KINDNS
An Initiative to Promote DNS Operational Best Practices
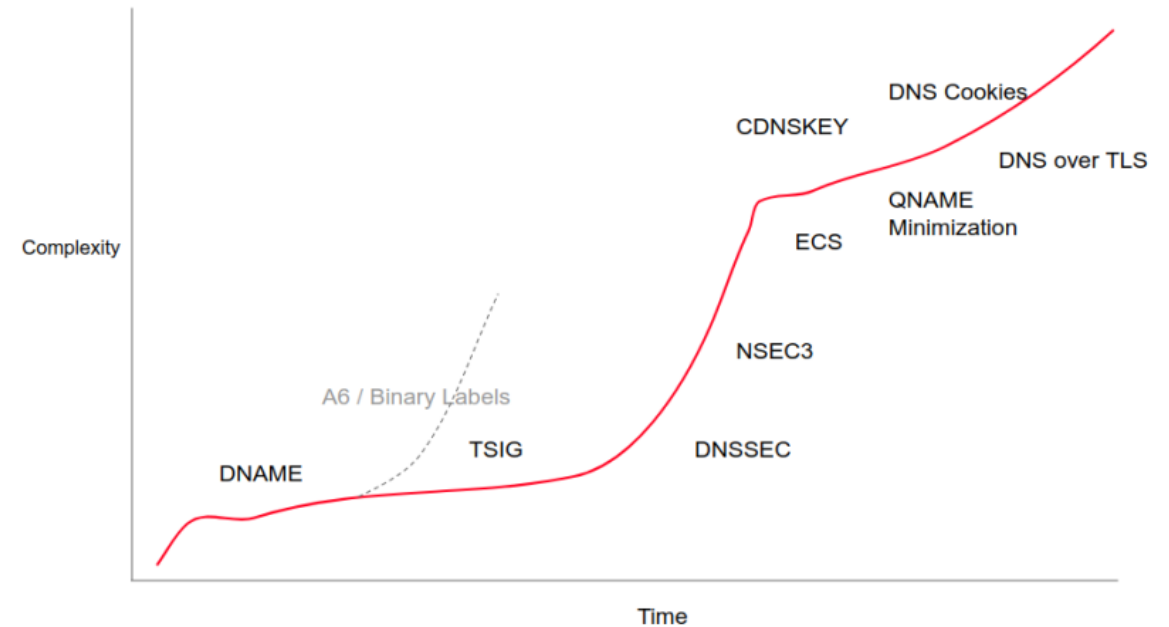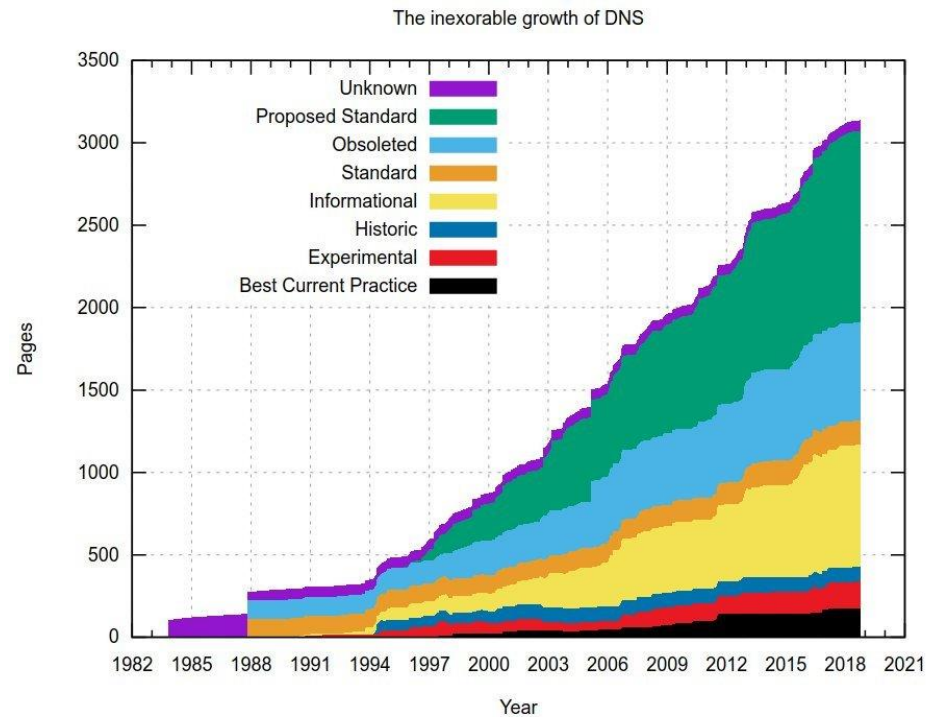
December 2025

