

Engineering Report

Mark Kosters | *Chief Technology Officer*





Agenda

- Services the Engineering Department supports
- Statistics
- Software releases and improvements
- Challenges and what's next



Services ARIN Engineering Supports

Resource Public Key
Infrastructure (RPKI)

ARIN Online

- Restful provisioning API
- Email templates
- Reports
 - WhoWas
 - Bulkwhois
 - Etc..

Core Services

Email

- Hostmaster
- Billing

Internet Routing
Registry (IRR)

Domain Name
System (DNS)

Directory
services

- Whois
- Whois-RWS
- Registration Data
Access Protocol
(RDAP)

Services ARIN Engineering Supports

Other Services

ARIN Online

FTP

Operational Test and
Evaluation Environment

ARIN Mailing Lists

ARIN website

The Vault

Services ARIN Engineering Supports

Internal Support

ARIN Online
(staff interface)

Security and
performance monitoring

Cloud-based tools

Various environments, including development,
daily testing/regression tests, long-running
tests, current release, staging, and branch
environments

Infrastructure
tools

Analytics

Email



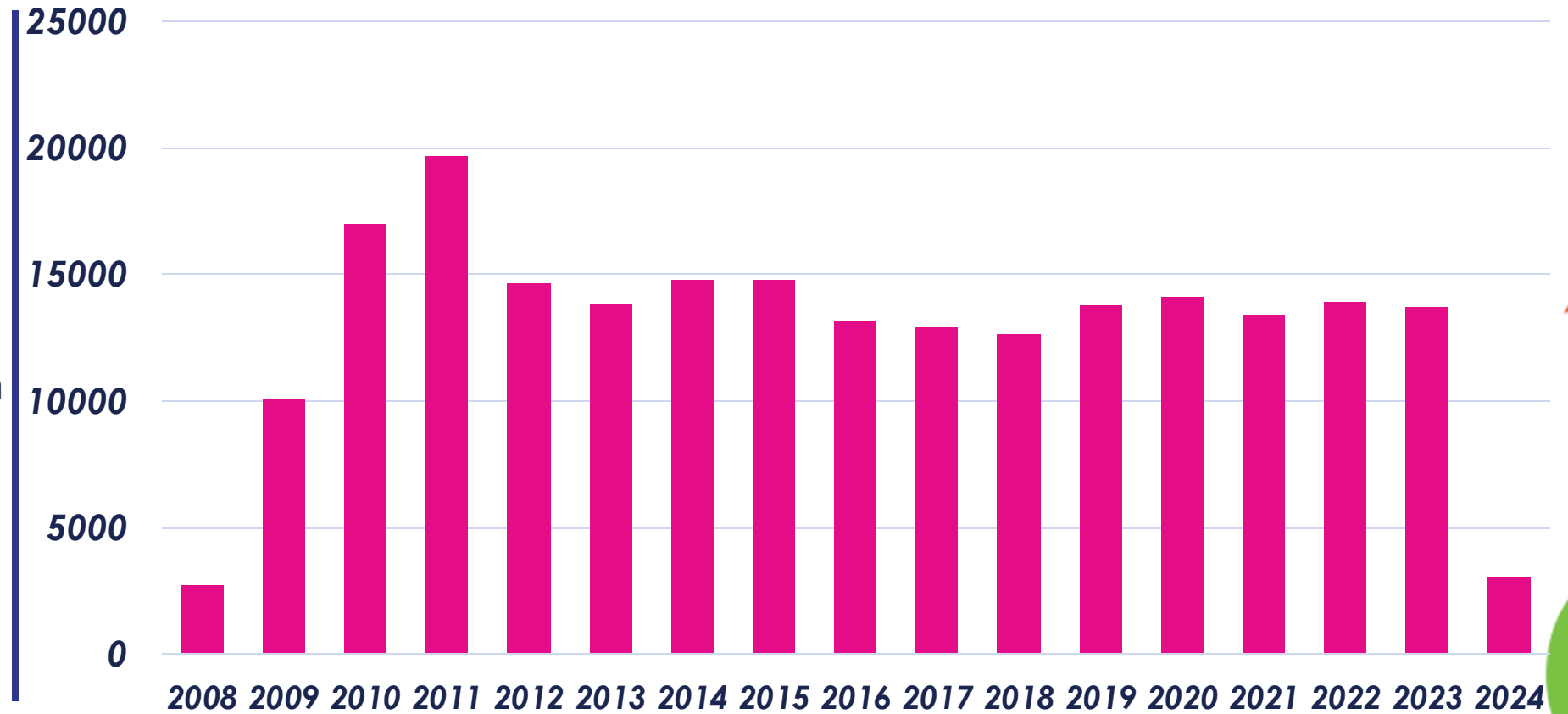
Statistics

ARIN Online



218,545

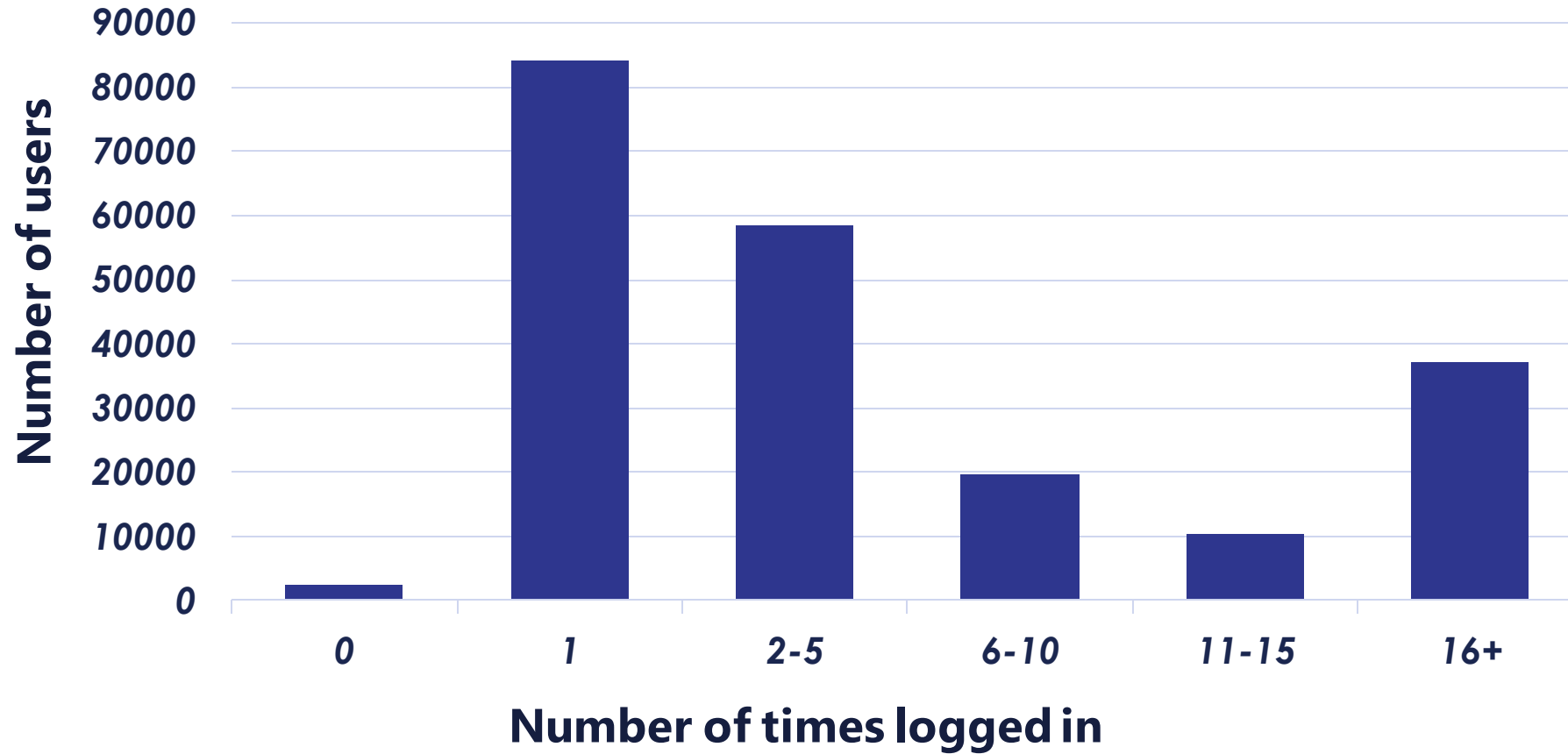
accounts activated
since inception through
Q1 of 2024



