

Routing Security Update

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Agenda

- Global Resource Public Key Infrastructure (RPKI) Activity
- RPKI Adoption at ARIN
- New Features and Upcoming Development
- NRO RPKI Program Update



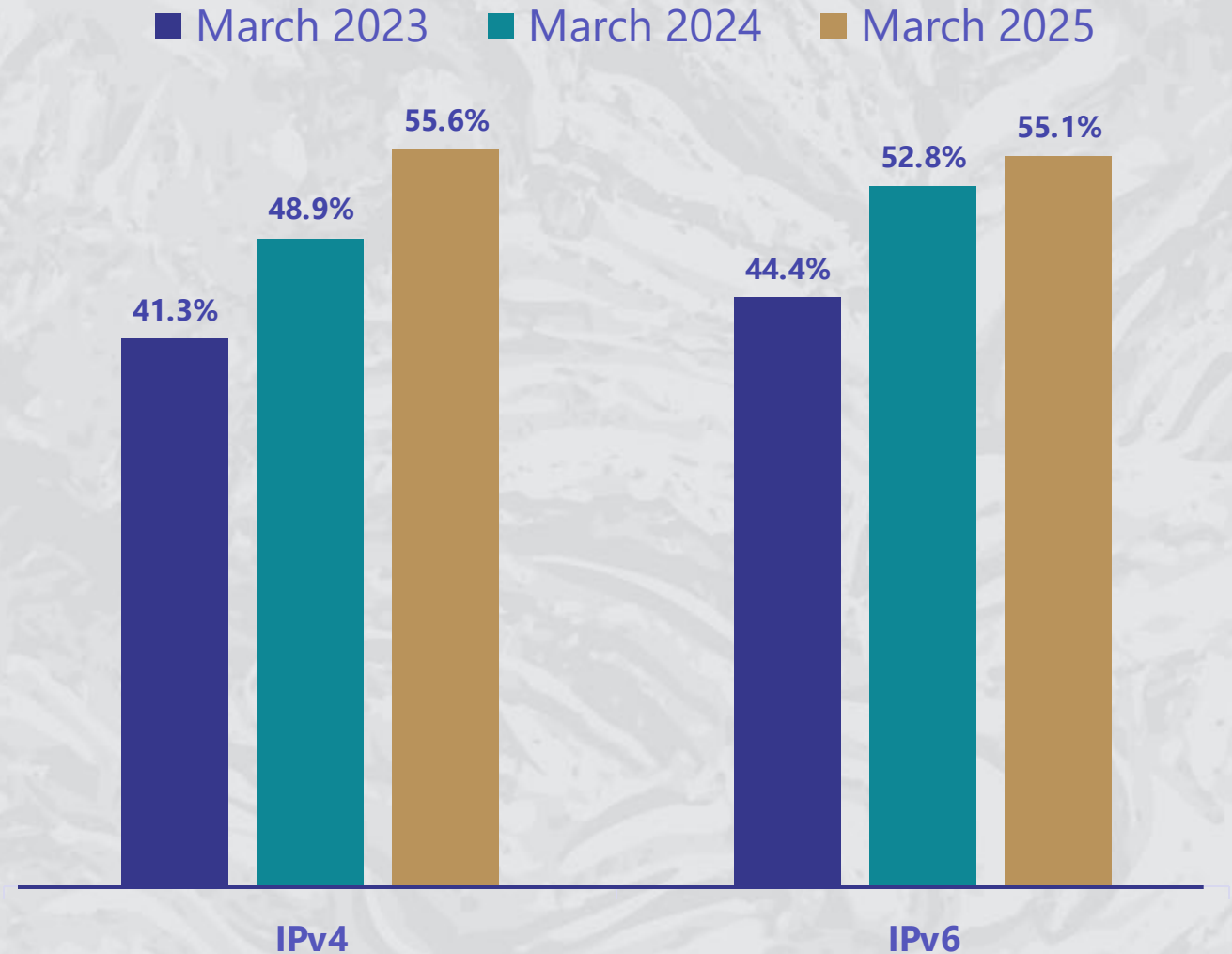
The State of RPKI - By The Numbers

Global RPKI Validity

Parity in IPv4 and IPv6 resource coverage in Route Origin Authorizations (ROAs)

