



RIPE NCC

RIPE NETWORK COORDINATION CENTRE

RIPE NCC Update

Changes, Challenges and Highlights

Who We Are



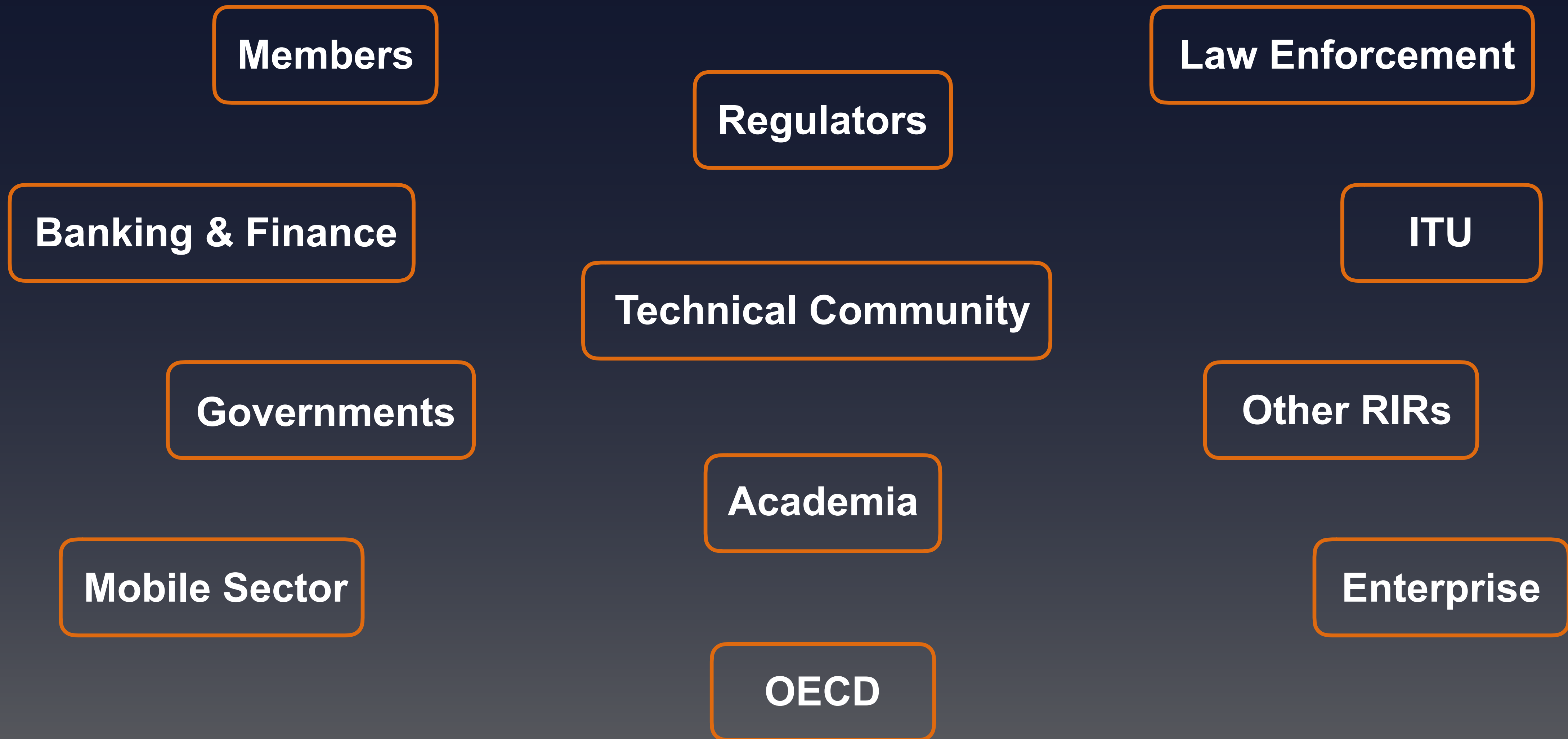
- **We are one of five Regional Internet Registries (RIRs)**
 - We distribute and maintain the registry of IP address space for Europe, the Middle East and parts of Central Asia
 - Our members are ISPs and other organisations running their own networks
- **We also provide a number of technical services and tools, including K-root**
- **We are a source of technical expertise for a range of stakeholders**

Our Mission



- **Support development of local technical communities**
- **Understand challenges faced by members across our service region**
- **Understand public sector concerns and provide relevant information**
- **Represent members and community in Internet governance and policy arenas**
- **Spread know-how, share best practices and tools**

Our Place in the Ecosystem



Where We Went in 2018



Includes RIPE Meetings, Regional Meetings, Member Lunches, Training Courses, Roundtable Meetings, Hackathons and other RIPE NCC events

