IPv4 Run Out
…and More

Theodoros Polychniatis | 6 Dec 2019 | GRNOG9

Who Am I?

Early life in Lesbos

Electrical & Computer Engineer @ NTUA

Software Engineer

MSc Business Informatics @ UU, The Netherlands

Whois, LIR Portal & internal apps

1999　　2004　　2010　　2013

uni.systems

intracom

Eurobank

Universiteit Utrecht

RIPE NCC
RIPE NETWORK COORDINATION CENTRE
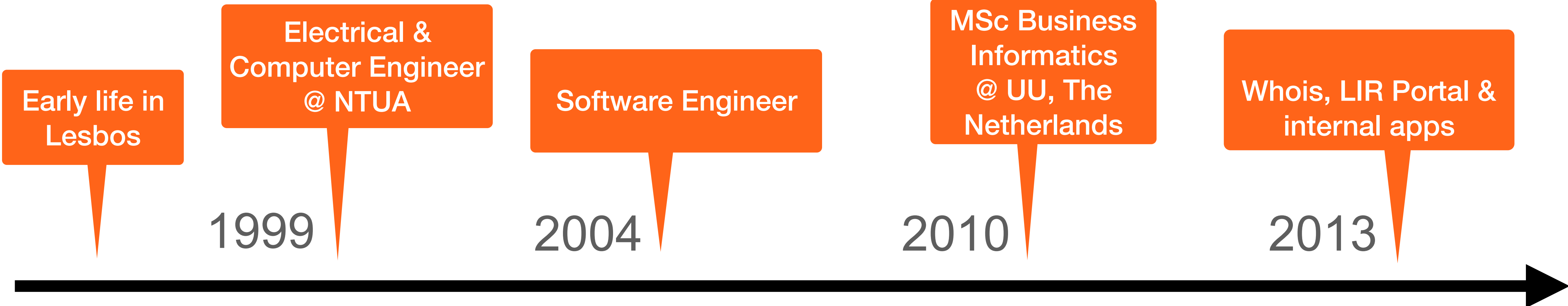
Engineer /

Product Owner /

Assistant Manager

25 November 2019

IPv4 Exhaustion Timeline (2019)

Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pool	Contiguous /22s										Composite /22s	Waiting List / 24s
Policies		2019-02 (Waiting List + /24s)							2019-05 (IXP pool)			
Software and Procedures			Updating software and procedures								
Communications	Informing RIPE community											

25 Nov. 2019

Now, How Do I Get IPv4?

Wait for Recovered Space

IPv4 Waiting List

- 2019-02, "IPv4 Waiting List Implementation"

  - Waiting list after IPv4 pool exhaustion

  - Allocation Size /22 => /24

  - Only for LIRs that never received an IPv4 allocation from the RIPE NCC
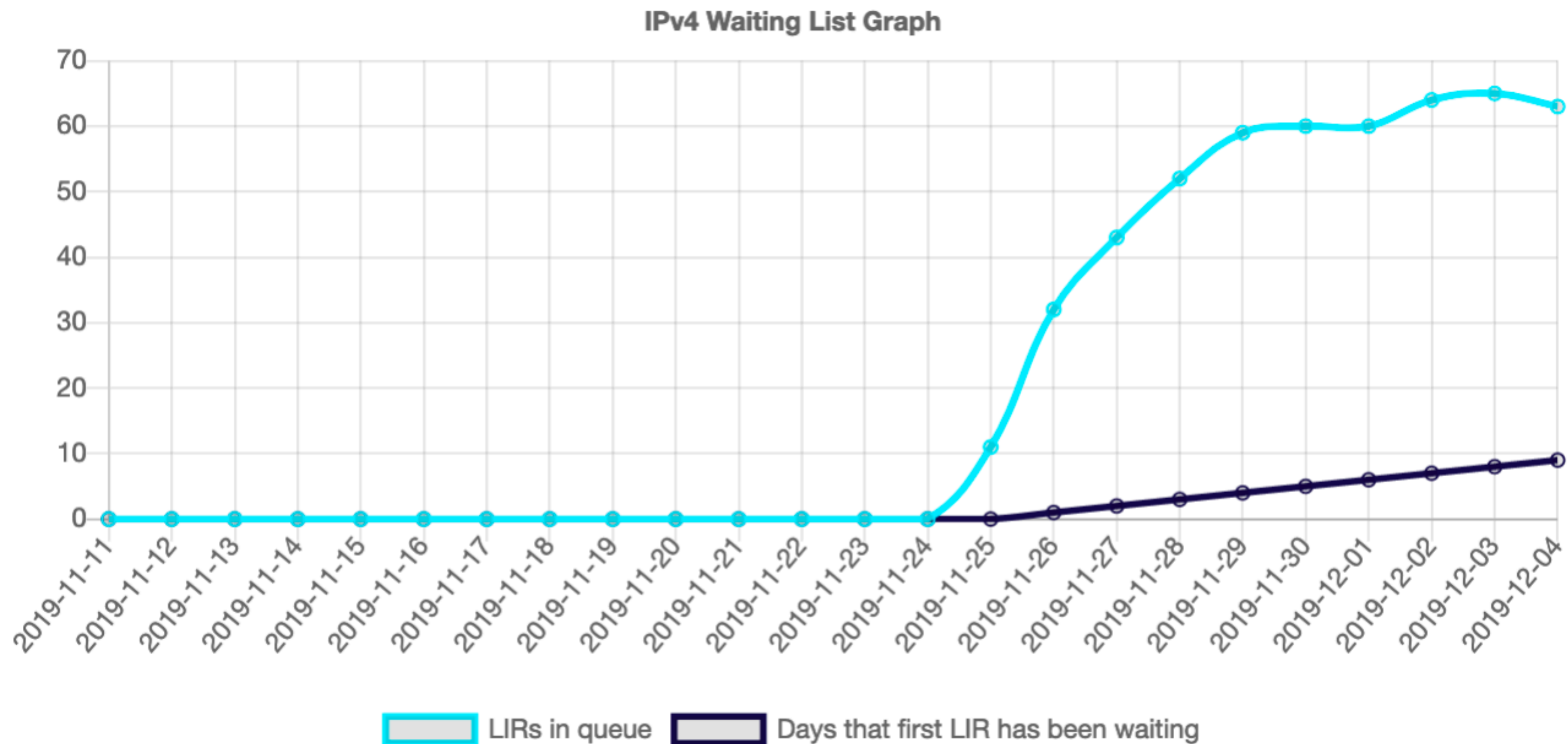
  - No IPv4 dust, no sizes < /24

