



RIPE NCC
RIPE NETWORK COORDINATION CENTRE

IPv6 Metrics

The view from RIPE Atlas and the k-root

Introduction



- The theme is “IPv6-only”, so that’s mostly what I’ll cover
- I’ll briefly touch on:
 - RIPE Atlas: the platform
 - RIPE Atlas: measurements
 - the k-root





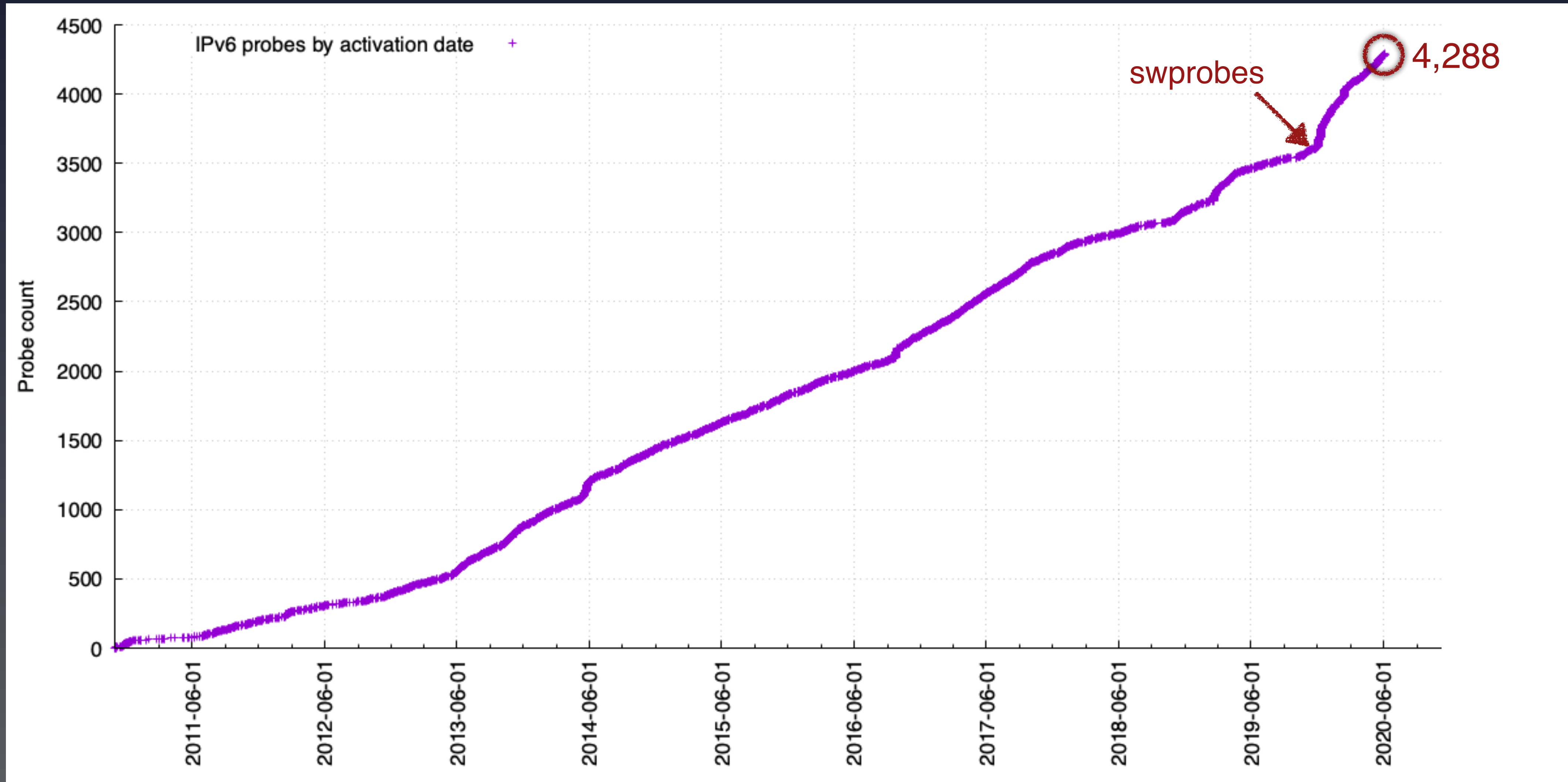
RIPE Atlas: Platform

RIPE Atlas

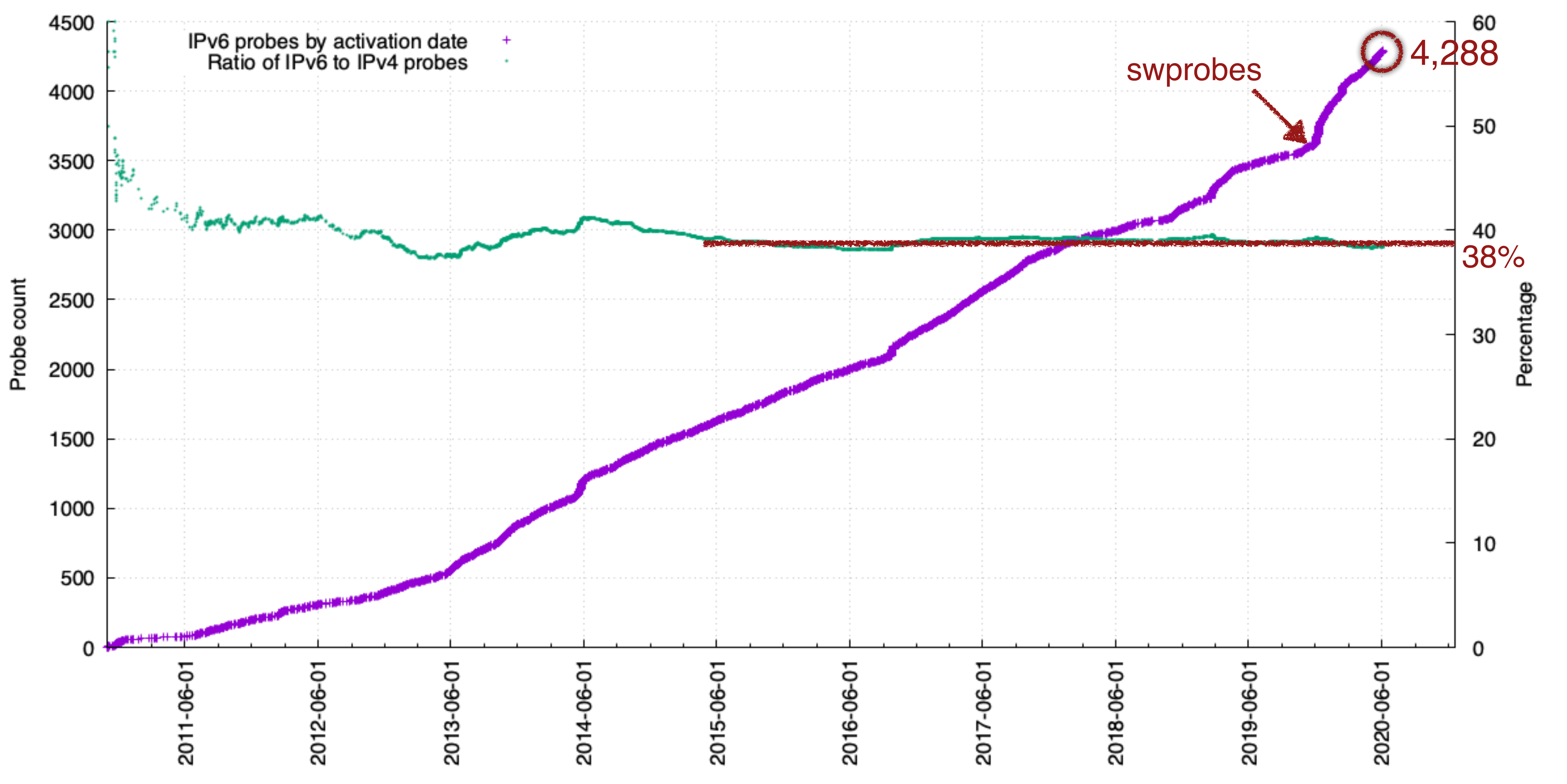


- A distributed network measurement platform
 - You should totally participate:
<https://atlas.ripe.net/get-involved/become-a-host/>
 - You can now install and run software probes:
<https://atlas.ripe.net/docs/software-probe/>

