DNSSEC and Security Virtual Workshop

ICANN 67

Dan York, Internet Society

11 March 2020

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 and Security Workshop Program
ICANN67 Virtual Meeting
Wednesday, 11 March 2020 - 0900 to 1200

Key to Level of Difficulty:
NOVICE = New to DNSSEC and want to learn more
INTERMEDIATE = Familiar with DNSSEC and how it works, but not of all concepts
EXPERT = Expert understanding of DNSSEC and extensive experience in deployment/implementation

DNSSEC Workshop – Zoom: https://icann.zoom.us/j/860229088
0900 – 0920 (1400 - 1420 UTC) – Presentation: Dan York, *DNSSEC Workshop Introduction, Program, Deployment Around the World – Counts, Counts, Counts*
0920 – 1015 – Panel Discussion: KSK Rollover
Moderator: **Jacques Latour, CIRA**
0920 - 0950 – Wes Hardaker, ISI and Duane Wessels, Verisign: Roll, roll, roll the root
0950 - 1005 – Kim Davies, ICANN: KSK Rollover Update
1005 - 1015 – Q&A
1015 - 1030 – Coffee Break (we will pause the recording but folks will not have to disconnect for the break)
DNSSEC Workshop –Zoom: https://icann.zoom.us/j/860229088
1030 – 1110 (1530 – 1610 UTC) Panel Discussion: DOH (40 minutes)
Moderator: **Fred Baker, ISC**
1030 - 1040 – Vittorio Bertola, Open-xchange: The DOH resolver recovery program
1040 - 1050 – Suzanne Woolf, PIR and Barry Leiba: Update on the SSAC Advisory DOH/DOT–
1050 - 1100 – Genshen Ye, Gong Yiming,
1100 - 1110 – Q&A
1110 - 1150 (1610 – 1650 UTC) Panel Discussion: DNSSEC Provisioning with 3rd party DNS Providers (40 minutes)
Moderator: **Steve Crocker**
1110 - 1120 – Steve Crocker will outline the problems and the space of possible solutions
1120 - 1130 – Registry: James Galvin, Afilias; Erwin Lansing, DK; and Gavin Brown, CentralNic for SK
1130 – 1140 – Registrar: Brian Dickson, GoDaddy; Jothan Frakes, PLISK; and Ólafur Guðmundsson, Cloudflare
1140 – 1150 – DNS Provider: Ólafur Guðmundsson, Cloudflare
1150 – 1205 – Q&A
1205 – 1215 (1705 – 1715 UTC) Workshop Review

