



RIPE NCC

RIPE NETWORK COORDINATION CENTRE

Operational Update

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Post IPv4

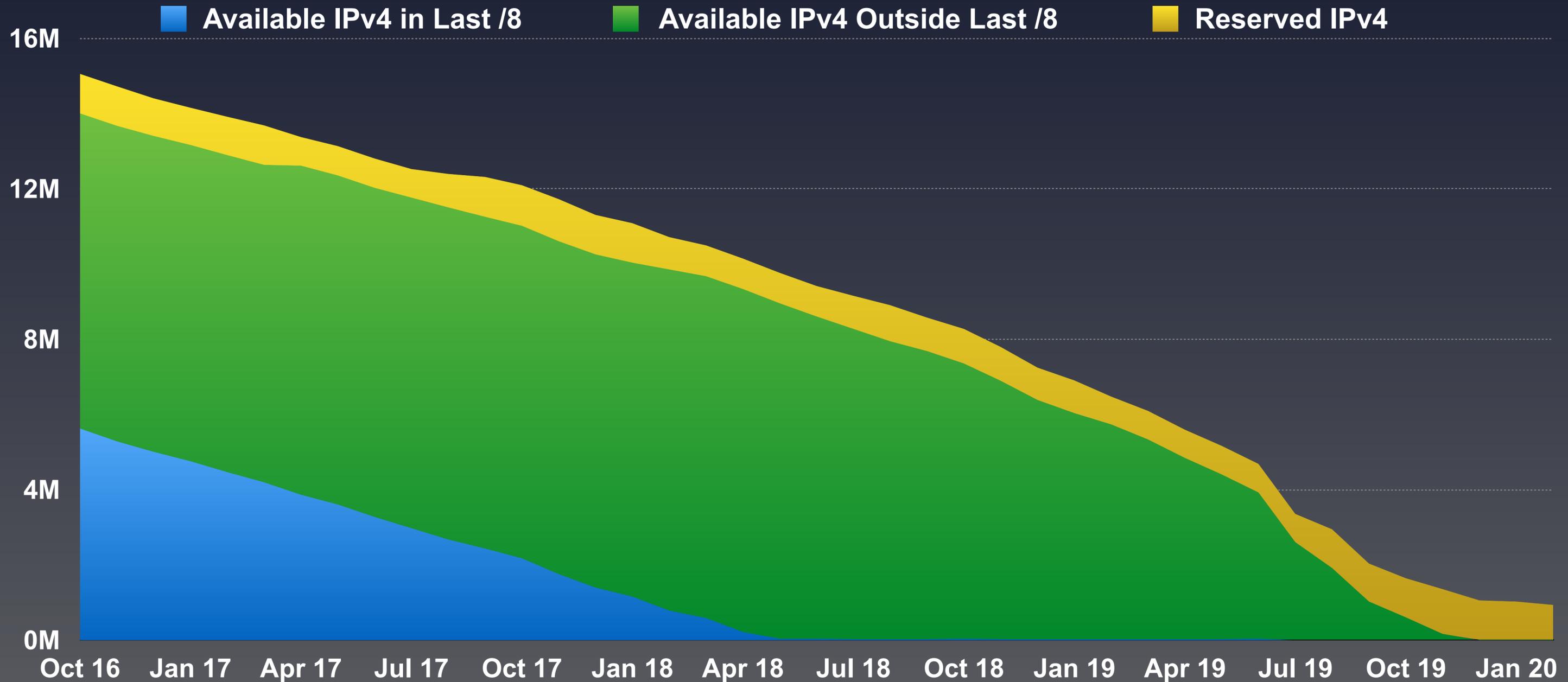
How is life after
run-out?

IPv4 Run-out



- Announced on 25 November 2019
- Long-anticipated and planned for
- Increase in LIR applications as we approached the end
- Waiting list now in place for recovered /24s
- We will continue to allocate these small amounts for the foreseeable future

RIPE NCC IPv4 “Pool” ...



