RIPE NCC Update

RIPE NCC Day Moscow

Chris Buckridge | April 2019 | RIPE NCC Day Moscow

Membership Overview
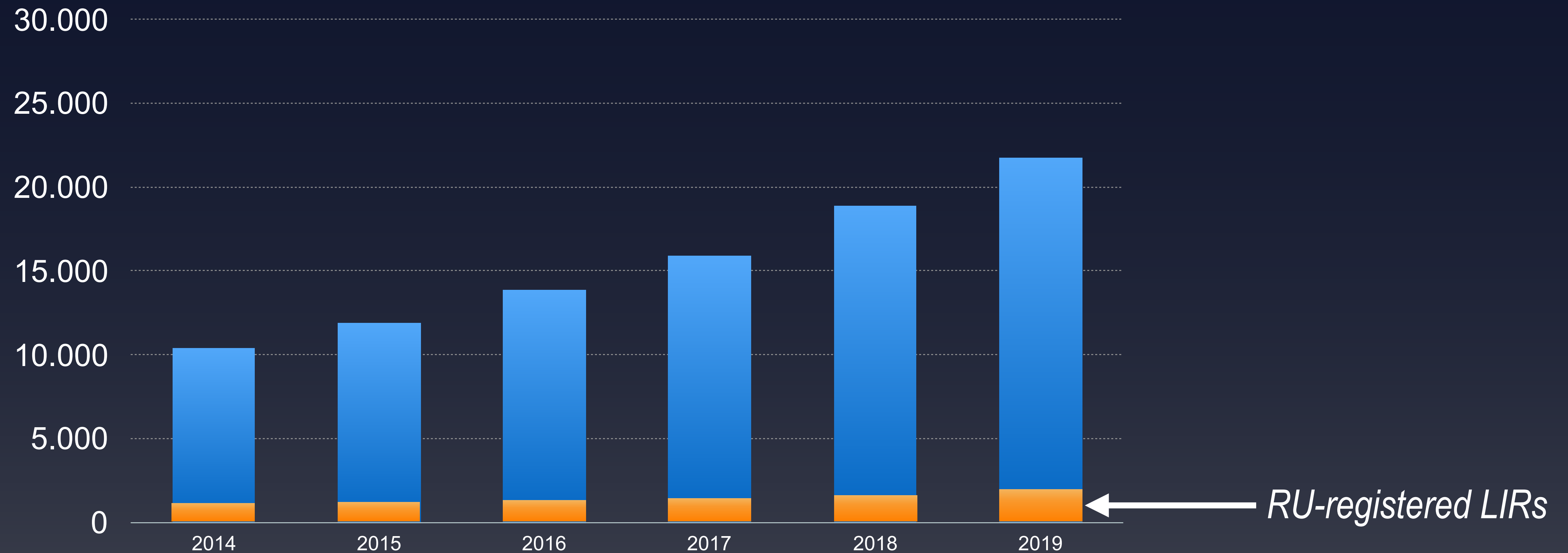
- Unprecedented growth in 2018
- Membership projected to reach 24,000 LIRs by end 2019

Our Focus for 2019

Strategic Focus Areas

- **Preparing for strong membership growth and anticipated fall-off after our IPv4 pool is finished**

- **Ensuring accuracy of the RIPE Registry**

- **Focus on due diligence and fraud prevention**

- **Adding value through our training services**

- **Providing neutral information, tools and measurements to support the RIPE community**

- **Strengthening the K-root server infrastructure**

Recent Activities

Validating Abuse Contacts

- **Policy implementation started in February 2019 ***

- **Initial check of over 70,000 contacts**

- **Automated validation emails sent to abuse contacts that fail this check**

- **Manual follow-up by our staff if these abuse contacts are not validated/updated**

- *Please check the abuse contacts for your LIR and customers and look out for any emails from us about this!*

* Proposal 2017-02, "Regular abuse-c Validation"

