KINDNS

An ICANN Initiative to Promote DNS Operational Best Practices

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The DNS has Evolved Over Three Decades

Since RFC882 (1983) the DNS protocol has significantly evolved.

- ◉ According to PowerDNS's "DNS Camel Viewer", there are:
  - ○ 297 RFCs relevant to DNS
  - ○ With 2,082 pages of text

- ◉ These evolutions include:
  - ○ Major additions (e.g., DNSSEC)
  - ○ All new RR types
  - ○ Privacy mechanisms (e.g., QTYPE minimization)
  - ○ . . . and a whole lot more

Challenges for DNS Operators

◉ The DNS has become complex, offering many choices and many implementations to suit myriad needs.

◉ Good engineers want to implement, and then operate, a fast and effective DNS for their users.

◉ But to do so requires knowing the entire protocol and all its formulations. It requires a *specialist*.

◉ Large operators have many full-time engineers on staff who specialize in DNS.

◉ But what about everyone else in the world? Especially smaller networks which do not have full-time DNS engineers?

Challenges for DNS Operators

How does a small ISP keep up with even new evolutions such as DoH, DoT, DoQ or DoHoT and their impact on their service . . .?

How does a medium-sized enterprise ensure it is following all elements in guidelines to properly lock down its DNS?

How does a community network know if they should implement DNSSEC validation and how it should securely manage its cryptography keys?

How does a Corporate IT manager set the minimum requirements for securing his domain names service even if provided by a third-party?

…

Knowledge-sharing and **I**nstantiating **N**orms for **D**NS and **N**aming **S**ecurity

The Name?

It plays a bit on the Mutually Agreed Norms for Routing Security initiative (MANRS ... pronounced "manners"), so, KINDNS pronounced "kindness"

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

Key components of the Current phase

- ⊙ Identify and document the most critical security norms for DNS operations (authoritative, recursive resolvers, and running software) – *Consultation and engagement with operational community*.

- ⊙ Communication, promotions, and an enrollment plan
  - ○ Developing a dedicated information portal with best practices and implementation guidelines. (kindns.org)
  - ○ Enroll DNS operators to lead by example

- ⊙ Identifying indicators that will help measure and assess the impact of the initiative.

- ⊙ Mapping best practices to ICANN DNS policy functions (Registry, Registrar, Registrant).

Categories covered

- *Hardening the Operation Environment*
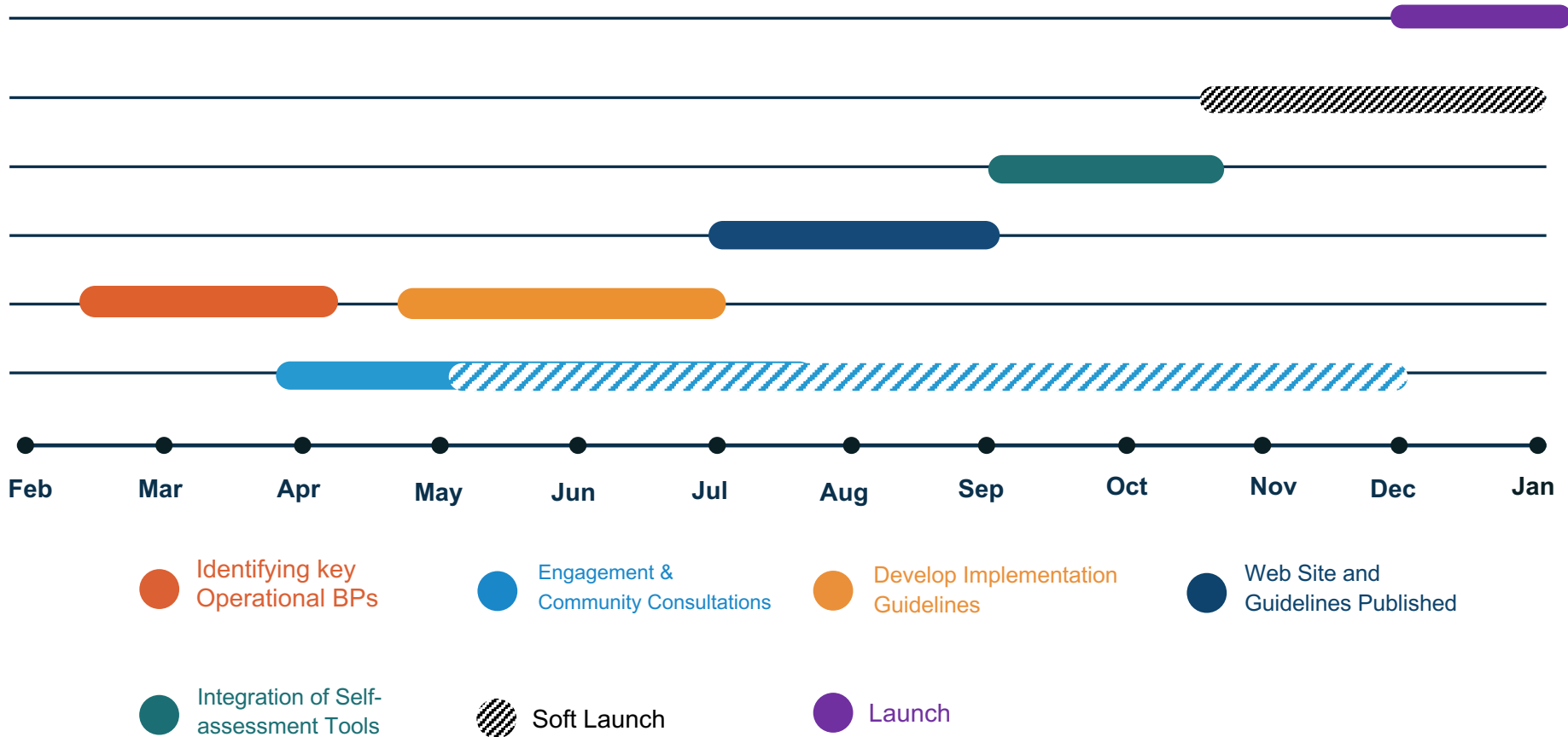 - *Service*
  - *System*
  - *Network*

- **Authoritative Servers**
  - **gTLDs** (Must, Should, May)
  - **ccTLDs** (Must, Should, May)
  - **STLDs** (Must, Should, May)

- **Recursive Resolvers**
  - **Close** (Must)
  - **Special case of Open Resolvers** (May)

- *Other considerations*
  - *DoT, DoH,*
  - *Anycast DNS,*
  - *…*

- Establishing Implementation Guidelines (How-Tos, Checklists, Configuration Processes, Examples)

Project Timeline

Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan

Legend:
- Identifying key Operational BPs
- Engagement & Community Consultations
- Develop Implementation Guidelines
- Web Site and Guidelines Published
- Integration of Self-assessment Tools
- Soft Launch
- Launch

We have just started identifying the key operational best practices to be the foundation of this initiative. We welcome input and contribution from the community throughout the process on the mailing list.

How to Stay Informed and Contribute

- **The KINDNS discussion mailing list**

  kindns-discuss@icann.org

- We have setup a temporary **Wiki page** where will share some preliminary documents until the formal website is developed and launched

  https://community.icann.org/display/KINDNS

- **Technical Consultant**: Tim Wicinski

Engage with ICANN

Thank You and Questions

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