- https://www.ripe.net/manage-ips-and-asns/ipv4/getting-ready-for-ipv4-run-out

IPv4 Waiting List

- ripe.net
- Placement number

LIRs in queue	63
Days that first LIR in queue has been waiting	9

IPv4 Waiting List Graph

Legend: LIRs in queue — Days that first LIR has been waiting

But, I Can't Wait…

- Find an LIR (e.g. ISP) with IP ranges for sale and arrange a transfer

- Country list of LIRs

- Transfers, Mergers & Acquisitions are increasing

- Increased time for due diligence

What Else?

IPv4 for IXPs

- 2019-05, "Revised IPv4 assignment policy for IXPs"

  - Increases the reserved IPv4 pool for IXPs from /16 to /15

  - We will have IXP assignments for a longer period.

- List of policies

Progress | Timeline	▬ In Progress	▬ Complete	**I.A.** Impact Analysis	
	Initial Discussion	**Comment & Review**		**Concluding**
2019-04 Validation of "abuse-mailbox" Anti-Abuse Working Group	**Open for Discussion** Extended Until 09 Dec 2019			
2019-06 Multiple Editorial Changes in IPv6 Policy Address Policy Working Group		**06 Nov 2019** Document is Drafted		
2019-07 Default assignment size for IXPs Address Policy Working Group	**Open for Discussion** Extended Until 19 Dec 2019			
2019-08 RPKI ROAs for Unallocated and Unassigned RIPE NCC Address Space Routing Working Group	**Open for Discussion** Until 29 Nov 2019			