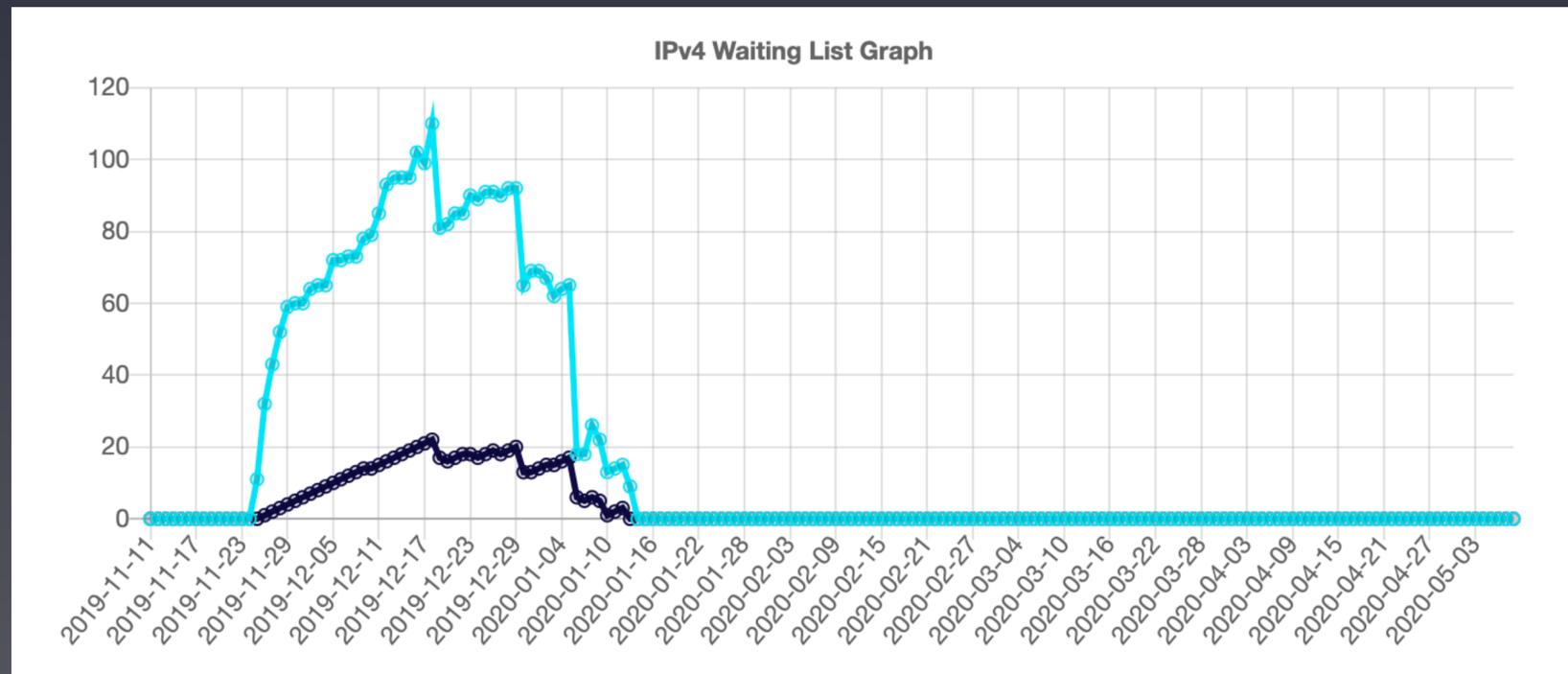
...Becomes IPv4 “Puddle”