DNSSEC, DANE & RPKI Deployments Around the World

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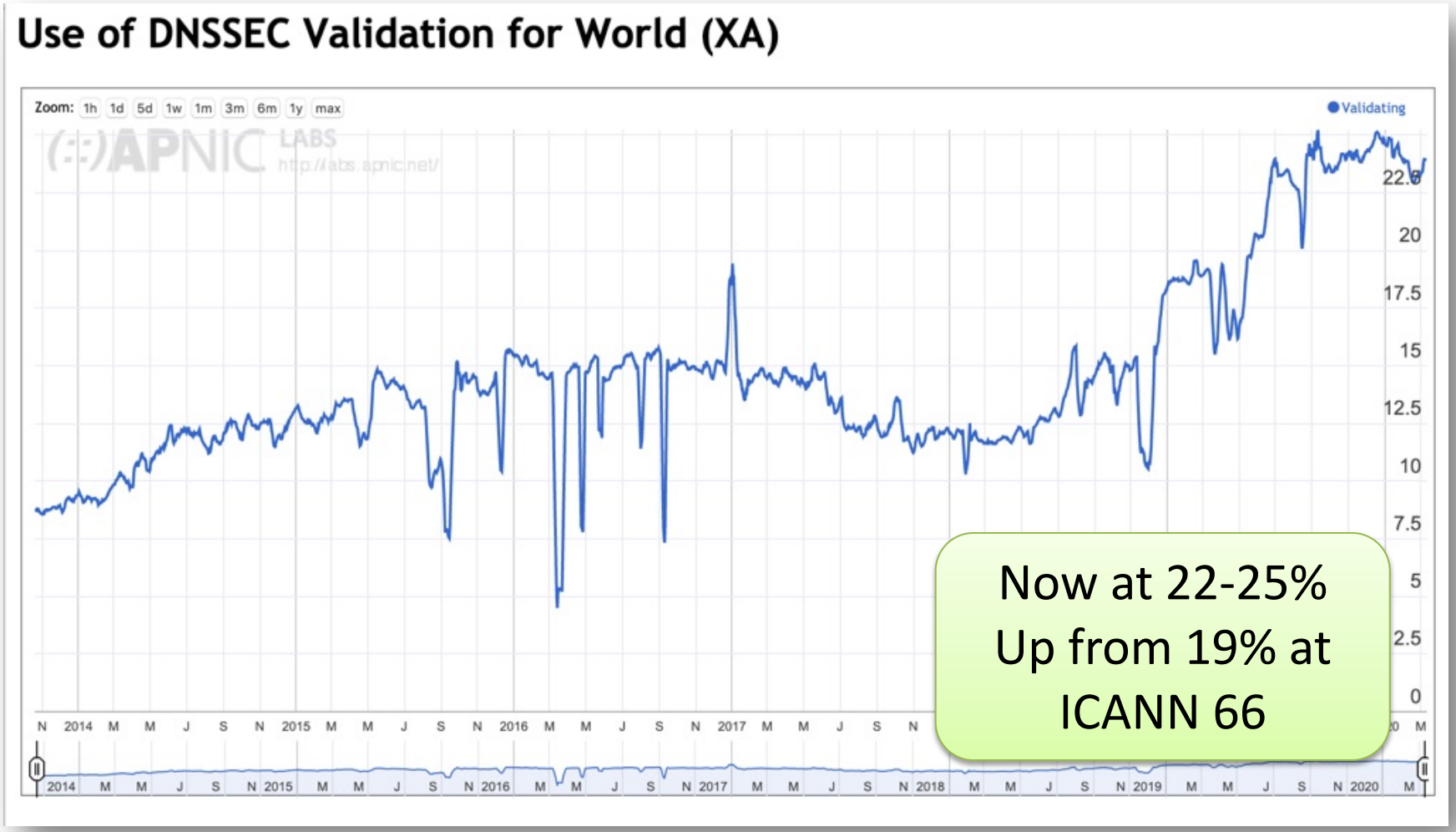
DNSSEC Validation