RPKI

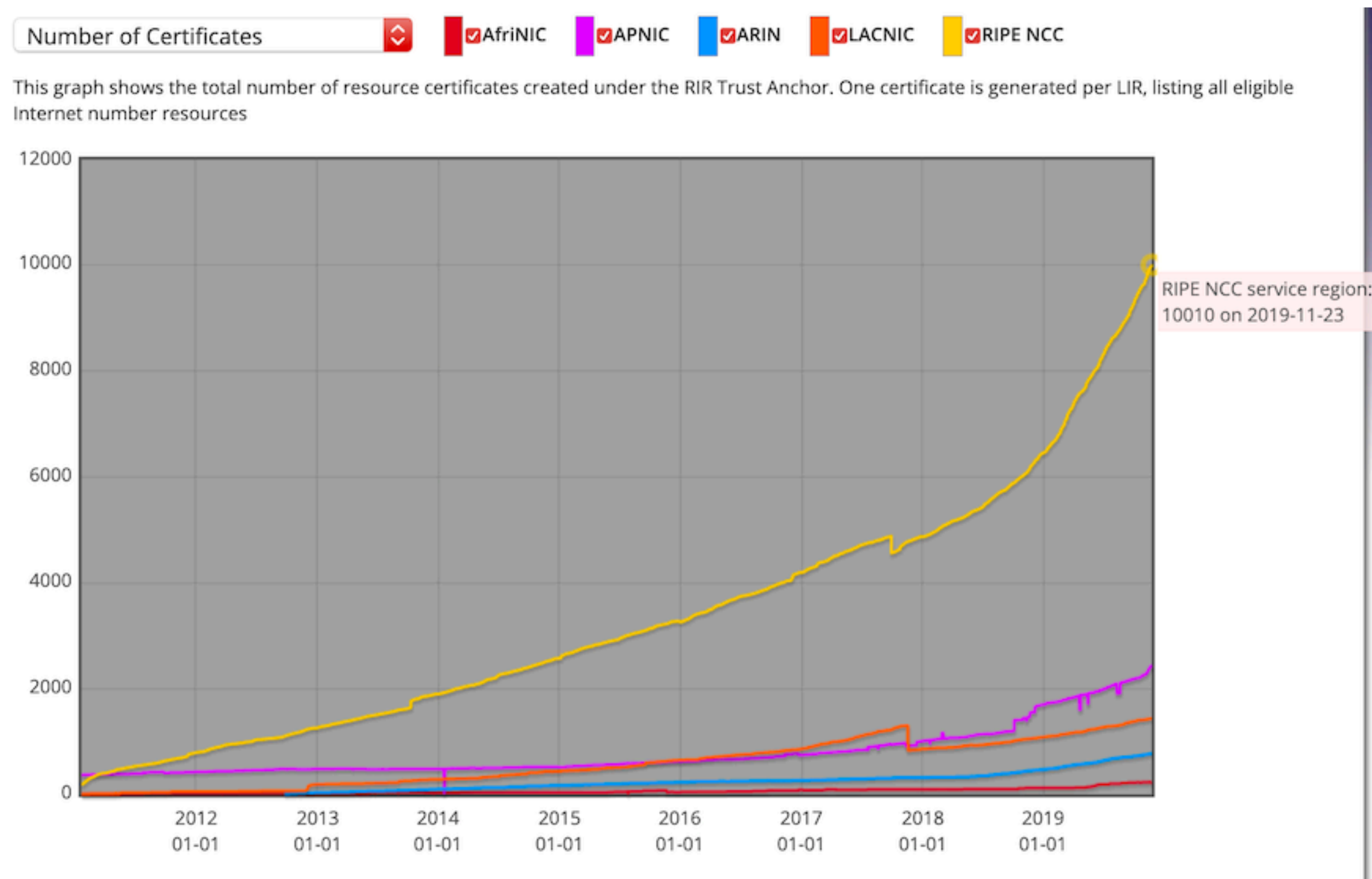# ROAs for Unallocated Space

- "2019-08 - RPKI ROAs for Unallocated and Unassigned RIPE NCC Address Space" (awaiting decision)

- This proposal aims to instruct the RIPE NCC to create ROAs with origin AS0 for all unallocated and unassigned address space under its control.

- BGP announcements will show as invalid when non allocated space from RIPE NCC is used

RPKI Work

- RPKI Core service: Improve resilience, scalability

- RPKI Validator: Improve stability, and usability

  - deb packages, docker images

Number of Certificates
☑ AfriNIC ☑ APNIC ☑ ARIN ☑ LACNIC ☑ RIPE NCC

This graph shows the total number of resource certificates created under the RIR Trust Anchor. One certificate is generated per LIR, listing all eligible Internet number resources

RIPE NCC service region: 10010 on 2019-11-23

10.000 RPKI CERTIFICATES!

RIPE Database

New and Upcoming Features

- NWI-8 Sync portal users to RIPE DB default maintainer [Done]

  - https://labs.ripe.net/Members/ed_shryane/synchronising-users-from-the-lir-portal-to-the-default-maintainer-in-the-ripe-database

  - https://ripe79.ripe.net/presentations/119-NWI-8.pdf

- NWI-9 Near real-time mirroring (NRTM) [In progress]

  - Service will be opened to everyone, not just to members

  - New, modern version is under discussion in the db-wg

  - Participate to stir the direction!

- All NWIs (numbered work items)

RIPE Database - My Resources

- Related route(6) and domain objects to My Resources [In progress]

Live in Q1 2020

RIPE NCC
Certified
Professionals

Your Expertise Certified!

- Three levels of expertise
  - Analyst
  - Associate
  - Expert

- Badges are verifiable

- Can be shared on social networks, added to your CV, email signature or website

- Members will receive vouchers to take the exam

How good are you with the RIPE Database?

Prove It!

ripe.net/certifiedprofessionals
exams@ripe.net

Questions

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