Waiting List for Returned Address Space

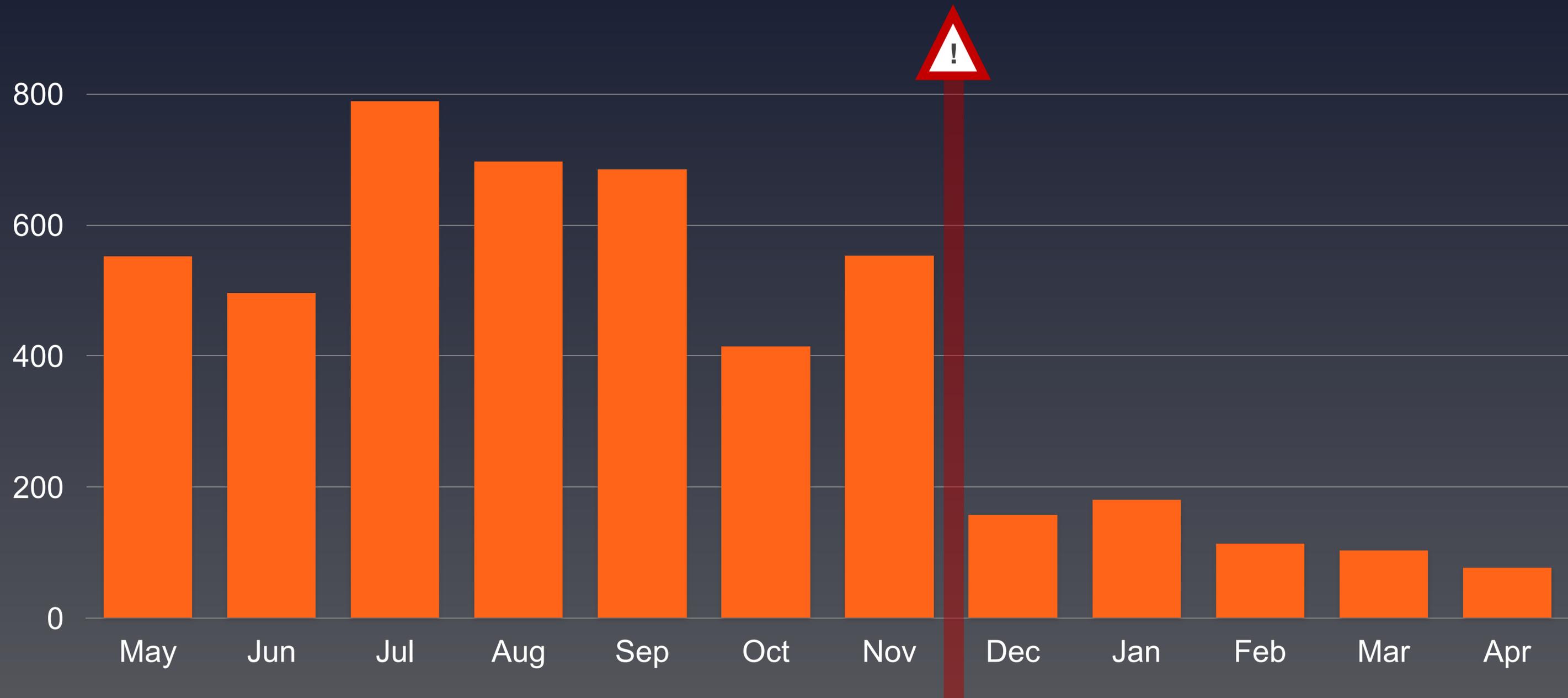


- No wait for new LIRs currently
 - 1,340 /24s in our pool
 - Expect to release a further 456 /24s from quarantine over the next six months

