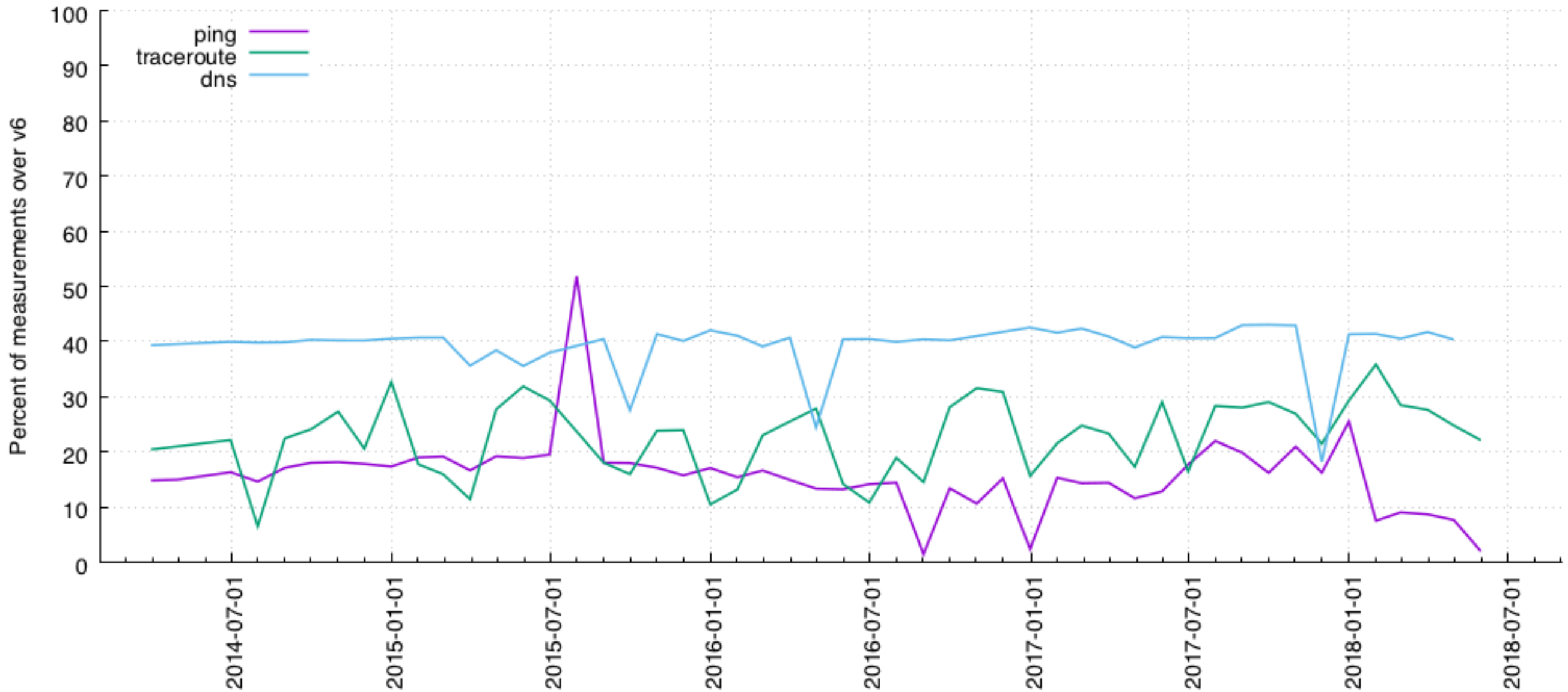
- Answer:
 - growth isn't tracking the CDN numbers
 - but maybe that's a side-effect of our hosts, their locations