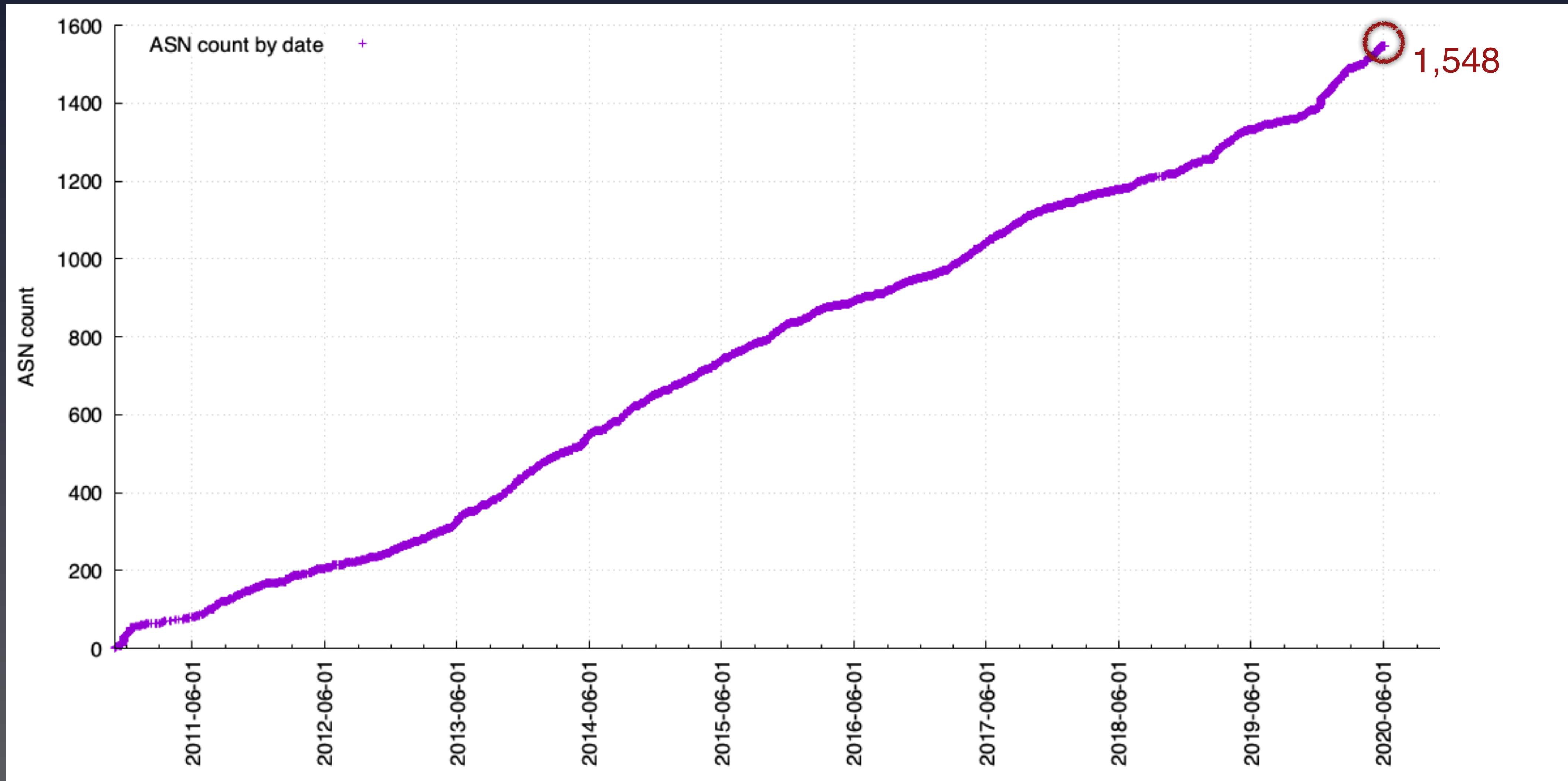
IPv6 RIPE Atlas Deployment



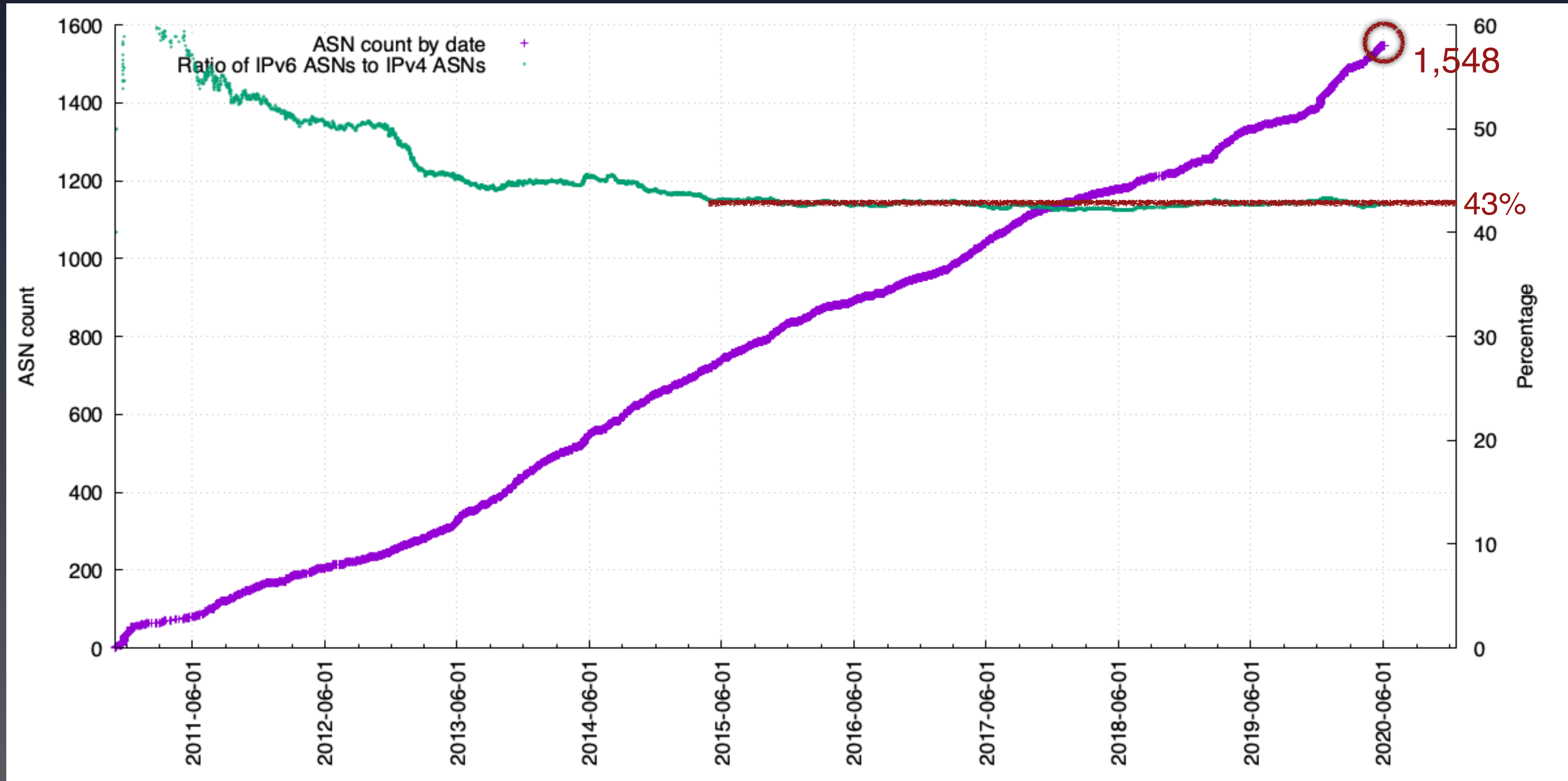
IPv6 RIPE Atlas Deployment



RIPE Atlas ASN Coverage



