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Issues in the Delegation of 2.0.0.2.IP6.ARPA

draft-ymbk-6to4-arpa-delegation-00.txt

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<http://psg.com/~randy/030227.apnic-2002-arpa.pdf>

6to4 RFC 3056

- 6to4 provides a mechanism for hosts at IPv6 native sites to communicate over IPv4 without tunnel setup
- Border router translates incoming packets for 192.1.2.3 (encaps 41) to 2002:c001:0203:: and vice versa
- I.e., your IPv4 space is mapped to your IPv6 space in 2002::/16

Forward DNS for 6to4

- If you are a 6to4 site with a host in IPv6 space 2002:c001:0203::, someone will want to find

  foo.bar. AAAA 2002:c001:0203::

- Which is easy because you control the foo.bar domain

Reverse DNS for 6to4

- But, someone receiving a connection from you will want to find
  `$ORIGIN 2.0.0.2.ip6.arpa.`
  `3.0.2.0.1.0.0.c PTR foo.bar.`
- But, you don't (yet) control
  `1.0.0.c.2.0.0.2.ip6.arpa.`
  the reverse delegation
- How do you acquire that delegation?

draft-moore-6to4-dns-03.txt

- Because the 6to4 space directly maps the site's IPv4 space
- Holders of IPv4 address space should be able to request the delegation of a sub-zone in the **2.0.0.2.ip6.arpa** DNS tree from the party from which they obtained the corresponding IPv4 **in-addr.arpa** delegation

The Top of 2.0.0.2.IP6.ARPA

- The RIRs delegate IPv4 space and its corresponding **IN-ADDR.ARPA** zones
- Therefore the **2.0.0.2.IP6.ARPA** DNS space should be delegated by the RIRs along with the corresponding **IN-ADDR.ARPA** space
- This seems simple, but ...

Down the Tree

- What if the upstream chain of ISPs of a 6to4 site knows nothing of IPv6 and is not responsive to requests to serve and delegate the corresponding **2.0.0.2.IP6.ARPA** DNS zones?
- Then the closest branch on the tree that does serve **2.0.0.2.IP6.ARPA** needs to delegate the fragments directly to the end site

Implication for RIRs

- But this is likely to mean that the RIRs would be delating many small fragments of **2.0.0.2.IP6.ARPA** directly to individual end sites
- This is an administrative load on the RIRs
- Whether to accept it or not could be considered a policy decision