RIPE Atlas in 2019

- **Developing non-hardware solutions for RIPE Atlas**
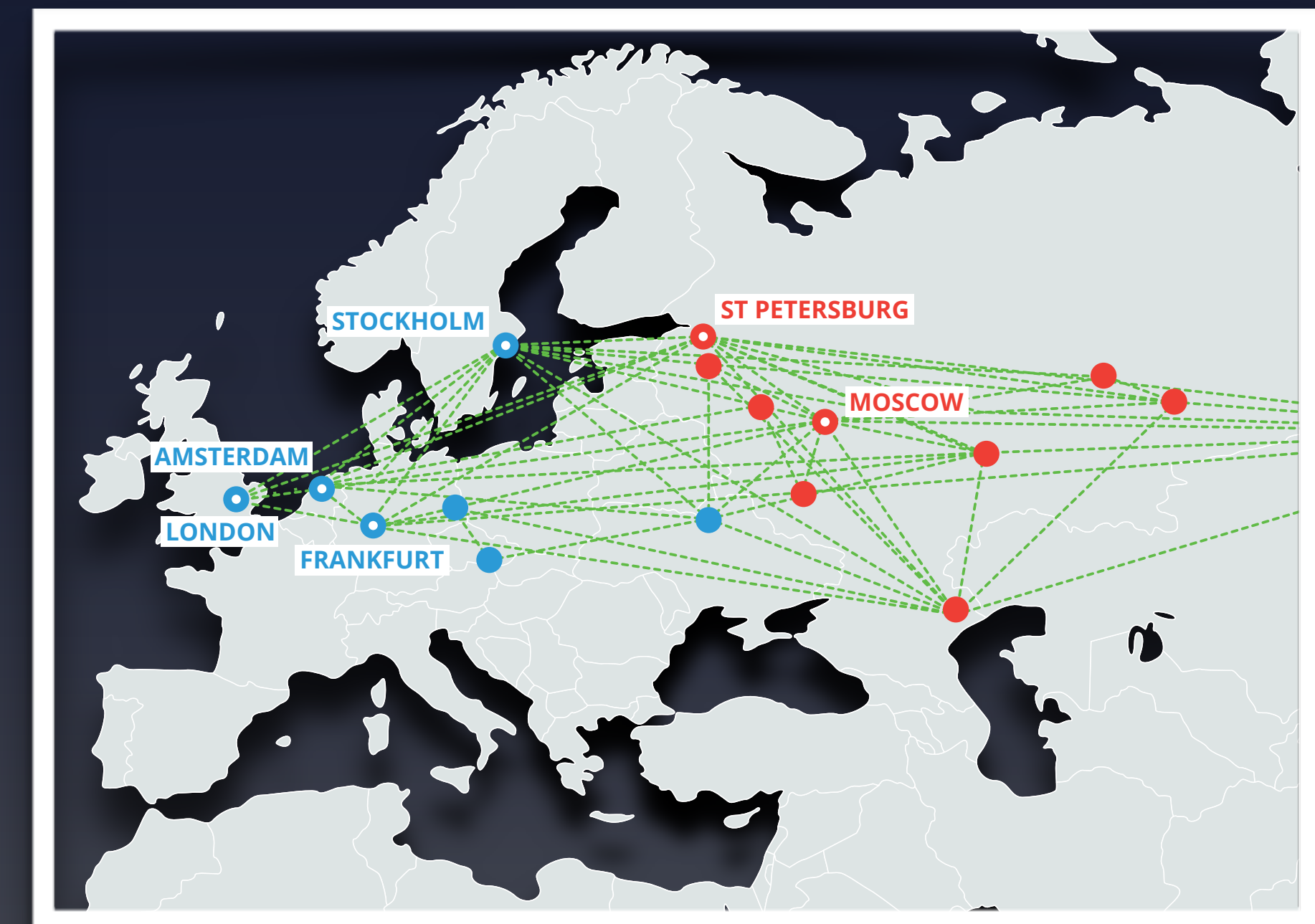 - New: RIPE Atlas VM anchors now available
  - Coming soon: RIPE Atlas software probes

- **RIPE Atlas tools and data**
  - Supporting new tools and visualisations for network operators
  - RIPE Atlas data enabling research and analysis

- **Get involved**
  - We need more probe coverage across Russia!

