Redirects in RDAP

WEIRDS Berlin, IETF 87
Carlos Martinez - Cagnazzo
carlos @ lacnic.net

Outline

- Problem, current solutions, relevant documents

- Wrap-up of the discussion so far

- Overview of server bootstrapping

- Some open questions

Overall Concept

```
while(true) {

  query = read_query_from_network()

  auth_rdap_svr = redirect_table_lookup (query)

  if (auth_rdap_svr != null) {

     write_http_301(auth_rdap_svr)

   } else {

     write_http_404("resource not in redirect table")

   }

}
```

Redirect Table

- The **<u>redirect table</u>** hosts the information needed by the redirecting server in order to redirect correctly

- How to properly fill a redirect table ?

  - Static tables, periodically refreshed

  - Directory services (DNS)

- This is the same as the bootstrap problem, as applied in particular, to RDAP servers

Discussion

- Relevant documents

    - draft-ietf-weirds-redirects

    - draft-ietf-weirds-using-http

        - In particular item 5.2

    - draft-blanchet-weirds-bootstrap

    - draft-blanchet-weirds-bootstrap-ianaregistries

- Bootstrap and Redirect threads on the ML

    - *(noted in the following slides)*

Questions

- Filling the redirect table is vastly different for names and numbers

  - Numbers:

    - #1 Take IANA's registries and record which RIR resources have been delegated to, redirect to said RIR RDAP server

    - #2 Take RIR's or NRO's delegated-stats files, parse delegations and redirect to appropriate server.

    - #3 Create a DNS-based directory

  - Names:

    - So far, only the DNS approach has been proposed

  - See [Marc's drafts on bootstrapping]

Questions (ii)

- For which queries do we redirect?

  - Redirecting for INRs and names is well-understood

    - well, except for bootstrapping names :-)

  - Redirecting entity and nameserver queries less so

    - See http://www.ietf.org/mail-archive/web/weirds/current/msg02959.html

Questions (iii)

- **Where to redirect ?**

  - A fully bootstrapped server can redirect directly to the authoritative RDAP server

    - Well-understood for INRs, running code available (ARIN's bootstrap pilot, LACNIC's redirector)

  - What to do with non-bootstrapped servers (and clients) or partially bootstrapped ones ?

    - See next slide! :-)

- **Interaction with authentication**

  - Scenario: the target server requires authentication, should a client know beforehand ?

Server Pooling

- Server pooling, as implemented for example by NTP.org can help provide easy-to-note central redirect points to server and client implementors

  - See http://www.ietf.org/mail-archive/web/weirds/current/msg02805.html

- Objections: .com queries represent a disproportionate amount of the total, load balancing will be unfair

  - See http://www.ietf.org/mail-archive/web/weirds/current/msg02809.html

Server Pooling (ii)

- A possible pooling scheme

```
; zone numbers.rdap-servers.arpa

pool    IN  A   <lacnic rdap server ip>
pool    IN  A   <arin rdap server ip>
pool    IN  A   <ripencc rdap server ip>
pool    IN  A   <apnic rdap server ip>
pool    IN  A   <afrinic rdap server ip>


; zone names.rdap-servers.arpa
pool    IN  A   <com TLD rdap server ip #1>
pool    IN  A   <com TLD rdap server ip #2>
pool    IN  A   <com TLD rdap server ip #3>
pool    IN  A   <net TLD rdap server ip>
pool    IN  A   <org TLD rdap server ip>
```

- In a partial bootstrap scenario, LACNIC's RDAP server would:

  - Redirect directly to other RIR RDAP servers for number queries

  - Redirect to "pool.names.rdap-servers.arpa" for name queries

Thanks!