Global DNS Operations
ISC's Participation

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Introduction

- DNS: ISC provides software, is global operator
- Software
  - BIND 9, used by 80% of name servers
  - BIND 10, next generation of BIND
- Operations
  - F-root
  - SNS@ISC
  - DLV
  - SIE

Root Server Overview

- Top of DNS hierarchy
- ICANN creates root zone, root servers publish
- 13 servers (limited by DNS), 12 organizations
- Co-ordination via rootops
- Advise ICANN via RSSAC
- Most support IPv6 now
- Most are anycast now

F-root Details

- F is ISC's root name server
  - IPv6 and anycast
- Anycast allows same IP from multiple locations
- F-root has global & local nodes
- Global nodes: SFBA now, AMS soon
- Local nodes: 46 locations, on all continents[1]

[1] Except Antarctica

SNS@ISC

- Secondary Name Service
- Provides benefits of anycast for **any** domain
- Competes with commercial offerings
- Always IPv6
- DNSSEC support in several ways
- Public Benefit (SNS-PB), Commercial (SNS-COM)

SNS-PB vs. SNS-COM

- SNS-PB
  - Free service for nonprofit/public benefit orgs
  - More than 60 TLDs, hundreds of other domains
  - Runs on ISC infrastructure
  - "Best effort"
- SNS-COM
  - Commercial service – anyone can buy
  - Runs on infrastructure with commercial partners
  - SLA

DLV

- DNSSEC Lookaside Validation
    - Try "normal" DNSSEC first
    - If no trust anchor found, check DLV registry
- An interim DNSSEC deployment mechanism
    - Allows use of DNSSEC with many "islands of trust"
    - Eases resolver configuration headaches
    - Eases deployment of DNSSEC signed zones
- Lasts until enough key zones are signed
    - The root, TLDs
    - Sufficient "connectivity" in the DNSSEC chain

ISC's DLV Status

- DLV is now a production-quality service
- Published on SNS@ISC
- Tools for authoritative DNS operators
  - Web-based interface
  - E-mail notifications of problems
- Tracks Trust Anchor Repositories (TARs)
- Future improvements:
  - RFC 5011 (automatic trust anchor updates)
  - Integration into BIND 9.7

SIE

- ISC SIE - Security Information Exchange
- Collecting data from sensors around the Internet
  - Passive DNS, SPAM, URL searches, sinkhole data, etc...
- Making data available in real time to security researchers
- Benefits
  - Common infrastructure and tools
  - Common legal and privacy framework
  - Network effect from combining different data sources
  - Reducing duplication of effort - more collaboration

Thank you!

Main Site:

https://www.isc.org

Direct Links:

https://www.isc.org/community/f-root

https://www.isc.org/solutions/sns

https://www.isc.org/solutions/dlv

https://www.isc.org/solutions/sie