Outreach and Engagement

- **Regional Meetings and Member Lunches**
- **Supporting NOGs, national IGFs, technical community events**
- **Government Roundtables**
- **Face-to-face training courses**
- **Community building through RIPE Labs**
- **Academic cooperation and hackathons**

E-Learning

- Expanding our e-learning activities

- Webinars and a new online academic partnership model with universities

- Remote, online certifications for RIPE NCC e-learning courses

- Launching in late 2019 - early 2020

- (You'll hear more about this after lunch)

Simplifying our Billing Processes

- **Annual-only billing process from 2019**

- **A strong need to focus on efficiency as our membership continues to grow**

- **Support offered to help members with financial constraints make the transition**

- **Membership fee is much less than when quarterly payment options were first introduced (especially considering return of budget surplus to membership)**

RIPE Policy Development

Current Policy Proposals

- **2018-06:** Aims to delete non-authoritative objects in the RIPE IRR if they conflict with an RPKI ROA
- **2019-01:** Clarifies the definition of "Assigned PA'"
- **2019-02:** Aims to reduce the IPv4 allocation size to a /24 once the RIPE NCC is unable to allocate contiguous /22 ranges
- **2019-03:** Defines BGP Hijacking as a violation of RIPE policy

https://www.ripe.net/participate/policies/current-proposals/current-policy-proposals
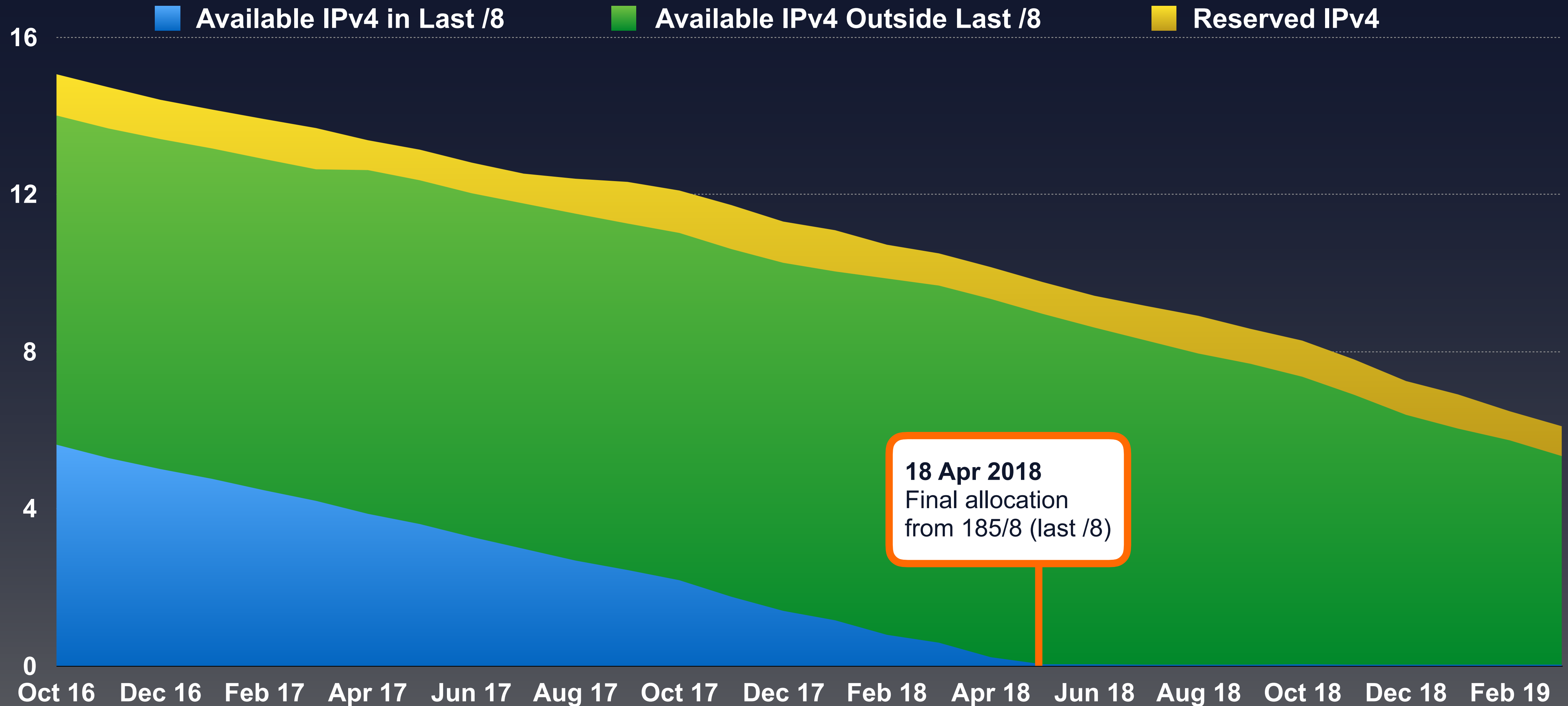
RIPE Community Developments