RIPE Atlas: the measurements

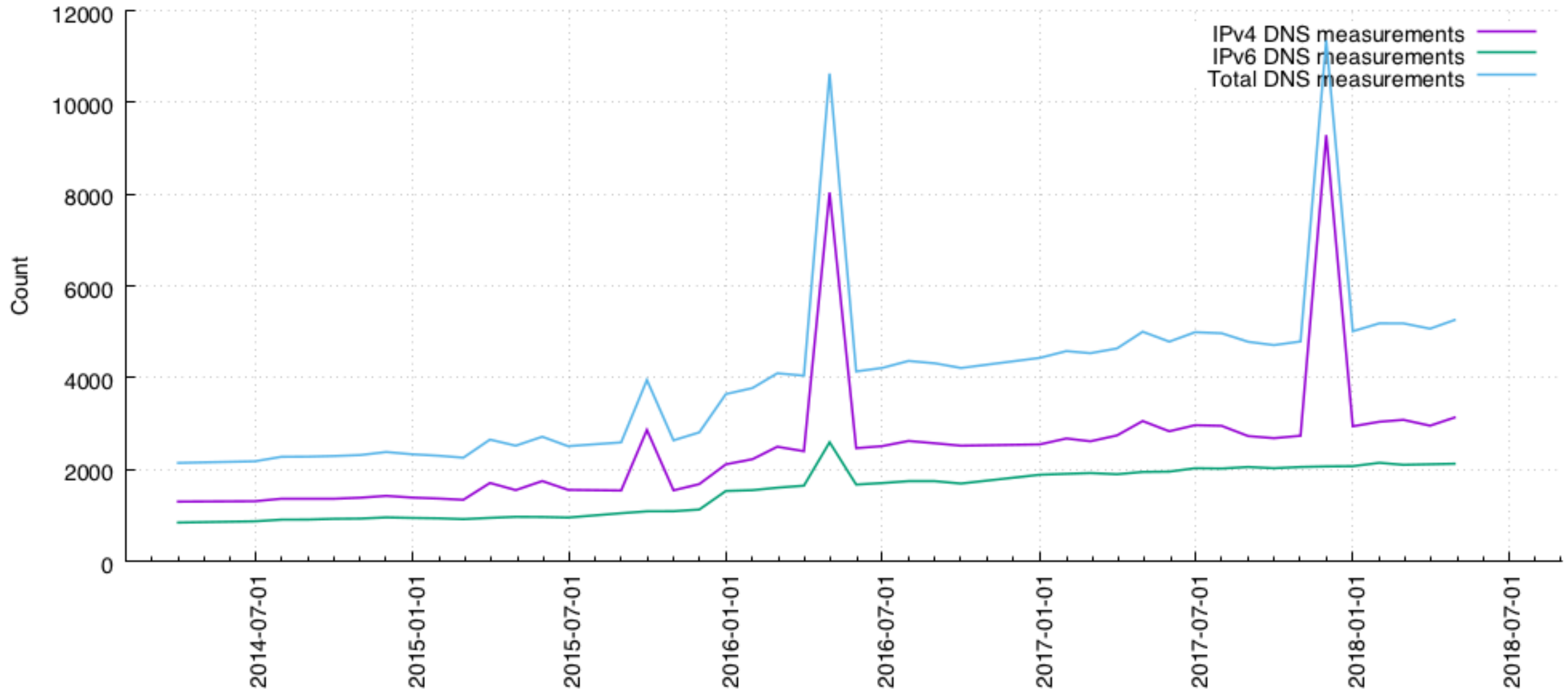


- People use this to measure targets, via
 - ping
 - traceroute
 - dns
 - various others, but mostly those three
- Q: if IPv6 deployment is rising, are people running more IPv6 measurements?