ARIN Online Logins (Cumulative)



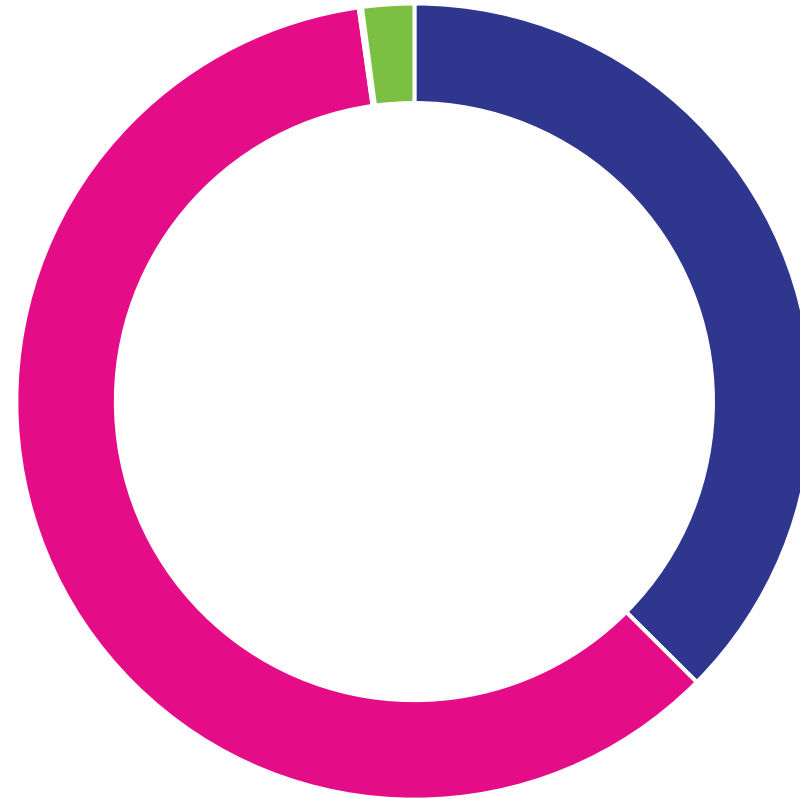
Logins from inception through Q3 of 2023



