



78

ANNUAL
GENERAL
MEETING



DNSSEC AND SECURITY WORKSHOP

WEDNESDAY, 25 OCTOBER 2023



DNSSEC and Security Workshop

ICANN78

Jacques Latour, CIRA

25 October 2023



Program Committee

- Steve Crocker, Shinkuro
- Mark Elkins, DNS/ZACR
- Jacques Latour, CIRA
- Russ Mundy, Parsons
- Yoshiro Yoneya, JPRS
- Dan York, Internet Society
- Andrew McConachie and Kathy Schnitt, ICANN Org

Support

The DNSSEC Workshop and associated activities at ICANN are an organized activity of the:

- **ICANN Security and Stability Advisory Committee (SSAC)**



with additional assistance from the:

- **Internet Society**



Agenda

DNSSEC and Security Workshop – Part 1 09:00 – 10:00 CEST (07:00 – 08:00 UTC)
1. Moderator: Jacques Latour
1.1 09:00 – 09:10 (07:00 – 07:15 UTC) – Jacques Latour, CIRA: Deployment Around the World – Counts, Counts, Counts
1.2 09:15 – 09:30 (07:15 – 07:30 UTC) – Peter Thomassen, deSEC/SSE: Analysis of DNSSEC Risk
1.3 09:30 – 09:50 (07:30 – 07:50 UTC) – Leo Liang & Singer Wang, CIRA: KSK Rock and Roll
1.4 09:50 – 10:00 (07:50 – 08:00 UTC) Q&A
DNSSEC and Security Workshop – Part 2 10:30 – 12:00 CEST (08:30 – 10:00 UTC)
2.0 Moderator: Steve Crocker
2.1 Steve Crocker, Edgemoor Research Institute: Panel Overview
2.2 Johan Stenstam, Swedish Internet Foundation: Generalised Notifications: Infrastructure for Robust Multi-Signer Operations
2.3 Peter Thomassen, deSEC/SSE: DS Automation Report
2.4 Steve Crocker, Russ Housley, Peter Thomassen: Documenting and Managing Algorithm Lifecycles
2.5 Steve DeJong, UltraDNS-Vercara: DNS Provider Coordination of Multi-Signer and DNSSEC Automation
2.6 Eric Osterweil, George Mason University: Monitoring and Evaluating ENS through the INSO
2.7 Warren Kumari, Google: DNSSEC - is the juice still worth the squeeze?
DNSSEC and Security Workshop – Part 3 13:30 – 15:30 CEST (11:30 – 13:30 UTC)
3. Moderator: Jacques Latour
3.1 13:30 – 14:00 (11:30 – 12:00 UTC) – Peter Thomassen, deSEC/SSE, Ed Lewis, ICANN: Loosening the algorithm requirements
3.2 14:00 – 14:15 (12:00 – 12:15 UTC) – James Mitchell, ICANN: Root Zone Algorithm Rollover Study
3.3 14:15 – 14:35 (12:15 – 12:35 UTC) – Musa Stephen Honolue: Using RPKI to implement MANRS Action 4
3.4 14:35 – 14:50 (12:35 – 12:50 UTC) – Pratyush Dikshit, CISPA:
3.5 14:50 – 15:05 (12:50 – 13:05 UTC) – Lixia Zhang, UCLA: A Comparative Study of DNS and Blockchain-based Naming System
3.6 15:05 – 15:25 (13:05 – 13:25 UTC) – David Jeffers, ARIN's DNS Services, DNSSEC Practices etc...
15:25 – 15:30 (13:25 – 13:30 UTC) – Q&A