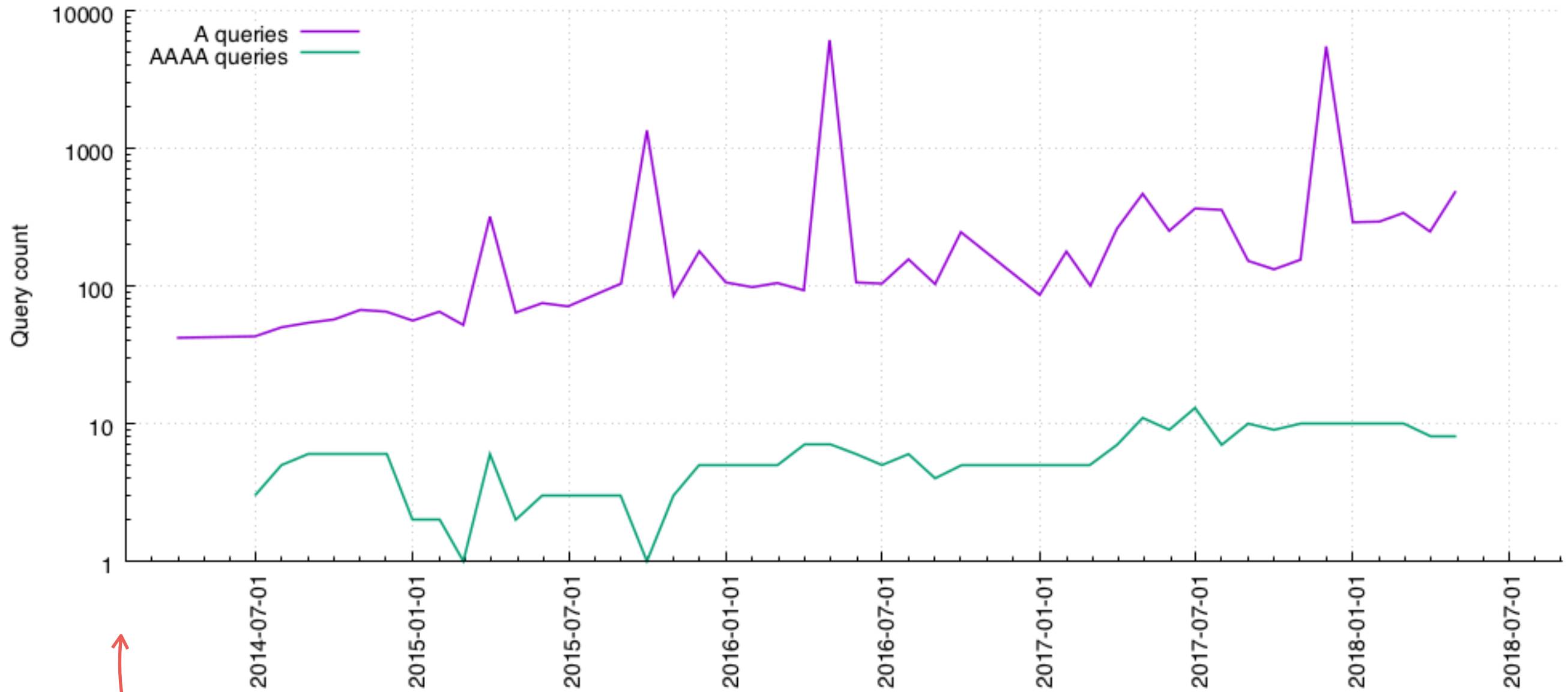
RIPE Atlas: the measurements



RIPE Atlas: dns (traffic)



RIPE Atlas: dns (queries)



note: this is a log scale!

RIPE Atlas: the measurements



- A: yes and no
 - this is not doom and gloom, there's an increase
 - but IPv4 is clearly still the focus



K-root

K-root



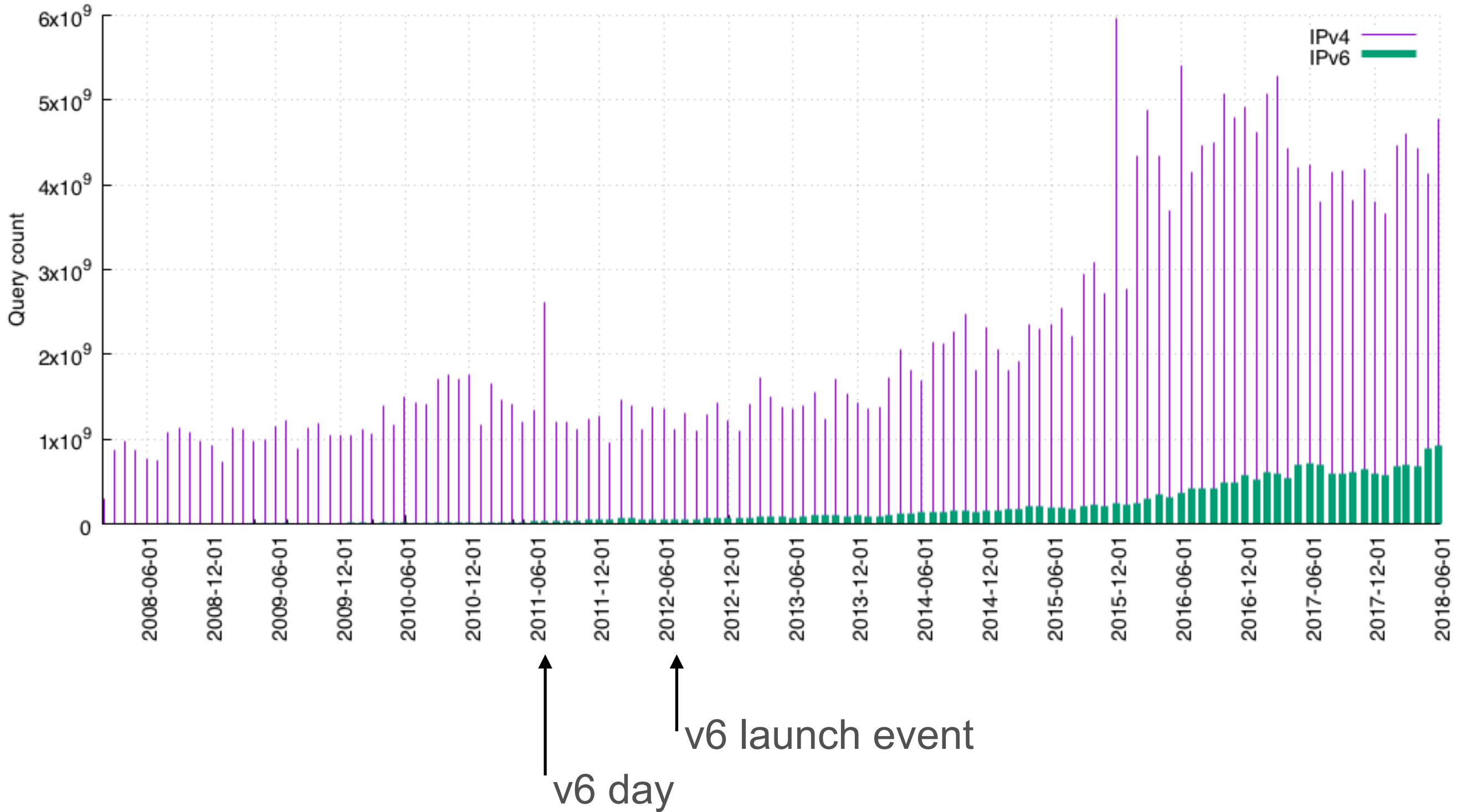
- We operate the DNS K-root servers
 - <https://www.ripe.net/analyse/dns/k-root>
- These are dual-stacked, attracting queries from resolvers over IPv6 and IPv4
- We have data!



