

# Routing Security Update

Brad Gorman

Director of

Customer Technical Services





# Agenda

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



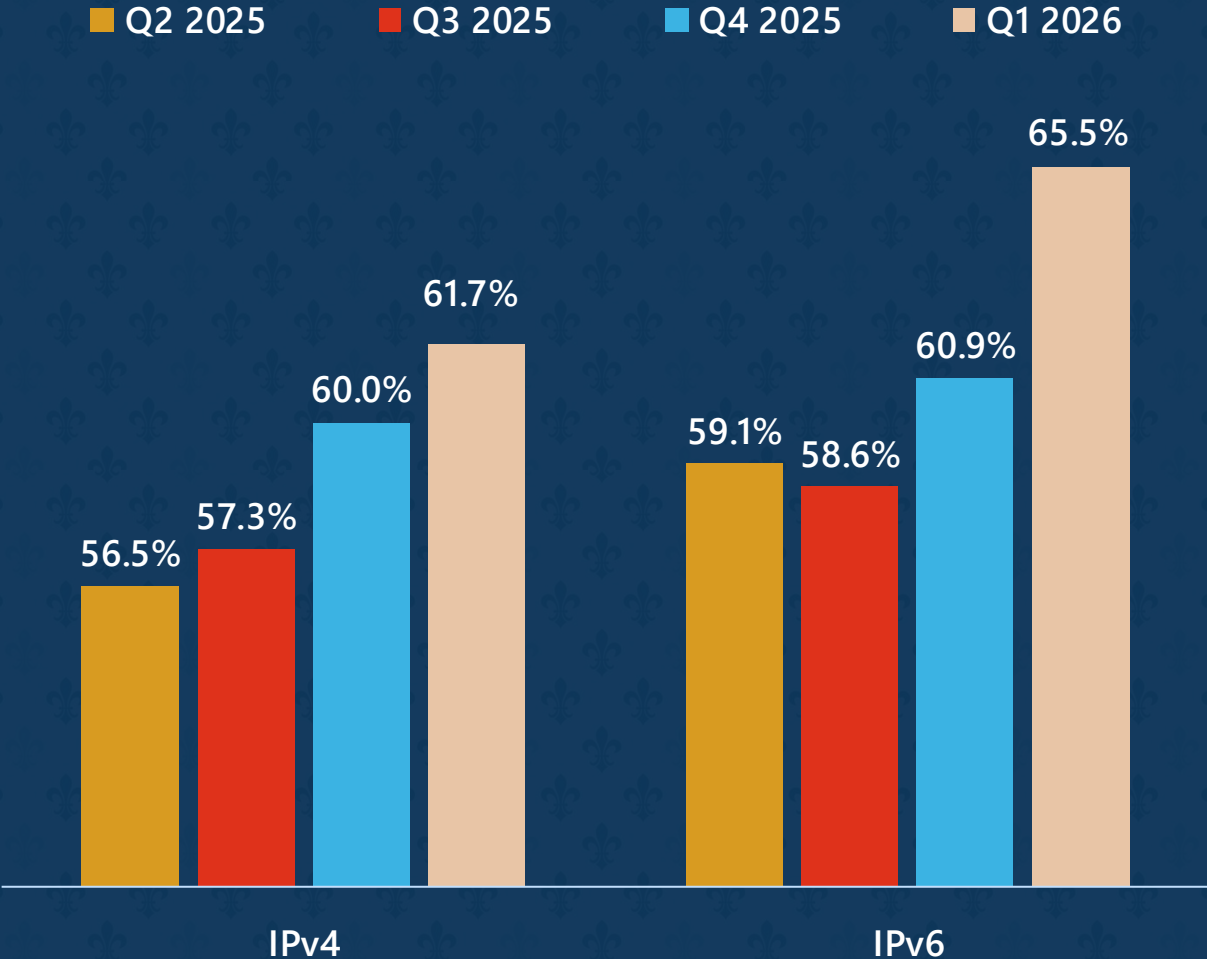
# The State of RPKI By the Numbers

# Global RPKI Validity

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

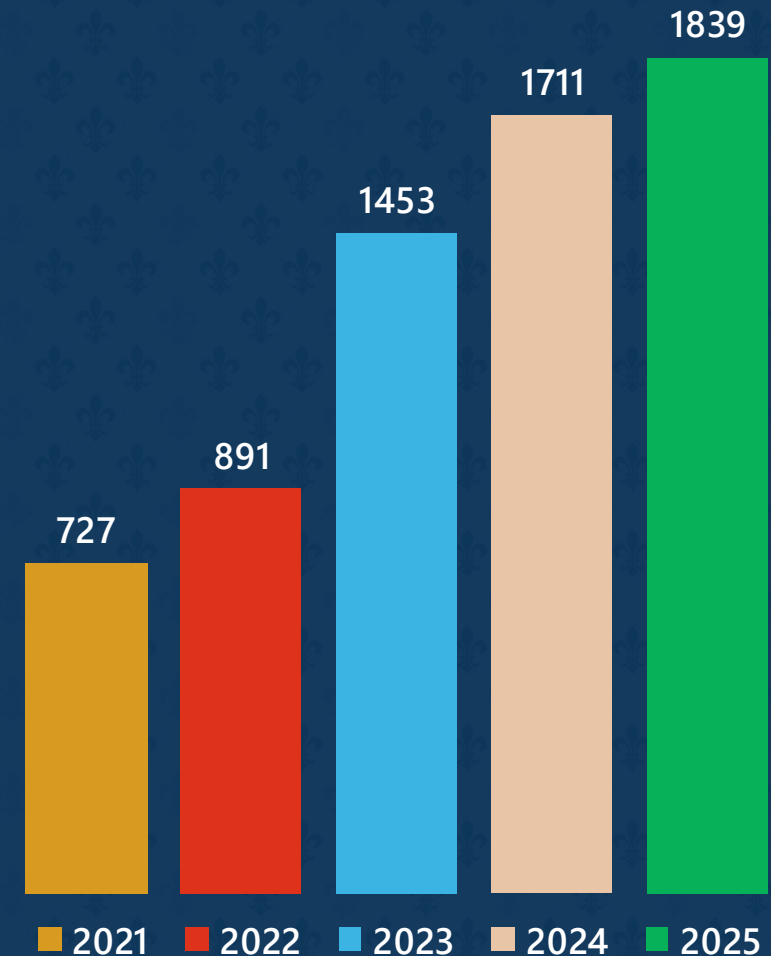
- RPKI community credits continued education and outreach
- Service provider requirements

Data collected from NIST RPKI monitor on 1 April  
<https://rpki-monitor.antd.nist.gov/ROV>



# New RPKI Registrations

- Continued growth in organizations who have signed up for RPKI services
- Community evangelization of RPKI's benefits
- Service provider requirement to create ROAs
- Ongoing training and education



# Three RPKI Services Available

---

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 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.

