NZRS
an InternetNZ company

Introduction to DNS stats as Open Data

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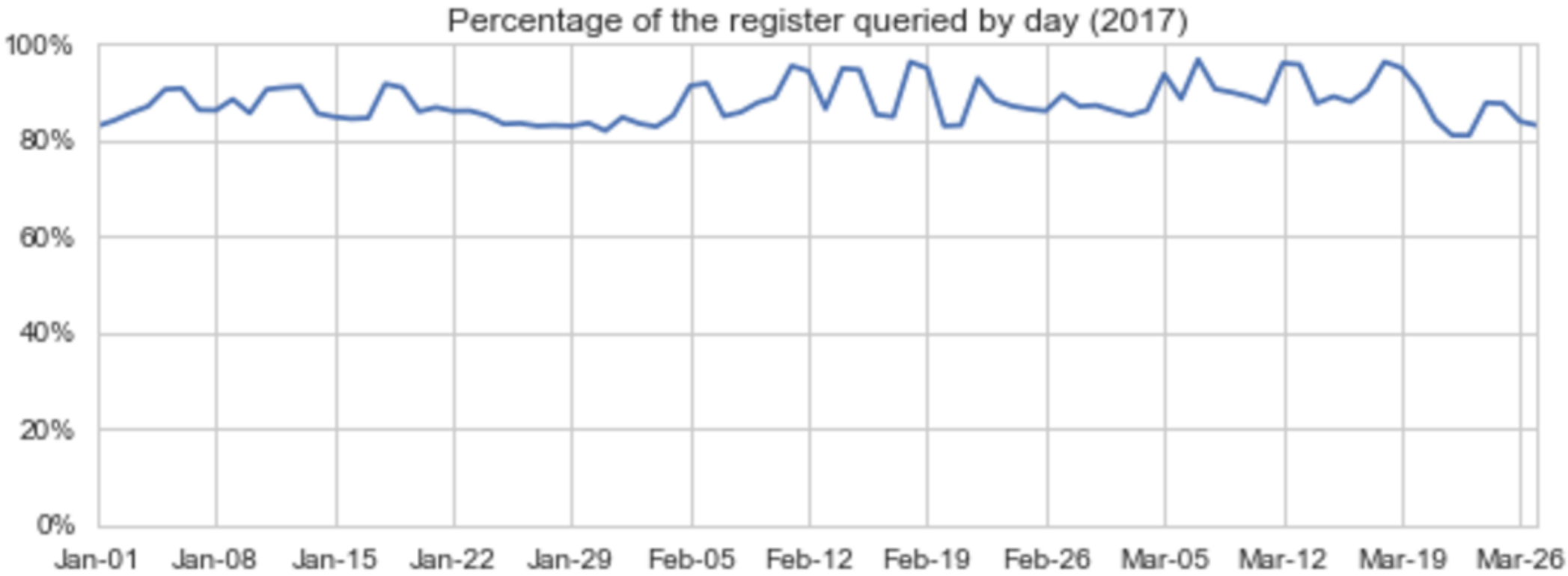
Registrar Conference 2017

Overview

- IDP (Internet Data Portal)
  - https://idp.nz/Domain-Names/-nz-DNS-Statistics
- Data source
  - We capture the DNS traffic sent to our authoritative servers
  - Stored in Hadoop cluster
- Daily stats
  - Aggregate on queried domain / source IP address / query type / DNS flag / response code / network protocol, etc.