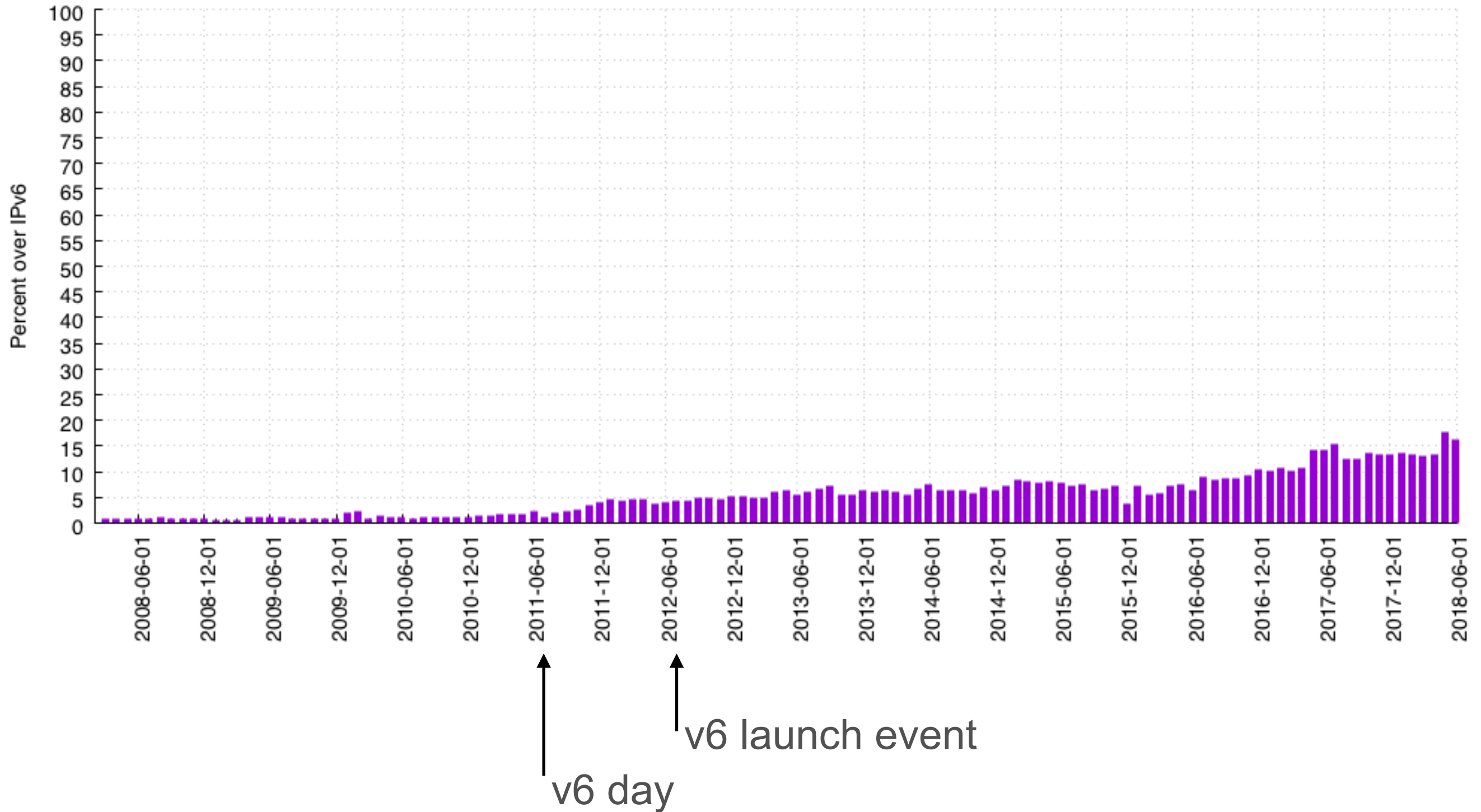
K-root: traffic

- CDNs report HTTP(S) requests
- Q: if eyeball networks light up v6 connectivity
 - do they also light up their resolvers?