DNSSEC, DANE & RPKI Deployments Around the World

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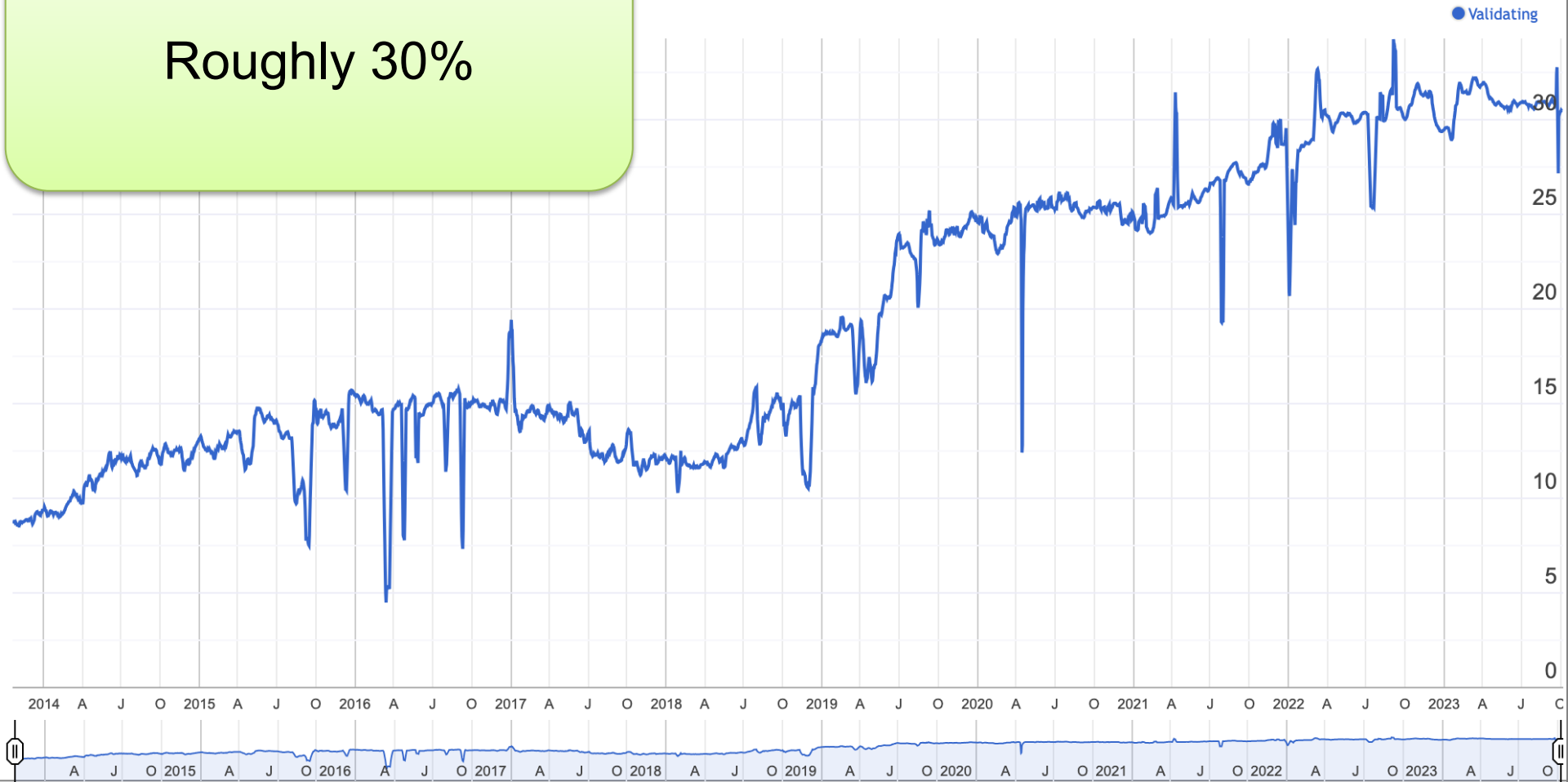
Jacques Latour, CIRA