Multifactor Authentication Adoption



■ SMS ■ TOTP ■ FIDO2

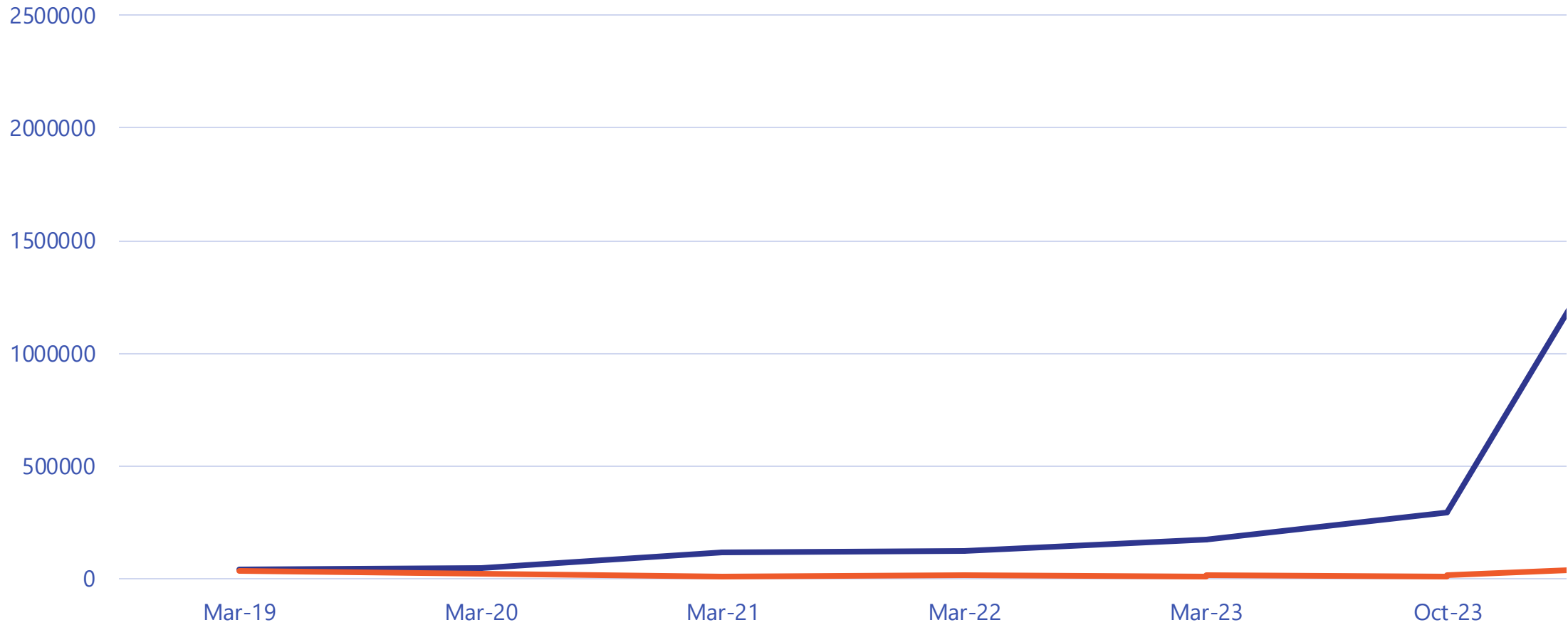


41,370 MFA users out of a total of 218,545 ARIN Online Accounts

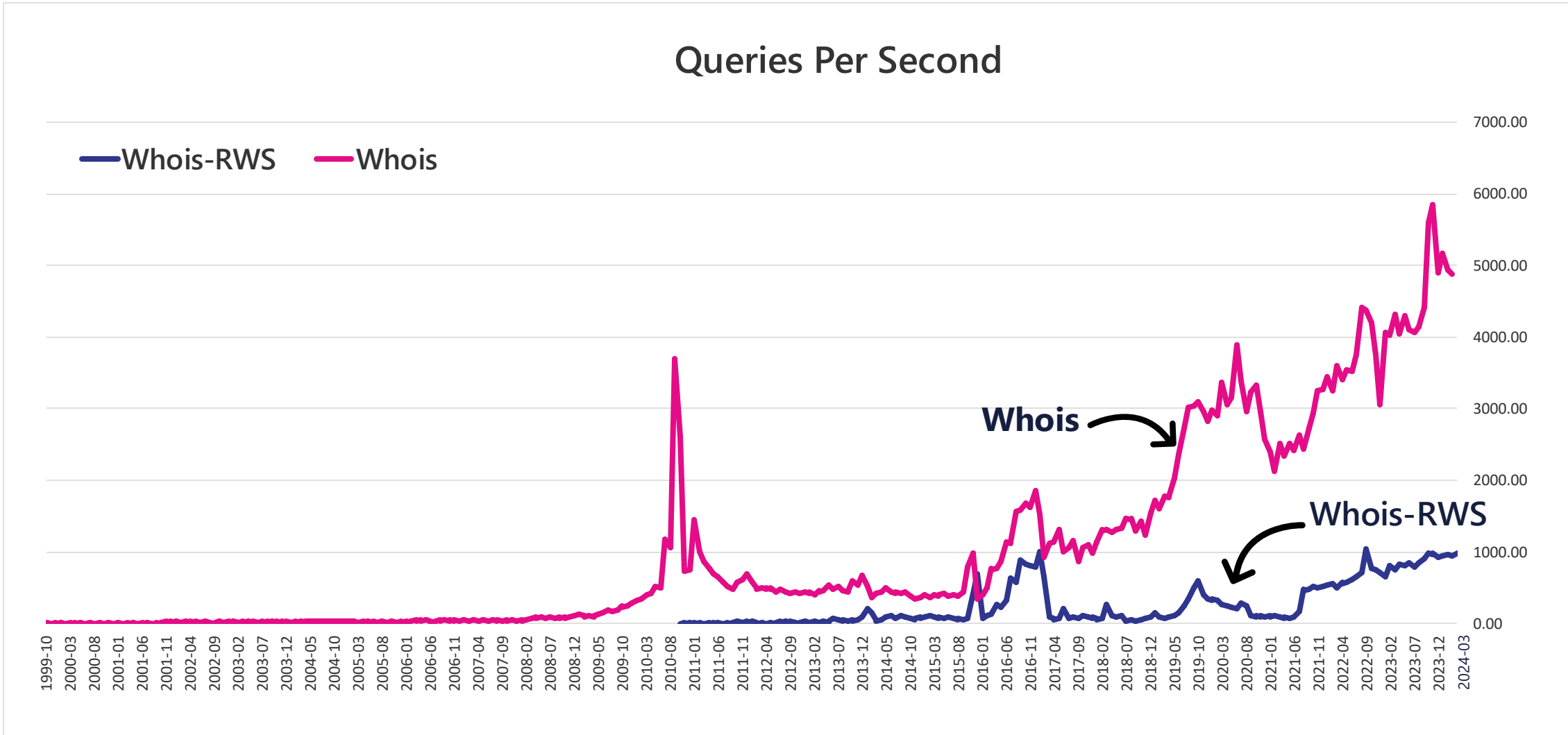
Provisioning Transactions



(RESTful + Templates)