Key Events in 2018

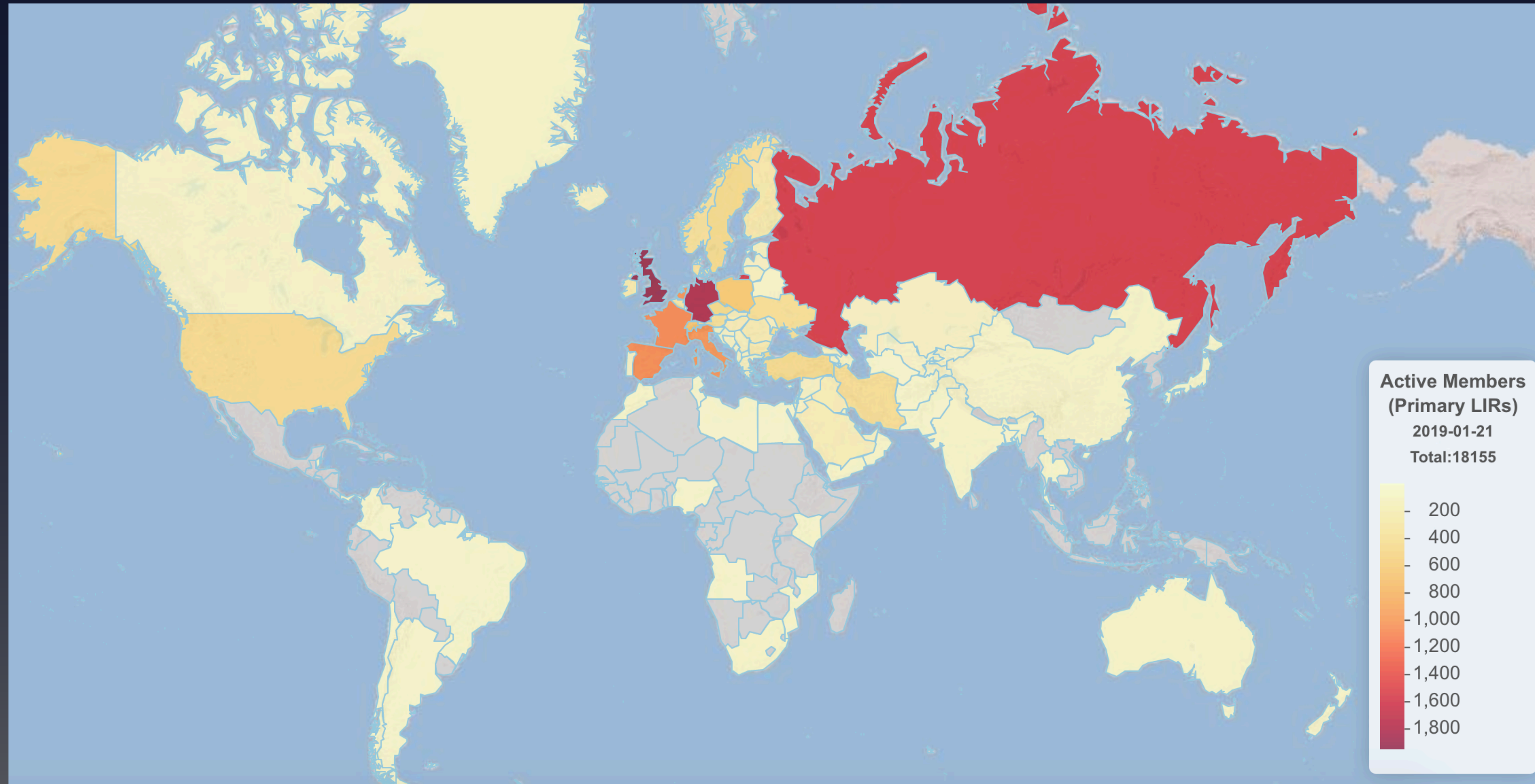


- **Two RIPE Meetings, largest ever (Marseille in May and Amsterdam in October)**
- **ITU Plenipotentiary in Dubai in November**
- **Internet Governance Forum in Paris in November**
- **Meeting with Europol's European Cybercrime Centre (EC3) in The Hague in September**
- **Roundtable Meetings in Brussels and Saudi Arabia**

