

Special Use Domain Name 'ipv4only.arpa'

draft-cheshire-sudn-ipv4only-dot-arpa-05

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Short 13 page draft — main content in first 5 pages

Updates RFC 7050: Discovery of the IPv6 Prefix Used for IPv6 Address Synthesis

Defines nothing new; just elaborates on what RFC 7050 already says

Explains how the name 'ipv4only.arpa' is special

- RFC 7050 has co-opted the DNS protocol as an impromptu client-to-middlebox communication protocol

But... some people dispute whether it's special

Specialness of 'ipv4only.arpa'

Known to have two IPv4 address records: 192.0.0.170 and 192.0.0.171

- But no client ever looks up those IPv4 address records

Known to have no IPv6 address records

- But clients do look up those IPv6 address records
 - And get positive answers for those IPv6 address record queries
 - For records that are known to be nonexistent!

This does not sound like a 'normal' DNS name

Consequences of 'ipv4only.arpa' previously being declared unspecial

Name does not appear in IANA Special-Use Domain Names list

- <https://www.iana.org/assignments/special-use-domain-names/>

No mandate for any server software to treat this name specially

Unnecessary queries to the authoritative 'arpa' name servers

Unnecessary additional load on the authoritative 'arpa' name servers

Unnecessary additional latency waiting for responses from those servers

Unnecessary dependence on an external point of failure

Summary

RFC 7050 defines a novel use of DNS:

- DNS is **not** being used to obtain an answer from the authoritative DNS server
- DNS **is** being used as a client-to-middlebox communication protocol

We should be open about this

- We should clearly document this special use
- The name 'ipv4only.arpa' should appear in the Special-Use Domain Names list at:
<https://www.iana.org/assignments/special-use-domain-names/>

Next Step?

- Adopt as WG document, or just go ahead with individual submission?