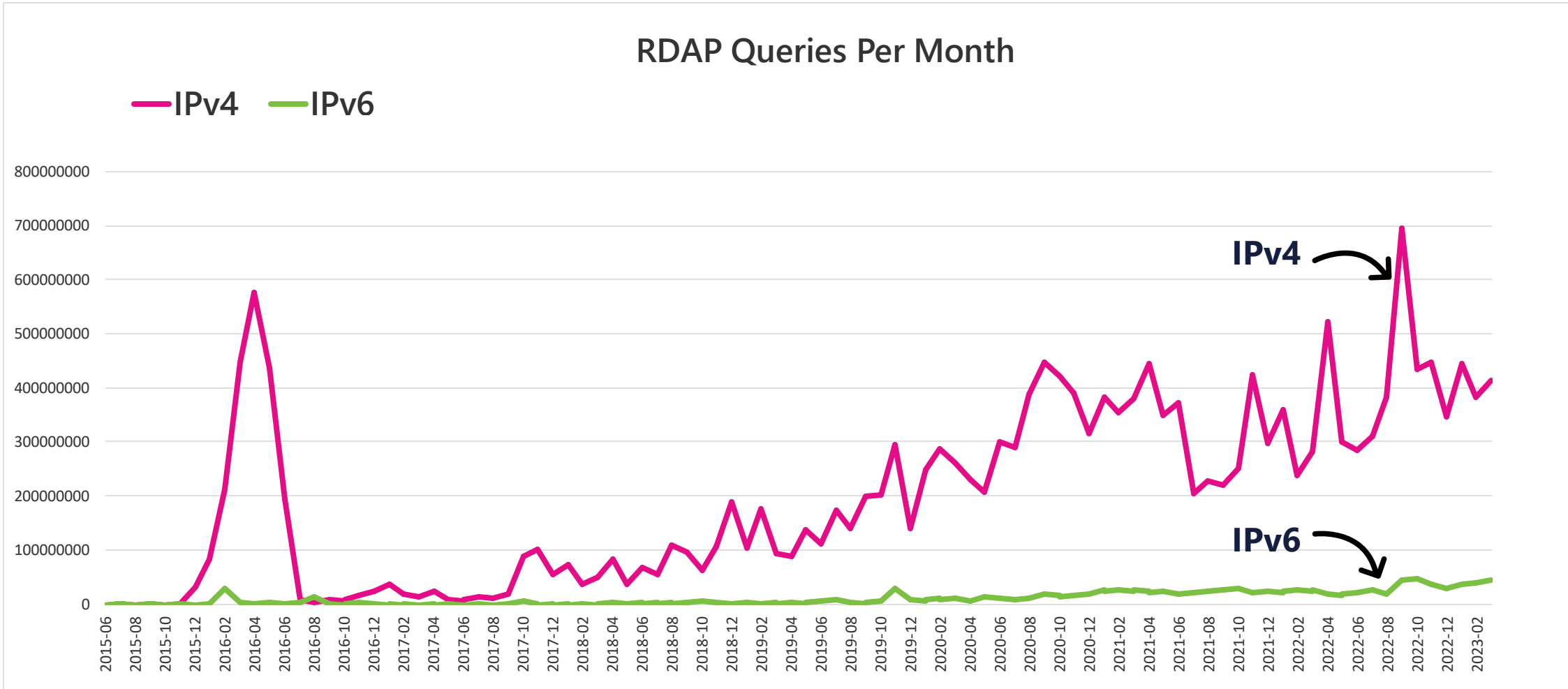
Whois and Whois-RWS



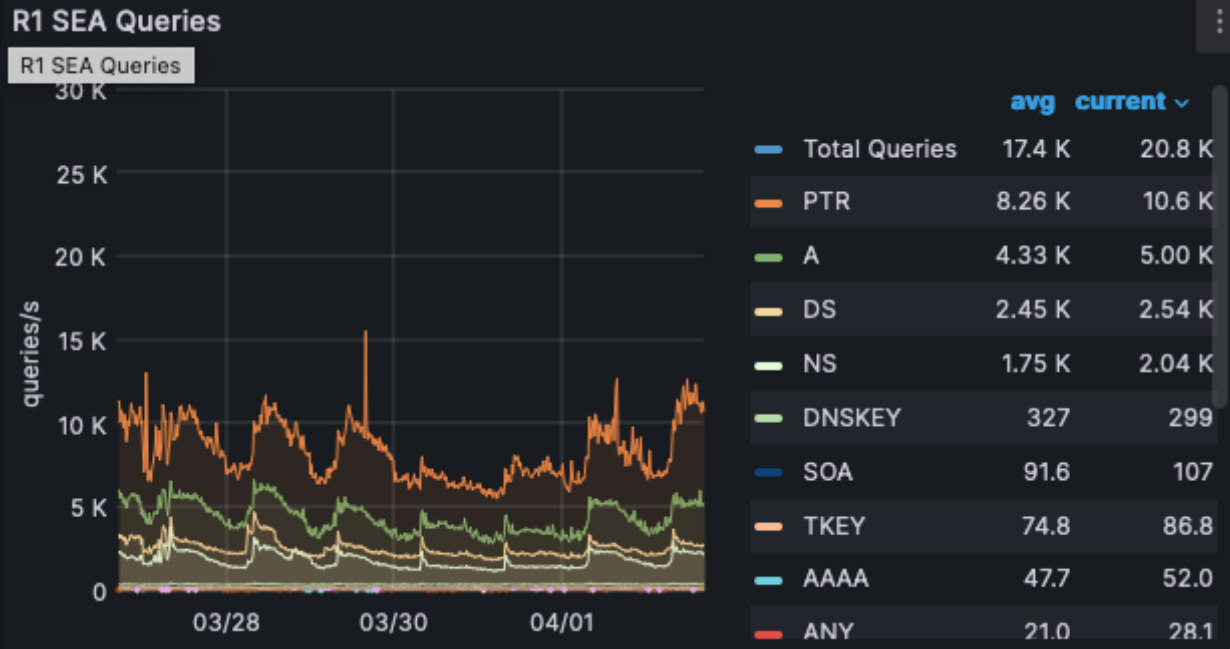