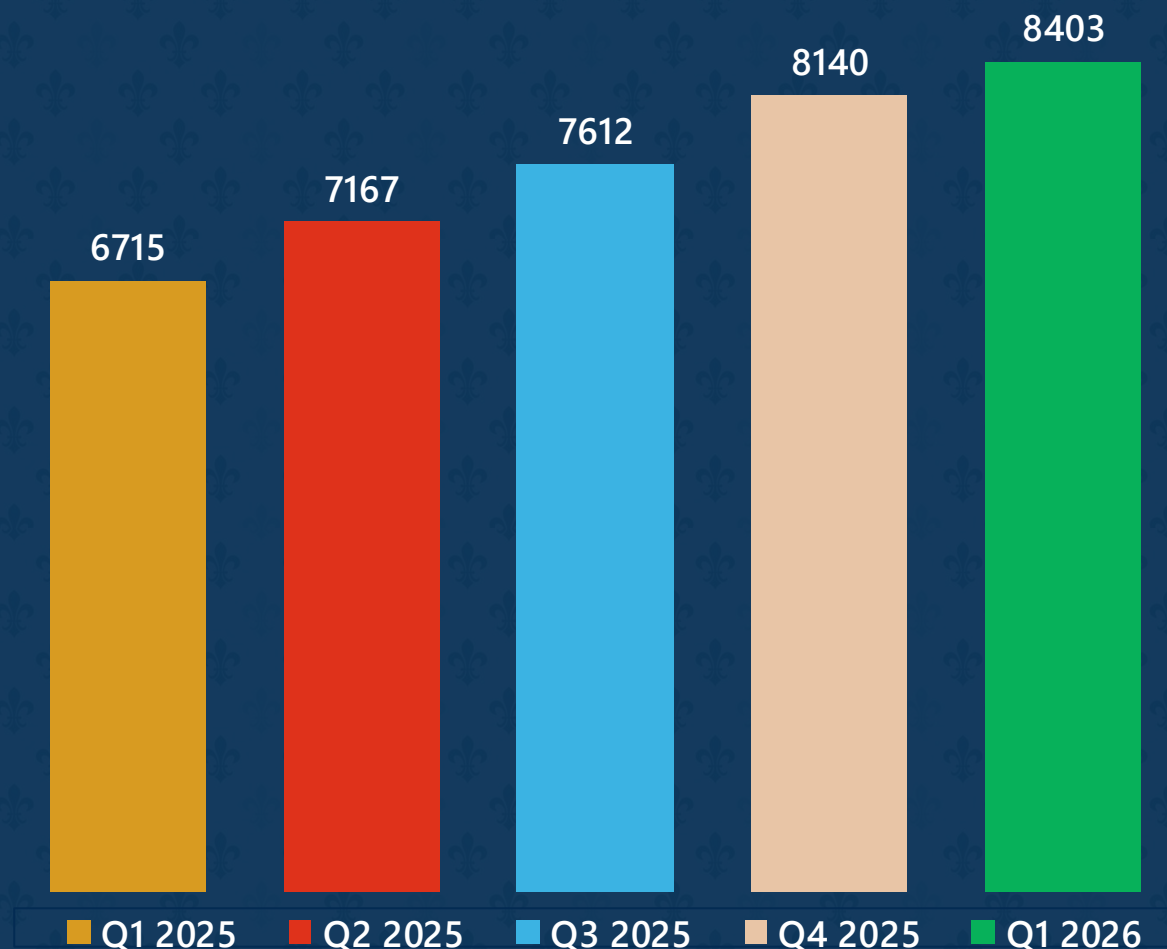
# RPKI Adoption – Service Type

8,403 Orgs have registered for RPKI services

- Hosted RPKI: 98.0% (8,232 orgs)
  - ~7200 have created ROAs
- Delegated RPKI: 2.0% (171 orgs)
  - 58% of those use the RPS