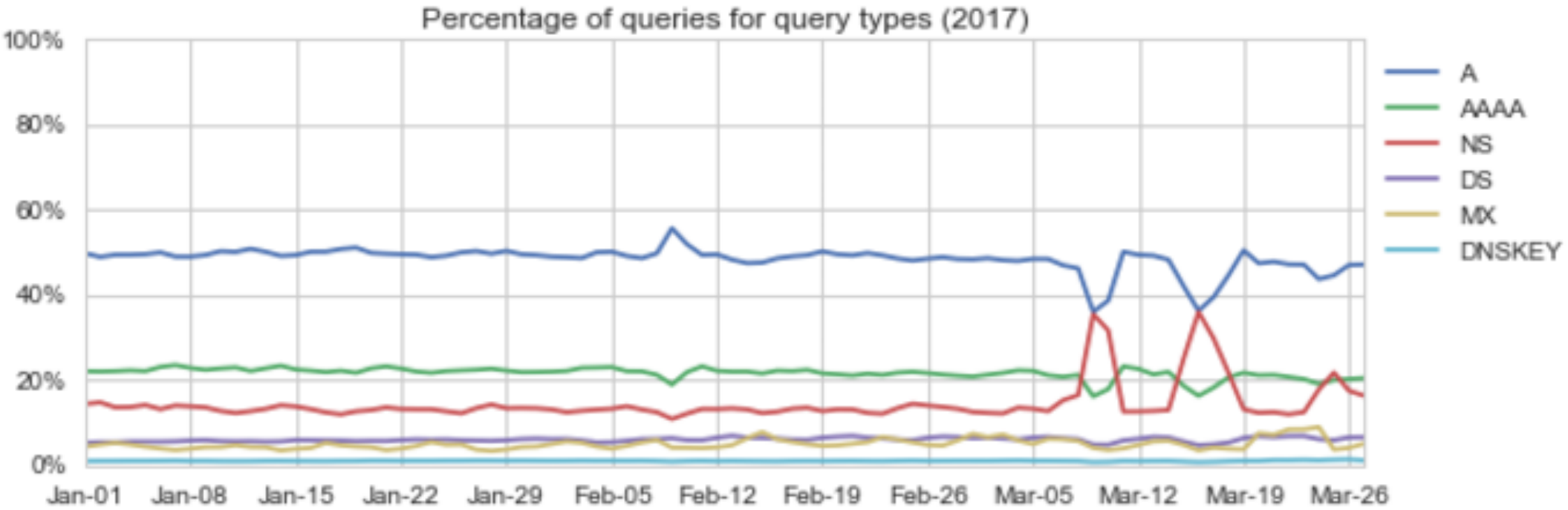
Domains queried

- Over 80% registered domains is queried each day



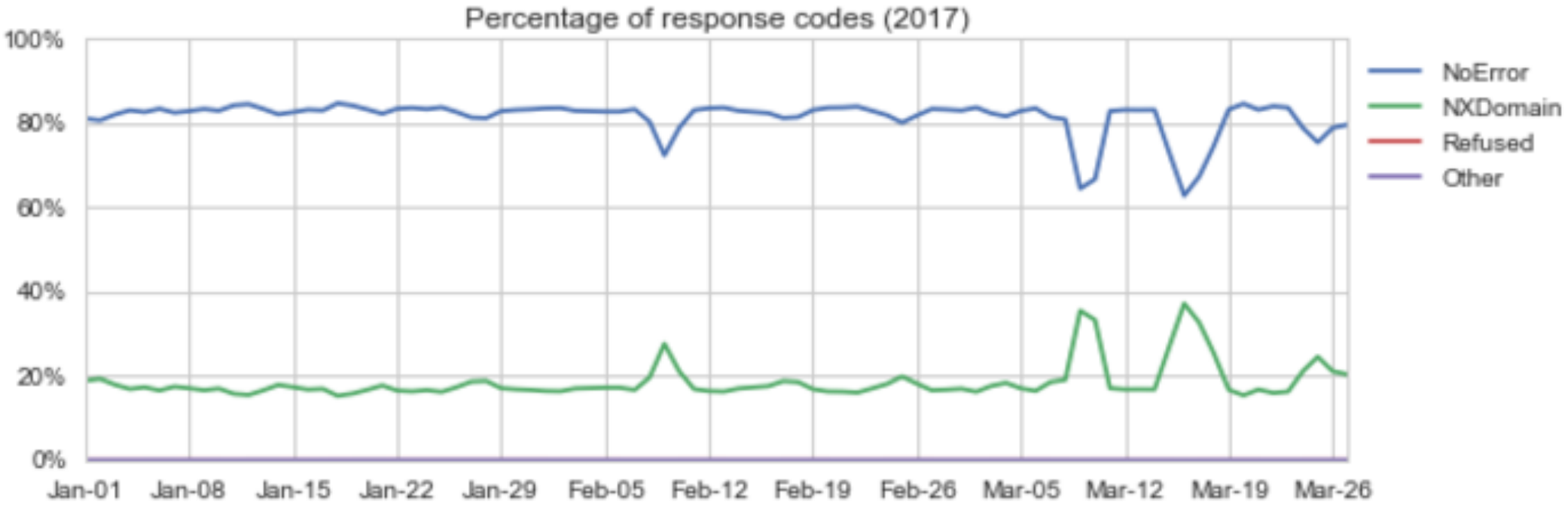
Query types

- The popularity of query types