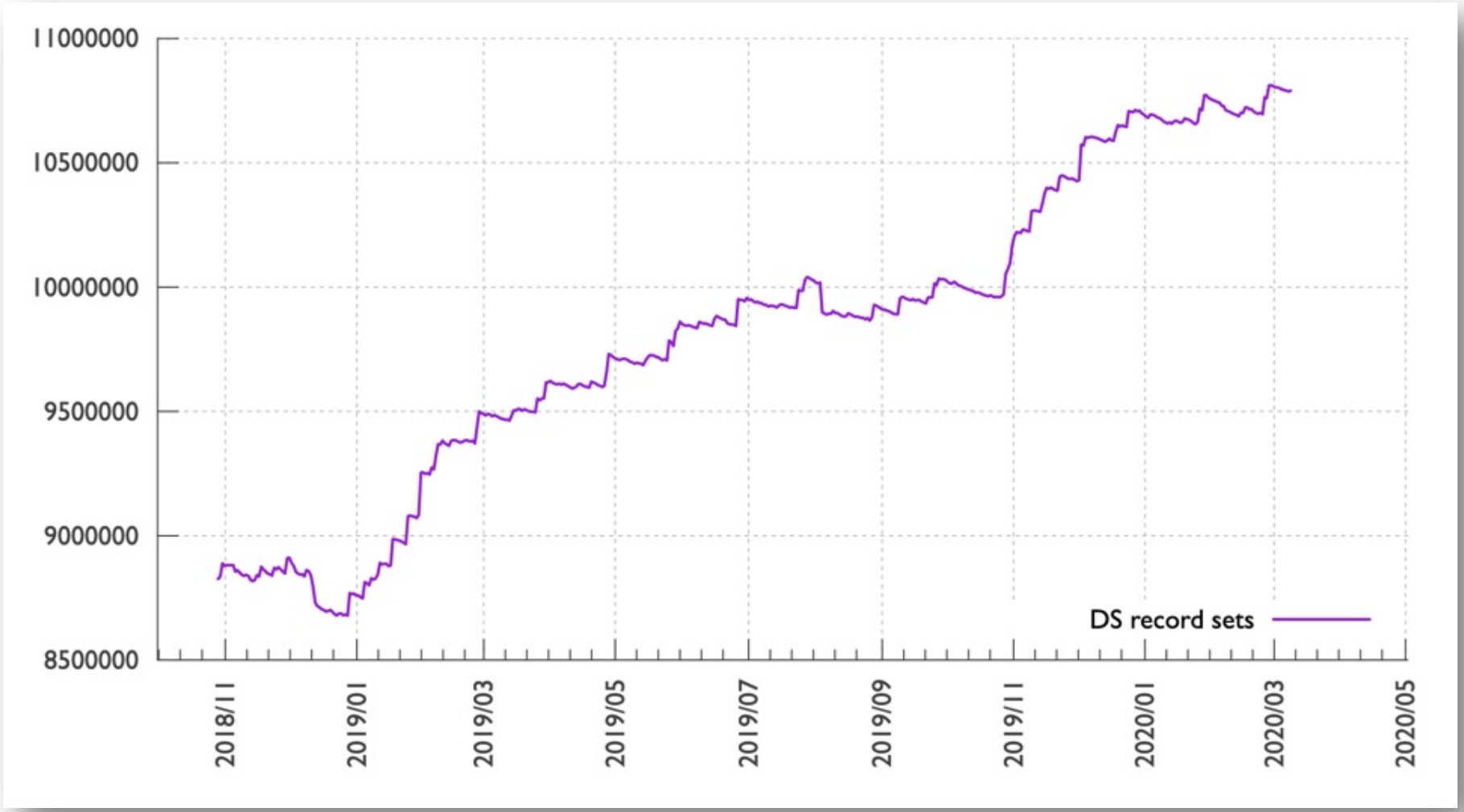


https://stats.labs.apnic.net/dnssec/XA?hc=XA&hx=0&hv=1&hp=0&hr=1&w=7

Code	SubRegion	DNSSEC Validates
QR	Micronesia, Oceania	62.68%
QS	Polynesia, Oceania	56.38%
XT	Southern Asia, Asia	47.18%
XV	Western Asia, Asia	46.98%
XK	Southern Africa, Africa	46.08%
QQ	Melanesia, Oceania	45.41%
QO	Western Europe, Europe	42.84%
XR	Central Asia, Asia	40.23%
QM	Northern Europe, Europe	33.31%
XP	South America, Americas	33.20%
QP	Australia and New Zealand, Oceania	28.66%
XN	Caribbean, Americas	22.65%
XW	Eastern Europe, Europe	22.57%
XQ	Northern America, Americas	21.85%
XH	Eastern Africa, Africa	21.45%
XI	Middle Africa, Africa	19.62%
XL	Western Africa, Africa	18.53%
XJ	Northern Africa, Africa	18.01%
QN	Southern Europe, Europe	17.27%
XU	South-Eastern Asia, Asia	14.58%
XO	Central America, Americas	9.54%
XS	Eastern Asia, Asia	3.01%