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The DNS Camel

- DNS is now described by at least 200 RFCs (More than 2000 pages)

> *"Soon, only 20 people will completely understand the massive complexity of the DNS" – Bert Hubert of Power DNS at #ietf101 (in 20218)*
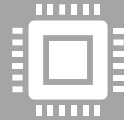

The inexorable growth of DNS

KINDNS

The DNS glues the Internet together

Operators scratching their heads

… DNS developers too

and any of us try to teach and help operators to be good citizens and safely ride the Camel too.

… the idea of KINDNS came from that observation

What Is It?

Knowledge-sharing and **I**nstantiating **N**orms for **D**NS
(Domain Name System) and **N**aming **S**ecurity - **KINDNS**

A simple framework that can help a wide variety of DNS operators, from small to large, to follow both the evolution of the DNS protocol and the best practices that the industry identifies for better security and more effective DNS operations.

*..... is pronounced "**kindness**"*

KINDNS

The Four Components
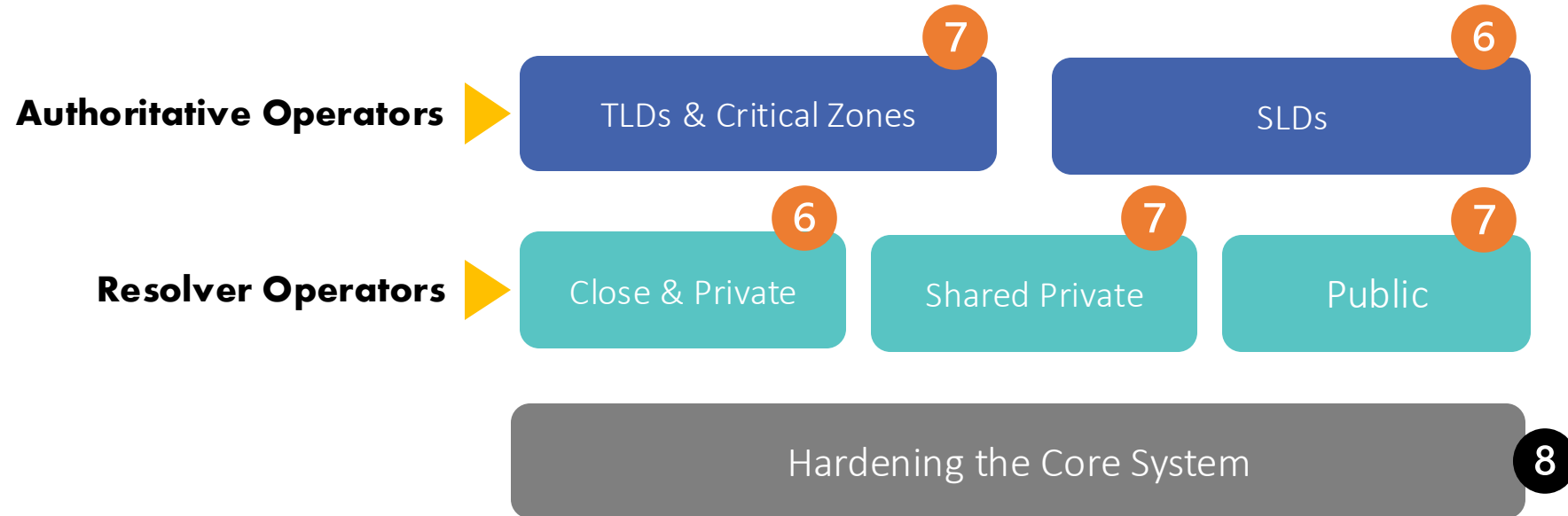

THE OPERATORS CATEGORIES

THE GUIDEBOOK

THE SELF-ASSESSMENT TOOL & ITS REPORT

THE ENROLLMENT AS SUPPORTER

compliance and commitment to share the good will

KINDNS

Targeted Operators

Authoritative Operators ▶

| TLDs & Critical Zones ⑦ | | SLDs ⑥ |

Resolver Operators ▶

| Close & Private ⑥ | Shared Private ⑦ | Public ⑦ |

Hardening the Core System ⑧

- Each category has **6-8 practices** that we encourage operators to implement & **a detailed guidebook** on why and how to implement them. *See www.kindns.org, for more details*

- By joining KINDNS, DNS operators are voluntarily committing to adhere to these identified practices and act as "goodwill ambassadors" within the community.

