

# 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