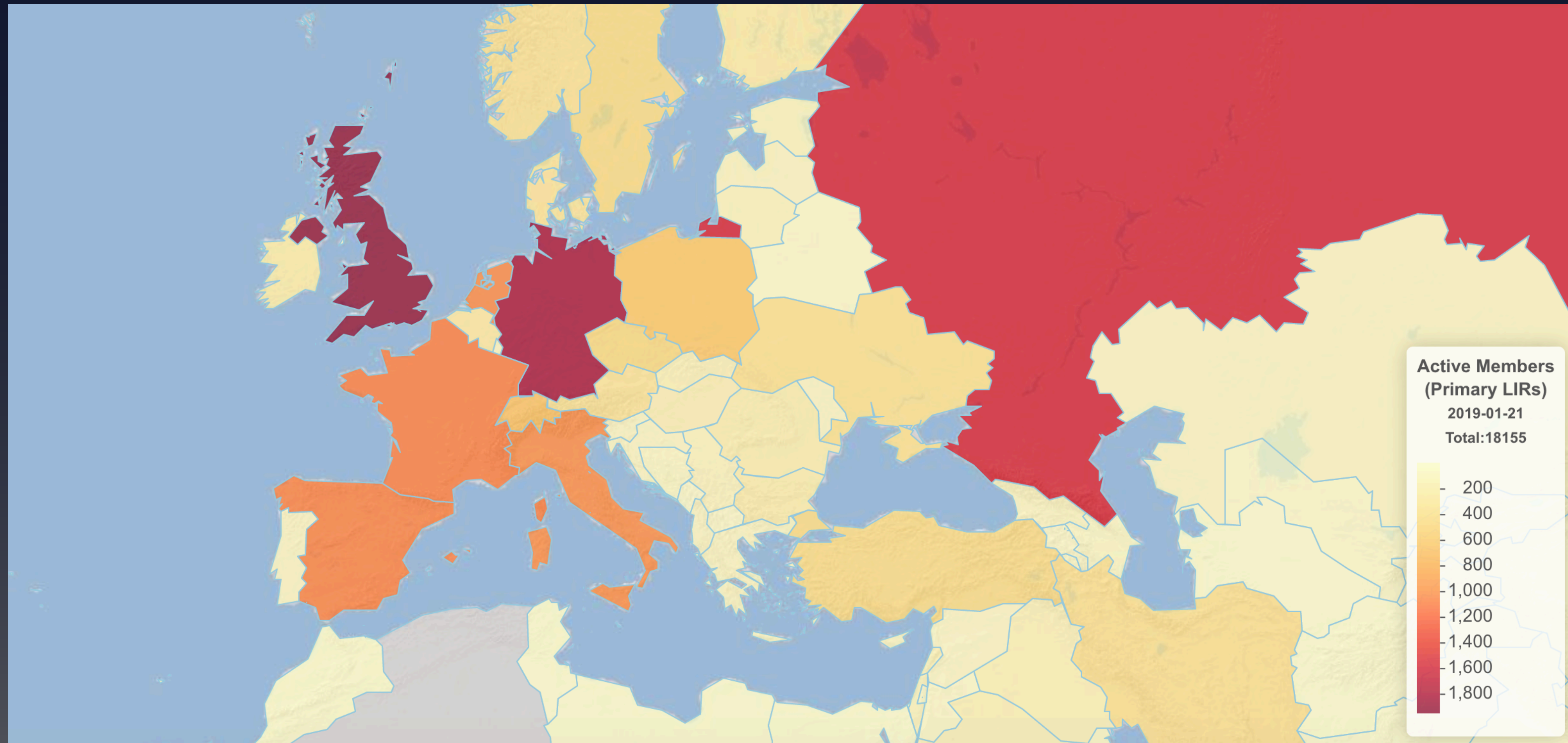


Membership

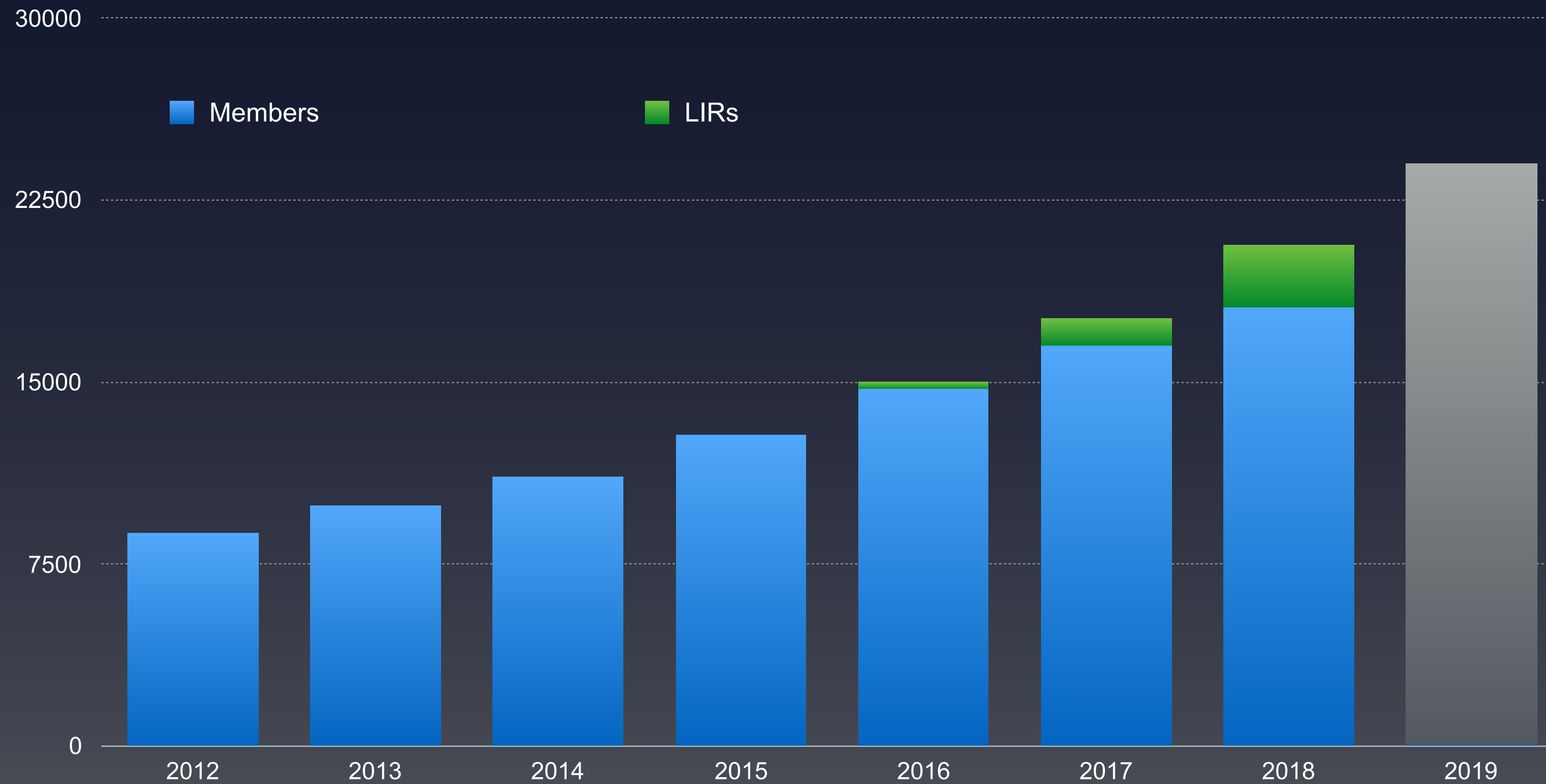
Where Our Members Are Located



Where Our Members Are Located



Membership Growth





IPv4

IPv4 Run-out



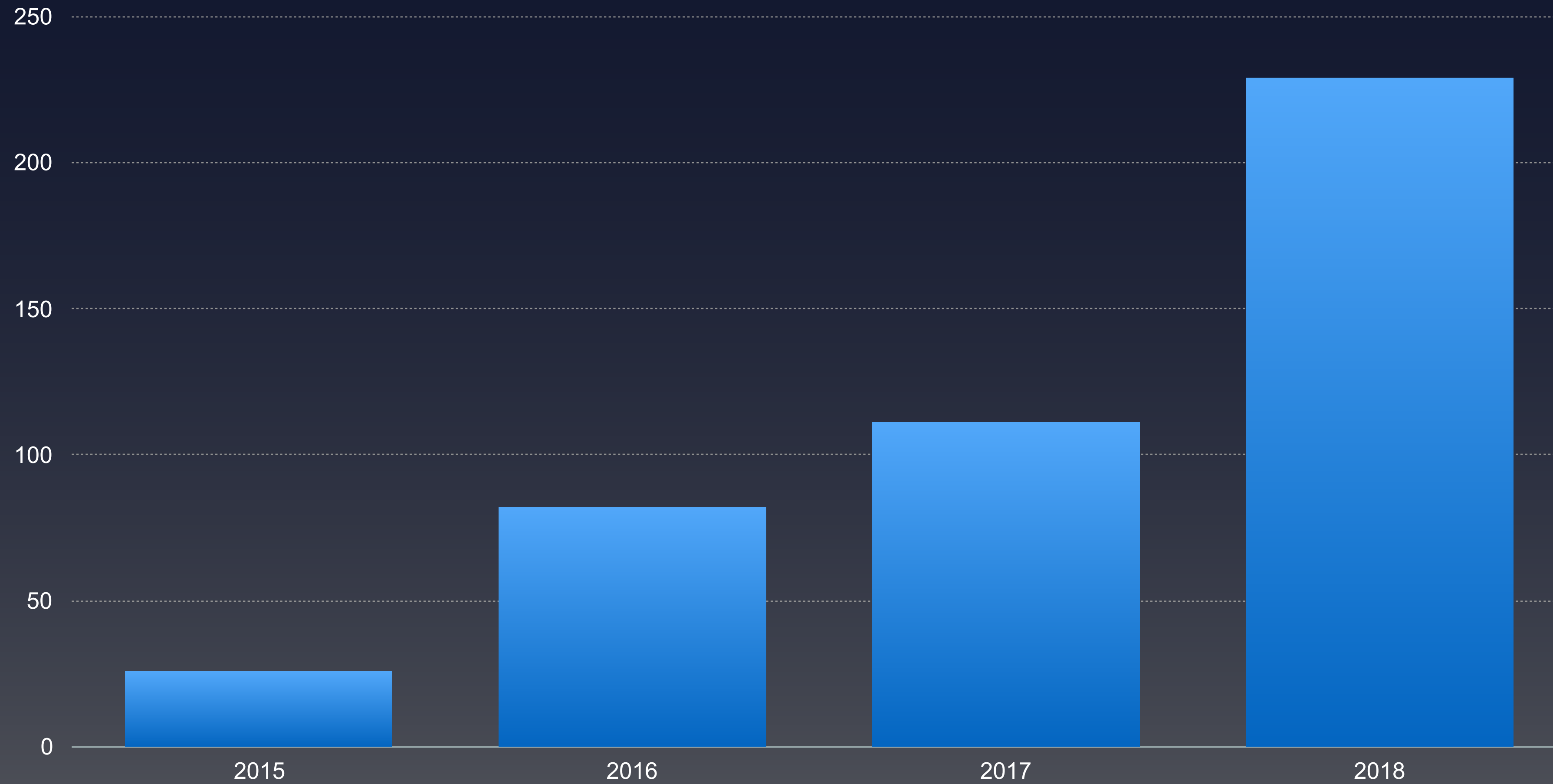
- **Four of five RIRs have little (or no) IPv4 left to distribute**
- **New LIRs can still receive a small amount**
- **Policy is defined by the technical community**

IPv4 Run-out Effects



- **Increasing number of LIRs**
 - Members opening multiple LIRs
- **More mergers and acquisitions > more complexity**
- **More problematic cases**
 - Increased number of fraudulent cases - especially from offshore tax havens
 - Increased hijacking attempts and lengthy disputes
- **Thriving IPv4 transfer market**