25% growth since Q1 2025

>> ~15% of registered orgs have not created a single ROA



# RPKI Adoption – Entity Type

## Q1 2026 vs (Q1 2025)

---

### Percent of RPKI Registrations:

#### Government Organizations

**20.0%** of 856 vs (**7.6%** of 804)

#### Educational Institutions

**21.8%** of 2,192 (**14.6%** of 2,196)

#### Commercial/ISPs/Enterprises/Individuals

**21.4%** of 39,135 (**14.4%** of 39,734)

### Percent of Prefixes (/24s) in ROAs:

#### Government Organizations

**6.9%** of 917.2k (**4.9%** of 925.8k)

#### Educational Institutions

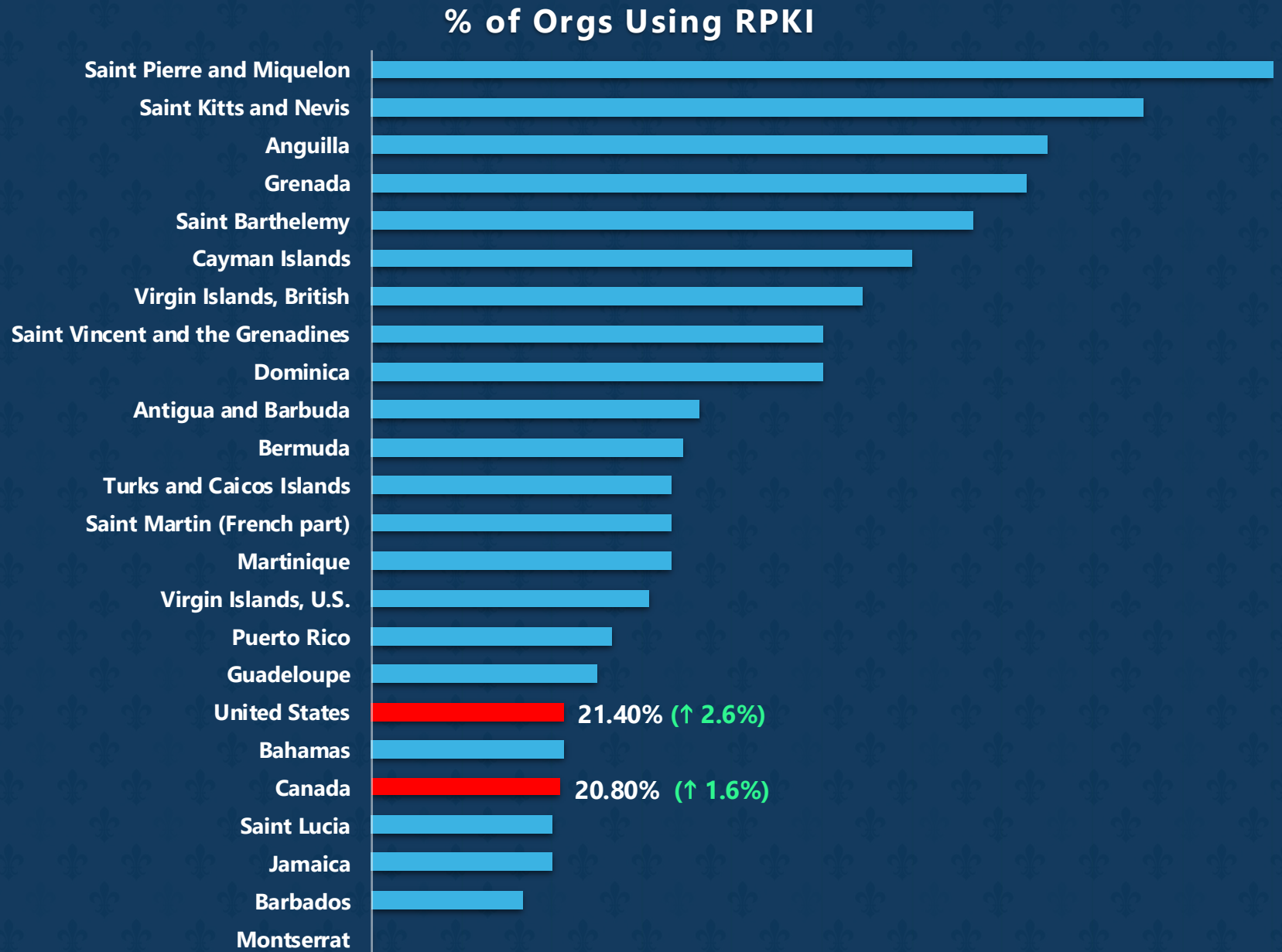
**14.2%** of 1,292k (**14.6%** of 1,236k)

#### Commercial/ISPs/Enterprises/Individuals

**48.1%** of 6,441k (**49.2%** of 6,467k)

# In Region RPKI Registrations

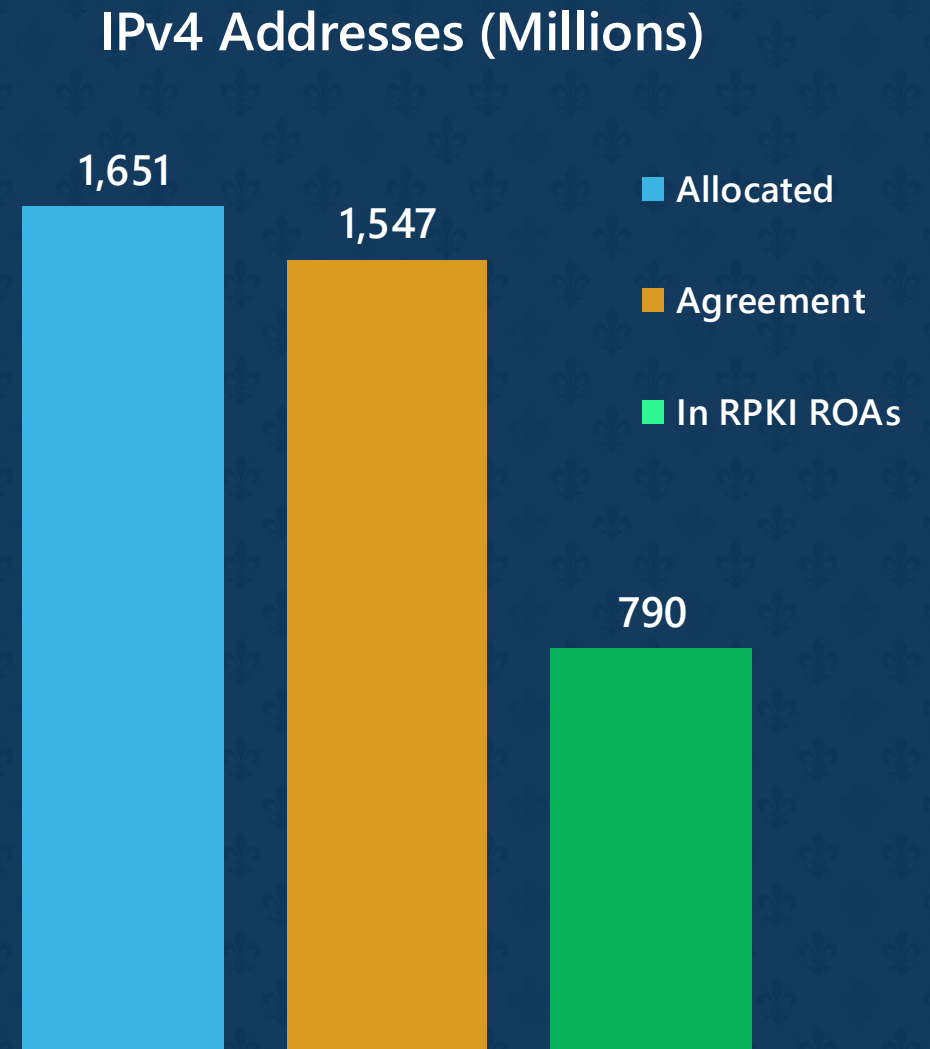
(change vs. ARIN 56)