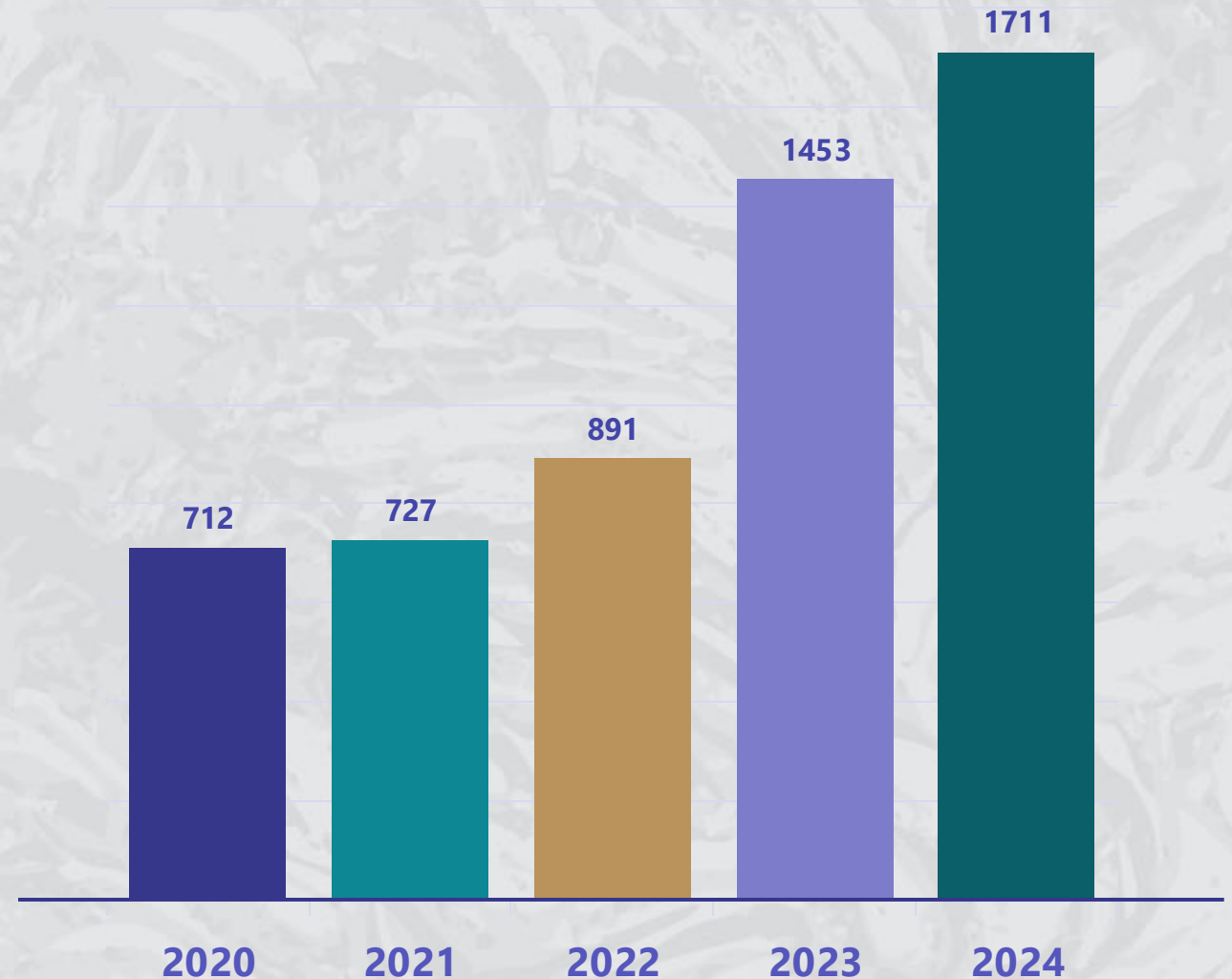
- RPKI community credits continued education and outreach
- Service provider requirements
- Is there a plateau on the horizon?

