CentralNic Registry

RSP Transition of an RDAP-enabled TLD

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Background

- CentralNic is an early adopter of RDAP: base URLs for all TLDs on CentralNic platform added to bootstrap registry by early April
- Received notice of assignment of .CONTACT to Donuts shortly afterwards
- This is the first time a TLD with RDAP will have migrated to a new RSP

Objectives

- Maintain 100% availability of RDAP service throughout RSP transition
- Maintain integrity and accuracy of RDAP responses
- Minimise technical work required to complete transition

Key Issues

- RDAP base URLs may not be transferrable between RSPs (rdap.nic.tld vs rdap.rsp.com/tld)
  - RDAP Profile requirements (DNSSEC, TLSA, etc) appear to make this more likely than not
- Bootstrap registry supports multiple base URLs per TLD
  - Question: How do RDAP clients select which URL to use?
- So: add new RSP's base URL, then remove old RSP's
- BUT:
  - New RSP's RDAP server may return incorrect responses **before** SRS migration
  - Old RSP's RDAP server may return incorrect responses **after** SRS migration
  - Updating the bootstrap registry takes 1-2 days, and clients cache it
- Similar challenges to DNSSEC migration

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Available Techniques

- RDAP uses HTTP
- HTTP supports redirects
  - Question: How many RDAP clients follow redirects?
- ∴ one RDAP server can provide a redirect to another

Model #1: Pre-migration redirect

1. New RSP sets up redirect to old RSP
2. New RSP's URL added to bootstrap registry, and old RSP's URL is removed
3. SRS migration occurs; new RSP is now authoritative
4. New RSP removes redirect and answers queries directly

Best option if the old RSP cannot implement redirects, but the new RSP can

Model #2: Post-migration redirect

1. SRS migration occurs; new RSP is now authoritative

2. Old RSP implements redirect to old RSP; some RDAP traffic now goes to old RSP and is redirected to new RSP

3. New RSP's URL added to bootstrap registry, and old RSP's URL is removed

Best option if the new RSP cannot implement redirects, but the old RSP can

Model #3: Two-stage Migration

1. New RSP sets up redirect to old RSP
2. New RSP's URL added to bootstrap registry; some RDAP traffic now goes to new RSP and is redirected to old RSP
3. SRS migration occurs; new RSP is now authoritative
4. New RSP removes redirect and answers queries directly
5. Old RSP implements redirect to old RSP; some RDAP traffic now goes to old RSP and is redirected to new RSP
6. Old RSP's URL removed from bootstrap registry

Works, but what scenarios would this procedure be needed for?

Conclusion

- Registry RDAP implementers should add redirection support if they expect to gain/ lose TLDs

- More attention needs to be paid to how RDAP clients select RDAP base URLs and whether they follow redirects. RFCs are not clear on expected client behaviour

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