



DNSSEC and Security Workshop  
Wednesday, 27 October 2021

# DNSSEC and Security Virtual Workshop

ICANN72

Dan York, Internet Society

27 October 2021



# Program Committee

- Mark Elkins, DNS/ZACR
- Jean Robert Hountomey, AfricaCERT
- Jacques Latour, CIRA
- Russ Mundy, Parsons
- Ondřej Filip, CZNIC
- Yoshiro Yoneya, JPRS
- Fred Baker, ISC
- Dan York, Internet Society
- Andrew McConachie and Kathy Schnitt, ICANN

# 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**



# DNSSEC, DANE & RPKI Deployments Around the World

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# DNSSEC Validation

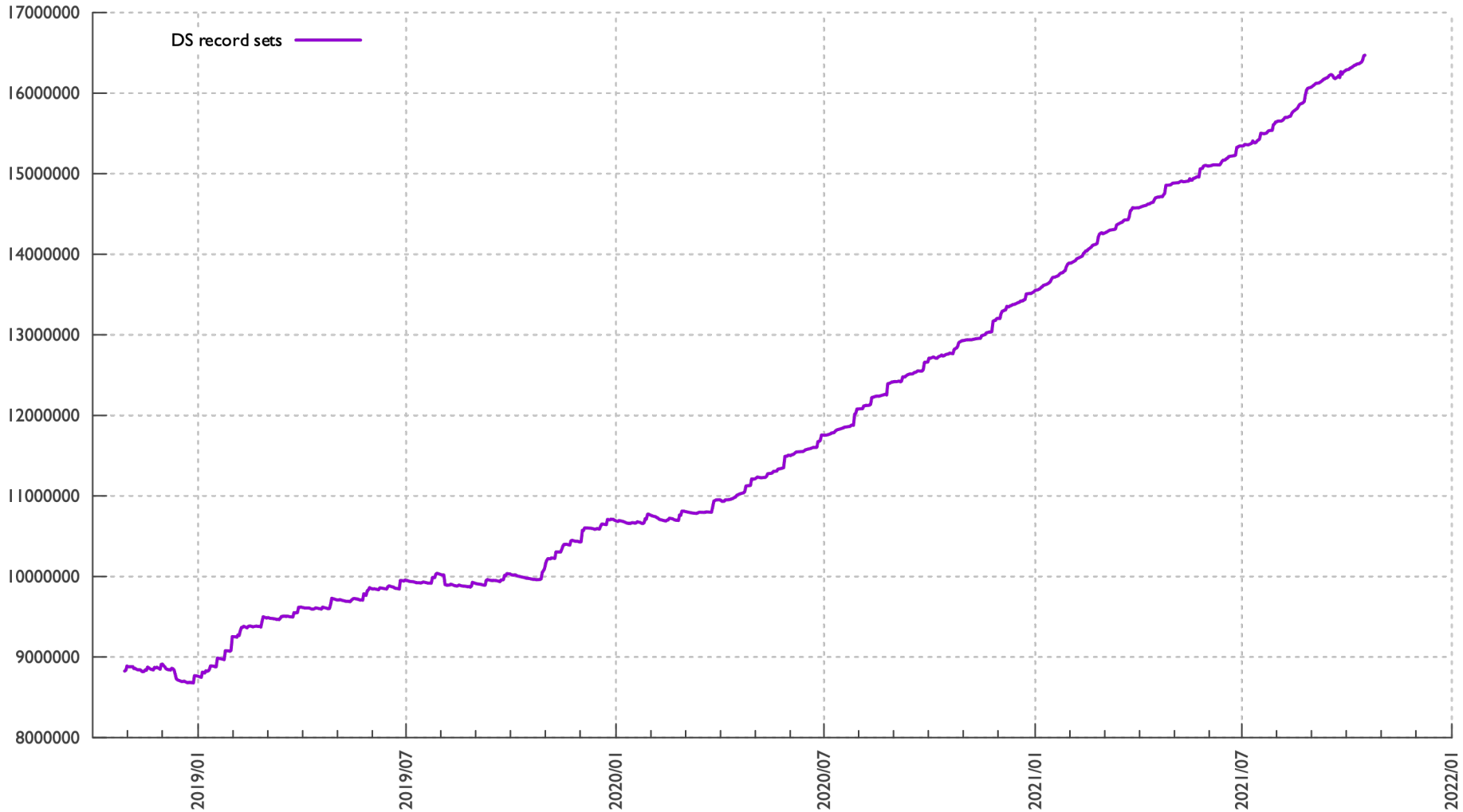


<https://stats.labs.apnic.net/dnssec/XA?hc=XA&hx=0&hv=1&hp=0&hr=1&w=7>

Code	SubRegion	DNSSEC Validates	Samples	Weight	Weighted Samples
QR	Micronesia, Oceania	66.88%	1,084	0.92	997
XT	Southern Asia, Asia	50.46%	2,374,405	0.69	1,645,907
QO	Western Europe, Europe	48.97%	165,394	2.18	360,556
QS	Polynesia, Oceania	48.24%	1,534	0.58	885
QQ	Melanesia, Oceania	45.73%	3,814	1.29	4,909
XV	Western Asia, Asia	41.74%	710,756	0.65	461,395
QM	Northern Europe, Europe	41.33%	169,390	1.27	215,943
XQ	Northern America, Americas	37.96%	681,932	0.89	608,720
XW	Eastern Europe, Europe	35.41%	353,307	1.4	493,697
XK	Southern Africa, Africa	34.74%	40,066	2.1	84,332
XP	South America, Americas	34.70%	358,184	1.93	690,386
QP	Australia and New Zealand, Oceania	31.90%	27,031	2.12	57,206
XL	Western Africa, Africa	23.50%	342,246	0.75	257,491
XH	Eastern Africa, Africa	22.59%	200,588	1.07	215,448
XR	Central Asia, Asia	22.33%	24,215	3.85	93,204
XJ	Northern Africa, Africa	21.15%	1,009,578	0.28	281,080
XN	Caribbean, Americas	19.71%	127,973	0.4	50,740
QN	Southern Europe, Europe	17.99%	418,359	0.59	246,792
XI	Middle Africa, Africa	15.65%	47,137	1.3	61,402
XU	South-Eastern Asia, Asia	15.14%	1,387,278	0.56	781,043
XO	Central America, Americas	11.44%	224,192	1.12	251,696
XS	Eastern Asia, Asia	3.72%	394,904	5.57	2,199,334