25 October 2023



DNSSEC Validation

Roughly 30%

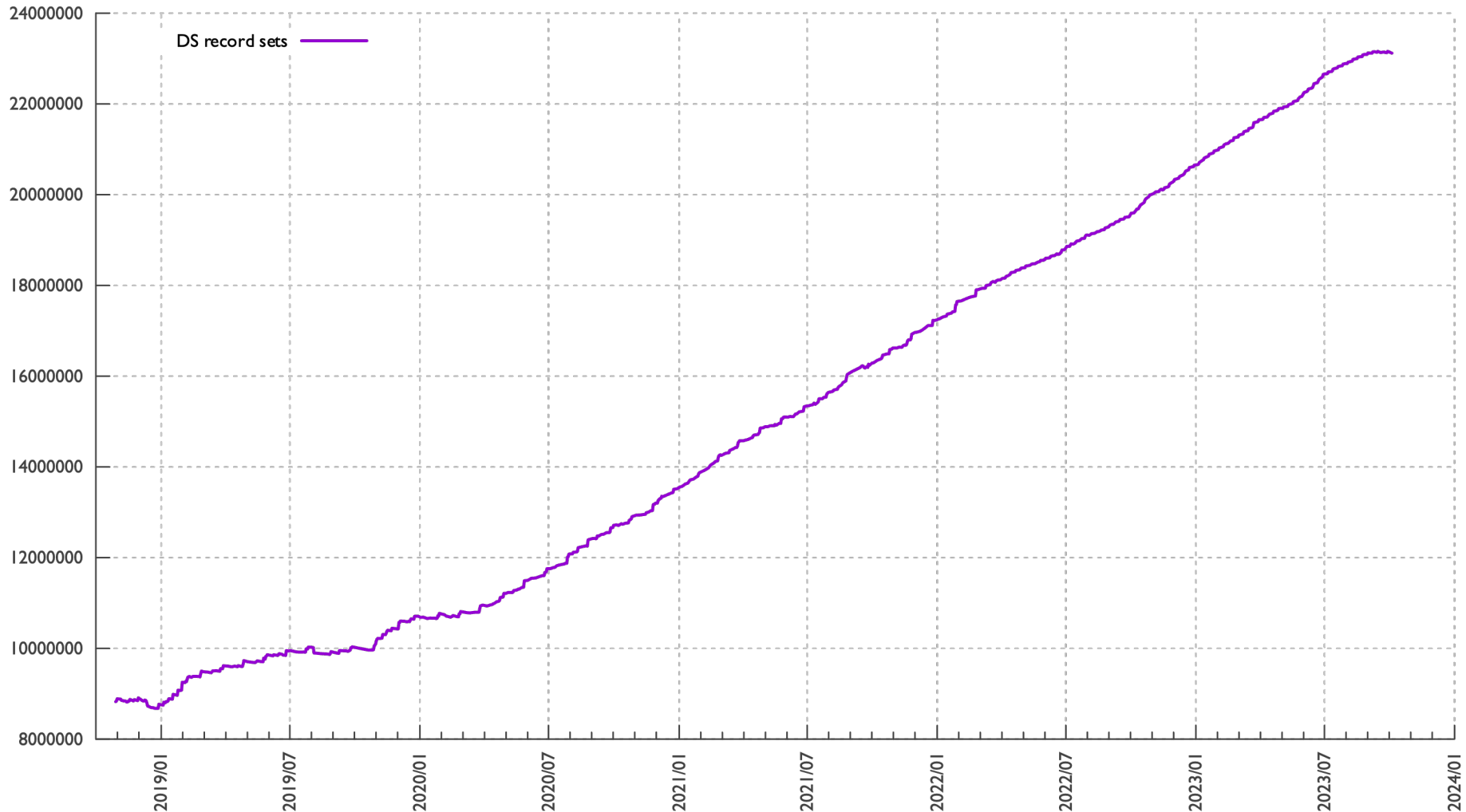


<https://stats.labs.apnic.net/dnssec/XA?hc=XA&hx=0&hv=1&hp=0&hr=1&w=7>

Code	SubRegion	DNSSEC Validates	Samples	Weight	Weighted Samples
QS	Polynesia, Oceania	87.21%	782	1.52	1,189
QR	Micronesia, Oceania	78.96%	713	1.09	778
QQ	Melanesia, Oceania	78.37%	2,427	2.73	6,622
XT	Southern Asia, Asia	56.83%	2,848,911	0.73	2,083,600
QO	Western Europe, Europe	55.89%	319,827	1.46	468,321
XR	Central Asia, Asia	48.28%	75,101	1.62	121,581
XK	Southern Africa, Africa	47.48%	39,378	2.78	109,472
XV	Western Asia, Asia	44.00%	459,656	1.29	591,248
XP	South America, Americas	39.70%	1,093,174	0.81	881,010
QP	Australia and New Zealand, Oceania	38.94%	63,858	1.21	77,499