Problematic Cases



Member Closures



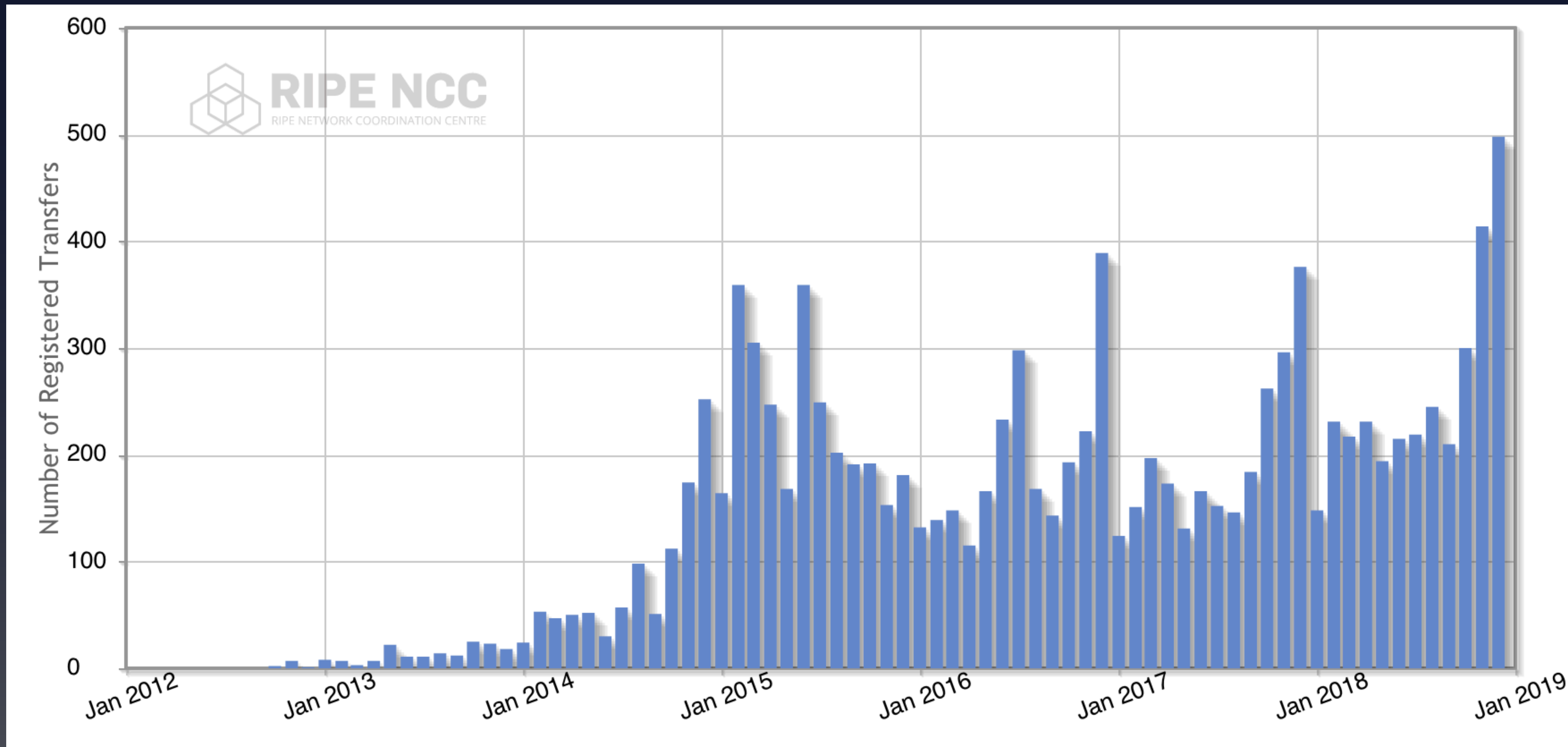
- **Generally fewer than five closures per year**
- **Number increased dramatically in 2018**
 - We closed 203 LIRs belonging to 40 members

Protecting the RIPE Database



- **What we're doing:**
 - Continually increasing due diligence procedures
- **What you can do:**
 - Help us by flagging errors, inconsistencies
 - Keep information sources like Chamber of Commerce records accurate

IPv4 Transfers





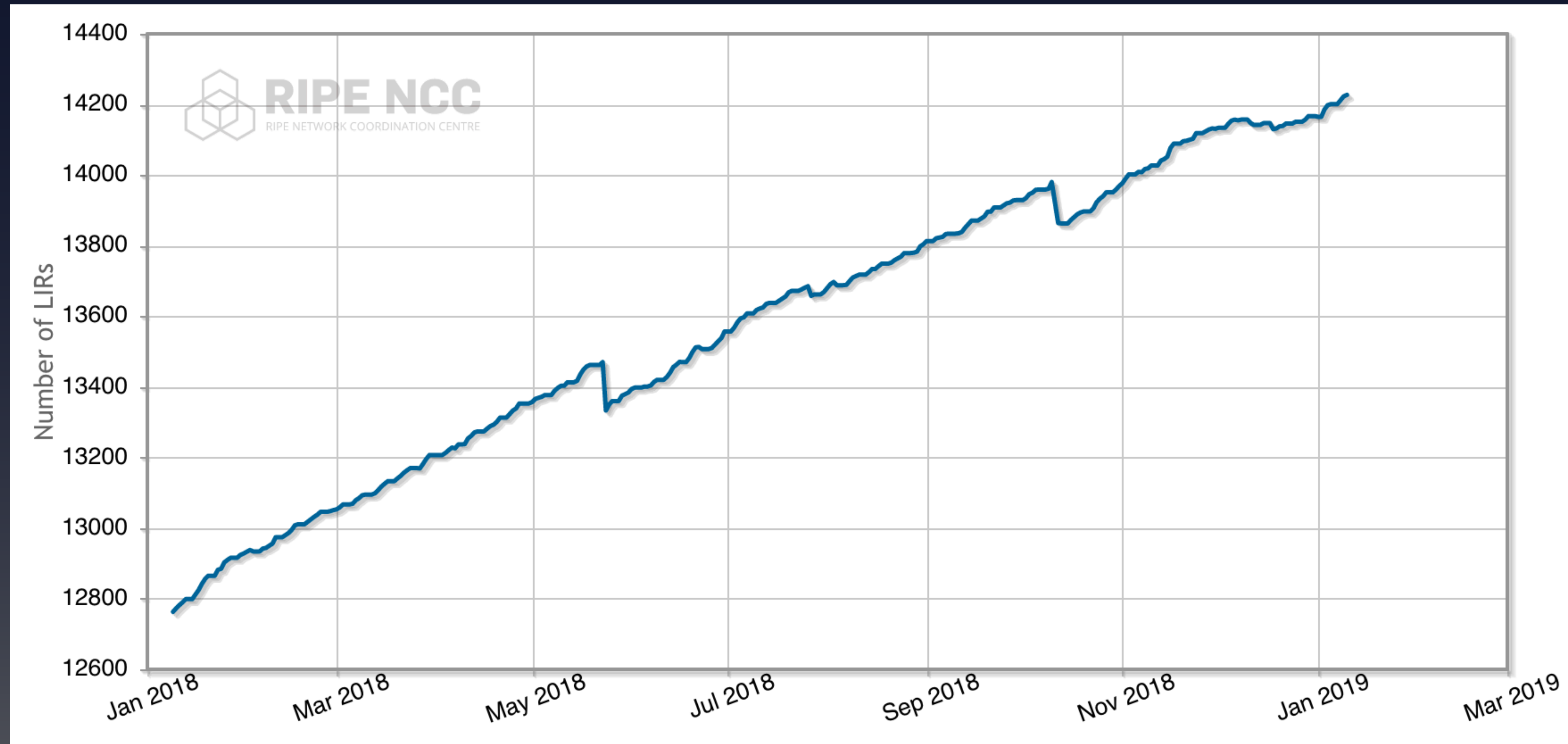
IPv6

Still Waiting for the Tipping Point...