RIPE Atlas ASN Coverage





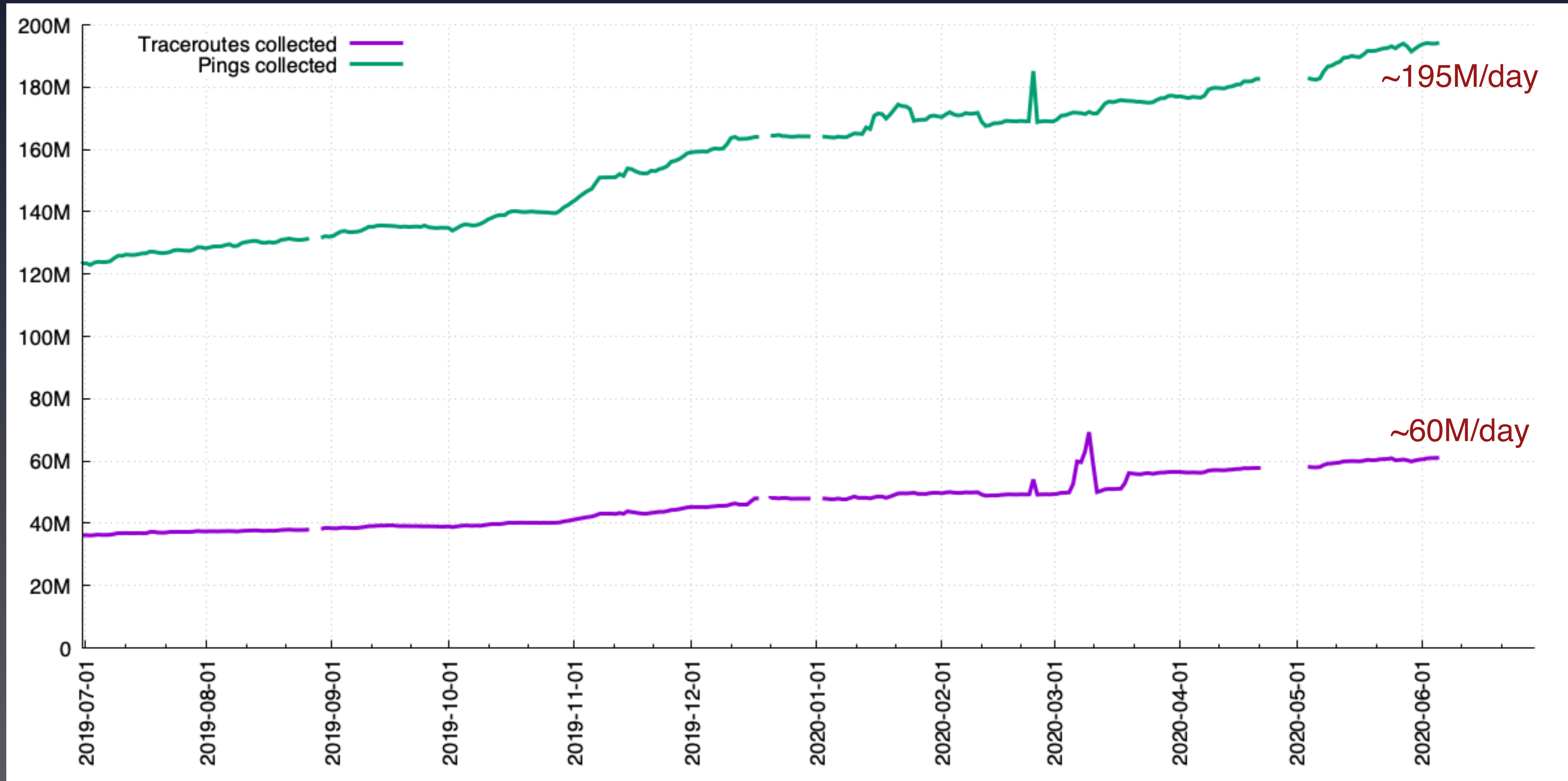
RIPE Atlas: Measurements

RIPE Atlas: What are we (you) measuring?

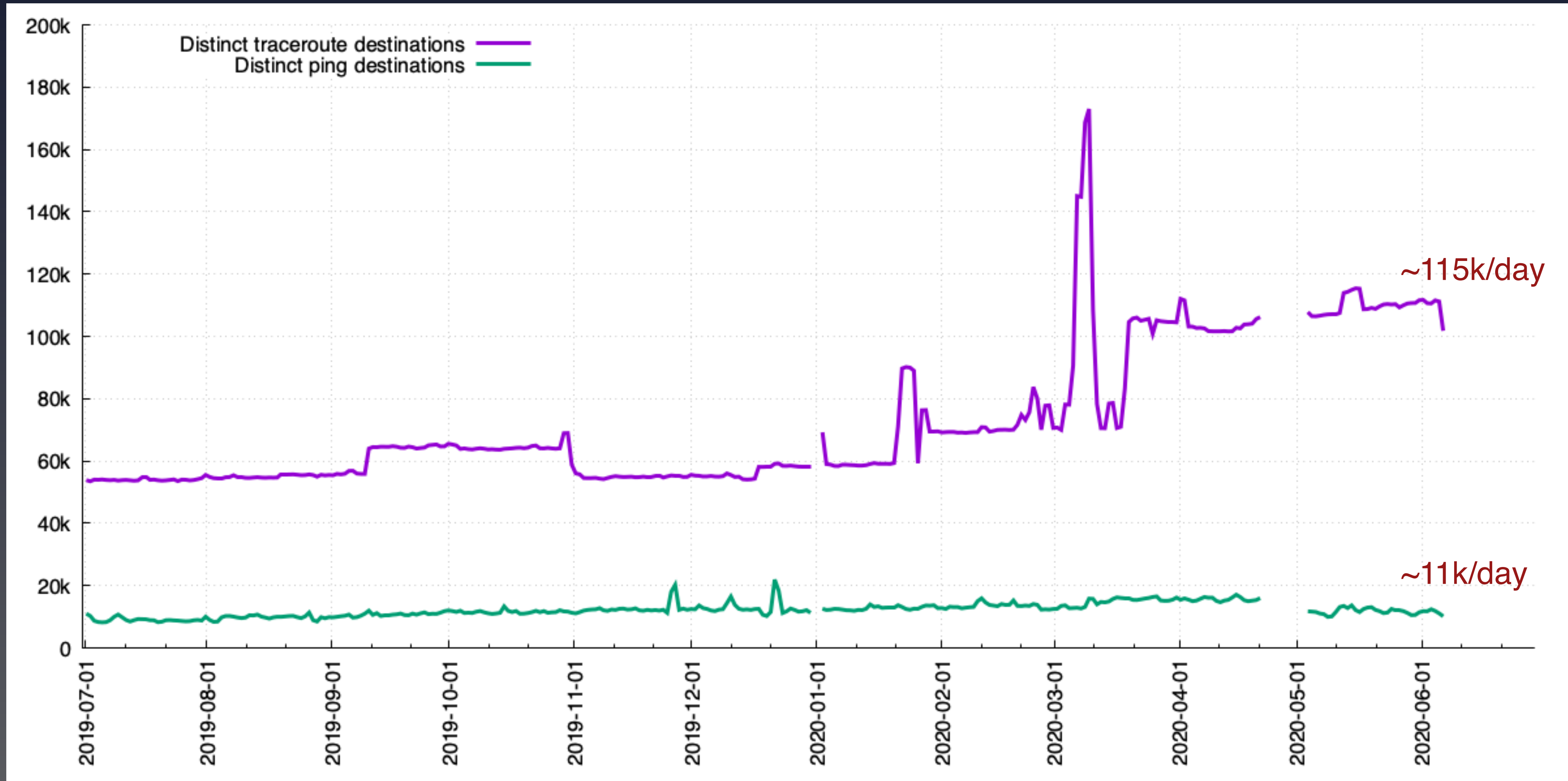


- How many measurements do we run?
- What is our network coverage?
 - How many targets (ping/traceroute)?
 - How many responses?
 - From which prefixes/ASNs?

