RSSAC Report

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with input from
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Some issues that have been on RSSAC's table since the last update report by Jun Murai:
Anycast

What is anycast?
• A way to install more servers in more places.

Why anycast?
• Better service to more users.
• Mitigates impact of distributed denial of service attacks (DDoS).
Local anycast

- Also known as load balancing
  - Queries are spread over several servers in same installation.
  - Nearly all instances do this now.
Current anycast situation

- Currently 7 of 12 root server administrators are doing anycast in some form.
  - M has been doing this since 1998.
  - Not particularly dangerous – lots of experience.
List of plans

• C Cogent: in their datacenters at the edges.
• F ISC: international exchanges. 21 sites in pipeline. One transit instance, everyone else is peering, which gives localised failure.
• G DISA: survivable service for parent org.
• I Autonomica: plans for about 10 instances world wide.

List of plans

• J Verisign: colocated with their gTLD server nodes.
• K RIPE NCC: do AMSIX/LINX first, then add more in Europe.
• M WIDE: more in East Asia.
IPv6

- IPv6 transport proposal draft.
  - Written by Akira Kato (M).
- We are stuck with old 512 byte limit (RFC 1035).
- Can fit only two AAAA records (v6 addresses) and remain below 512 bytes.

IPv6

- Use IPv4 style anycast services for these two AAAAs.
- Will need to add to the root-servers.net zone.
- Goal: AAAA records for all servers.
- More AAAA records require EDNS (Extended DNS).
Delegation response size

• Draft proposal written by Paul Vixie (F) and Akira Kato (M)
• Also related to 512 bytes limit.
• Responses include a copy of the query.
  – The larger the query, the smaller the delegation information.

Delegation response size

• TLD operators can use the common "name hack" to increase the number of servers.
  – Naming all servers in same domain, like for the root servers: [a-m].root-servers.net.
• Adding AAAA will impact the response.
• What should we do with mixed A/AAAA replies?
  – generally push A first, then AAAA?
  – Sort by transport?
IDN

• Open interoperability testing May 28-30.
  – Working with the community on testing.
• Will impact response size, even more than existing or contemplated techniques.
• There is a potential impact of ambiguous interpretation of the label separator.
  – Not "." everywhere?
  – Will lead to more strange queries to the root servers.
• We already see more traffic due to new queries with IDN encoding.

Report available at

http://www.autonomica.se/liman/presentations/icann/