IANA and its meaning for TLDs

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Overview

- What is IANA
- What IANA does
- IANA and TLDs
- Statistics
- Future Directions
- Summary
What is IANA?

- Internet Assigned Numbers Authority
  - Established around 1972 as the place where protocol numbers were assigned
    - Never really existed in a legal sense
    - Funding was part of a (D)ARPA research project on high speed computing until the mid- to late-90’s

- A centralized coordination point for Internet resources
  - Works as long as everyone agrees it works
    - Anyone/anything can be the IANA as long as you convince everyone you are the IANA
  - IANA has a long history
What IANA does

- Allocates/Maintains registries for:
  - Top level domains
    - ccTLDs, gTLDs, sTLDs, other TLDs
    - Coordination of root server system
  - Some second level domains
    - .ARPA, .INT
  - Internet Protocol addresses
    - IPv4 and IPv6
  - Autonomous System Numbers
  - IETF Protocol Parameters
    - Ports, protocol specific registries
  - Private Enterprise Numbers (PENs)
- We also review Internet Drafts for IANA considerations
IANA and TLDs

- Most visible service IANA provides relates to Top Level Domain support
  - (Re-)Delegation of Top Level Domains
    - Additions, changes, and deletions of name servers and "glue"
    - Additions, modifications, and deletions of registration ("whois") data
  - Surprisingly non-trivial
    - "The more elaborate our means of communication, the less we communicate." —Joseph Priestley
    - Authorization failure, email bouncing, contacts vanishing, technical failure, unresolved dependencies, double-checking authenticity ...
TLD Name Server Update

- More than 30 steps
- 8 decision points
- Red boxes are where most delays occur
- Waiting on responses from requestors
- And this doesn’t include VeriSign’s root zone modification process
IANA is an operational body
- IANA does not define policies, it merely implements them
- Policies are defined in external organizations, e.g.:
  - “What is a top level country code domain?”
    ⇒ ISO 3166
  - “Who should technically manage a TLD?”
    ⇒ the TLD’s administrative contact
  - “Who should be the TLD’s admin contact?”
    ⇒ the TLD’s sponsoring organization
Relationships (cont’d)

- What about top level definitions?
  - What are the TLDs? ⇒ ?
  - Who are the sponsoring organizations? ⇒ ?
  - What are the external organizations? ⇒ ?
  - IDNs in the root? ⇒ ?

- ICANN to the rescue
  - ICANN constituencies help define policies
  - ICANN regional staff and community help IANA in understanding the situation “on the ground”
    - Critical in re-delegation
  - ICANN provides a relatively neutral meeting ground in which various parties can try to come to agreement
    - “ICANN annoys everyone equally” —Anonymous
Root Zone – processing time in days

Max: 103 days (Feb)
Min: 8 days (Oct)
Trend decreasing to externally constrained minimum

AKA Nov, ‘05
AKA Feb, ‘05
Root Zone: where time is spent
Future Directions

- **Internal Optimizations**
  - Reviews of processes and procedures
    - Streamlining where possible (and allowed)
  - More automation in most processes
    - Leveraging eIANA
  - Improved ticketing system
    - Consistent interfaces across resources
  - New staff
    - Psst! Wanna job? Contact me!
  - 24x7x365 IANA availability
  - New Web Page...
Future Directions (cont’d)

- **Root Zone Management**
  - DNSSEC support
  - Improved/simplified communication among the various parties

- **Strong Authorization/Authentication**
  - Deployment of new technology and systems to address this requirement
Summary

- The Top Level Domain community is IANA’s most visible customer
  - IANA is committed to continuing to improve our service to this community
- As part of ICANN, IANA is able to leverage ICANN’s resources and relationships.
- IANA’s service levels have improved over time
  - Still room to improve
- Lots of new developments and activities at IANA
  - We’re hiring!
Thankyou for your attention!