# RPKI Adoption – Resource Coverage

- 93.7% of ARIN allocated IPv4 blocks are eligible for RPKI (covered under an ARIN Agreement)
- 50% of RPKI-eligible IPv4 blocks are covered by ROAs

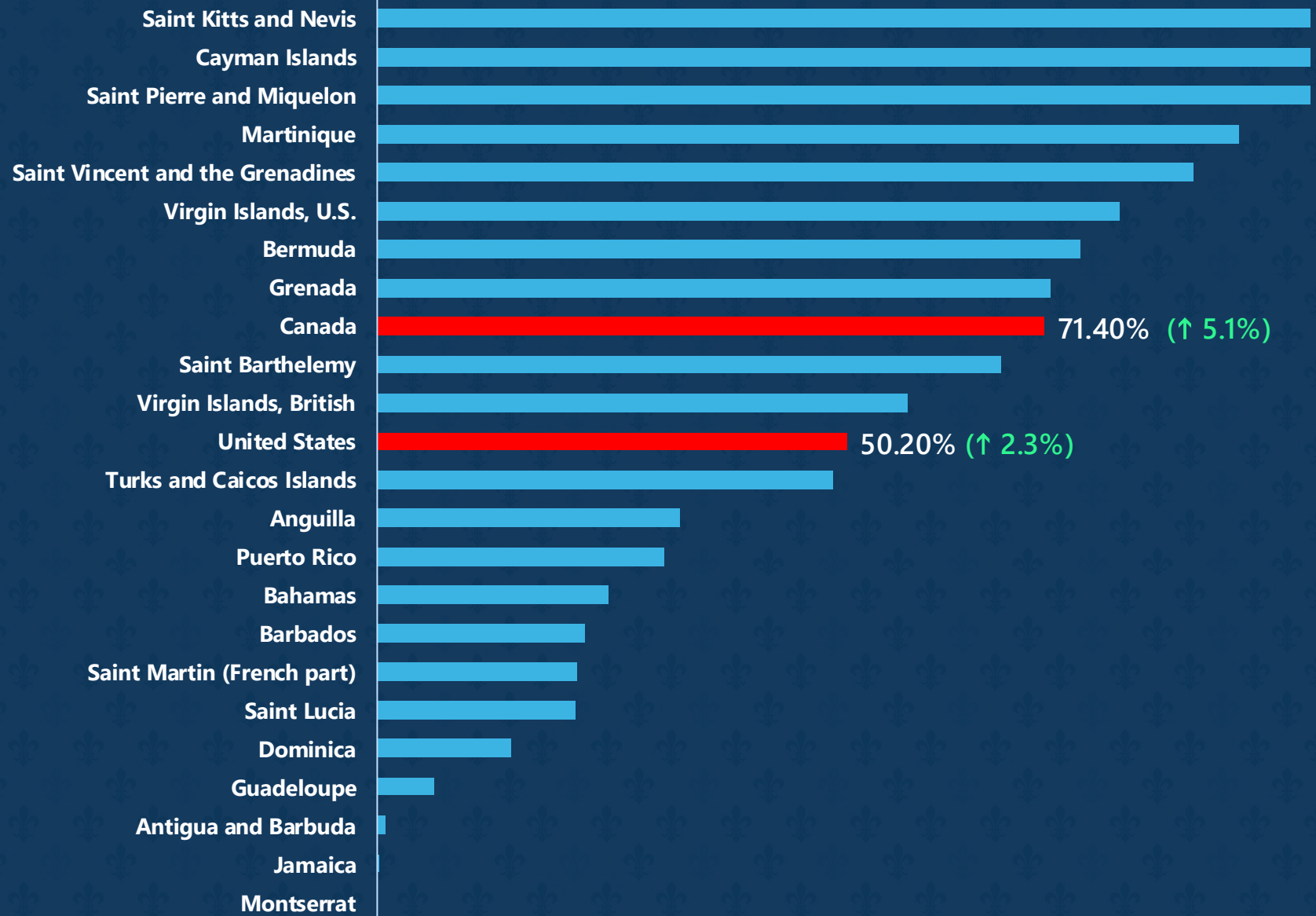
*>>54% of ARIN-registered IPv4 blocks in Internet announcements are RPKI Valid*