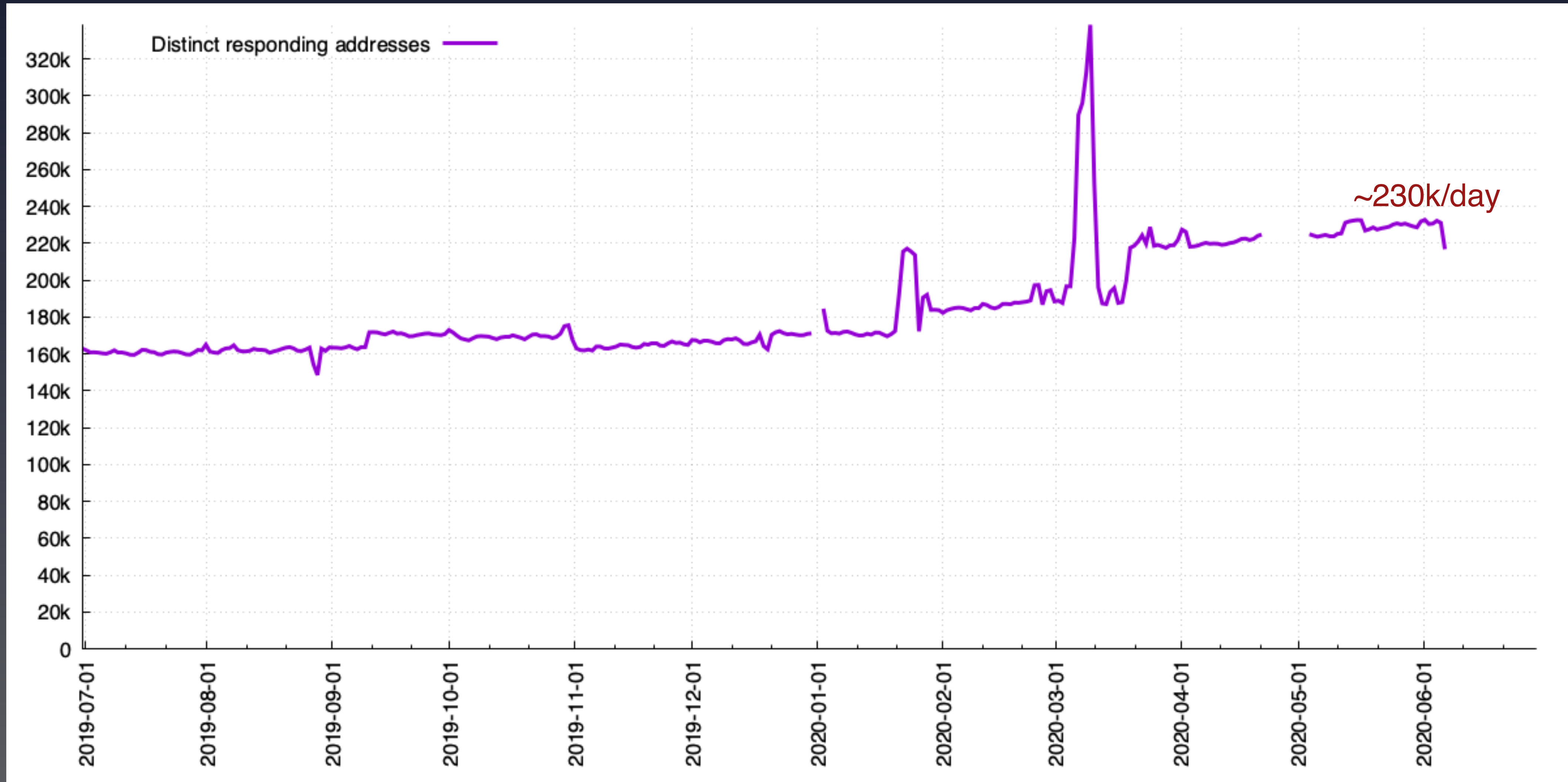
How many measurements?



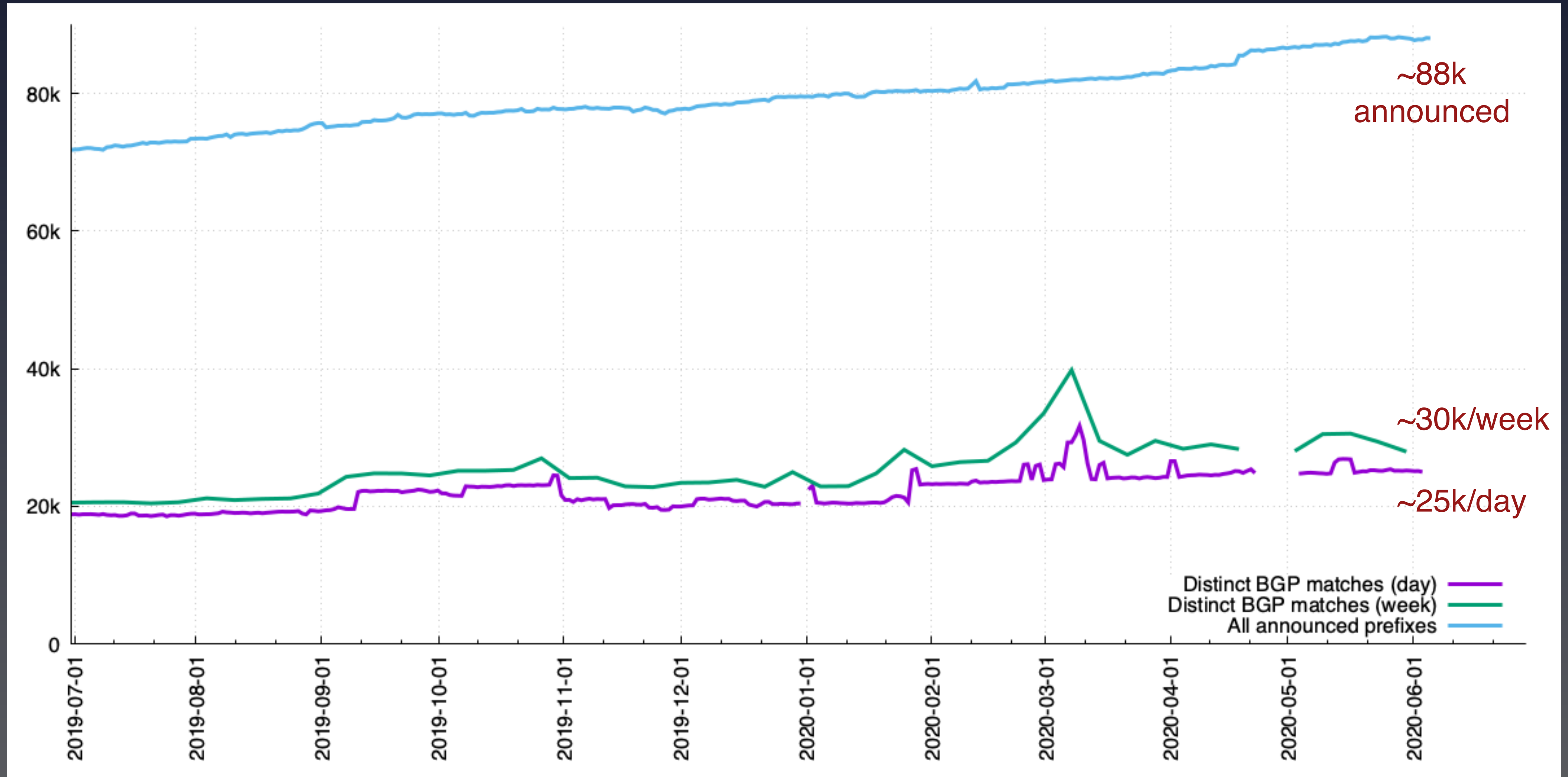
How many distinct targets?