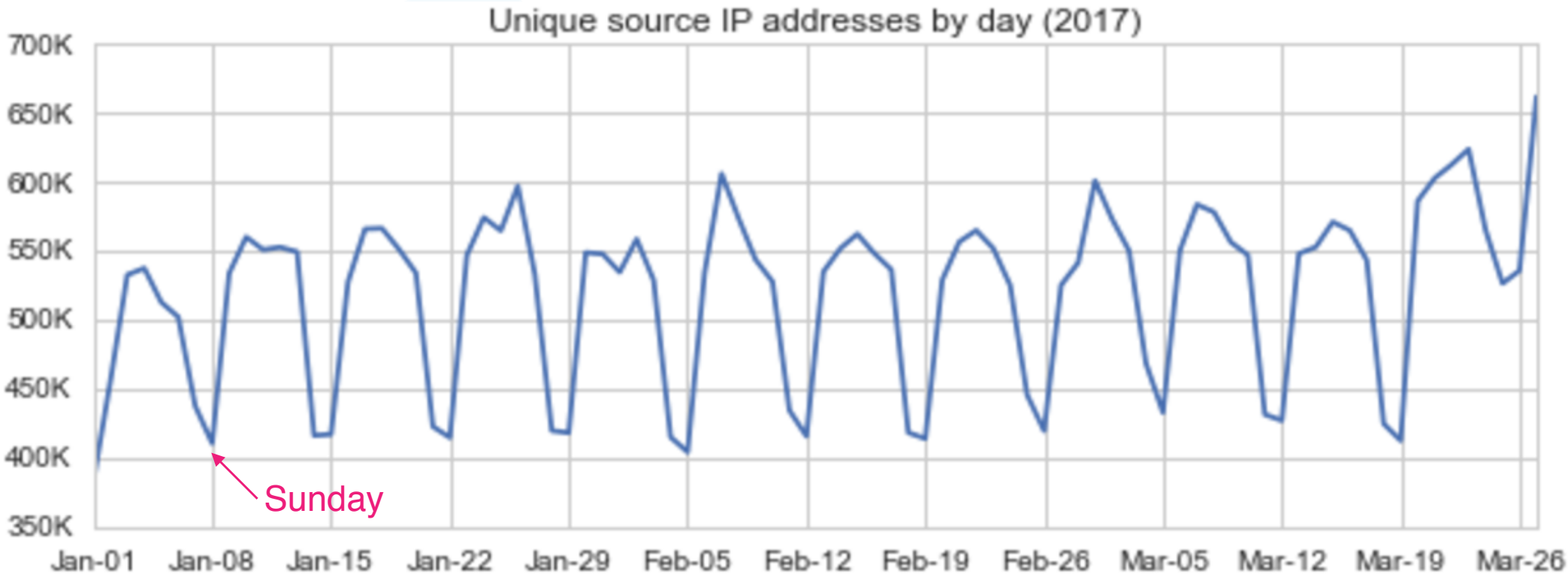
Response codes

- ~20% NXDomains (infected hosts, spam sources, search for non-registered domains using DNS instead of WHOIS