# In Region IP Resource Coverage

(change vs. ARIN 56)

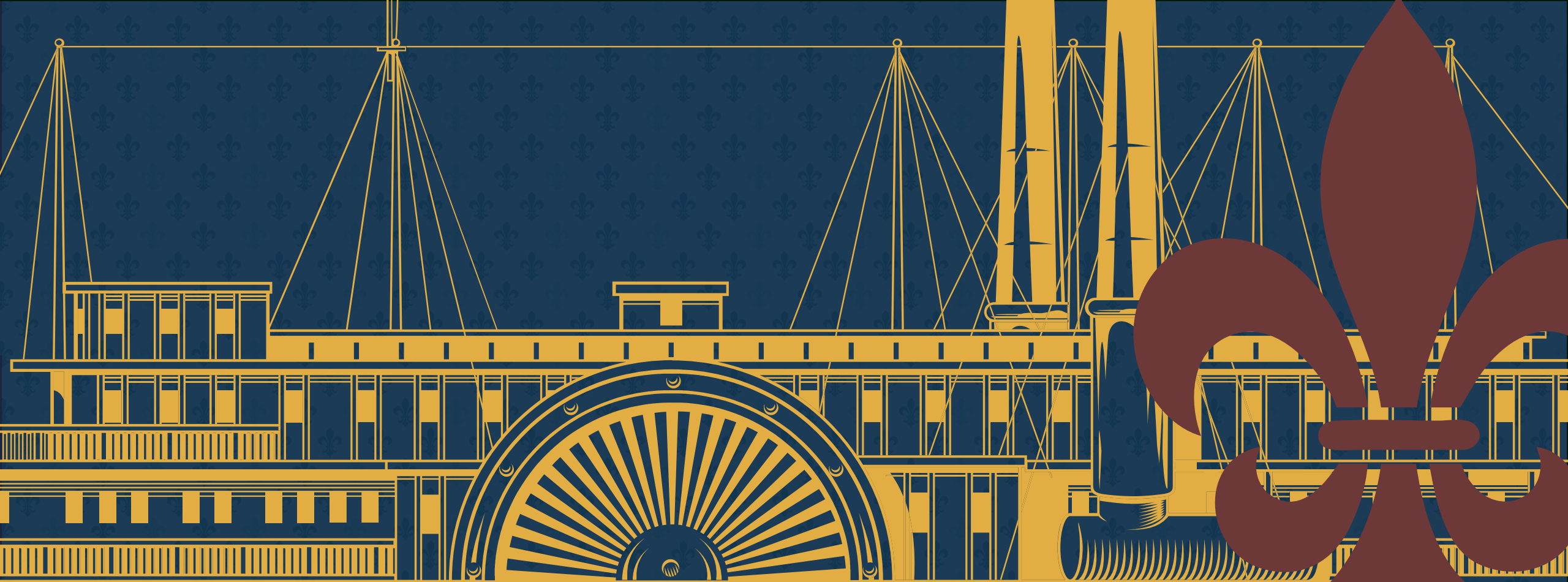
## % IP Resources in ROAs



# What the Data Tells Us



- RPKI participation at ARIN continues to grow, with more organizations registering for RPKI services, but simply signing up for RPKI services does not equal protection.
- The benefits of RPKI are dependent on resource holders making statements on their intended use by creating ROAs, and there is plenty of room to improve resource coverage in the ARIN region.
- Routing security is a global issue to address. It has been proven the adoption of RPKI services by resource holders and network operators is leading to a more secure and resilient Internet, and we all need to do our part to keep moving forward.