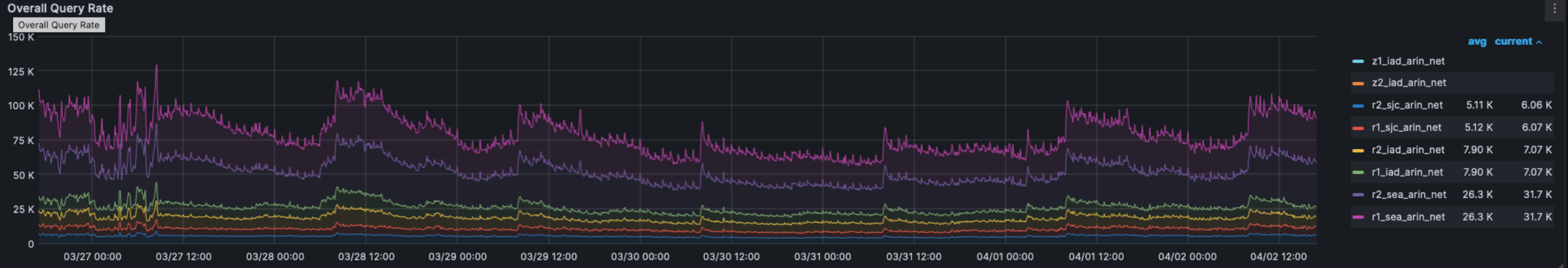
Registration Data Access Protocol (RDAP)