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Self Assessment

Participation/Enrollment

High uptake for Self-assessment

2621	**40%**	**12:15 Minutes**
of 2656 responses	Completion Rate	Duration

6516	3404	1062	304
Views	**Starts**	**Partial responses**	**Unfinished responses**
Number of times your questionnaire has been opened by someone	Number of times someone clicked the start button of the questionnaire	Number of responses saved with save and continue, but not finished yet	Number of times someone exited questionnaire without a complete response

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Why are you taking this self-assessment?

Bar chart ∨

- To know where I stand with KIN… — 72% (1861)
- To join KINDNS — 30% (770)
- To use the result to convince … — 44% (1130)
- Other — 10% (245)

Responses (0, 250, 500, 750, 1000, 1250, 1500, 1750)

Part 1 Core DNS Operation Practices Assessment – Which component(s) of the DNS do you run?

Bar chart ∨

- Authoritative Servers — 27% (274)
- Recursive Servers — 23% (233)
- Both — 45% (455)
- Managed by a Third Party — 5% (50)

Responses (0, 100, 200, 300, 400, 500)

What Type of Authoritative Zone Do You Manage? – Type(s) of authoritative zone that you manage

Donut chart ∨

- Both - 27%
- TLDs - 29%
- SLDs - 44%

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What type of Recursive Resolver do you run? – Type of recursive resolvers you run

Bar chart ⌄

- Private Recursive Resolvers: 56% (675)
- Shared Private Recursive Reso...: 25% (296)
- Public Recursive Resolvers: 20% (236)

Responses
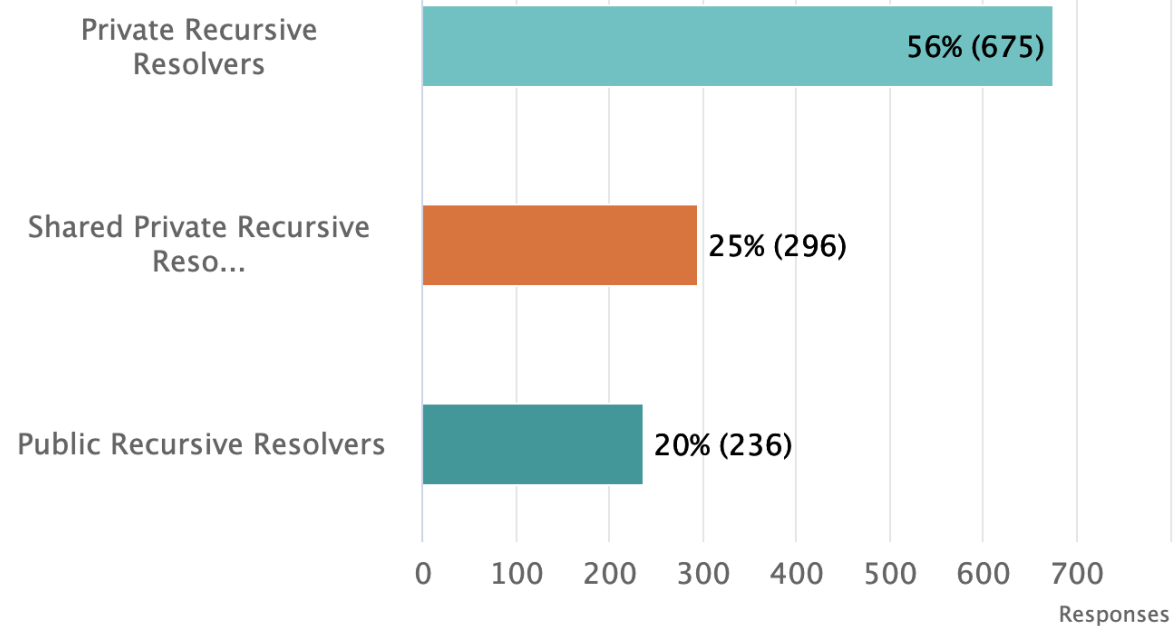
As a Private Recursive Resolver operator, I implement and adhere to the following practices:

