Changes in IP6.ARPA and IN-ADDR.ARPA

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Overview

• Three changes in the past year
  ‣ IANA zone management system
  ‣ Authority servers operated by RIRs and ICANN, as described in RFC5855
  ‣ DNSSEC signed
In the beginning
IP6.ARPA

• Zone authored at ICANN

• Authority service provided by some of the RIRs and ICANN
IN-ADDR.ARPA

- Zone authored at ARIN
- Authority service provided by some of the root servers
Current status
Zone management

• Both zones are managed by IANA using a system which allows direct update by the RIRs

• Updates are sent in XML form to a RESTful HTTPS service secured with certificates issued to the RIRs by ICANN
Authority service

- Two sets of servers have been deployed by the RIRs and ICANN, one for each zone
- Servers are named A through F in new IP6-SERVERS.ARPA and IN-ADDR-SERVERS.ARPA zones
DNSSEC

• All four zones are DNSSEC signed by ICANN’s bump-in-the-wire signer infrastructure

• Parameters
  ▸ NSEC
  ▸ 2048 bit KSK with rollover annually
  ▸ 1024 bit ZSK with rollover every 3 months
  ▸ Signatures are SHA256 with 7 day validity
The transition
Zone management

- The effort to build the new management system began in 2009
- Designed and implemented at ICANN, tested with the cooperation of the RIRs
- System ready in early 2010
- RIRs began using the system in March 2011
IP6.ARPA

- Already authored at ICANN, transition to the new management system and authority servers was relatively straightforward

- April 2010
  - DNSSEC signed

- September 2010
  - DS RRSet added to ARPA

- December 2010
  - Re-delegated to the new authority servers
IN-ADDR.ARPA

• Authored at ARIN, transition to the new management system and authority servers was a more involved process

• Details at http://in-addr-transition.icann.org/
IN-ADDR.ARPA (2)

• January 2011
  ▸ ICANN publishing zone to new authority servers

• February 2011
  ▸ The zone is signed
  ▸ Re-delegation to new authority servers
  ▸ ICANN stops taking updates from ARIN

• March 2011
  ▸ DS RRSet is added to the ARPA zone
Some stats
• ICANN operates B.IP6-SERVERS.ARPA and B.IN-ADDR-SERVERS.ARPA

• Dedicated hardware anycast on the east and west coast of the USA.
B.IN-ADDR-SERVERS.ARPA

Queries by Node
From May 03, 2011, 14:54:26 To May 04, 2011, 14:54:26 UTC

Query Rate (q/s)

Time, UTC

May 3
Questions ?