*Data collected from NIST RPKI monitor
<https://rpki-monitor.antd.nist.gov/ROV>*



New RPKI Registrations

- Accelerated growth in organizations who have signed up for RPKI services
- Push in 2023 to get resources under an ARIN agreement to lock in legacy fee cap
- Service provider requirement to create ROAs
- Assisting the U.S. government with RPKI focus/deployment



Three RPKI Services to Choose From

1

Hosted RPKI

Suggested for organizations that would prefer ease of use and the least responsibility. ARIN runs the certificate authority, maintains and publishes the RPKI repository to the global networking community.

ARIN also develops RPKI tools for use by hosted RPKI customers.

2

Delegated RPKI

Suggested for organizations that want cryptographic control of RPKI certificates; the organization should have a deeper understanding of routing security and RPKI along with a technical staff and resources to run and support the high availability repository.

3

Repository and Publication Service

Suggested for organizations that wish to retain cryptographic control, but do not want to maintain the high availability RPKI repository and publication requirements.

RPKI Adoption – Service Type

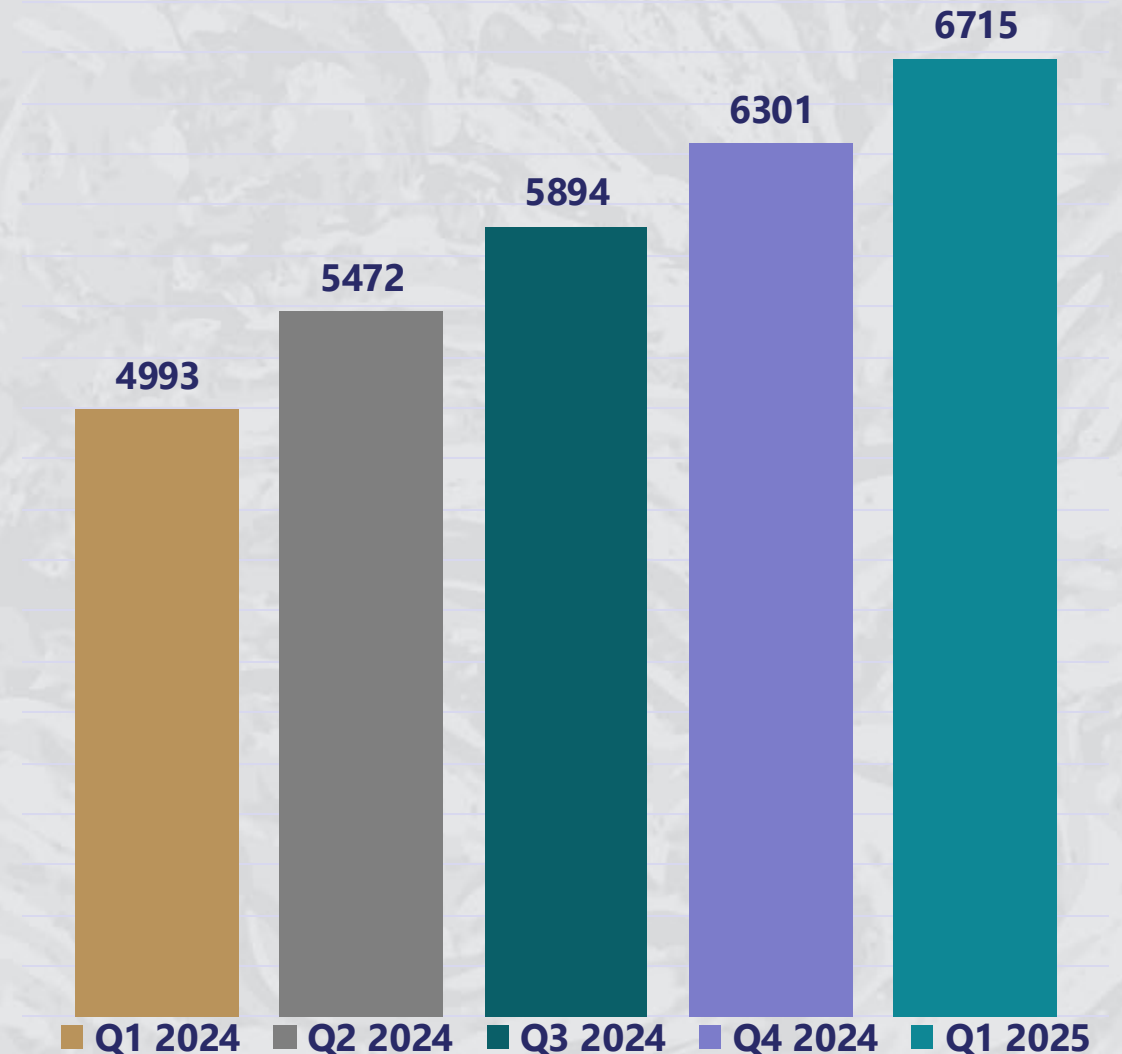
Organizations using RPKI services: **6,715**