Bar chart ⌄

- Practice 1: I have DNSSEC validi...: 66% (407)
- Practice 2: I use ACLs to rest...: 73% (453)
- Practice 3: I have QNAME minim...: 39% (244)
- Practice 4: My resolvers don't...: 67% (416)
- Practice 5: I have at least on...: 70% (435)
- Practice 6: The infrastructure...: 73% (450)

Responses
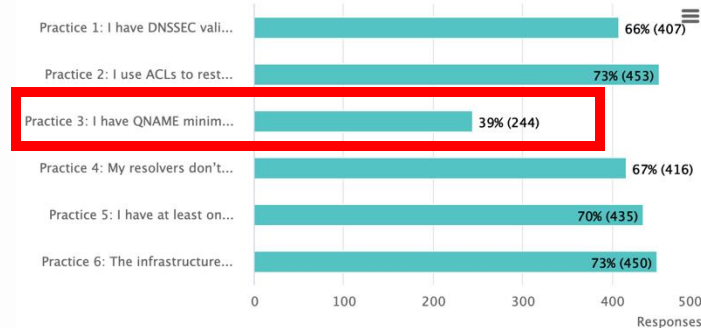
As a Shared Private Recursive Resolver operator, I implement or adhere to the following practices:

Bar chart ⌄

- Practice 1: I have DNSSEC vali...: 68% (187)
- Practice 2: I use ACLs to rest...: 82% (225)
- Practice 3: I have QNAME minim...: 44% (121)
- Practice 4: My resolvers don't...: 63% (173)
- Practice 5: My recursion servi...: 59% (162)
- Practice 6: The infrastructure...: 67% (186)
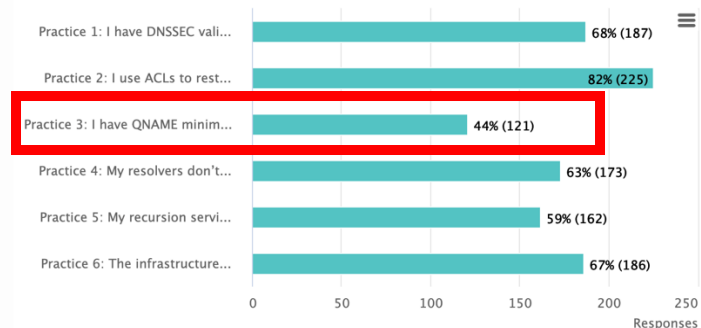
Responses

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As operator of a Public Recursive Resolver, I implement or adhere to the following practices :

Bar chart ∨

- Practice 1: I have DNSSEC vali... — 69% (139)
- Practice 2: I have QNAME minim... — 52% (106)
- Practice 3: I have DNS-over-TL... — 47% (94)
- Practice 4: My resolvers don't... — 66% (133)
- Practice 5: I only retain data... — 52% (106)
- Practice 6: My overall recursi... — 56% (114)
- Practice 7: My network infrast... — 62% (125)
- Practice 8: The infrastructure... — 68% (137)