- RIPE Community Report 2018

  - https://labs.ripe.net/Members/hans_petter_holen/ripe-community-report-2018

- RIPE Chair Replacement Procedure (v.05)

  - A Selection Committee of RIPE community volunteers selects new chairs

  - A new Vice Chair role is established

  - Introduces five-year terms with a two-term limit

  - Community aims to to reach consensus at RIPE 78

  - Discussion on ripe-chair-discuss@ripe.net

IPv4 Run-out

IPv4 Addresses in our Pool (Millions)

Available IPv4 in Last /8 · Available IPv4 Outside Last /8 · Reserved IPv4

18 Apr 2018
Final allocation
from 185/8 (last /8)

16

12

8

4

0

Oct 16 Dec 16 Feb 17 Apr 17 Jun 17 Aug 17 Oct 17 Dec 17 Feb 18 Apr 18 Jun 18 Aug 18 Oct 18 Dec 18 Feb 19

Current Allocation Process

- **Now that the last /8 is gone, we are allocating contiguous /22s from our pool of returned IPv4 addresses**

- **When we can no longer allocate contiguous blocks, we will make /22 allocations out of the smallest-routable blocks (/23s and /24s)**

- **Once we can no longer make a /22 equivalent allocation, we will have reached run-out**

Considerations

- How can we handle run-out in a way that is fair, transparent and efficient?

- How should we handle the possibility that members might have to spend time on a waiting list or not get any IPv4 at all?

- Complex changes to our internal/external software will need to be made ahead of time

- We need to keep members and other stakeholders informed as we approach run-out

Some IPv4 Will Remain After Run-out…

- **A /13 for temporary assignments**

  - Conferences and events, research and experiments, etc.