**New Releases and Upcoming Development**

# ASPAs in the RPKI Repository!

---

Enabled  
20 Jan

- Full feature support in ARIN Online and Reg-RWS API
- Over 198 Autonomous System Path Authorizations (ASPAs) created so far and trending up
- Enables testing of IETF draft proposals with live data
- Work continues through the IETF standards process

# Behind the Scenes

---

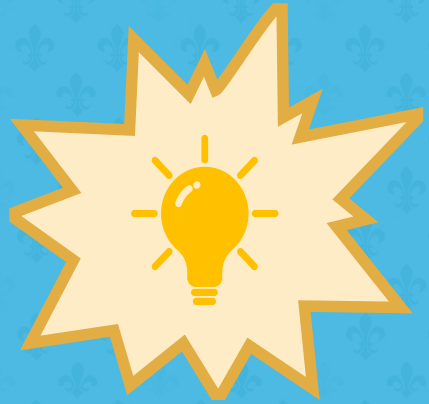
- **Infrastructure buildout**
  - Increased network capacity, monitoring and alarming, and systems expansion.
  - Benefit: Improved performance and reliability of previously deployed features.
- **Internal tools enhancements:**
  - Enables our Registration Service Department Analysts to continue delivering high-quality customer support.

# Deep Dive: RPKI Training Workshop

---

- Instructor-led training into ARIN's Hosted RPKI features
- Incorporates presentation and hands-on components
- Participants have access to live training accounts linked to Orgs with IPv6 resources, which are announced to the Internet so workshop activities can be measured in real time.

*For more information regarding Deep Dive training,  
please send an email to [training@arin.net](mailto:training@arin.net)*

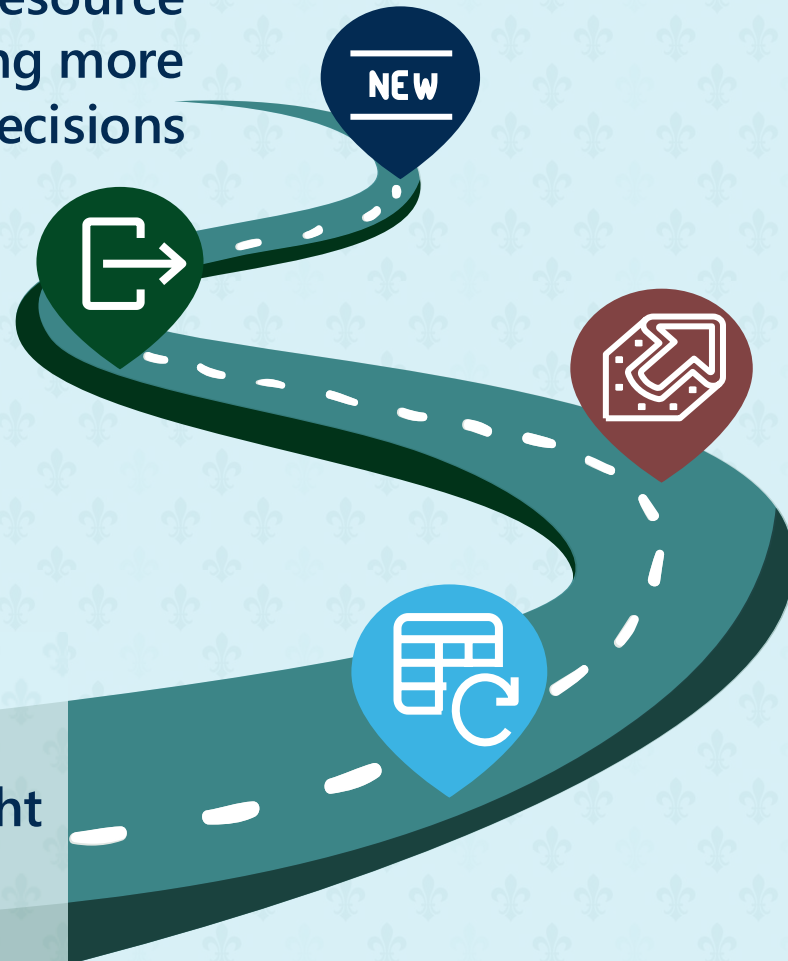


# What's on the Horizon?

# RPKI Routing Intelligence



Leads to resource holders making more informed RPKI decisions



We're giving more insight to ARIN organizations regarding their RPKI configurations.

## Impact to a route announcement

What might happen if proposed changes are made?