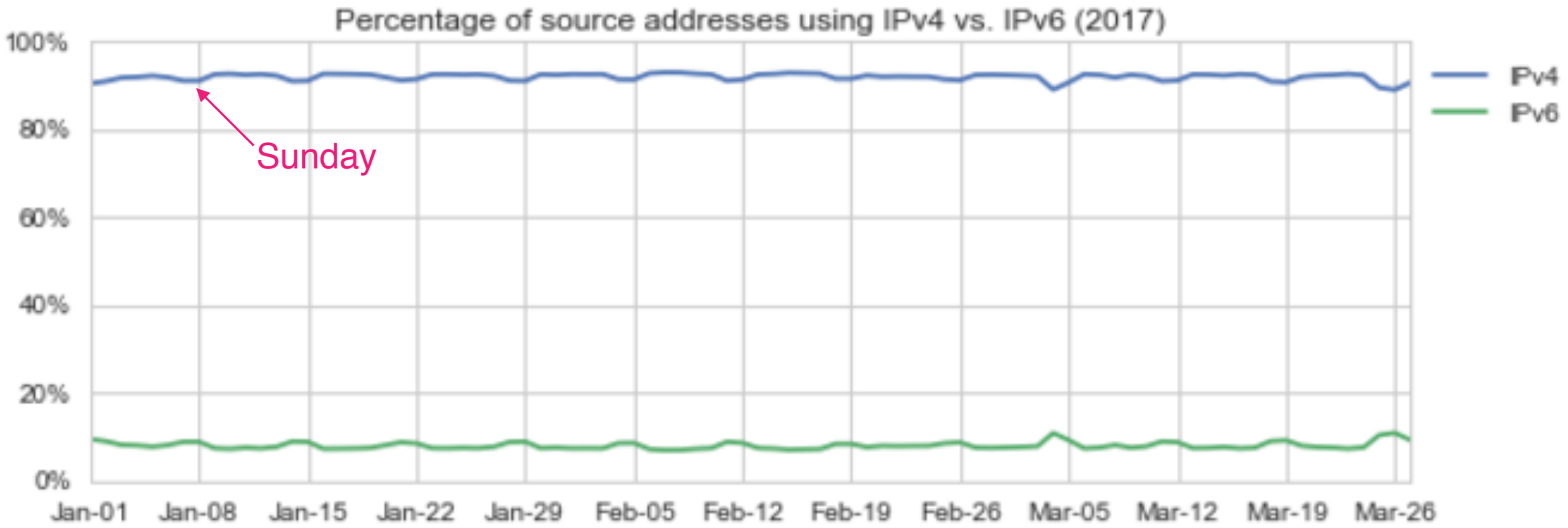
Unique source IP addresses

- Weekly seasonality

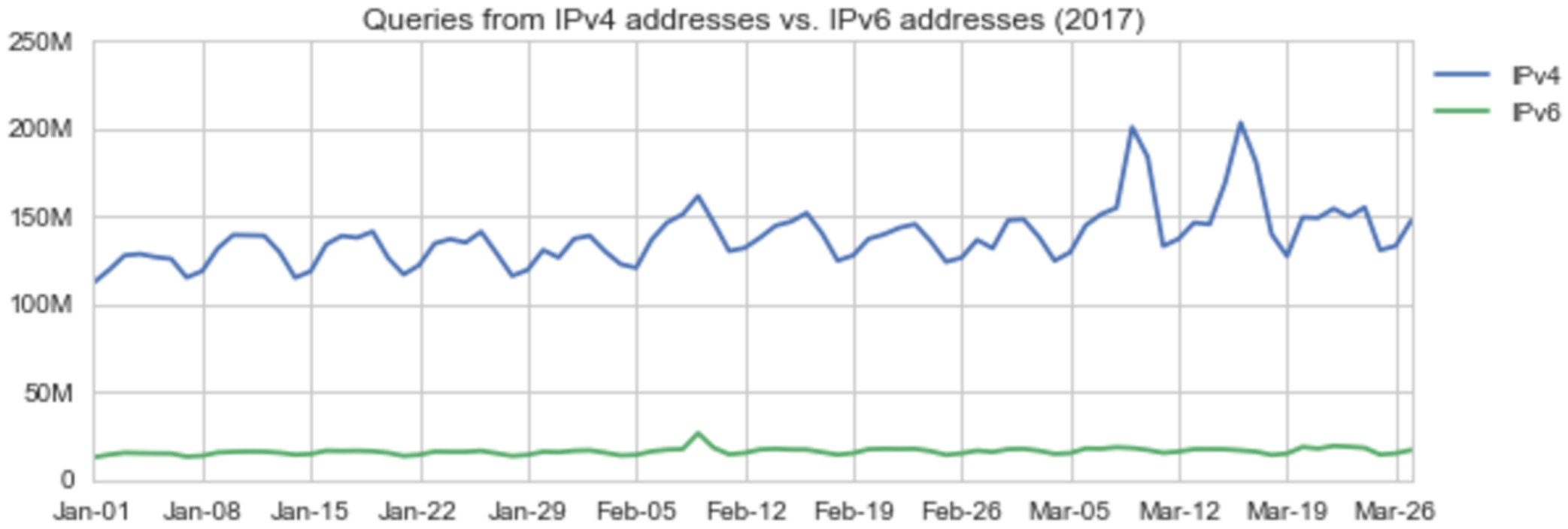


IPv4 vs. IPv6 source addresses

- < 10% IPv6