K-root: queries over v4/v6



K-root

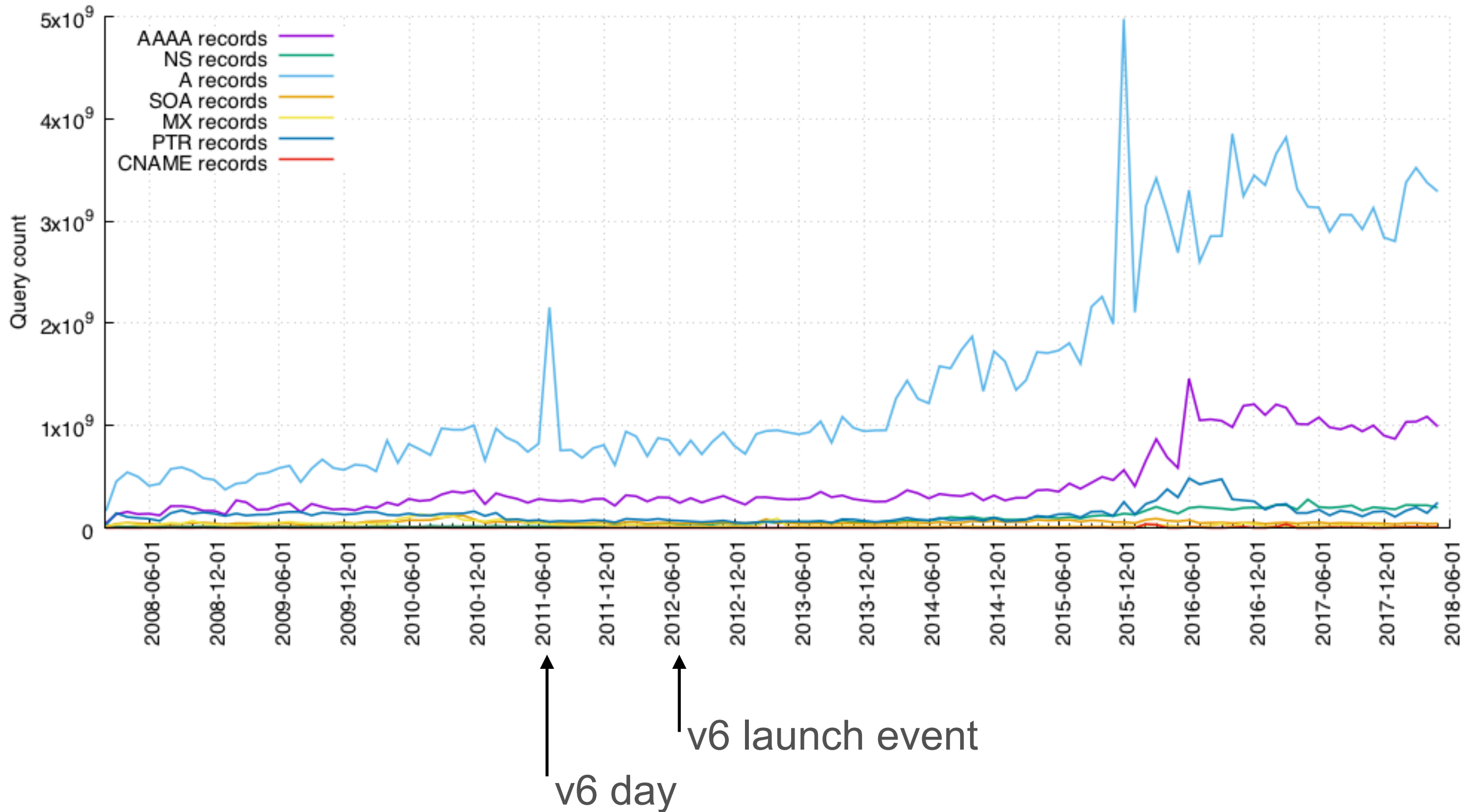


K-root: traffic

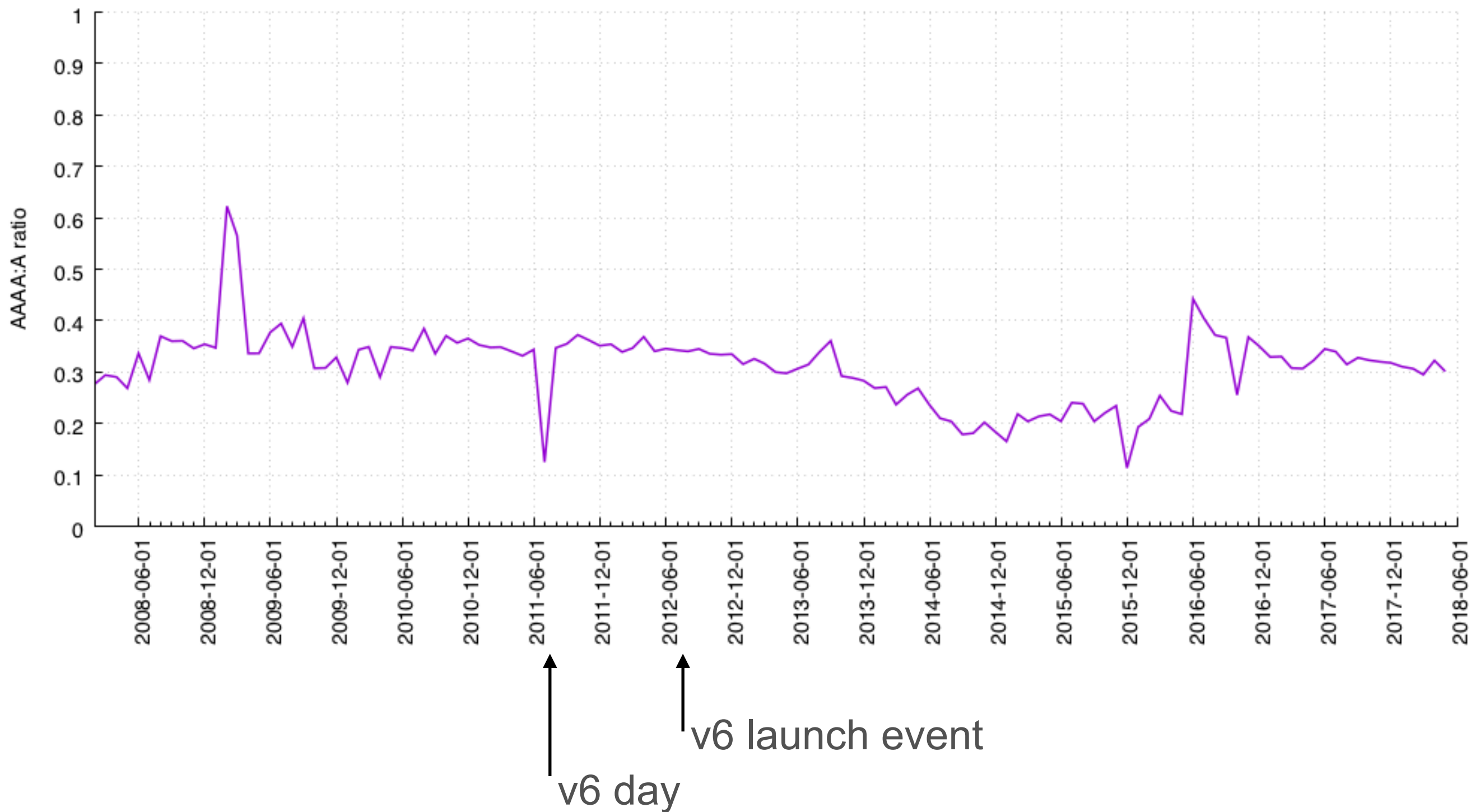


- Answer: yes
 - deeper analysis will look at which networks, countries, etc
- Next question: as stacks/frameworks/etc mature, do we see more AAAA queries?