## Explain why Invalid or Not Found

Present paths to reach Valid state

## RPKI validity check

Using the last BGP data pull

## Internet route announcements

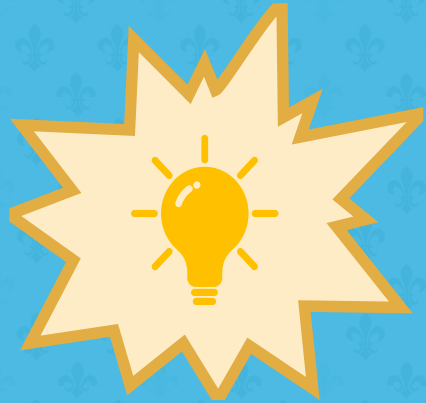
IP prefixes on your resource certificate as seen in the global BGP table

# Enhancements to Existing Features & Services



- Adding new capabilities to the Reg-RWS RESTful API
- Updating the RPKI changelog to include ASPA information
- Linking third-party tools to ARIN interface
- Developing more ways to manage your RPKI configurations
- Expanding inter-RIR collaboration intended to deliver RPKI feature parity

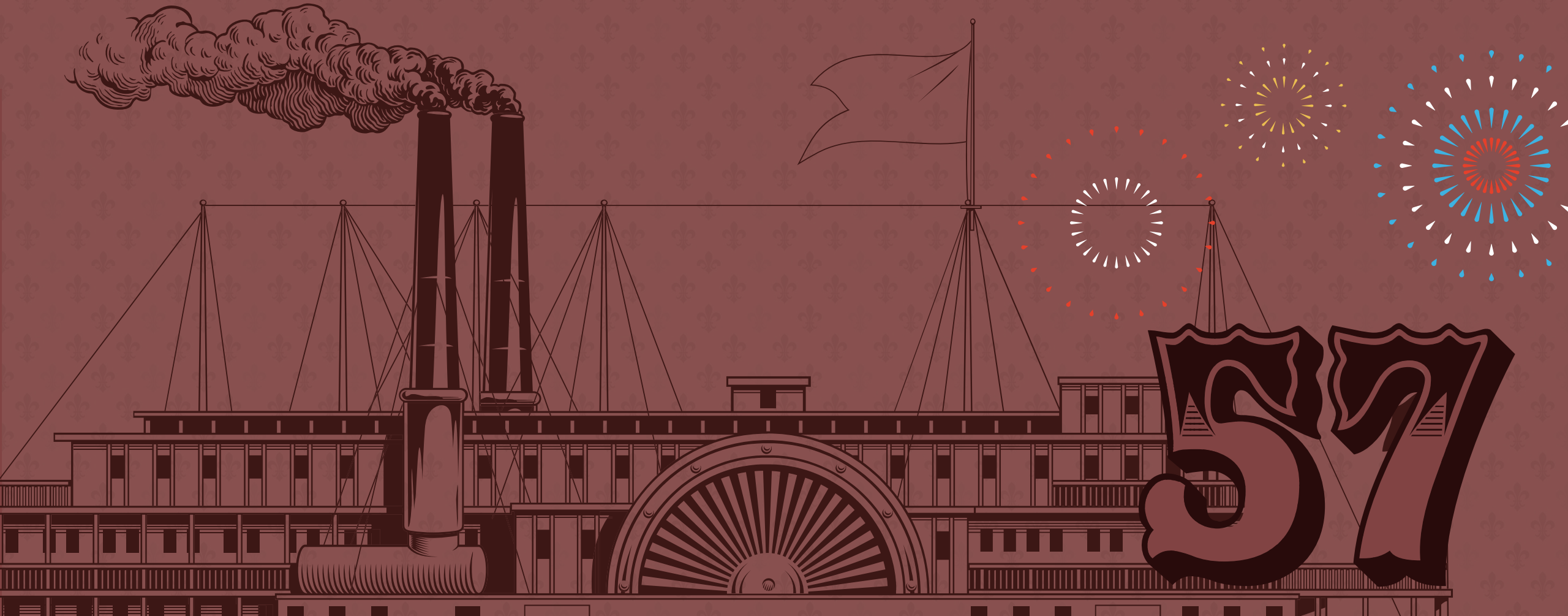
*If you have ideas for more features and functionality, speak up!*



**Help us shape the future of  
routing security at ARIN!**

**Contact us at [routing.security@arin.net](mailto:routing.security@arin.net)**

# Questions and Comments?



57