- **A /16 for Internet Exchange Points (IXPs)**

  - IXPs are an important part the Internet's infrastructure

  - This pool is expected to last four more years

- **Some leftover IPv4 "dust"**

  - Blocks smaller than a /24

  - Mostly from returned PI assignments

IXP IPv4 Pool Utilisation
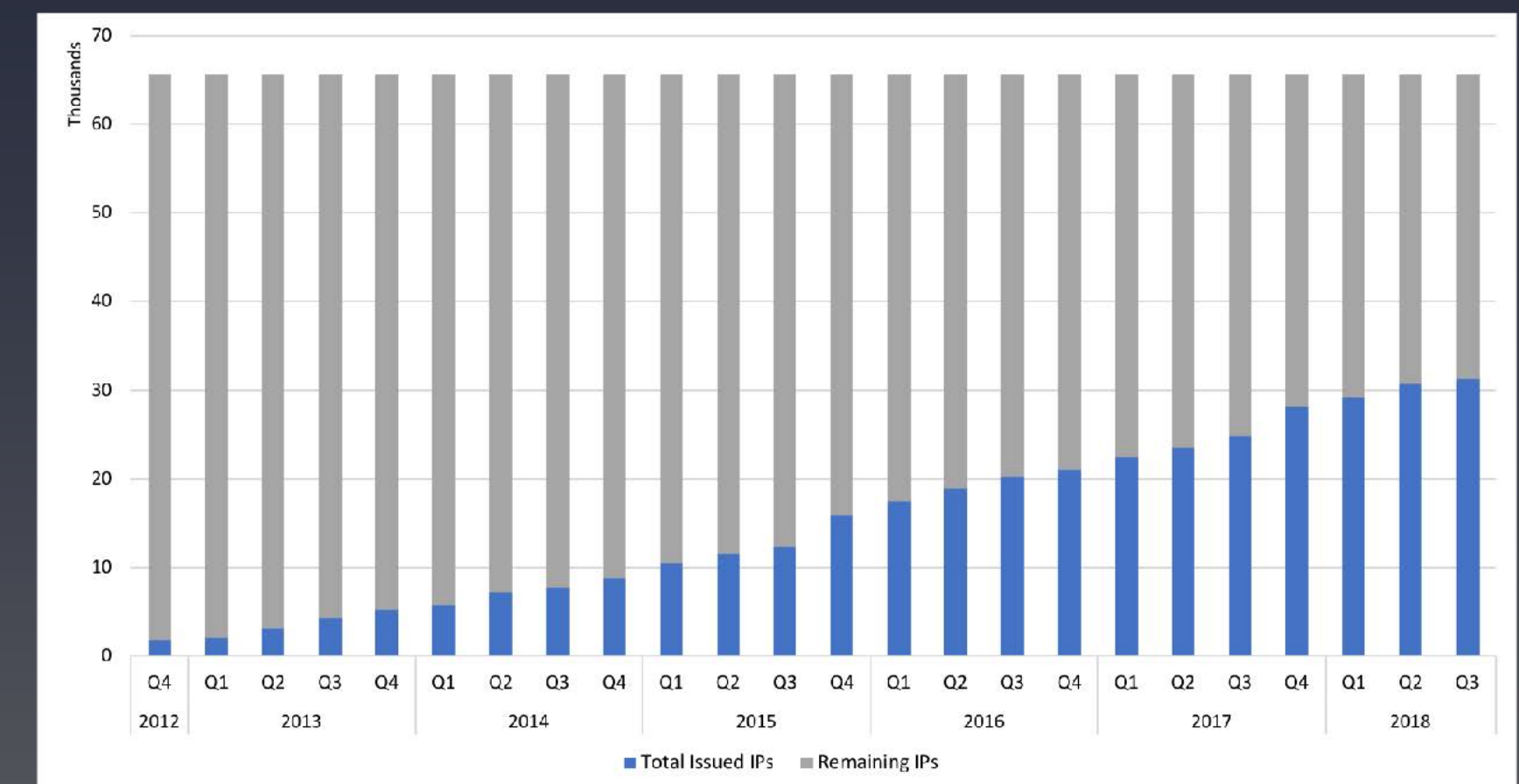
...and Addresses will be Returned to our Pool

- We will continue to receive returned IPv4 addresses after run-out

- Closures for non-payment, bankruptcy/liquidation, or violation of RIPE policies and RIPE NCC procedures

- Recovered Space: 238 /22s over the past three years

Recovered IPv4 Addresses (2016-2018)	
2016	83.712
2017	106.368
2018	53.824

Waiting List

- **Returned addresses shouldn't remain with us if networks can use them**

- **This position is supported by the IPv4 policy:**

  "Any address space that is returned to the RIPE NCC will be covered by the same rules as the address space intended in section 5.1." [i.e. should be allocated as /22s]