K-root: queries



K-root: queries

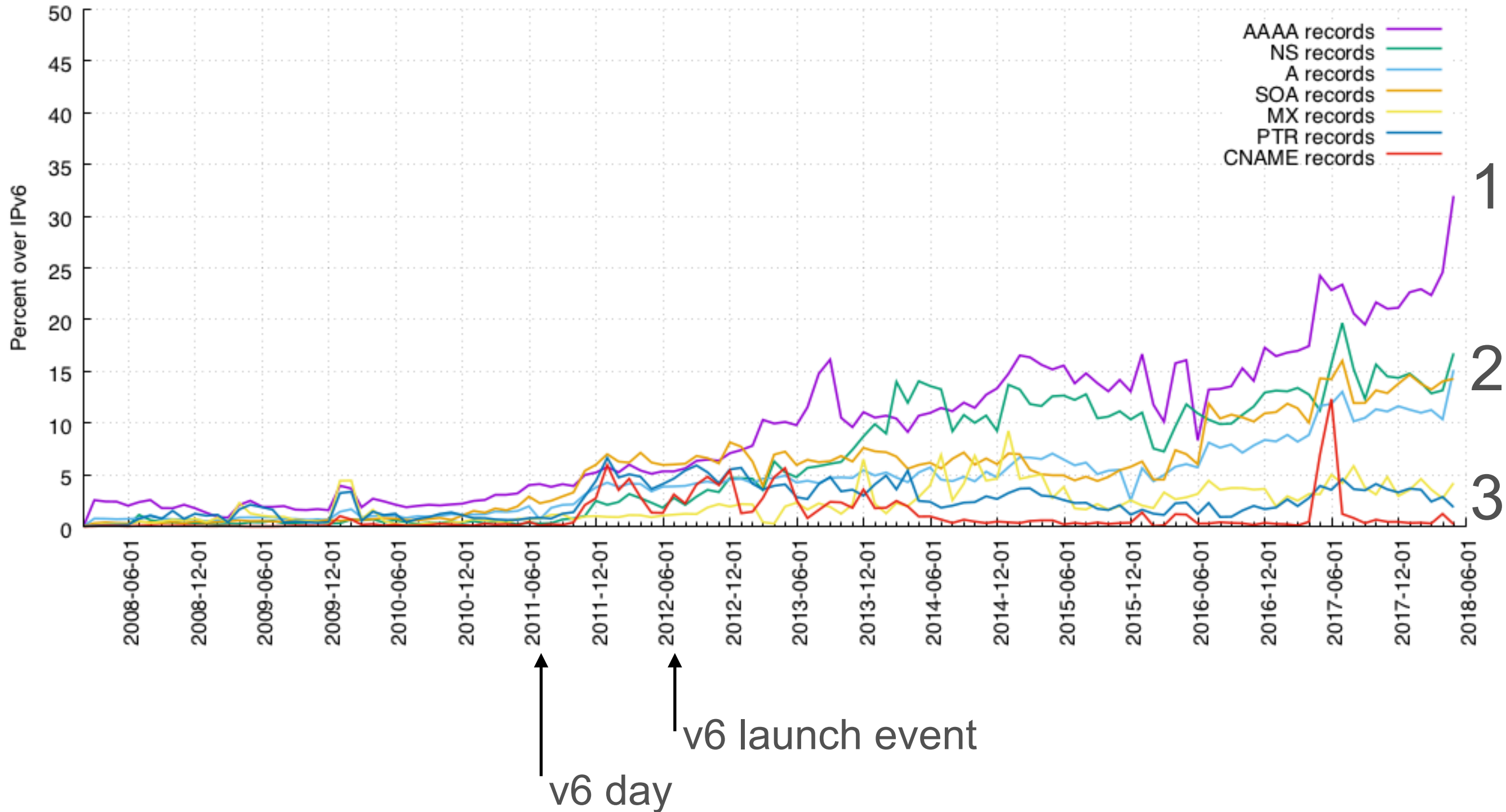




K-root: queries

- Answer: yes and no?
- The volume of AAAA queries has gone up, but so too has A queries
- The ratio of AAAA to A is equivalent at best
- Also: behaviour on the K-root likely different to resolvers handling other zones

K-root: queries



K-root: queries



- So the existence of IPv6 encourages AAAA queries



Takeaways?