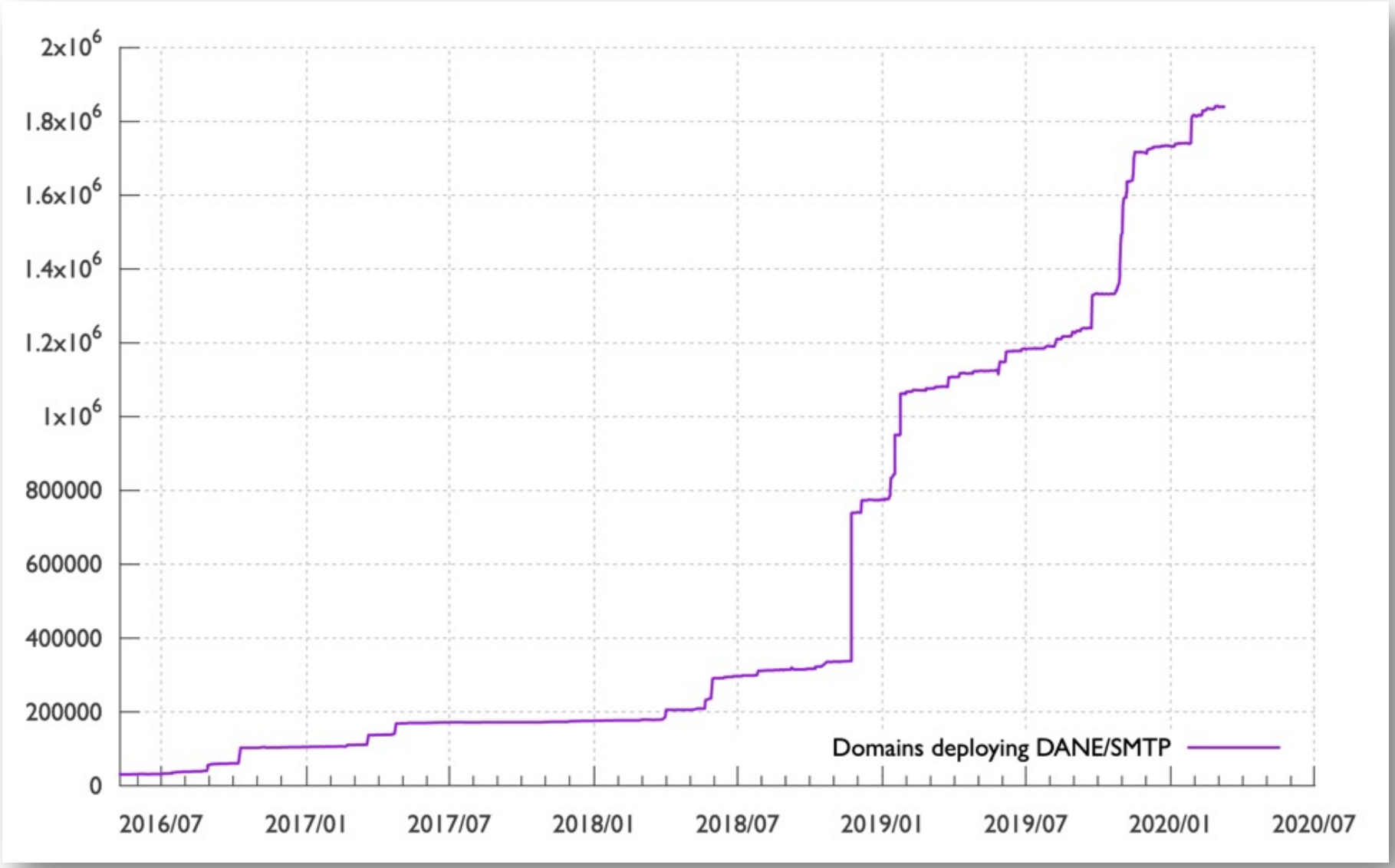
https://stats.labs.apnic.net/dnssec/XA?hc=XA&hx=0&hv=1&hp=1&hr=1&w=7&p=0