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

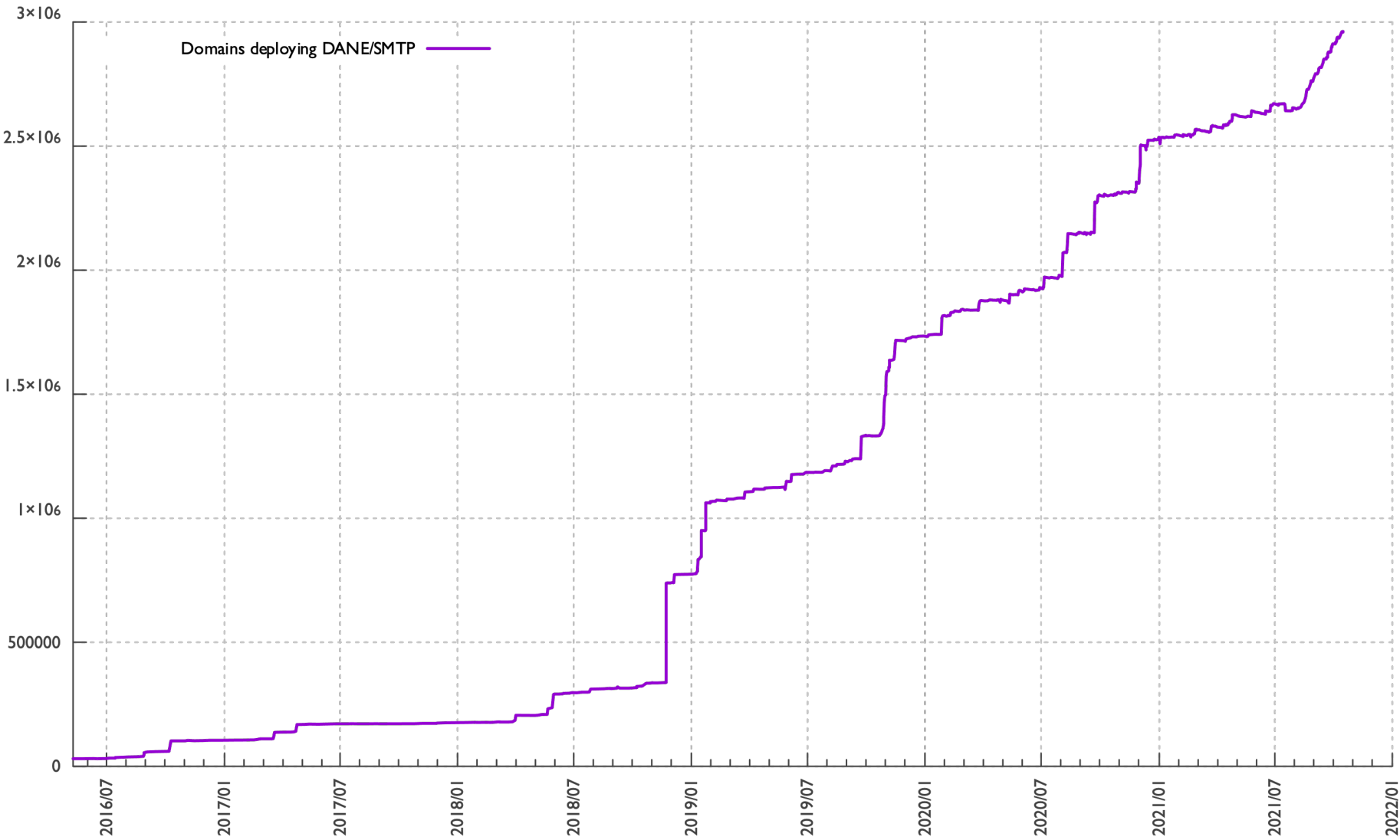
# Observed DS Record Count Growth