Takeaways



- We have two network stacks today
 - People need to get used to monitoring them: ops runbooks, analytics platforms, test-driven development, uptime monitoring, etc, etc, etc
- We have an uneven surface
 - Obviously networks move forwards at differing paces
 - Countries move forwards at differing paces
 - Protocols, too, move forward at differing paces

Takeaways



Finally:

Get out there and measure more IPv6?

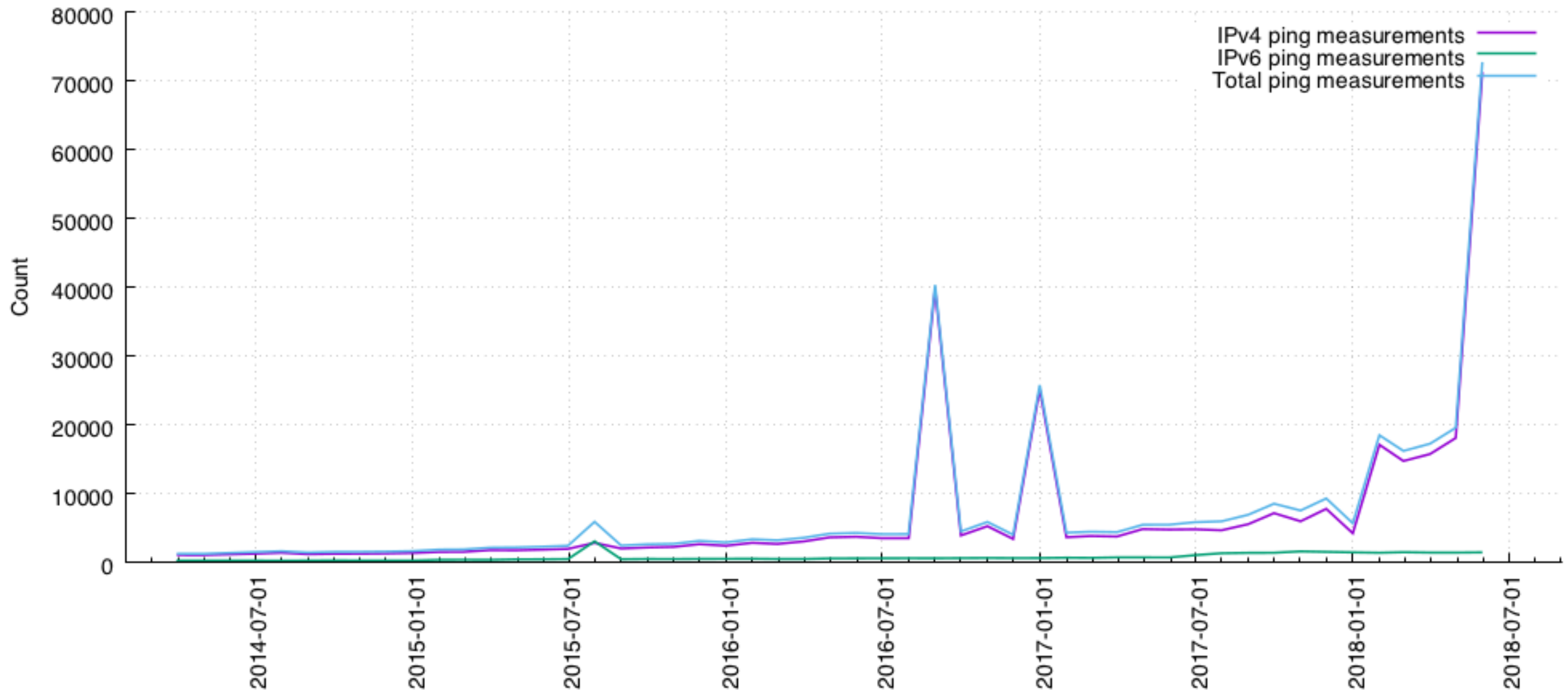


labs.ripe.net article later today



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RIPE Atlas: ping?



RIPE Atlas: traceroute?

