Transitioning DNS for GTLDs

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NOMINET

Agenda

- Introduction to Nominet DNS
- Nominet and GTLDs
- Transition (Pre RST)
- Transition (RST)
- Transition (The real deal)
- What else

Nominet DNS

We are a team of 6 and support the following services
UK Authoritative Service:
12 Global sites answering queries for .uk and 2lds
GTLD Authoritative Service:
12 Global sites answering queries for about 67 GTLDs.
UK Protective DNS Service:
Recursive service using RPZ for Filtering.
Four sites within UK
UK PSN DNS Service
Recursive service on Public Sector Network
Nominet Corporate DNS
Internal Resolvers
Authoritative for nominet.uk et al

DNS Engagement (Protocols, Policy, Operations Practice)

Nominet and GTLDs

- Registry provider for .wales and .cymru
- Back end provider for 67 GTLDS
- EBERO Provider

GTLD Transition Phase 1

- Notified of new GTLD Order
- Assessment of size and impact
- Decision made where to deploy
- Build test infra
- Build prod infra
- Every build stage is documented and is defined as code in Ansible.

GTLD Transition Phase 1

- Build made up of:
  DB
  Provisioning Infra
  DNSSEC Infra
  Distribution Infra
  DNS Sites Global
  DNS Sites Cloud.
- Create initial Zone files and add relevant records
- Add Monitoring
- Handover to QA
- RST is then scheduled

GTLD RST (Phase 2)

- Registry System testing previously known as Pre Delegation testing.
- ICANN Engineers – Test
  - DNS Servers respond properly
  - Zones are DNSSEC Signed
  - EPP Working to spec
  - Whois and RDAP Functionality.
  - Where required IDNS are working correctly
- If they find issues they raise a ticket and we have to fix quickly.
- RST usually takes 2-3 Weeks

DNS/DNSSEC Transition Phase 3

- Current State:
  Incumbent provider producing/distributing zones
  Nominet producing/distributing dummy zones
- Change:
  Nominet ingest current zones from incumbent
  Unsign and resign but add existing public keys
  Distribute to new infrastructure

DNS/DNSSEC Transition Phase 3

- Generate NS Change 1-6 Files with clear dates and instructions to incumbent provider.
- 1- Add Nominet DNSSEC keys to existing zone (pre publish)
- 1- Add DS for nic.tld to tld.
- 2- Add DS Records to root for new keys.
- 3- Add NS Entries for half of new NSs.
- 3- Remove NS Entries for half of old NSs
- 4- Add NS Entries for half of new NSs to root (RZM)
- 4- Remove NS Entries for half of old NSs from root (RZM)
- 5- Repeat of 3 for second half of NSs
- 6 – Repeat of 4 for second half of NSs

- Admin/Tech Contact updates where needed.

DNS/DNSSEC Transition Phase 3

- Current State:
  Nominet NSs now in zone and root
- DNSSEC signed by Nominet but post publishing old keys
- Zone being provisioned by incumbent
- Dependant on both providers at this stage

Registry Transition Phase 4

- Date of transition and registration downtime published
- On the day:
  Incumbent makes registry read only
  Produces a DB Escrow and supplies to Nominet
  Nominet populate DB and generate zone file
  Zone file checked and loaded
  DNSSEC and Distribution infrastructure changed to use Nominet generated zone file

Cleanup Phase 5

- Old DNSSEC Keys removed from zone.
- Old DS records removed from parents.
- Incumbent incoming zone removed from infra
- Done

What Else

- Transition Outs:
  Led by the new provider
  We encourage but don’t mandate similar process
- Out of balliwick DNS Transitions
- Future Plans
  Automated deployment and testing

Questions