34.5% increase over Q1 2024

Service Used

- Hosted – **97.8%**
- Delegated – **2.2%**
 - RPS – **51.0%** (*of delegated users*)

Data as of 1 April 2025



RPKI Adoption – Entity Type



Percent of RPKI Adoption:

Government Organizations

7.6% of 804

Educational Institutions

14.6% of 2,196

Commercial/ISPs/ Enterprises/Individuals

14.4% of 39,734

Percent of allocated IP prefixes in RPKI ROAs:

Government Organizations

4.9% of 925.8k /24s

Educational Institutions

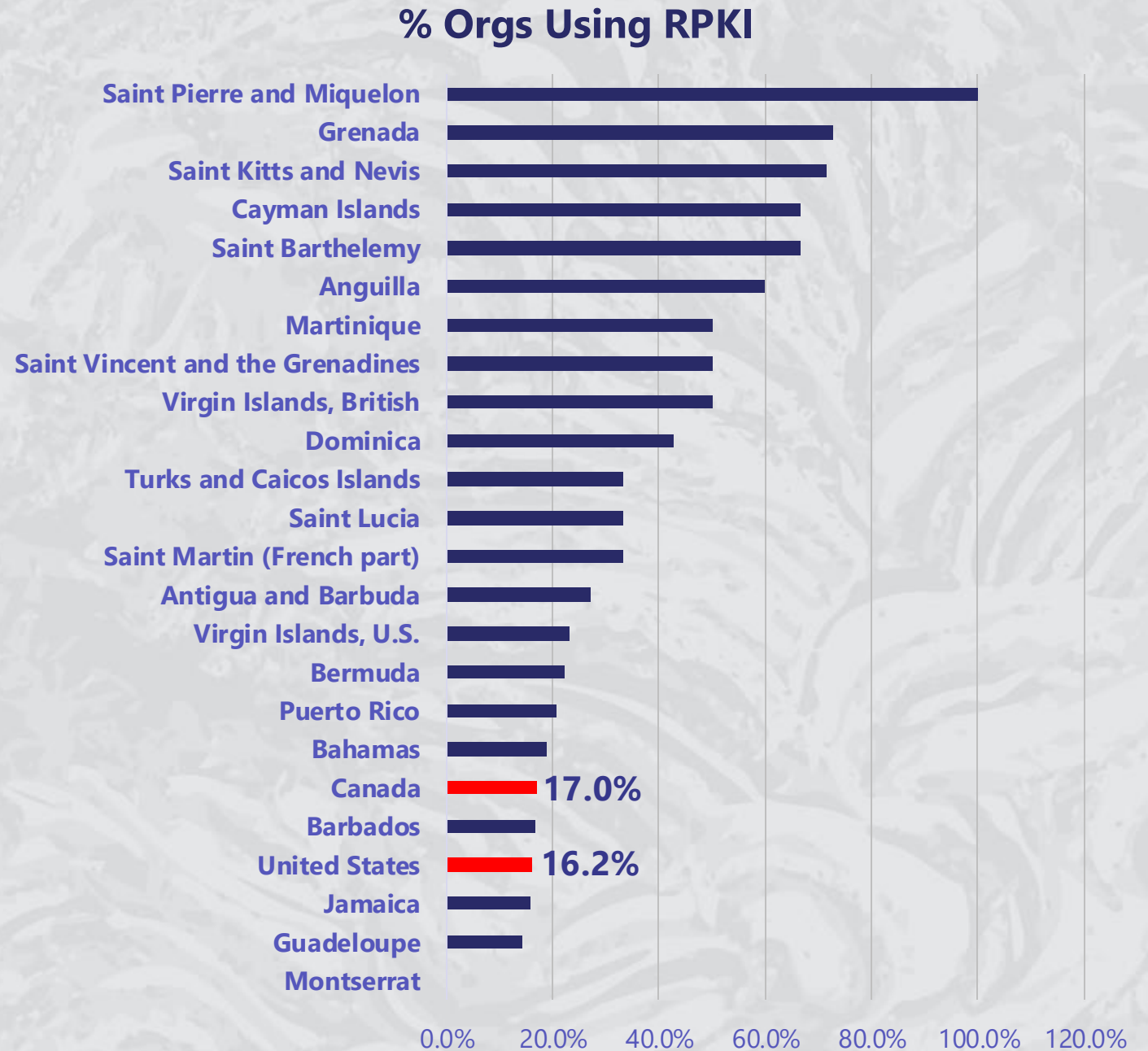
14.6% of 1,236k /24s

Commercial/ISPs/Enterprises/ Individuals

49.2% of 6,467k /24s



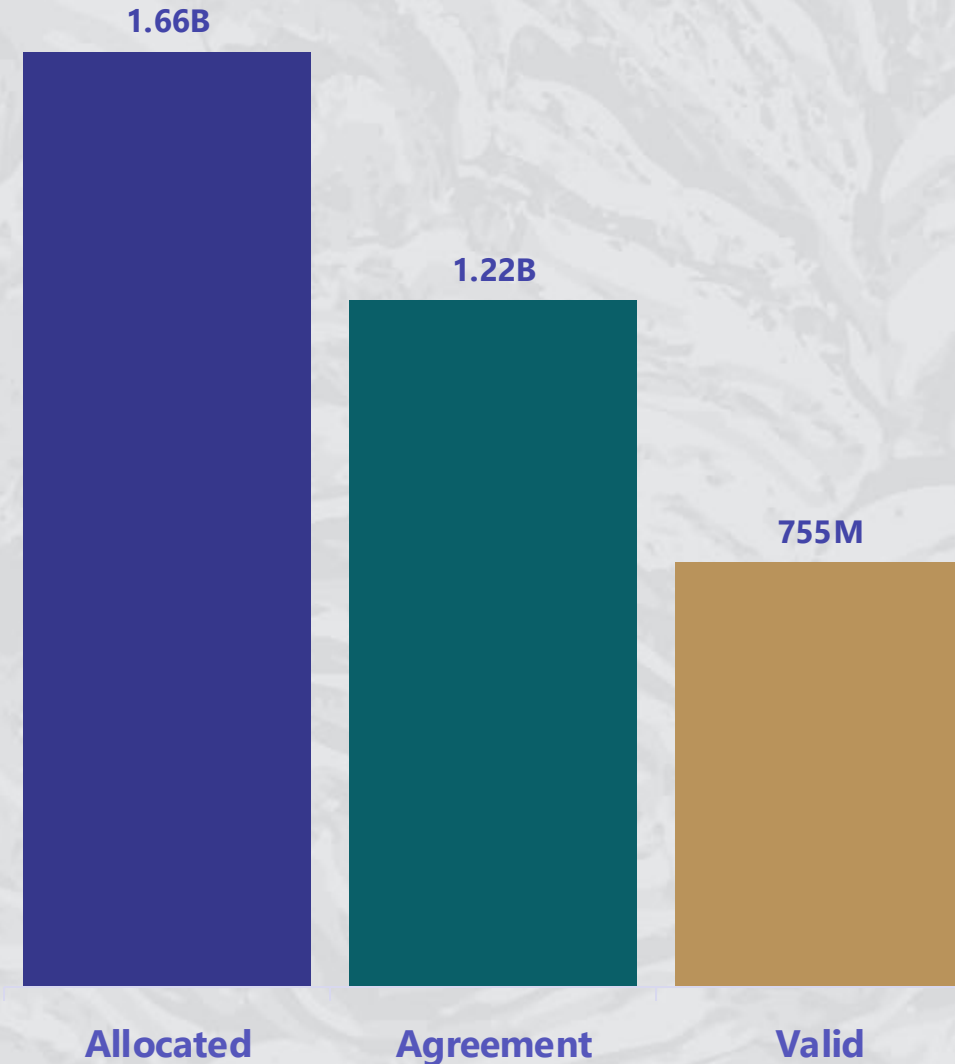
Organization Adoption of RPKI by Country