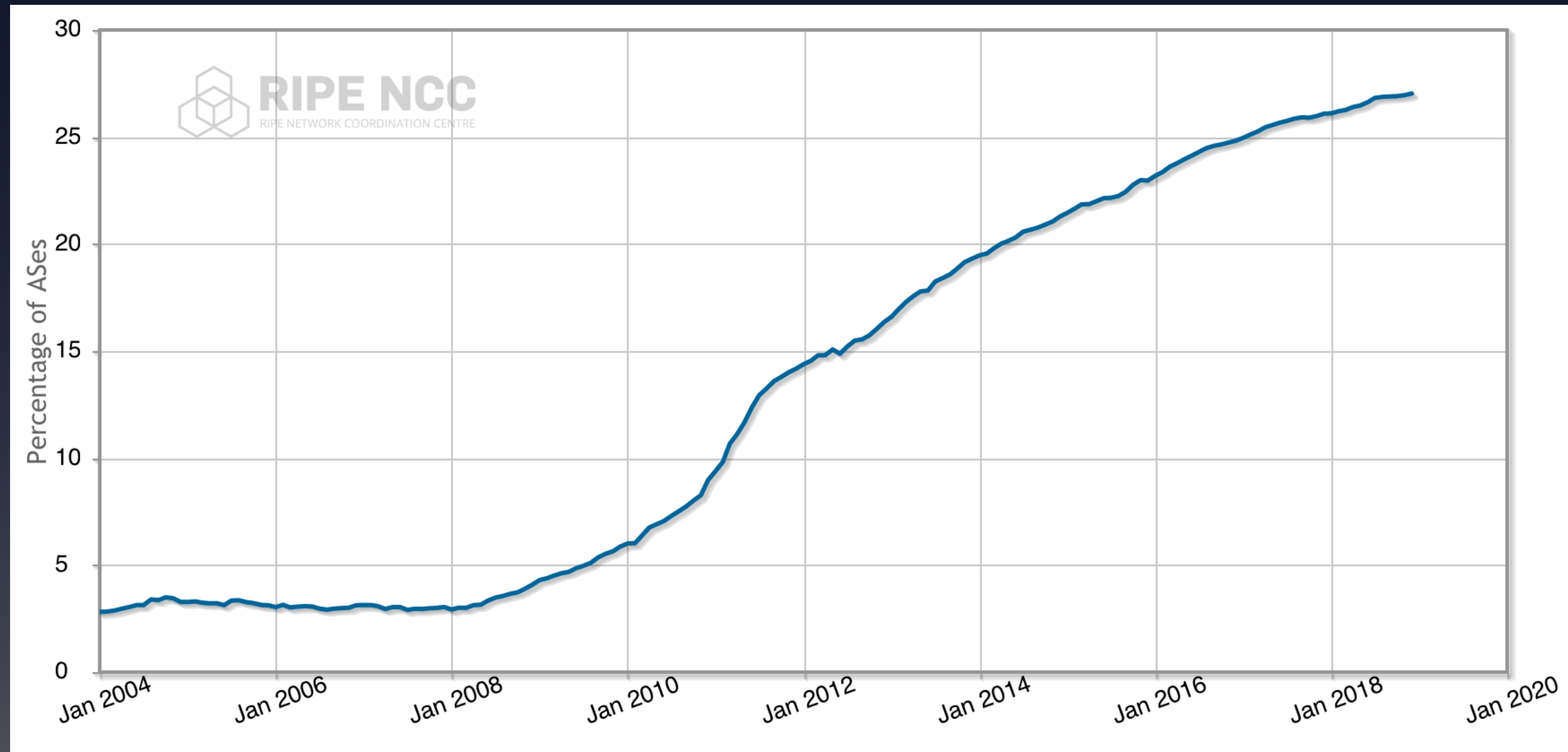


- **Many of our members aren't rushing to deploy IPv6**
 - Seen as expensive
 - No customer demand
 - Technical workarounds
- **We support IPv6 deployment**
 - Technical training courses
 - IPv6 for governments program
 - Extensive deployment guide and resources