XW	Eastern Europe, Europe	36.79%	261,849	2.37	621,470
QM	Northern Europe, Europe	34.59%	216,728	1.3	281,957
XI	Middle Africa, Africa	32.14%	45,159	1.81	81,916
XQ	Northern America, Americas	32.01%	977,473	0.83	814,698
XJ	Northern Africa, Africa	30.59%	273,371	1.36	372,364
XH	Eastern Africa, Africa	28.73%	118,693	2.38	282,324
XN	Caribbean, Americas	27.48%	68,735	0.95	65,265
XU	South-Eastern Asia, Asia	24.44%	1,149,492	0.86	985,370
XL	Western Africa, Africa	22.27%	270,357	1.28	345,169
QN	Southern Europe, Europe	21.47%	297,288	1.05	312,742
XO	Central America, Americas	16.01%	269,872	1.17	315,654
XS	Eastern Asia, Asia	2.03%	2,768,361	1.01	2,800,699

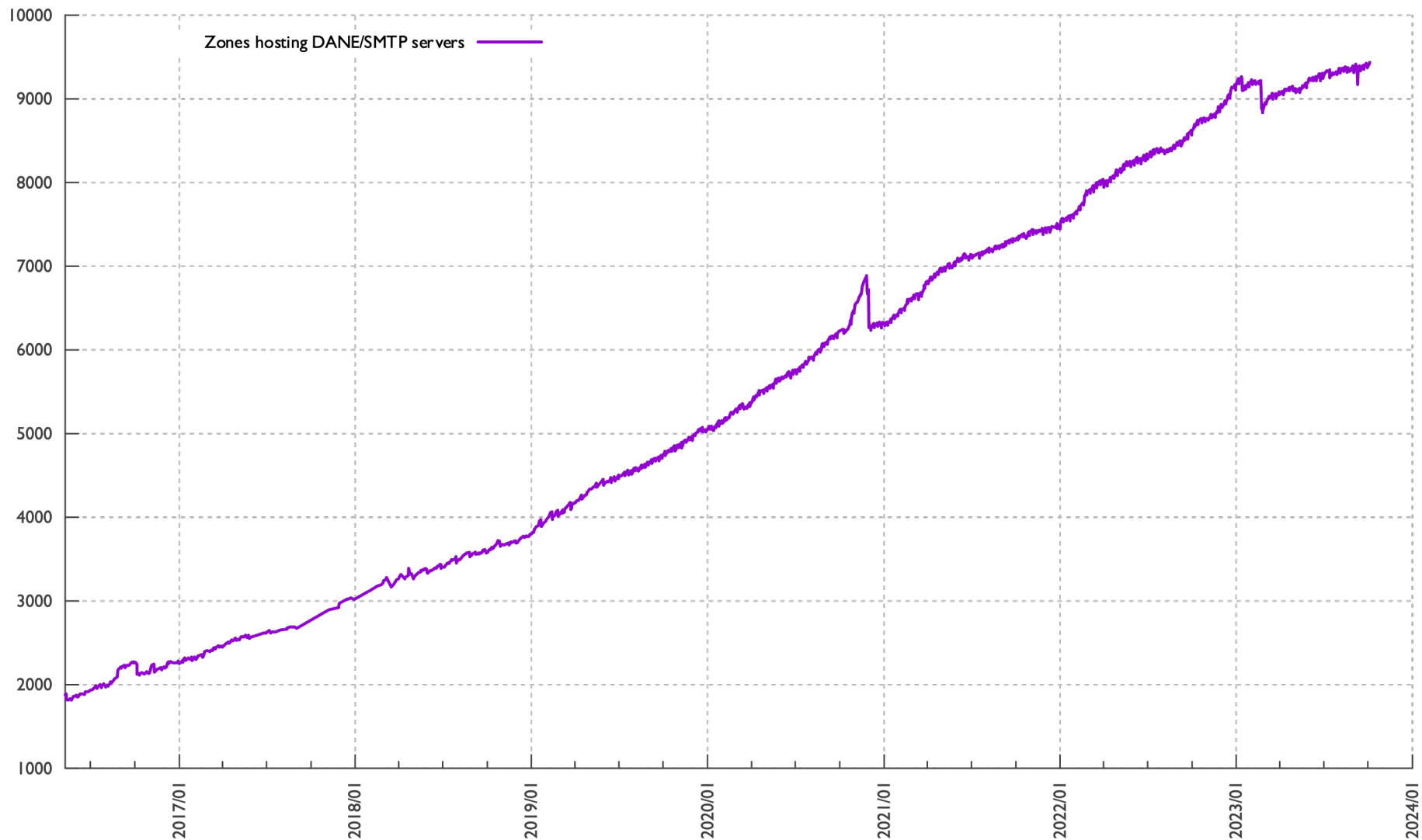
<https://stats.labs.apnic.net/dnssec/XA?hc=XA&hx=0&hv=1&hp=1&hr=1&w=7&p=0>