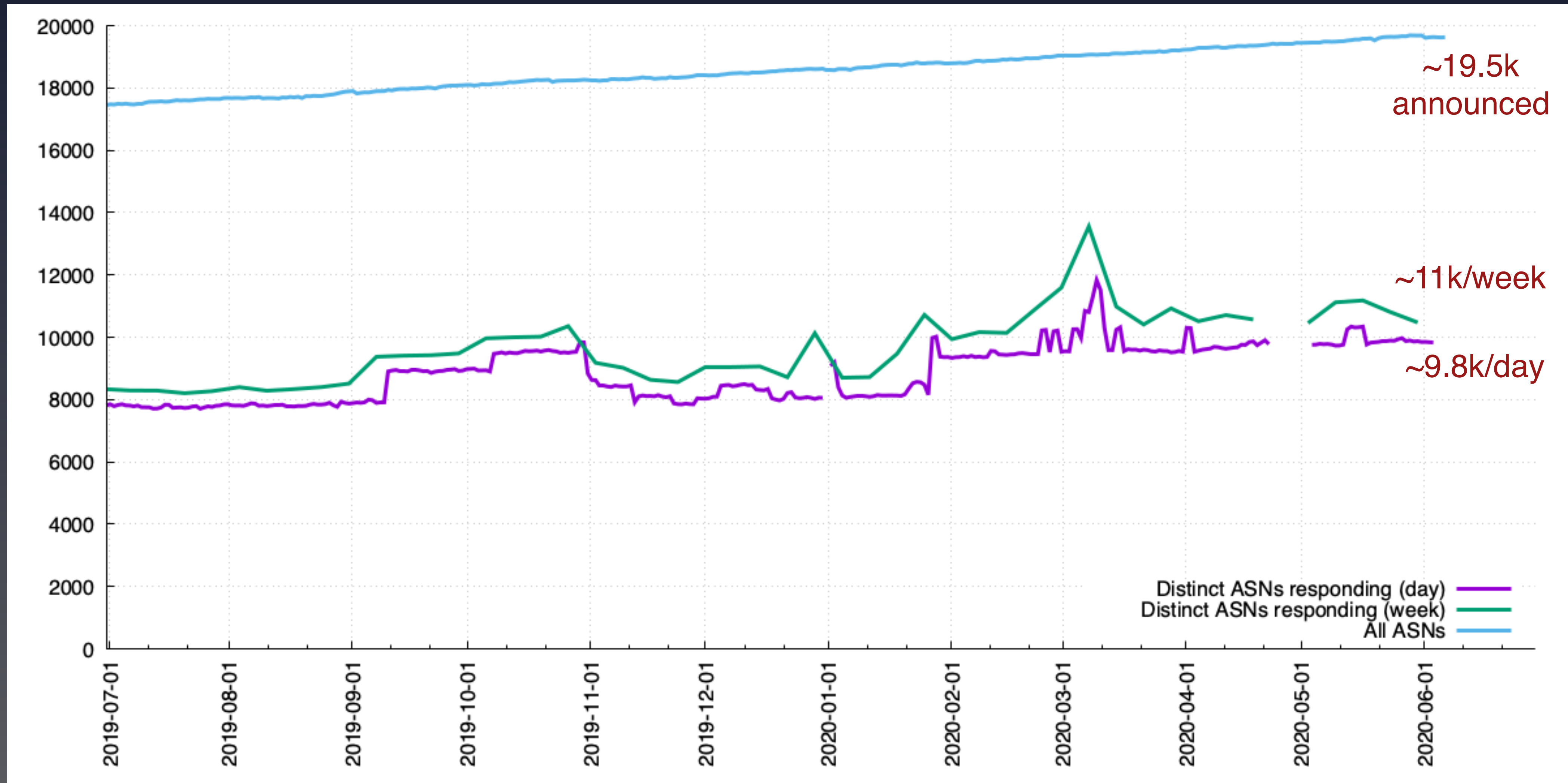
How many hops respond?



... from how many BGP prefixes?



... from how many ASNs?



RIPE Atlas: What are we (you) measuring?



- So we're measuring responses from
 - around 35% of the BGP announcements
 - around 50% of the ASNs originating or propagating IPv6 space
- IPv6 topology discovery is an active research area!