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



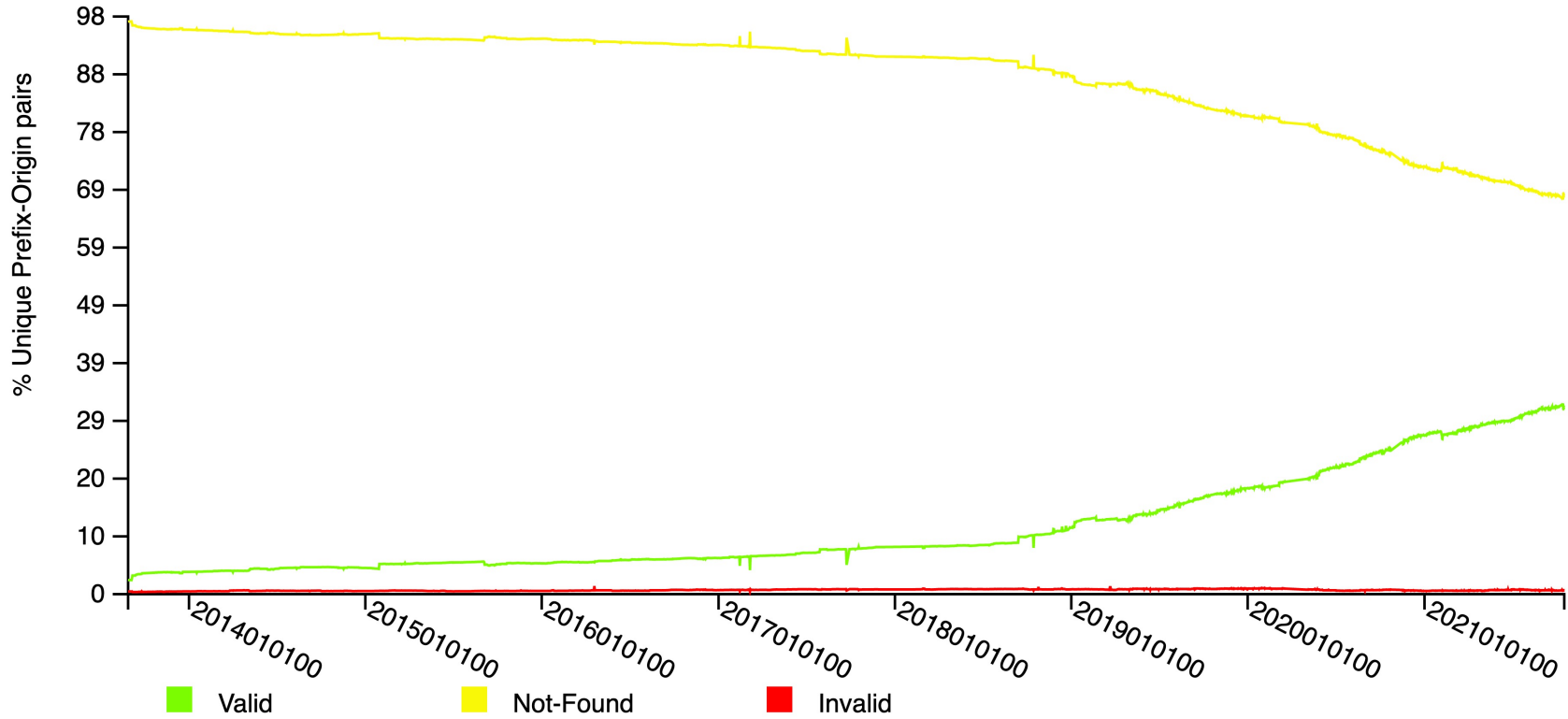
# Domains with signed MX and DANE records