Responses: 0, 25, 50, 75, 100, 125, 150

66% (407)
73% (453)
67% (416)
70% (435)
73% (450)

Bar chart ∨
400 500
Responses

68% (187)
82% (225)
63% (173)
59% (162)
67% (186)

Bar chart ∨
200 250
Responses

What type
resolvers y

Priv
Shared
Public R
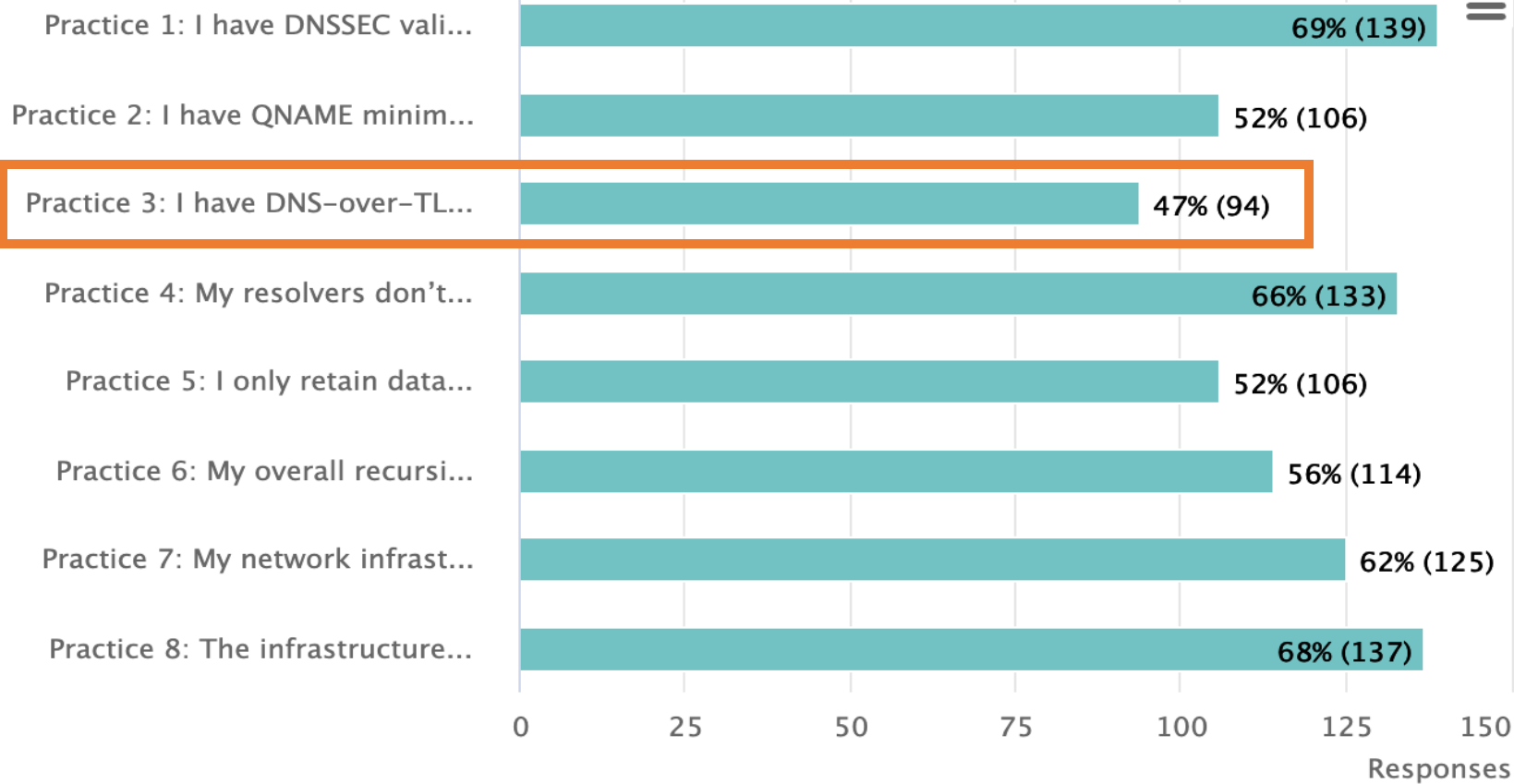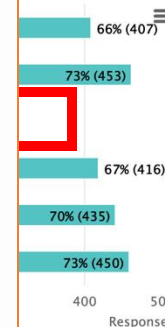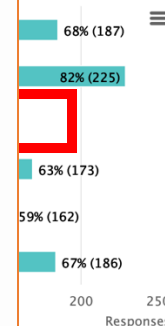
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Self-Assessment Ranking