Observed DS Record Count Growth



<https://stats.dnssec-tools.org/>

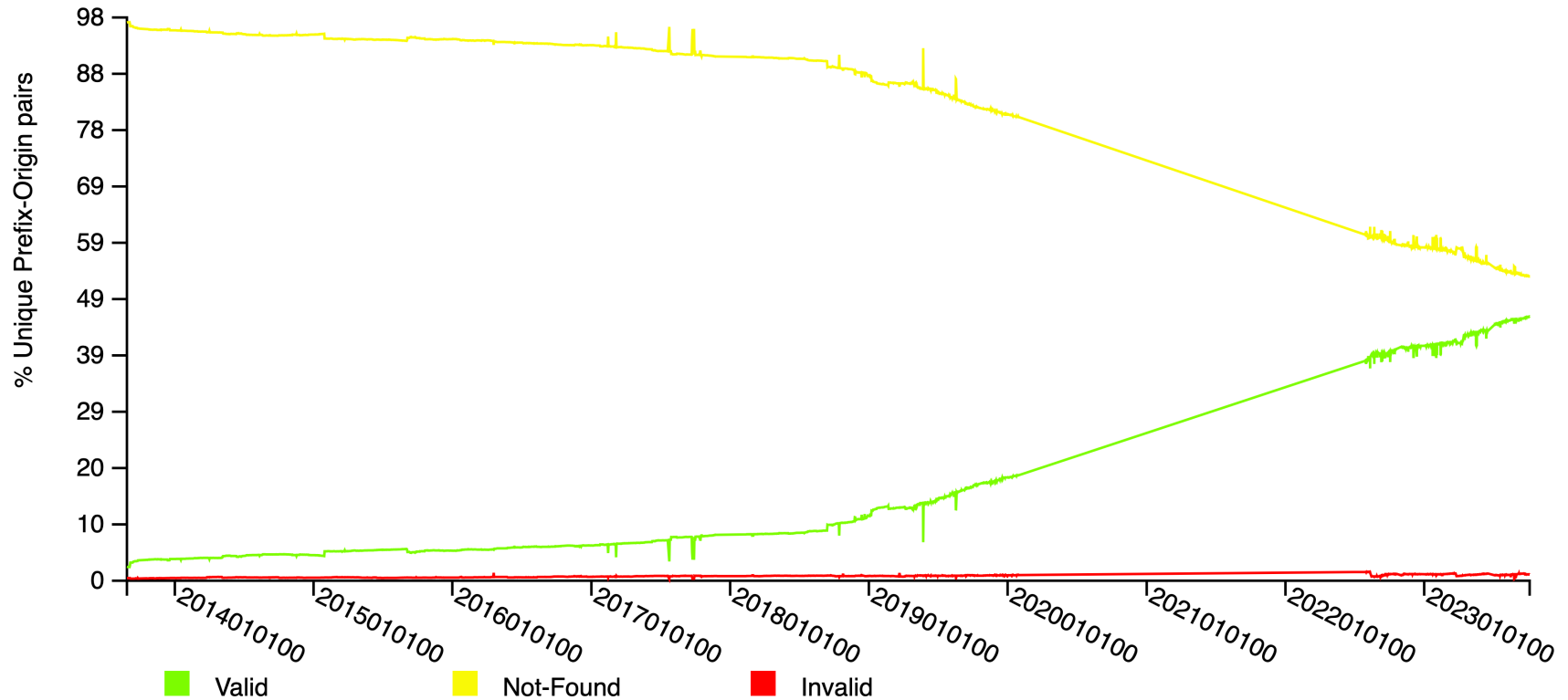
Domains with signed MX and DANE records



<https://stats.dnssec-tools.org/>

RPKI Global IPv4 Prefixes

RPKI-ROV History of Unique Prefix-Origin Pairs (IPv4)



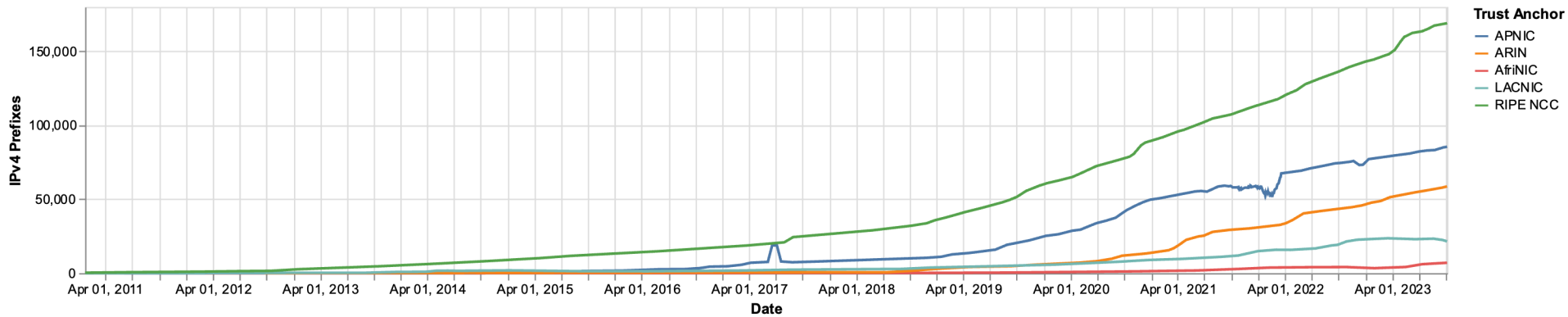
NIST RPKI Monitor: RPKI-ROV Analysis

Protocol: IPv4

RIR: All

<https://rpki-monitor.antd.nist.gov/>

RPKI Covered IPv4 Prefixes by RIR



<https://certification-stats.ripe.net/>

Questions & Answers

DNSSEC Resources

www.dnssec-tools.org

stats.dnssec-tools.org

stats.labs.apnic.net/dnssec

RPKI Resources

rpki-monitor.antd.nist.gov

certification-stats.ripe.net

www.securerouting.net

Thank You