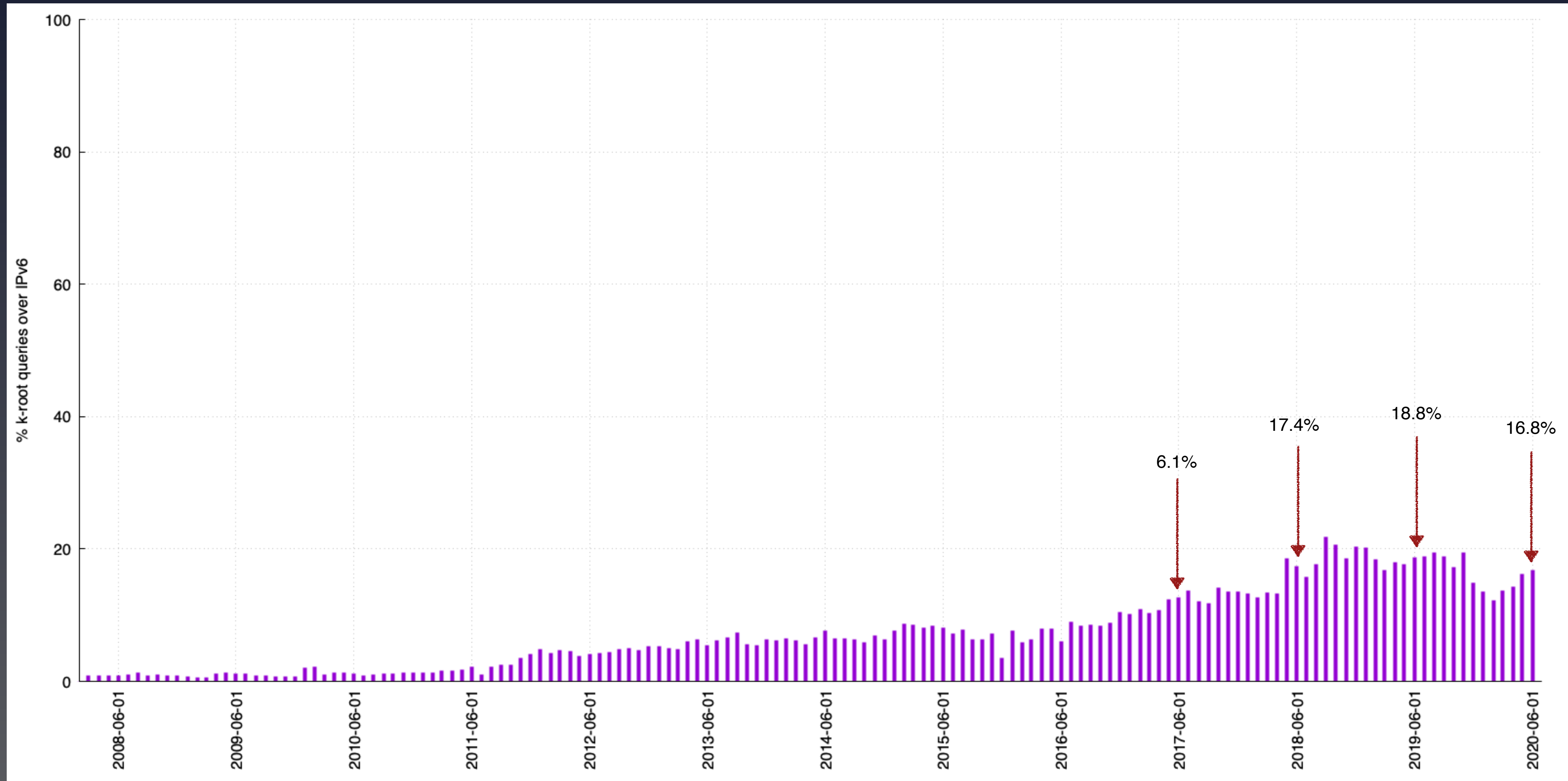
The k-root

The k-root

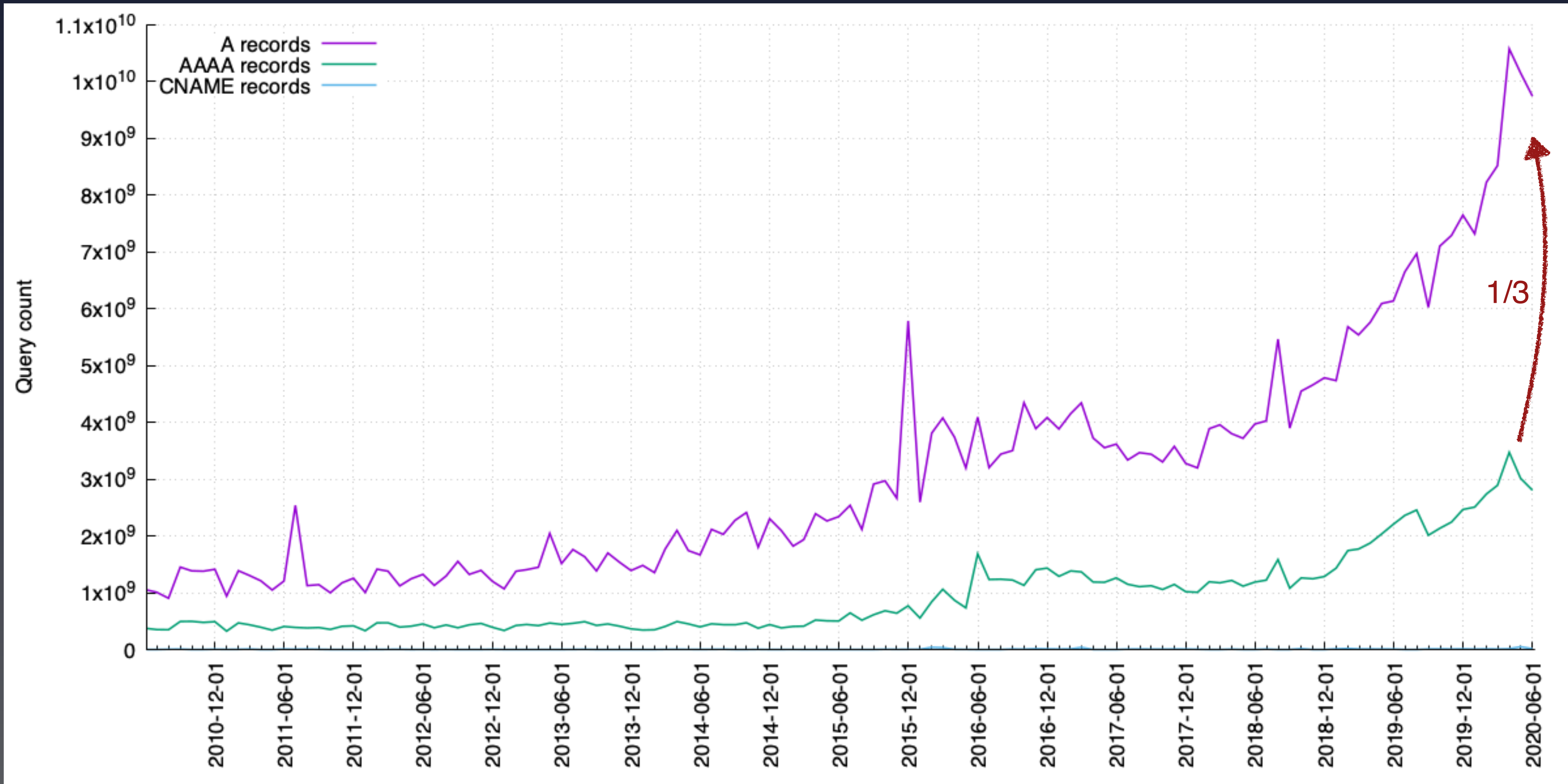


- We operate the DNS K-root servers
 - <https://www.ripe.net/analyse/dns/k-root>
- DNS traffic is not HTTP traffic!

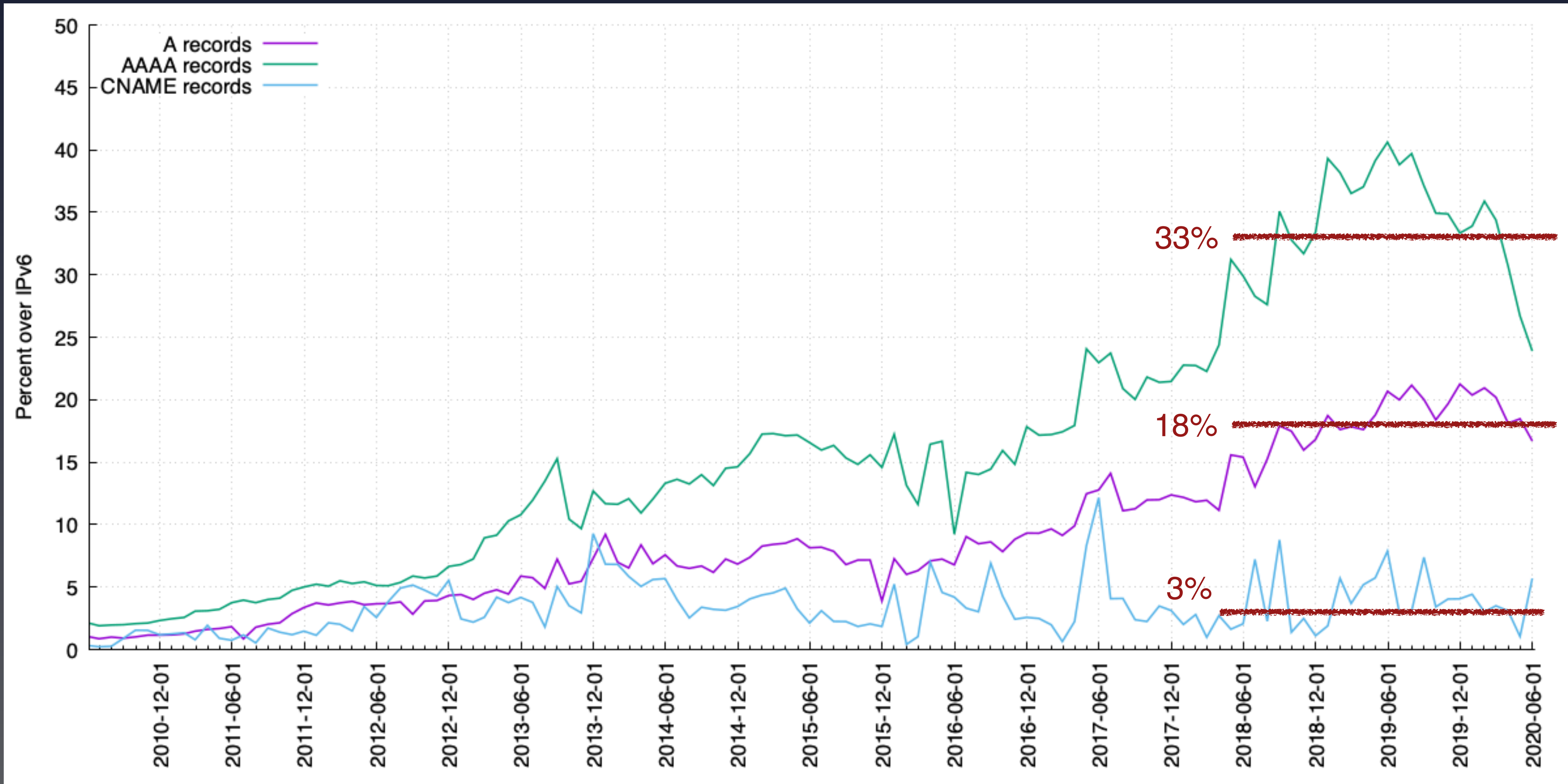
k-root



k-root queries



k-root queries





Summary

Summary



- We have pretty good coverage
 - ~38% of RIPE Atlas probes have IPv6 connectivity
 - We run *a lot* of IPv6 measurements continuously
 - We collect network measurements from ~50% of ASNs
 - ~17% of requests to k-root arrive over v6
- Can we nudge things upwards?
 - Check your networks and fill in gaps in RIPE Atlas!
http://sg-pub.ripe.net/petros/population_coverage/table.html