Observed DS Record Count Growth



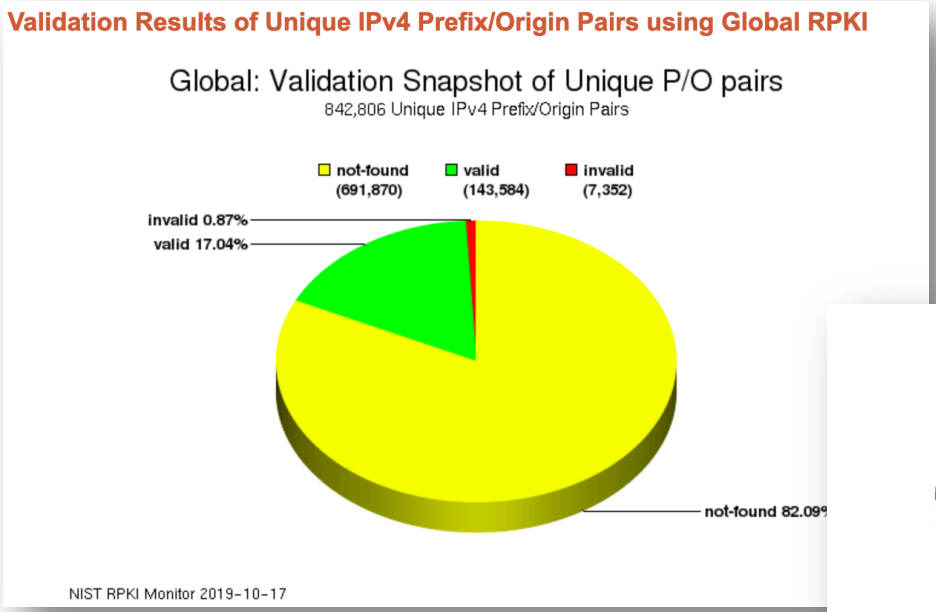
http://stats.dnssec-tools.org/#dnssec

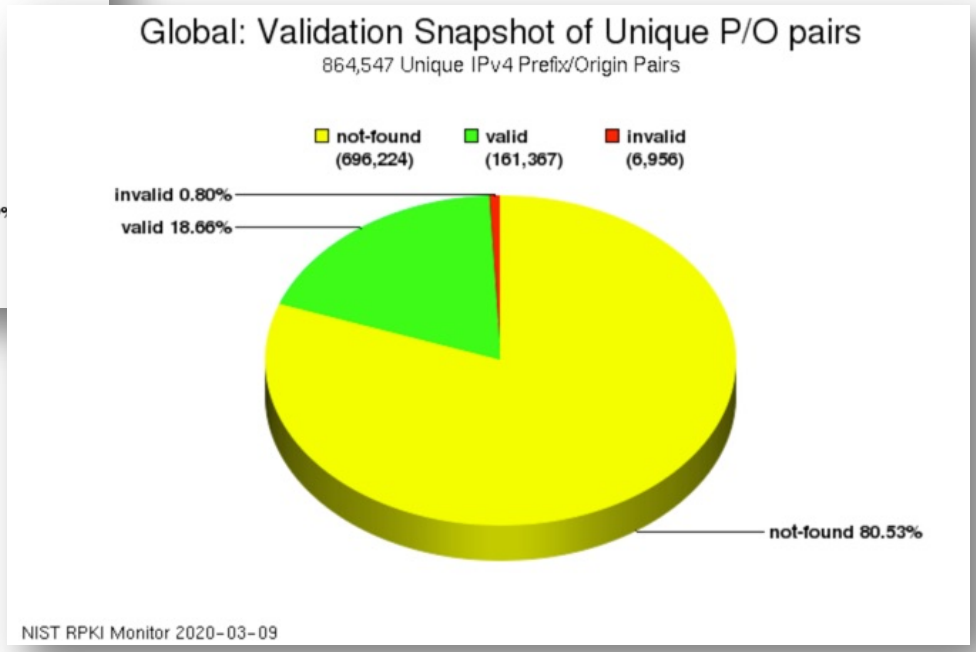
Domains with signed MX and DANE records



stats.dnssec-tools.org

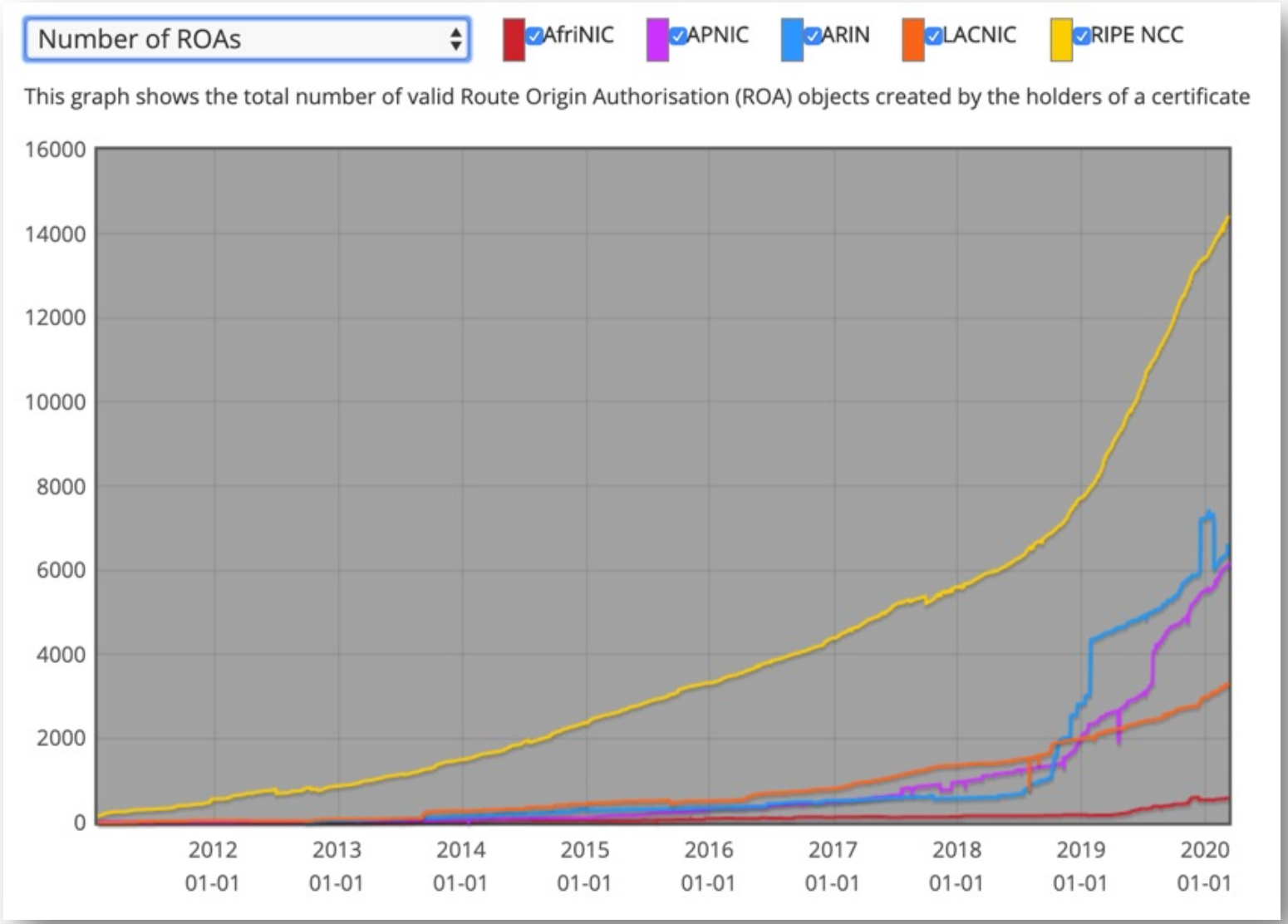
RPKI Global IPv4 Prefixes





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

RPKI Covered IPv4 Prefixes by RIR