- **As returned addresses won't meet demand, a waiting list seems like the most logical and fair approach**

  - (Only members that have not already received a final /22 allocation will be eligible)

A New Paradigm for IP Addresses

Plentiful, available as needed → **A scarce resource**

No inherent monetary value → **Seen as a commodity to be bought or sold**

Hierarchical distribution → **More complex movement between all parties**

Transfers: RIPE Community Policy Response

- **Trading in IPv4 addresses was seen as inevitable**

- **The priority is an accurate registry**

- **Current policy situation:**

  - LIRs and End Users can transfer IPv4 allocations/assignments

  - Transfers can be within the RIPE NCC service region and to/from other RIR service regions with compatible policies (currently ARIN and APNIC)

  - Resources subject to a 24-month holding period after a transfer (also applies to /22 allocations from the RIPE NCC)

Disputes Over IP Addresses

- **Becoming much more frequent**

- **Disputed transfers**

  - Outdated contact information

  - "LIR contact was no longer working at the company"

- **Hijacked, disputed LIR accounts**

  - LIR contacts removing other contacts from the LIR Portal

  - LIR accounts opened on behalf of unaware organisations

Actions Taken by the RIPE NCC
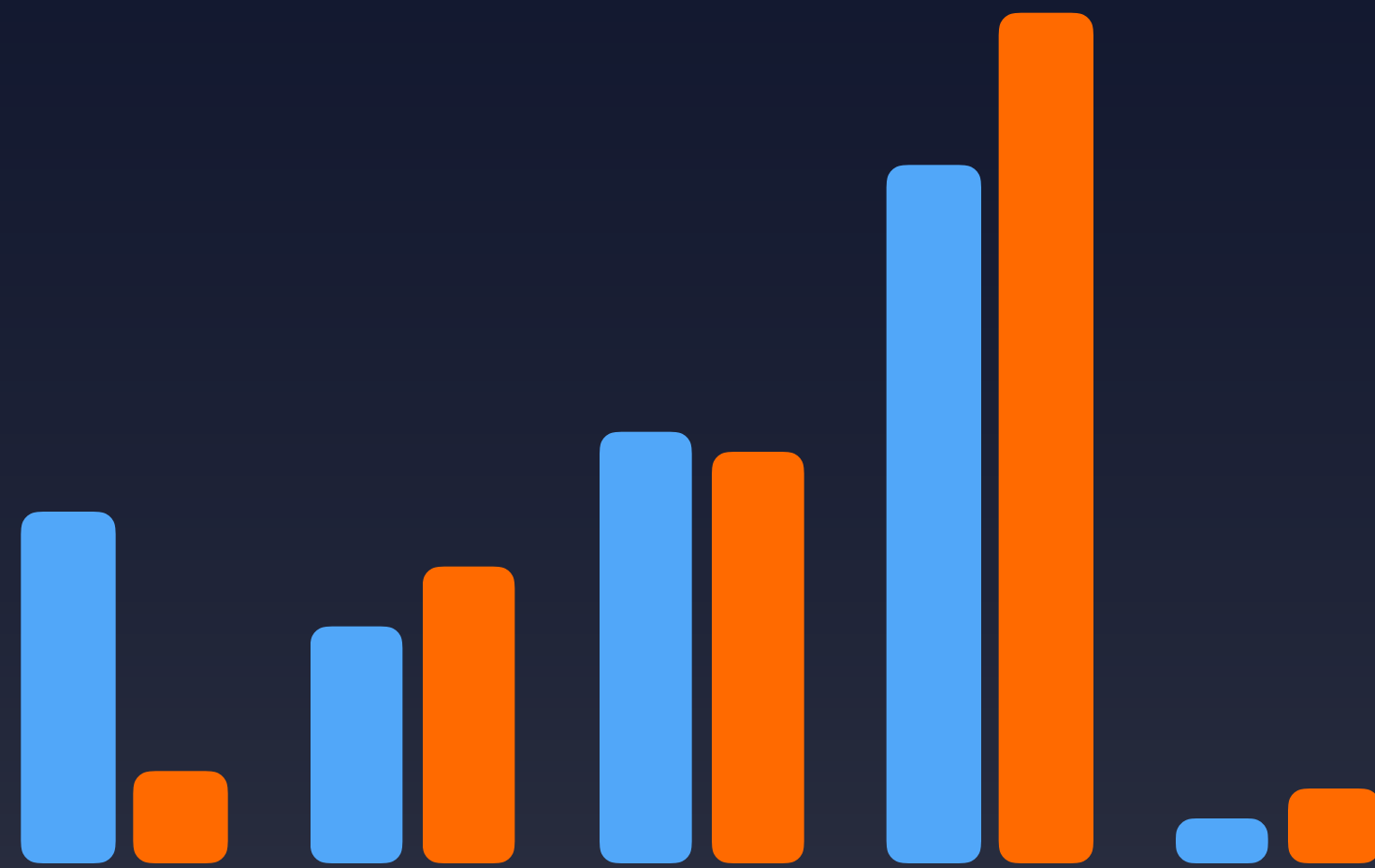
Year	2015	2016	2017	2018	2019
Concluded	95	64	116	188	12
New	25	80	111	229	20
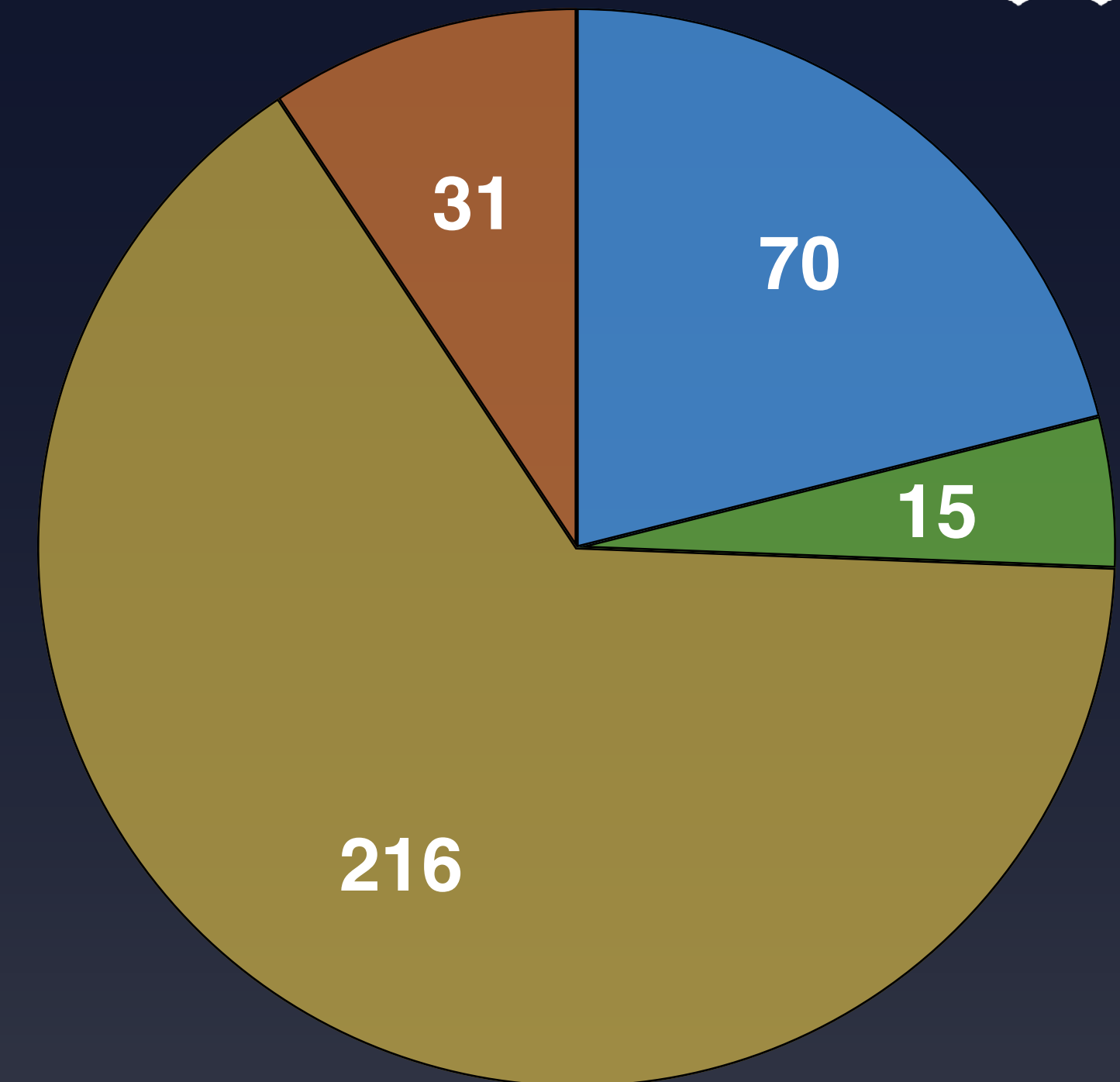
- 🔵 Due-diligence reminder*
- 🟢 Final warnings**
- 🟡 LIR closures (SSA termination) (203 in 2018)
- 🟤 Disputed transfers