<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

Number of ROAs



AfriNIC



APNIC



ARIN

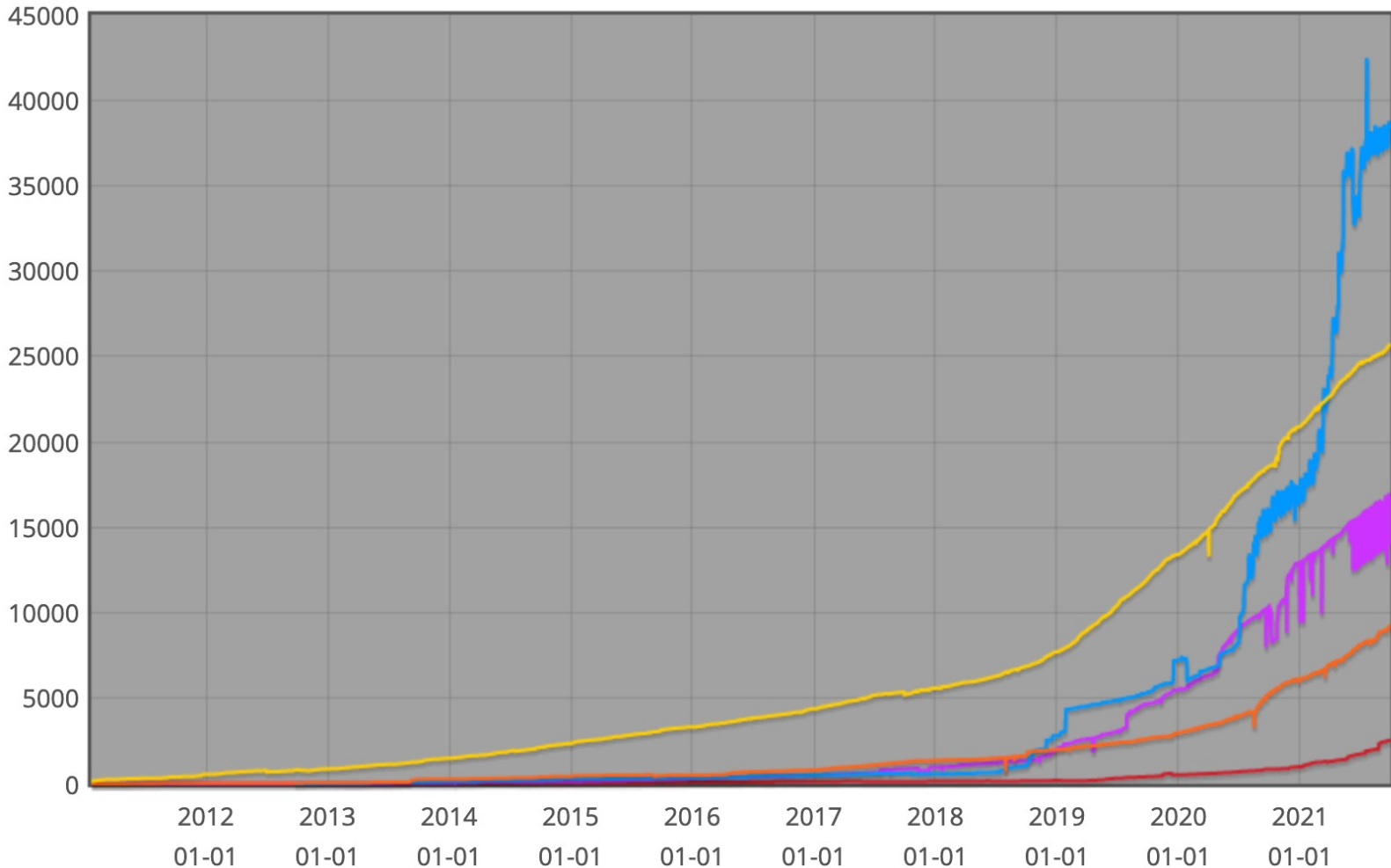


LACNIC



RIPE NCC

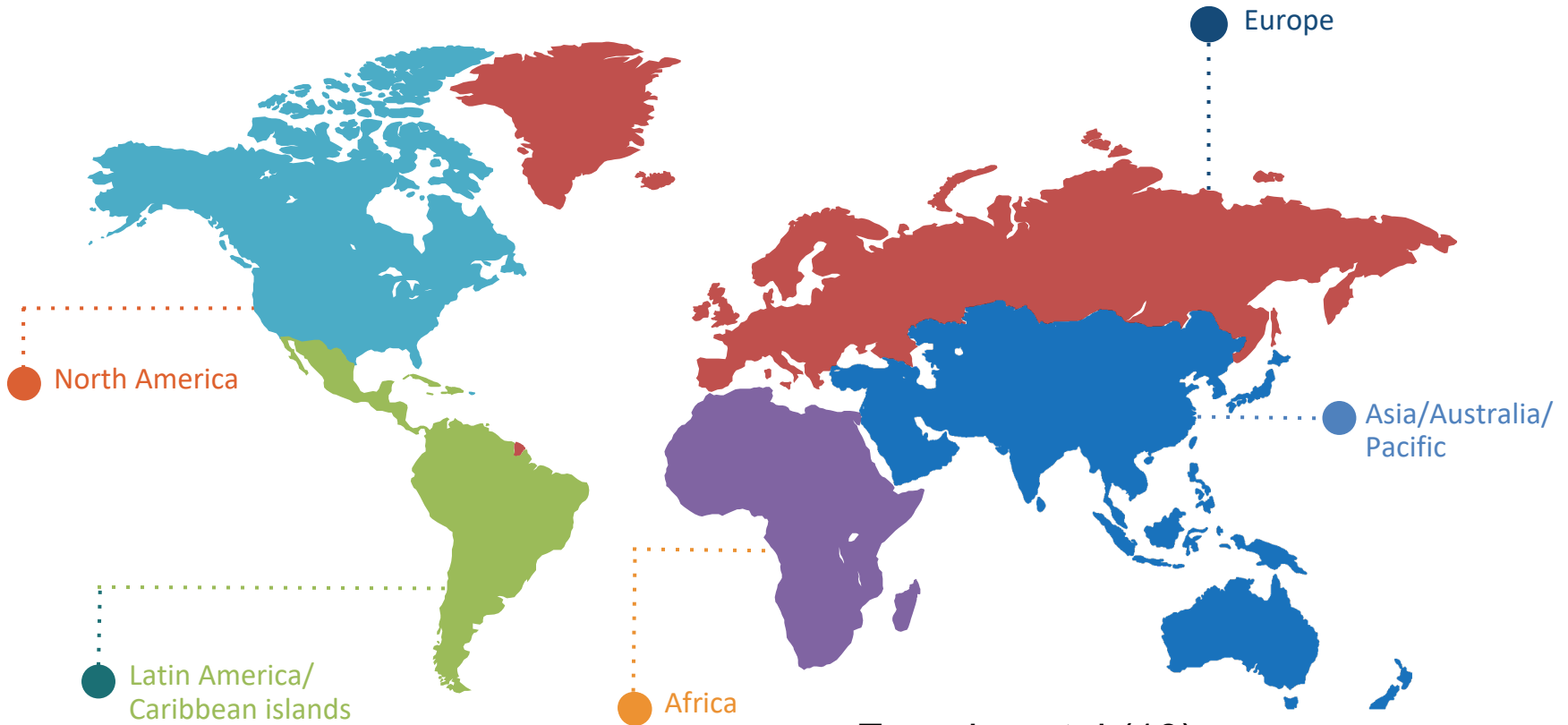
This graph shows the total number of valid Route Origin Authorisation (ROA) objects created by the holders of a certificate



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

# ccTLD DNSSEC Deployment Status

# ccTLD DNSSEC Status 2021-10-25



Experimental (10)  
Announced (4)  
Partial (1)  
DS in Root (57)  
Operational (78)  
DS Automation (6)

# Questions & Answers

## DNSSEC Resources

[www.dnssec-tools.org](http://www.dnssec-tools.org)

[stats.dnssec-tools.org](http://stats.dnssec-tools.org)

[www.dnssec-deployment.org](http://www.dnssec-deployment.org)

[stats.labs.apnic.net/dnssec](http://stats.labs.apnic.net/dnssec)

## RPKI Resources

[rpki-monitor.antd.nist.gov](http://rpki-monitor.antd.nist.gov)

[certification-stats.ripe.net](http://certification-stats.ripe.net)

[www.securerouting.net](http://www.securerouting.net)

# Thank You