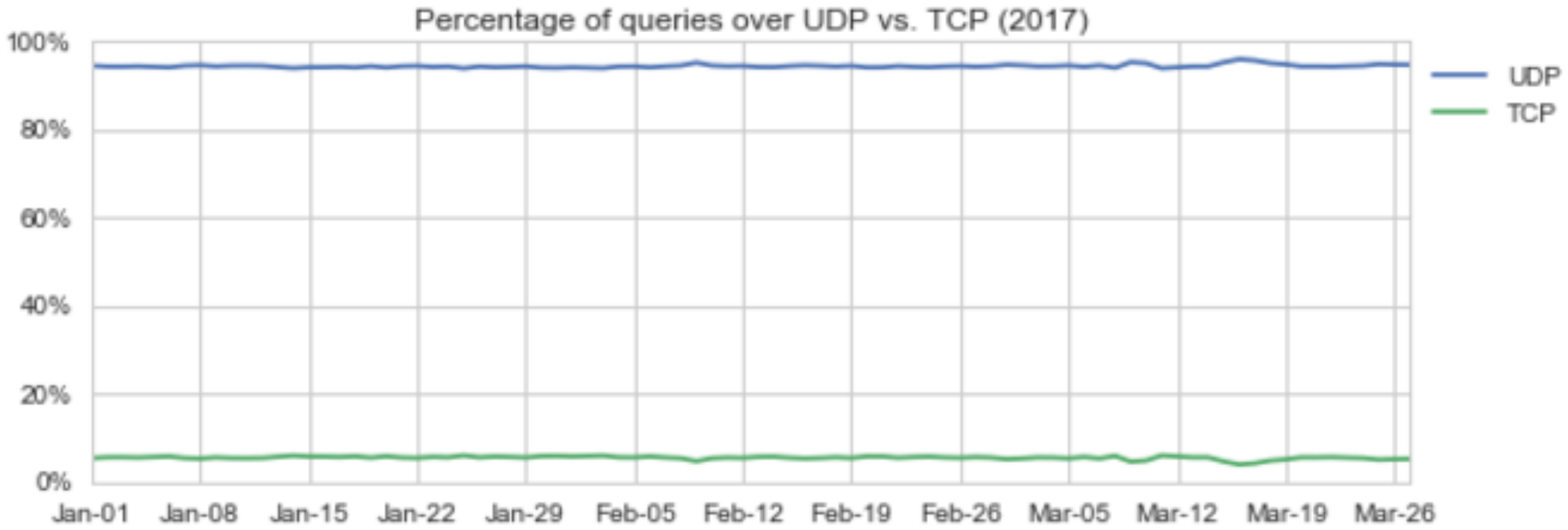


IPv4 vs. IPv6 queries



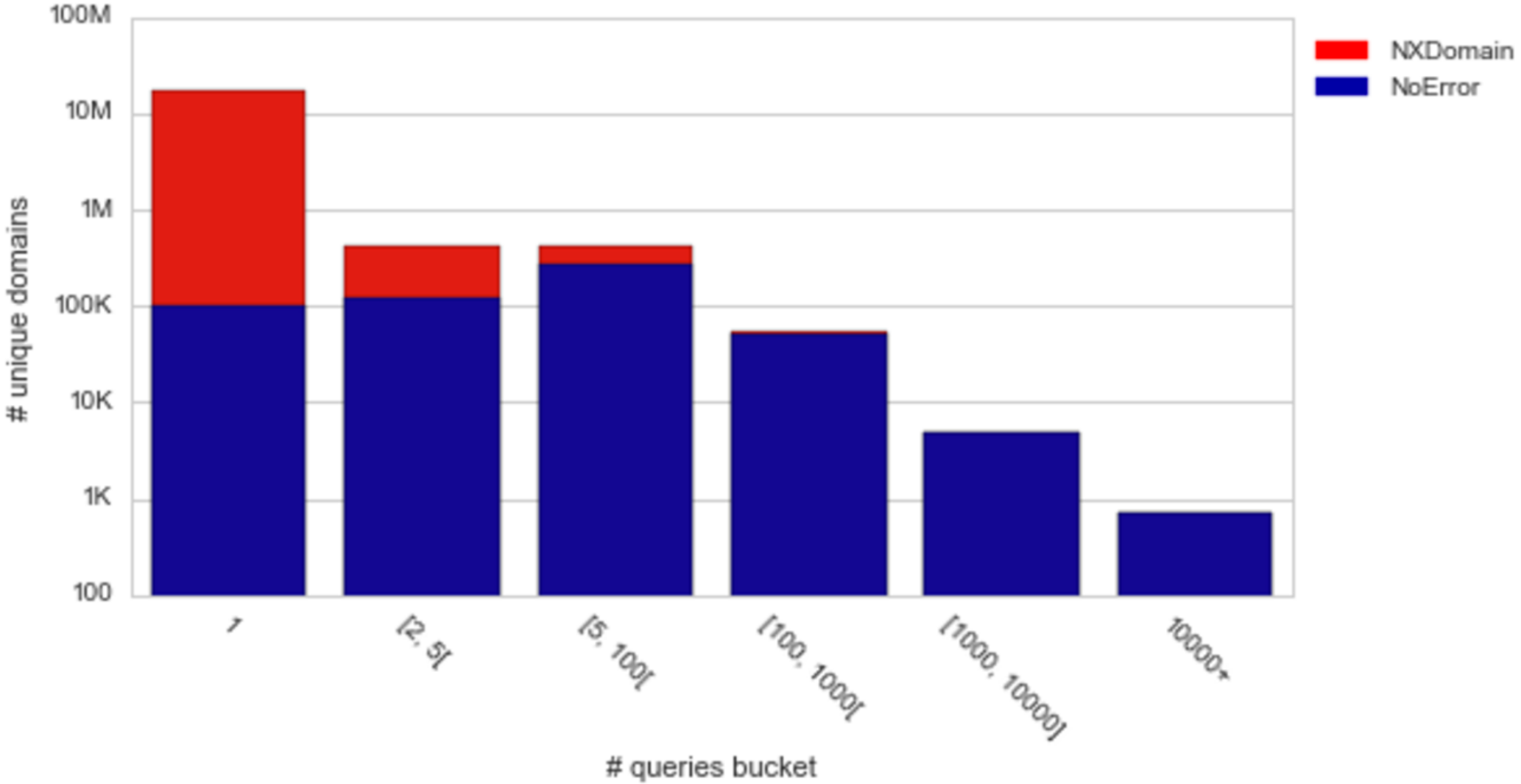
UDP vs. TCP

- ~ 5% TCP



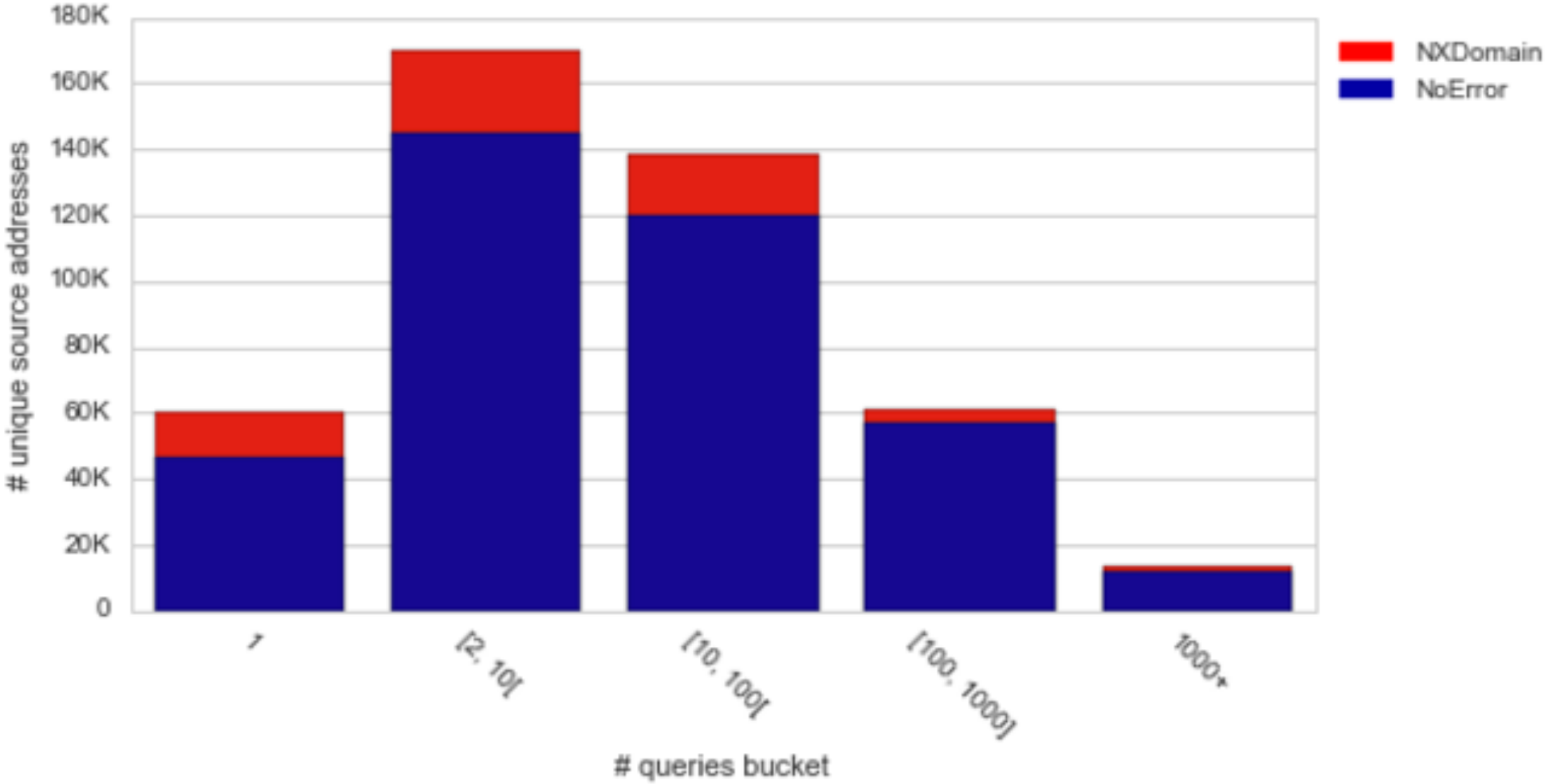
Queries distribution by domain (01 Jan)

- How many queries are normally sent for a domain in a day?



Queries distribution by source IP address (01 Jan)

- How many queries are normally sent by a source IP address each day?



Future

- Run it daily
- More datasets
  - Source address geo-location
  - Resolver support of DNSSEC (DO bit)
  - Traffic load per Servers/Nodes/Providers

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