Score: 31-40%
141
6%

Score: 21-30%
136
6%

Score: 11-20%
157
7%

Score: 41-50%
153
6%

Socore: 0-10%
988
42%

More than 50%
772
33%

Score: 71-80%
140
6%

Score: 80-100%
319
14%

Score: 61-70%
173
7%

Score: 51-60%
140
6%
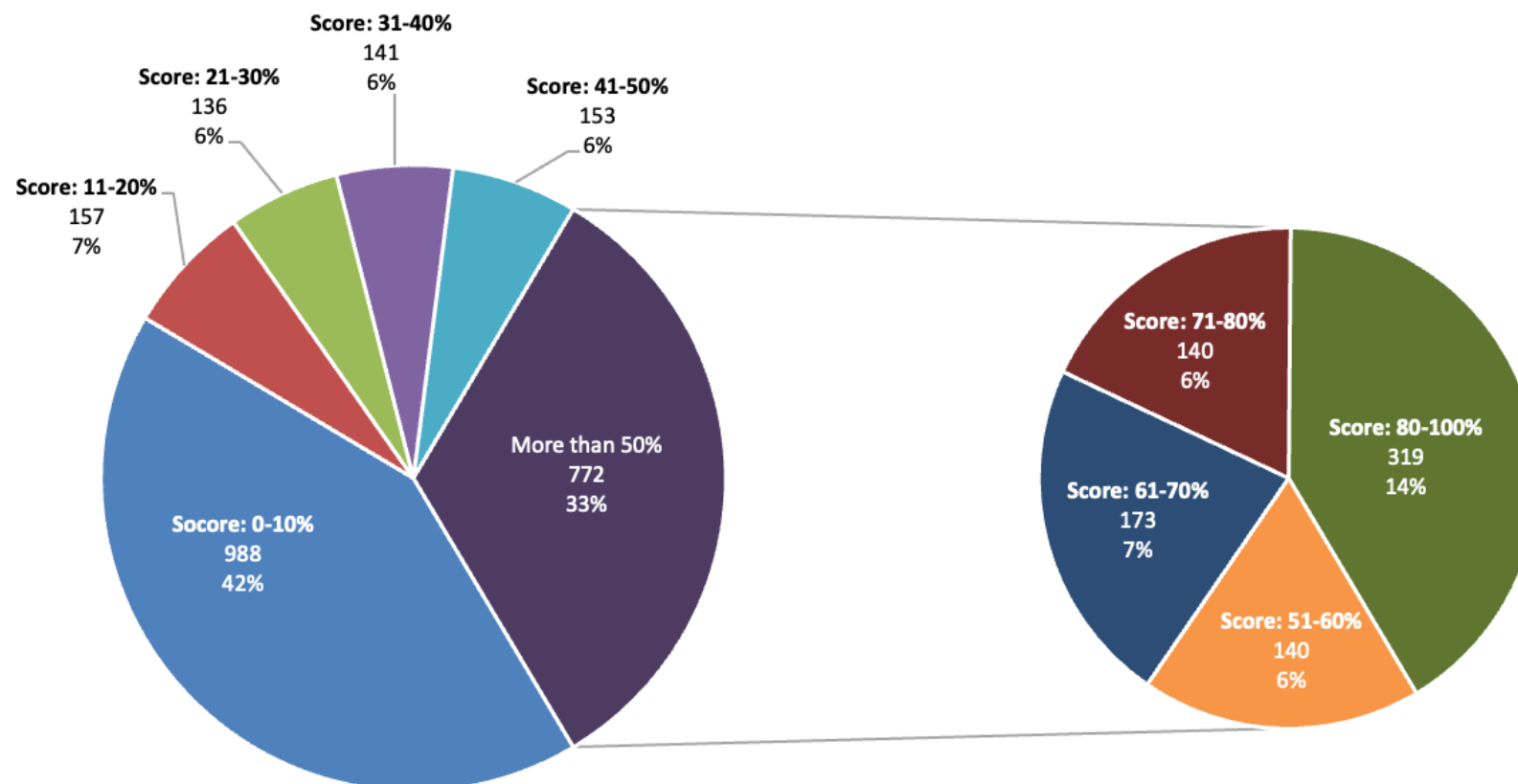
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KINDNS v.2 - Discussion Points