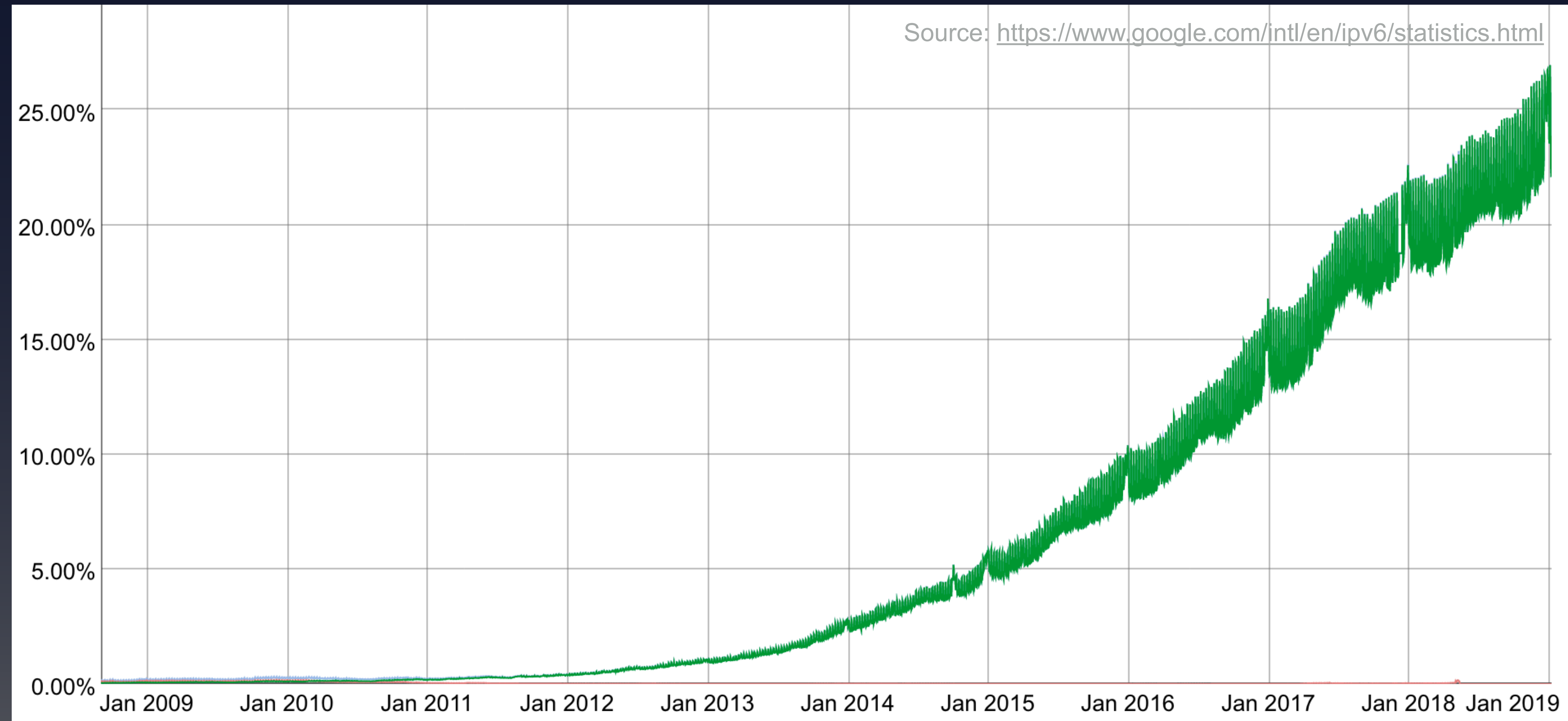
LIRs with IPv6



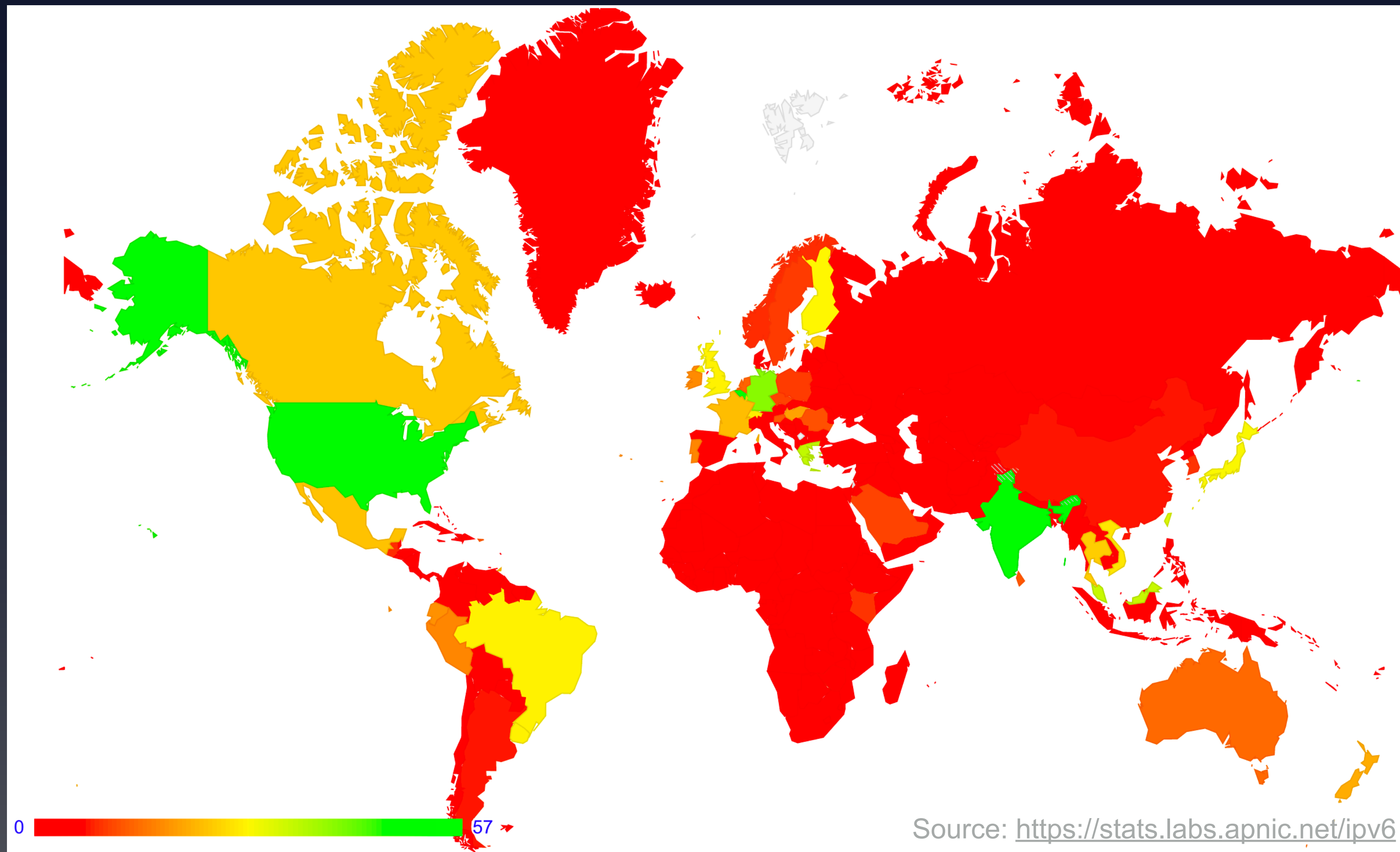
Networks Announcing IPv6



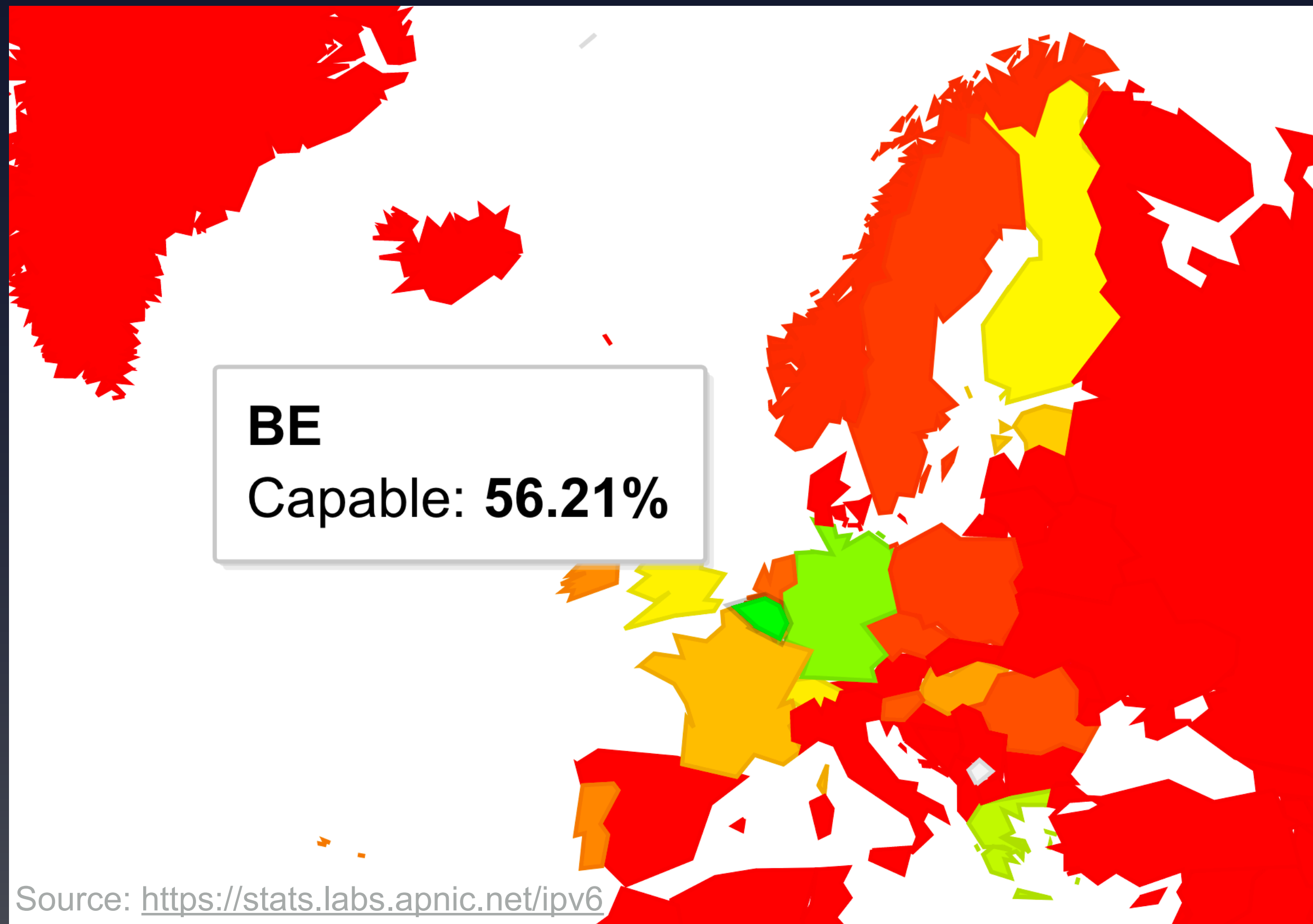
Users Accessing Google Over IPv6



IPv6 Globally

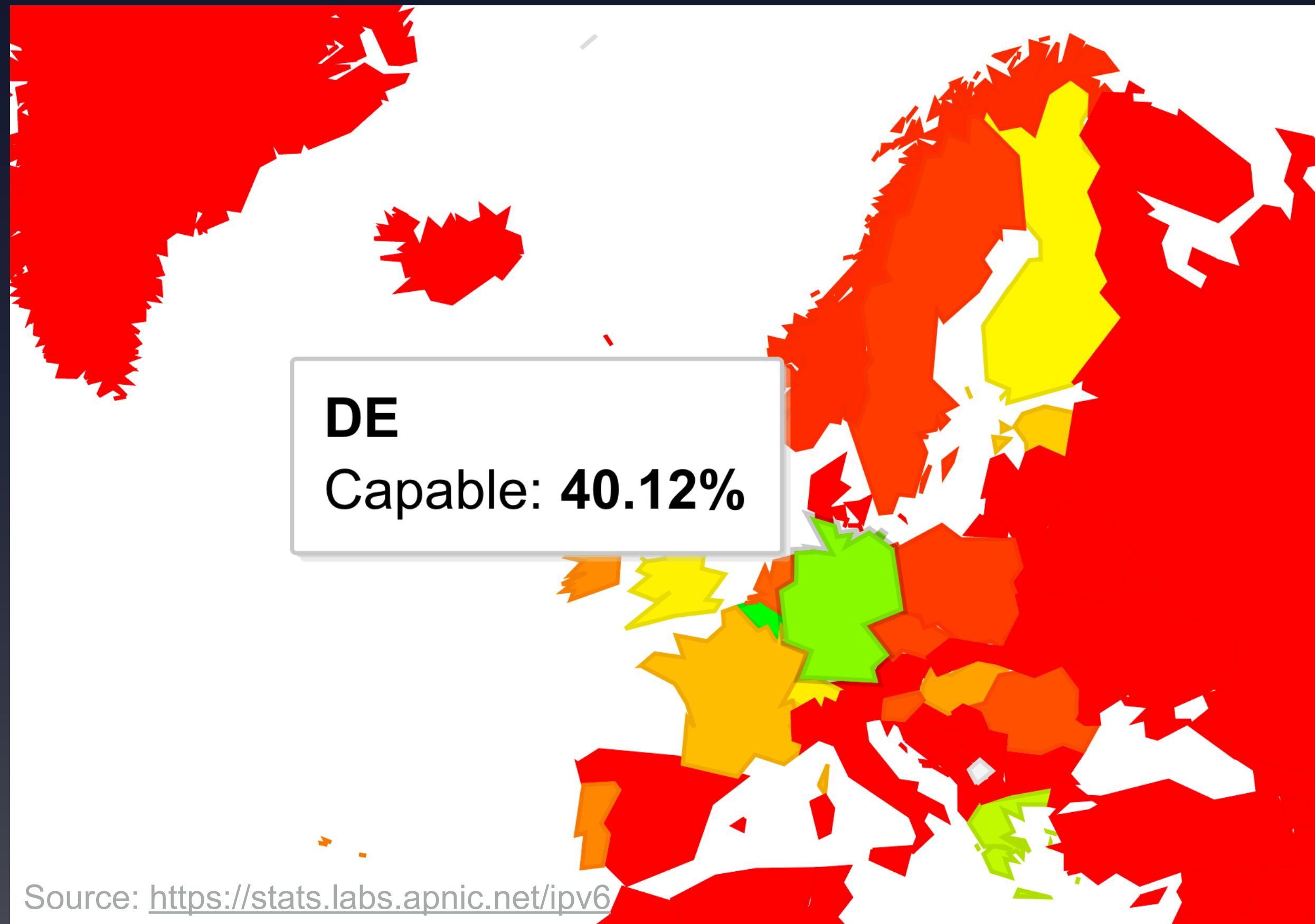


Belgium



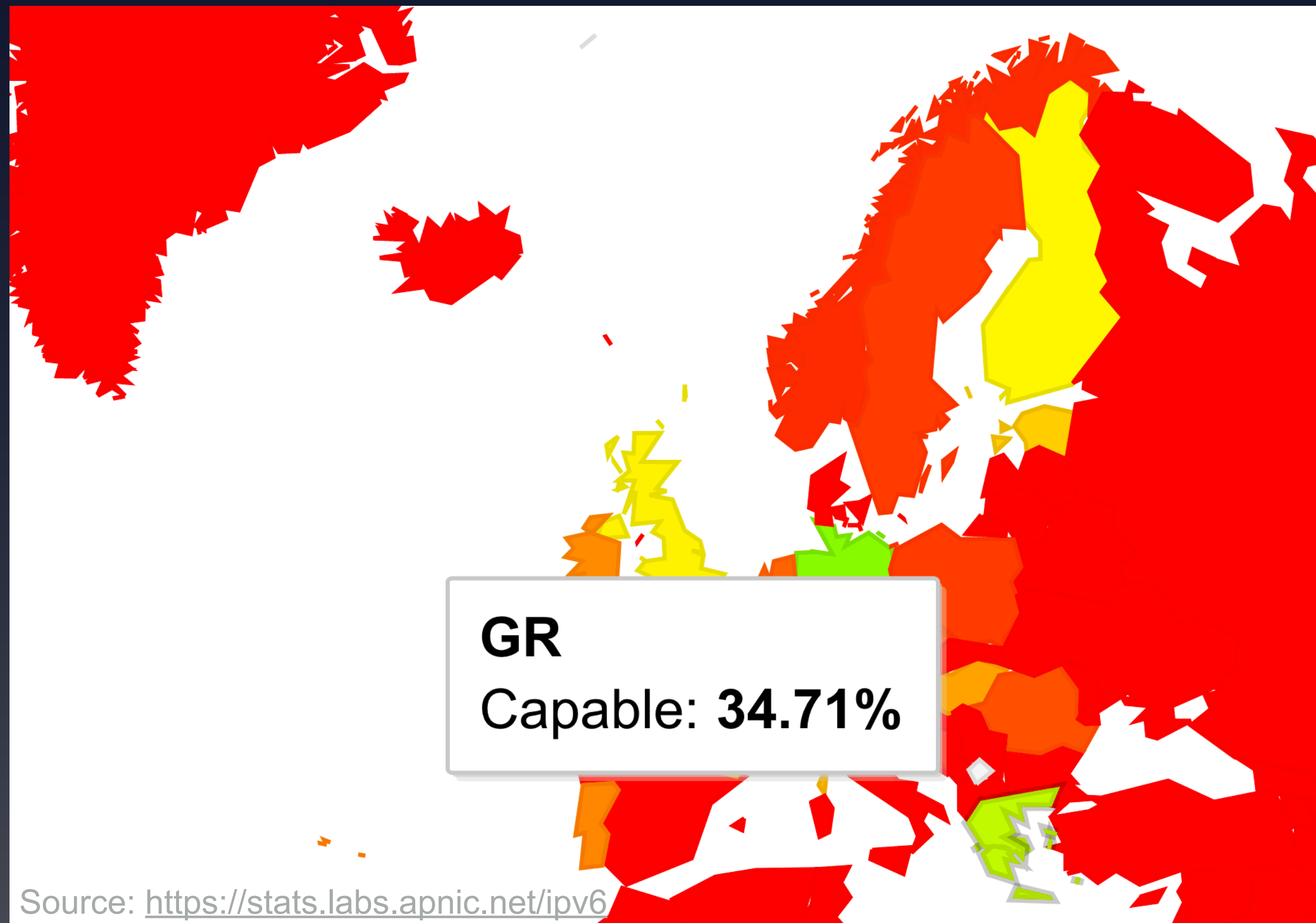
Belgacom/Proxymus	58%
Telenet	73%
Brutele	80%
Mobistar (ex KPN)	0%
Base (Telenet)	0%

Germany



DTAG	63%
Vodafone	0%
Kabeldeustchland	66%
UPC/LGI	65%
1&1	75%