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

ccTLD DNSSEC Deployment Status

Stages of Deployment

Experimental – Internal experiments

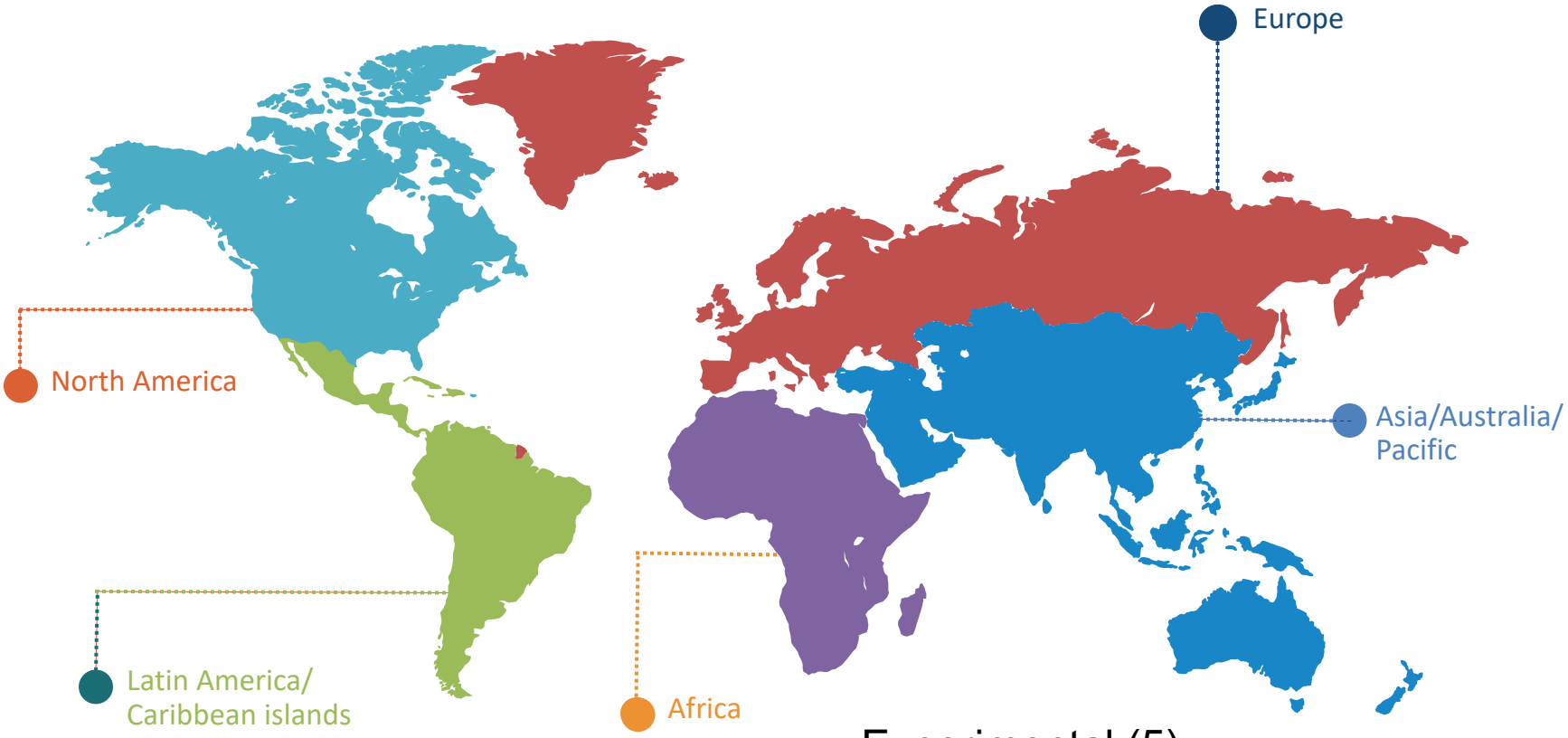
Announced – Public commitment to deploy

Partial – Zone is signed but not in operation

DS in Root – DS record in root zone

Operational – Accepting signed delegations

ccTLD DNSSEC Status 2020-03-09



Experimental (5)
Announced (4)
Partial (3)
DS in Root (50)
Operational (86)

Questions & Answers

DNSSEC Resources

- www.internetsociety.org/deploy360/
- www.internetsociety.org/ose/
- www.dnssec-tools.org
- www.dnssec-deployment.org
- stats.labs.apnic.net/dnssec

RPKI Resources

- rpki-monitor.antd.nist.gov
- certification-stats.ripe.net
- www.securerouting.net

Thank You