*   Due diligence reminder for more minor infringements
**   Final warnings for major policy and contractual violations

What Run-out Means for the RIPE Community

- **Extending the lifespan of IPv4 as a technology**

- **Possibly slowing or delaying IPv6 adoption**

- **Possibly adding complexity to the routing table**

  - (Though we haven't seen evidence of this to date)

- **New kinds of actors in the RIPE Policy Development Process, and in the RIPE community generally**

- **Greater attention/involvement from governments and regulators who may view IPv4 as an economic issue**

What Run-out Means for the RIPE NCC

- **Transfer market reinforces the importance of the registry**

- **Impacts the dynamic between the RIPE NCC and our members**

- **New services and processes required**

- **Speculators, hoarders and hijackers with greater incentive to abuse the system**

- **A need to ensure we maintain the right balance between due diligence and not being overly bureaucratic**

What Run-out Means for Y*ou*

- **Make sure your information is correct in the LIR Portal**

  - Especially update your contacts when staff members leave the company!

- **More and more cases involving bad actors in transfer deals - know who you are dealing with!**

- **Make sure you fulfil your obligations as a RIPE NCC member (i.e. pay your bills on time, follow policies)**

- **Make sure you're ready for IPv6 - and become an advocate for IPv6 in your region**

Have Your Say

Have Your Say at the GM

- **The General Meeting decides**

  - Who is elected to the RIPE NCC Executive Board

  - What the Charging Scheme will be

  - What activities the RIPE NCC should prioritise

- **Registrations are open for the next GM taking place from 22-24 May 2019**

- **Watch the GM via webstream, participate remotely, vote electronically**

Have Your Say in the RIPE NCC Survey

- **Our last survey gathered input from 4,400 people**

- **Crucial for guiding our strategy**

- **2019 Survey launches at RIPE 78 (on Friday, 28 May)**

  - This will be our last survey before IPv4 exhaustion

  - Consultations ahead of survey have identified important issues

  - Much shorter and more streamlined than the previous version

- **So, please participate!**

We Act on Your Feedback

- **Concrete actions are taken with your input**
- **We produce a list of actions that result from your survey responses and report back on our progress**
- **You can see the actions taken after the last survey:**

https://www.ripe.net/survey2016/key-findings

Questions ?

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