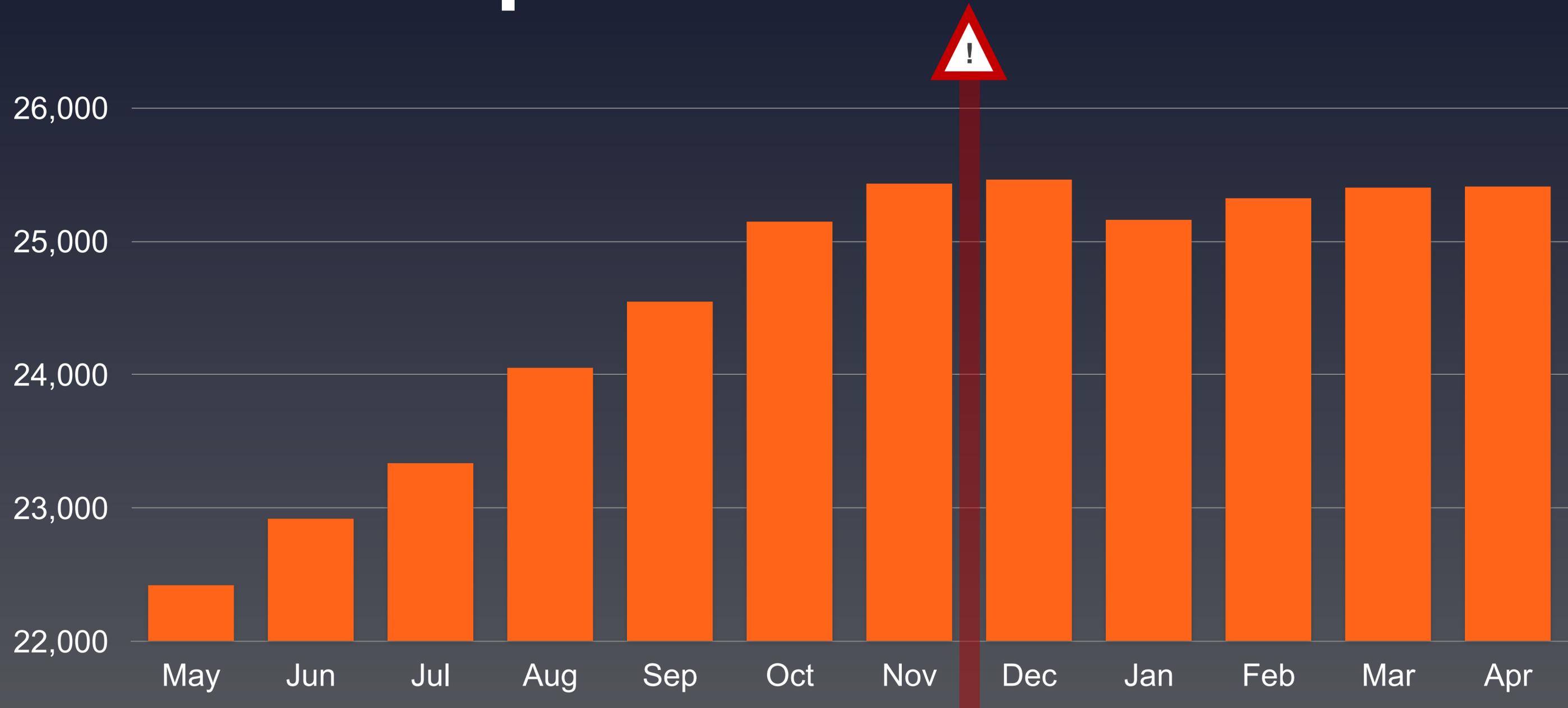


<https://www.ripe.net/ipv4-waiting-list>

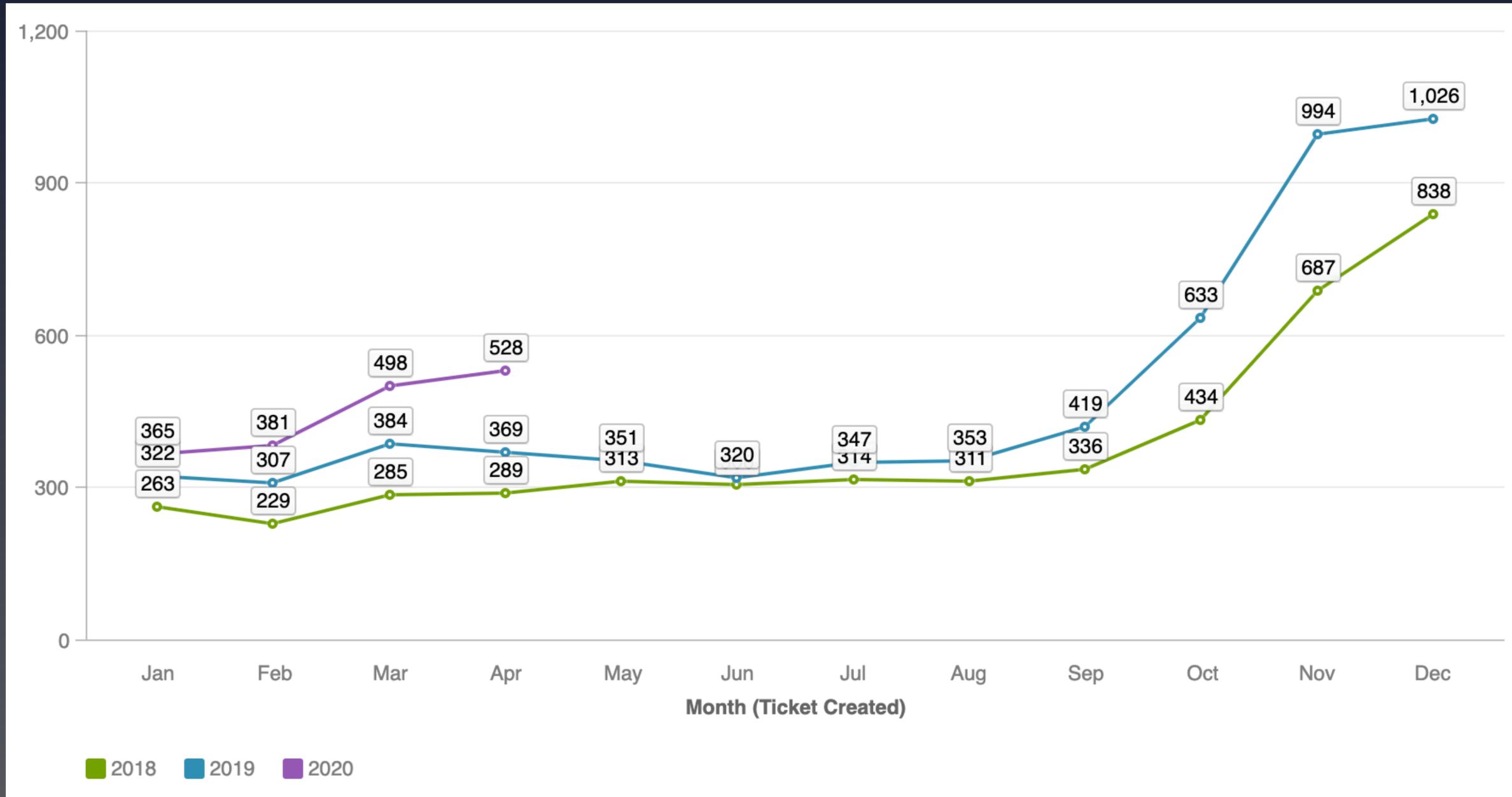
Number of New LIRs



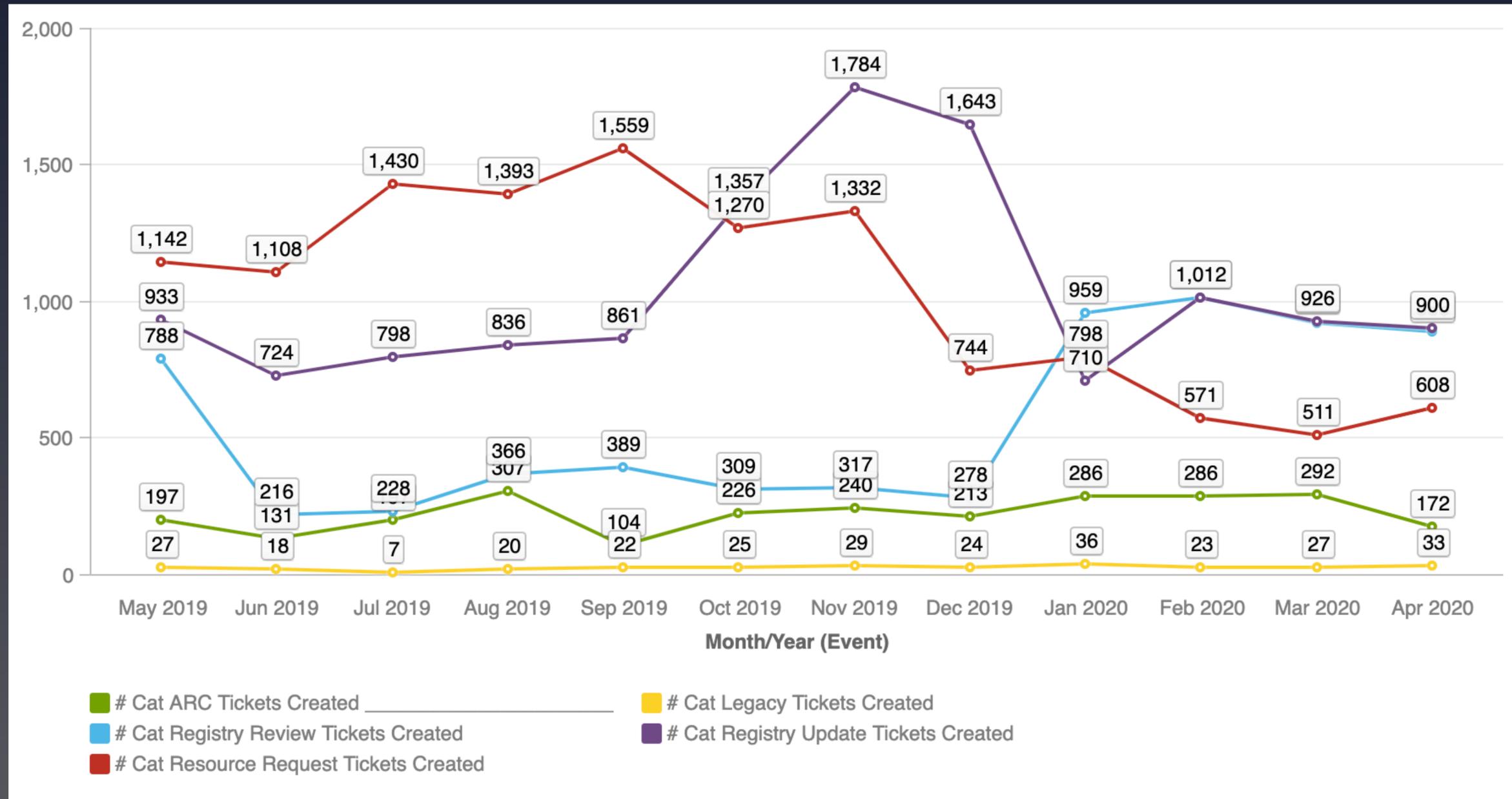
Membership Growth



Transfer Tickets



Registration Services Tickets





Sanctions

Compliance and our role in the
Internet community

Background



- Two members in Iran and one in Syria were recently found to be on the EU sanctions list
- RIPE NCC is an organisation under Dutch law and is therefore legally obliged to comply with European Union sanctions regulation
- We have frozen the provision of services to these members according to our existing audit procedure