1. **Adding Response Rate Limiting (RRL)** to Authoritative Servers' practice
   - ccTLD and critical Zone Operators
   - Other SLDs too?

2. **Addressing 'Split' responsibilities** for Authoritative servers' operation:
   - Zone file content is controlled or hosted by a third party. i.e Root server operators and the root zone itself, or registrars hosting DNS for registrants.

3. **Access reliability:** Reachability over IPv6, RPKI for the prefix used for the DNS servers.

4. **Steering Committee and Community review team**:
   - Volunteers to help steer the evolution KINDNS as framework and coordinate the initiative.

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Outreach

⊙ **Success story**

- 60% of enrollment requests comes from LAC region
- **Success Story:** KINDNS heavily used as DNS security framework already in few countries.
- Volunteers from the community to help translate KINDNS
- Work underway with AFNIC to tailor Zonemaster to KINDNS Authoritative Server Operator's practices.

⊙ *What we are doing in every region*

- More than 20 distinct KINDNS events last year.
- Use KINDNS as the framework for DNS Ecosystem security practices engagement.
- Present KINDNS at technical events (ISPs, DNS Operators, …).
- **KINDNS Clinics:** 1:1 session with Operators
- Plan training around the implementation of KINDNS practices
- *Help keep the KINDNS community alive (Mailing list, soon to be launched Ambassador program, etc…)*

KINDNS Clinics

Do you manage a DNS infrastructure? Or do you have any questions or challenges related to implementing the KINDNS (Knowledge-sharing and Instantiation Norms for DNS and Naming Security) best practices?

If you replied yes, scan this QR code or follow the URL to schedule a private meeting with the KINDNS technical team during this ICANN meeting.

https://kindnsclinics.sched.com/

MORE ABOUT KINDNS (pronounced "kindness")   kindns.org

KINDNS Clinics at ICANN79

KINDNS

Current Focus

Community Engagement *(vertical sidebar label)*

- ◉ **Community engagement**
  - ○ Continue to encourage operators to get onboard to **contribute and support** the framework:
    - • *Direct 1:1 Engagements (KINDNS Clinics) to get more operators to join*
    - • *Continue workshops & webinars to raise awareness on KINDNS practices as part of our overall DNS ecosystem security awareness program.*
    - • DNSAthon around KINDNS practices
    - • Develop partnerships with programs such as MANRS and Pulse, internet.nl, etc …

- ◉ **Communication**
  - ○ A more active communication plan to further promote KINDNS
    - • Translate the web site and the self assessment form in other languages
    - • Publish a series of DNS best practices dedicated blogs
    - • Develop toolkits to help operators engage with internal decision-makers

KINDNS

Stay Informed and Contribute

Website	www.kindns.org
Twitter	https://twitter.com/4KINDNS
E-Mail	info@kindns.org
Mailing list	kindns-discuss@icann.org