RDAP Queries Per Month



DNS – ARIN-Managed /8s





Releases and Improvements

Releases Since ARIN 52



Secure Routing Enhancements

- User interface improvements
- IRR Object search has been brought back to ARIN Online on the IRR route/route6 object list page.

Transfers

- Autonomous System Numbers (ASNs) can now be transferred between users across Regional Internet Registries (RIRs) through an (8.4 Transfer)

Open-Source Template Processor Released

- In preparation for email template retirement in June 2024

Ongoing:

- Audit System and Organization Controls (SOC) 2 Type 2 audit
- PCI Audit
- Reduction of technical debt – LARGE focus here
- Making provisioning systems more highly available

System Improvements Since ARIN 52

End-of-life box replacements are now concurrent with a steady transitioning to Kubernetes

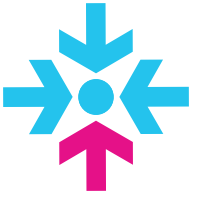
Rolled out new hardware for public-facing sites running Red Hat OpenShift (OKE) with services running under oVirt (VMs)

Prometheus Monitoring operational in all sites running on Red Hat OpenShift with applications being migrated away from Sensu

The background features a dark blue field with faint, overlapping organic shapes. A prominent horizontal yellow band spans the width of the slide, containing the title text. On the right side, there are several large, vibrant, overlapping shapes in cyan, yellow, orange, and green, creating a dynamic, abstract composition.

What's Next and Challenges

Geolocation within RDAP



Background

- Many calls to add a normalized way to find geolocation data through directory services
- RIPE and APNIC are open to the idea and having conversations within their communities
- RDAP is a common uniform directory service interface that is used by every Regional Internet Registry (RIR)
- ICANN is mandating the movement to RDAP and making Whois services optional for domain registries/registrars

Work in this area

- RFC 9092 describes local management of geolocation data within an ISP
- Read a draft that describes how this can be linked with RDAP here:
<https://www.ietf.org/archive/id/draft-ietf-regext-rdap-geofeed-04.html>
- Working with other RIRs and their communities on this common interface

Secure Routing Enhancements

- RPKI Integration with IRR
- Routing Intelligence for RPKI

Email Template Retirement

Removing template processing service in June 2024

New Fee Calculator

Future fee changes based on Board action

Standards Work (dependent on when standard is finalized within the IETF)

- RDAP
 - RIR Search
 - Geolocation
 - Reverse Search
- RPKI
 - ASPA

Ongoing

- System and Organization Controls (SOC) 2 Type 2 audit
- SOC2 audit broadening to all of ARIN Online beginning in Q4 of 2024
- Recurring PCI audit
- Internal tool enhancements
- Reduction of technical debt

Upcoming Enhancements

Challenges Over Time

Balance of Urgent Needs (ARIN 51)



- ARIN Online enhancements
- Internal tools for customer-facing teams
- Technical debt

Balance of Urgent Needs (ARIN 52)



- ARIN Online enhancements
- Internal tools for customer-facing teams
- Technical debt
- SOC 2 and PCI audit logging and remediation

Balance of Urgent Needs (ARIN 53)

- ARIN Online enhancements
- Internal tools for customer-facing teams
- SOC 2 and PCI audit logging and remediation
- Technical debt
- Onboarding new staff
- Planning in preparation of computer room move from ARIN HQ to a colocation facility

Thank You

Questions or Comments?