Our Role in the Internet Community



- This has geopolitical implications for the RIPE NCC's wide and diverse service region
- Provision of correctly registered Internet number resources is an important part of Internet infrastructure
- RIPE NCC Executive Board: “The board wishes to caution against measures applied in pursuit of short-term public policy objectives that may undermine the wider Internet governance system, which is essential to the stability of the global Internet.”
 - <https://www.ripe.net/ripe/mail/archives/ncc-announce/2020-April/001413.html>

How Are We Tackling This



- Have submitted an urgent temporary request that would allow us to continue providing services to these members, referencing the COVID-19 pandemic and potential humanitarian consequences if we are forced to terminate the SSAs
- Also seeking a permanent exemption for our services from any current and future EU sanctions
- Our approach (freezing provision of services) ensures compliance with sanctions while we await clarity from the authorities



Recognised IPv4 Transfer Brokers

Ensuring policy compliance

Background



- List of recognised brokers on [ripe.net](https://www.ripe.net):
 - <https://www.ripe.net/manage-ips-and-asns/resource-transfers-and-mergers/brokers>
- Original intent was to encourage basic good behaviour on the part of brokers:
 - In return for “recognised” status, brokers would agree to adhere to relevant policies/procedural documents and a few other basic requirements
- Complaints about some brokers violating RIPE policies
- Enforcing these rules difficult for the RIPE NCC
- Members questioning the value of the service

Board Asked Membership for Input



- In January 2020, the Executive Board asked the membership whether you wanted us to continue maintaining the list
- Board decided to keep the service, as it was seen as a valuable resource for our members
- However, we will apply stronger due diligence checks and will ask brokers to agree to stronger terms to prevent abuse
- Currently working on a proposal for a new legal framework and internal procedures

IPv4 Transfer Listing Service



- A service in the LIR Portal that allows members to advertise address space offered/requested
- Reaching end of life and a full reimplementaion from the ground up is needed
- Not a lot of usage: further investment doesn't seem like a wise use of membership funds
- Propose to decommission this service unless there are strong objections



RPKI

Towards a resilient and secure
Trust Anchor



Background

- RPKI's foundation was built several years ago, when the technology was not yet established as a standard
- Resiliency, scalability and redundancy were not primary concerns back then
- Situation has changed significantly in the past two years
- Strong RPKI uptake worldwide puts pressure on existing infrastructure and operational procedures

A vertical chain of metal links is positioned on the left side of the image. The links are dark and metallic, with some highlights reflecting light. The chain is composed of several interlocking links, with the central link being slightly larger and more prominent than the others. The background is a dark, gradient blue-grey.

RPKI Resiliency Project

Areas Being Assessed



- **Technical infrastructure** (high-availability, scalability, redundancy, 24/7 support, SLA)
- **Security** (penetration and vulnerability testing)
- **Cryptography** (IETF RFC compliance)
- **Operational procedures** (key signing, key roll)
- **Legal framework** (CPS and T&C)

Recent Incidents



- A series of incidents happened our RPKI infrastructure earlier this year
- We have published post-mortems with a full account of each incident and a RIPE Labs article with more details
 - https://labs.ripe.net/Members/nathalie_nathalie/lessons-learned-on-improving-rpki
- Internal task force reassessing our RPKI technical infrastructure and software development procedures
 - Looking into monitoring, QA and DevOps, among other things
- Results will be included into RPKI resiliency project
- More details on our current and future plans on RIPE Labs:
 - https://labs.ripe.net/Members/felipe_victolla_silveira/rpki-past-present-and-future

A Solid Future Ahead



- RIPE NCC will play our part in supporting the successful adoption of RPKI worldwide
- As one of the RPKI Trust Anchors, we will do our utmost to provide a secure and reliable service to the technical community
- Over the next couple of years, the RIPE NCC will continue to invest the necessary resources into providing a world-class service
- We will achieve this through strong collaboration with RIPE and the wider Internet community



Questions



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