Resources Covered In RPKI ROAs

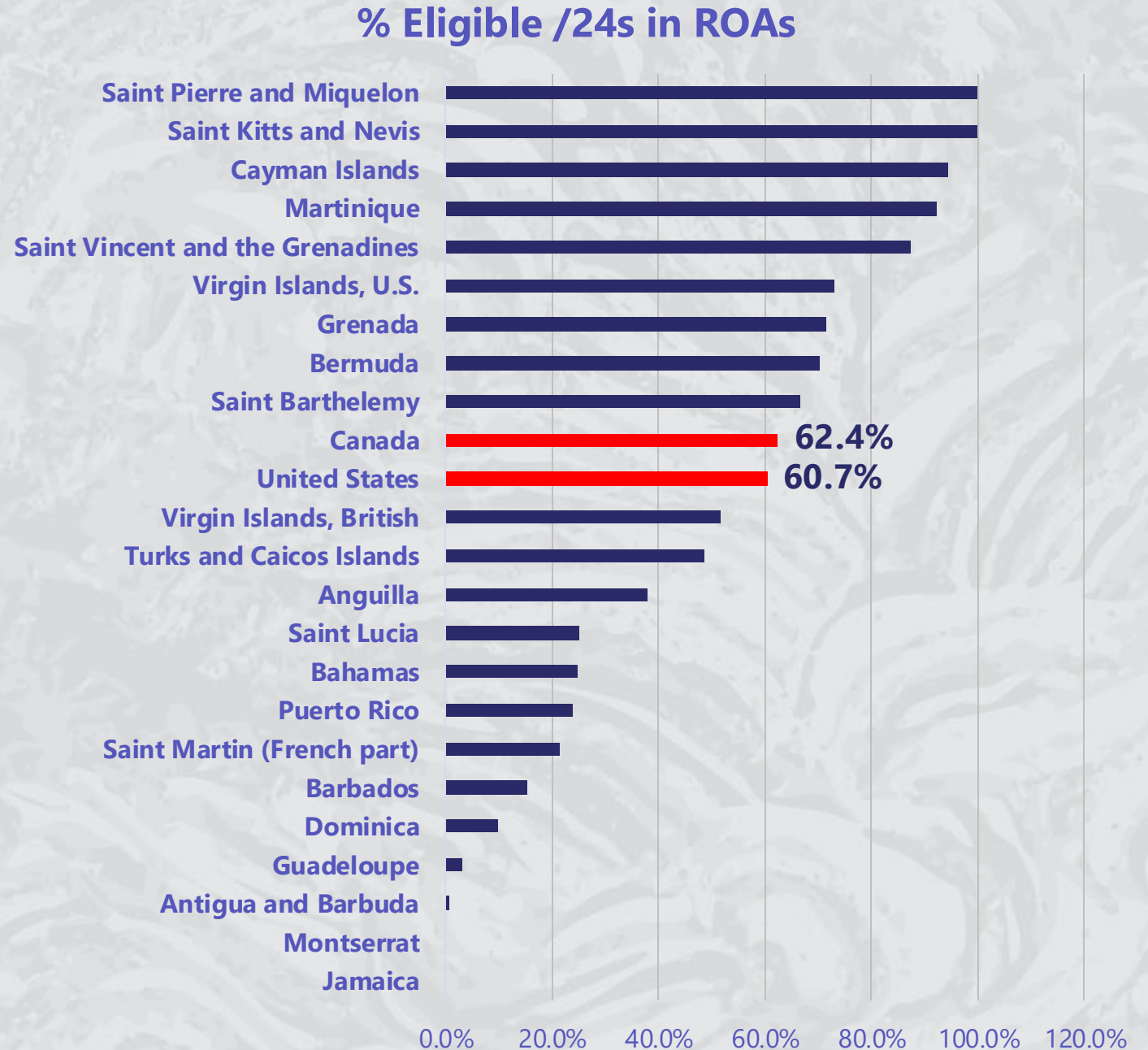
45.4% of ARIN-allocated
IPv4 resources are RPKI-valid

61.6% of IPv4 resources
under an ARIN agreement
are RPKI-valid





Resource Coverage by Country





New Releases and Upcoming Development

RPKI Development Pipeline

ROA Edit

- Ability to update a ROA
- Removing the delete and create actions to reflect changes

ASPA Object Support (beta coming May 2025)

- Available in Operational Test Environment (OTE)
- Access via both API and web user interfaces

RPKI for Recipients of Reallocated or Detailed Assignments

- Same resource eligibility requirements apply
- Direct resource holder is decision maker for access to RPKI tools



NRO RPKI Program Update

What We Learned (From You) In 2024

Better understanding of how a global RPKI ecosystem should look/feel

- Documentation of baseline for RPKI services/features offered by each Regional Internet Registry (RIR)
- Research conducted with users who interact with multiple RIRs
- Documentation of problem statement and exploration of solutions to improve current RPKI trust anchor configuration

Better measuring the robustness of the RPKI system as a whole

Documentation of key aspects of robustness for each RIR

Keep the technical community informed and engaged throughout and to address RPKI-related concerns in a coordinated way

- Periodic progress updates at relevant events and through blog posts
- Responded to community input in a coordinated way



What are we aiming for in 2025?

- Progress towards improved transparency, robustness, and security of the RPKI system
- Increased consistency of the RPKI system user experience
- The technical community is kept informed and engaged throughout the program.

We Want to Hear From You!

What are the **main barriers or obstacles** hindering RPKI adoption that could be solved (or at least improved) through **better coordination and collaboration** among the RIRs?

What barriers or challenges have you experienced?



Please email your comments and insights
to rpki_program@nro.net





Help us shape the future of Routing Security at ARIN!

Submit a Suggestion at
<https://account.arin.net/public/acsp>

Contact us at routing.security@arin.net



Questions and Comments?
Thank you