Greece

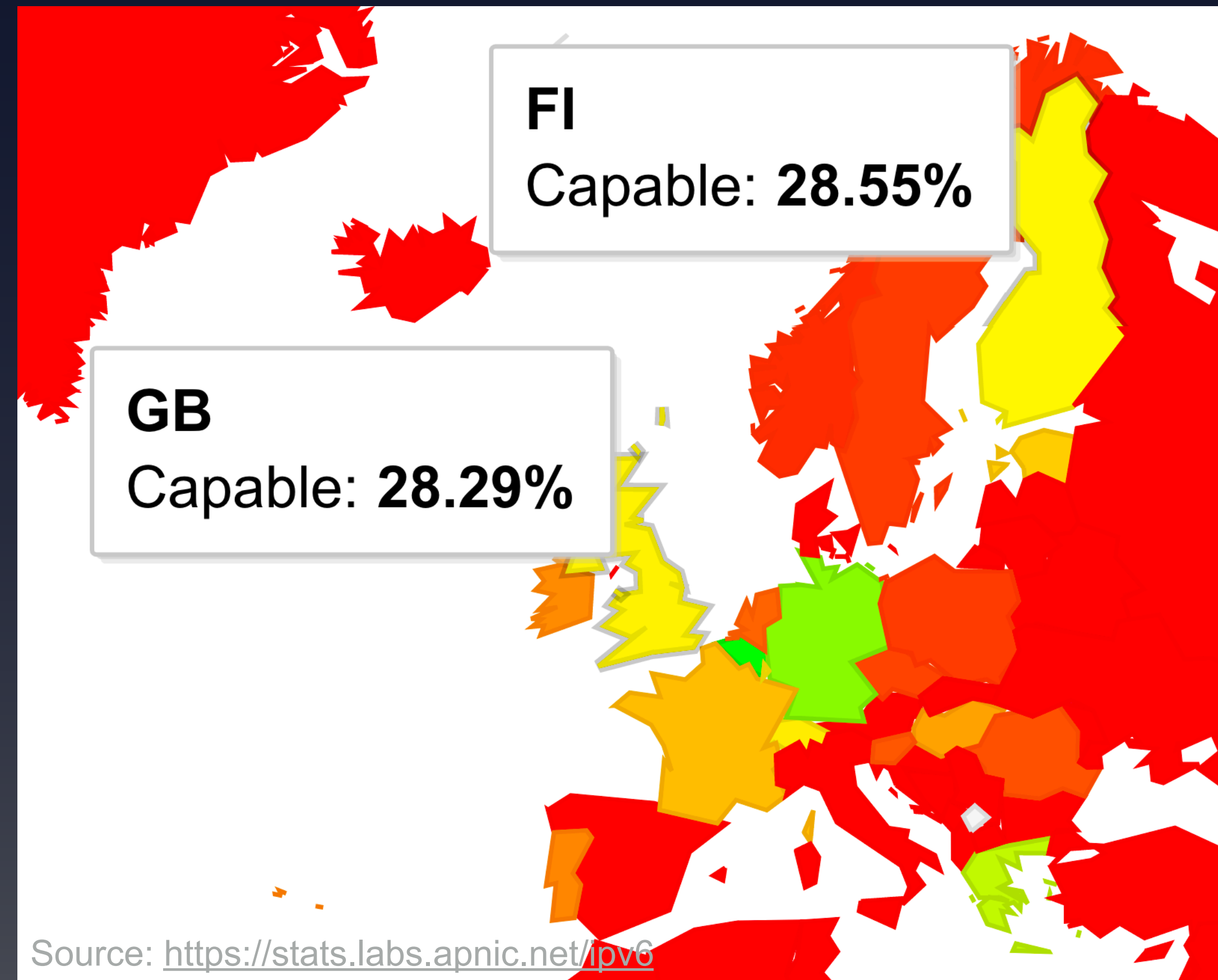


OTE	55%
Vodafone/Panafon	10%
Forthnet	52%
WIND	0%

UK and Finland



Sky Broadband	83%
BT	42%
NTL	0%
Orange	41%
O2 Online	0%
Talk Talk	0%
Hutchison 3G	0%
Vodafone	0%



Telia	1%
DNA	56%
EUNET	53%
Elisa	6%



Policy

Implemented in 2018



- **NWI-5 Out of Region Objects**

- Changes the way out-of-region objects are managed in the RIPE Database
- Solves issues related to prefix hijacking

- **Abuse-c Validation**

- Annual validation of abuse-c email addresses in the RIPE Database (currently more than 70,000)
- First policy proposal made by Europol



Looking Ahead

Top Issues in 2019



- **Catering for an expected 4,000 new LIR accounts!**
- **Ensuring registry accuracy**
- **Managing changing circumstances**
 - Hitting zero IPv4 to allocate
- **Launching new activities:**
 - Abuse-c validation
 - RIPE NCC Academy credentialing



Questions



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