Omniscient AS112 Servers

draft-wkumari-dnsop-omniscient-as112-00

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DNSOP WG - IETF 84 - Vancouver, CA.
What is the AS112 thing anyway?

- IN-ADDR.ARPA servers get a lot of junk queries.
  - e.g for RFC1918 space.
  - What's the "right" answer for PTR for 192.168.1.9?

- AS112 servers
  - "Distributed sink" to answer these queries.
  - Authoritative replies.
  - Anycast.
So, what's the problem again?

- How do you get AS112 to handle new space?

- Easy
  - Contact all the AS112 operators, ask them to add or remove a zone.
Nope, can't do that...

- Loose collaboration.
- Many of them are unknown / unpublished.
  - Enterprises
  - ISPs
  - Folk who set one up and moved on...
Omniscient AS112 Servers

- Stupid name.
  - Don't know everything, just think that they do...
  - Clifford?

- Authoritative for everything.

- Solve the issues by simply delegating and undelegating to these servers.

- Live on new anycast space.
The zone!

; Empty zone for AS112 server.
;
$TTL 604800
.
 . IN SOA A.AS112.NET. hostmaster.root-servers.org. ( 
    5 ; serial number
    604800 ; refresh
    4536000 ; retry
    604800 ; expire
    604800 ) ; negative caching TTL
;
 . NS B.AS112.NET.
 . NS C.AS112.NET.
;
; There should be no other resource records included in this zone.
;
Examples.

```bash
~$ dig -x 192.168.1.9 @scratch-monkey.kumari.net +noquestion +noedns +norec

;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NXDOMAIN, id: 54731
;; flags: qr aa; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 0

;; AUTHORITY SECTION:
. 604800 IN SOA a.as112.net. hostmaster.root-servers.org. 5 604800 4536000 604800 604800

;; Query time: 1 msec
;; SERVER: 204.194.22.8#53(204.194.22.8)
;; WHEN: Mon Jul 23 14:19:41 2012
;; MSG SIZE  rcvd: 115
```
Examples.

```bash
~$ dig -x 2001:0DB8::1 @scratch-monkey.kumari.net +noquestion +noedns +norec

;; <<>> DiG 9.9.1-P1 <<>> -x 2001:0DB8::1 @scratch-monkey.kumari.net +noquestion +noedns +norec
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NXDOMAIN, id: 54732
;; flags: qr aa; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 0

;; AUTHORITY SECTION:
. 604800 IN SOA a.as112.net. hostmaster.root-servers.org. 5 604800 4536000 604800 604800

;; Query time: 1 msec
;; SERVER: 204.194.22.8#53(204.194.22.8)
;; WHEN: Mon Jul 23 14:20:11 2012
;; MSG SIZE  rcvd: 115
```
Examples.

~$ dig sinkhole.example @scratch-monkey.kumari.net +noquestion +noedns +norec

; <<< DiG 9.9.1-P1 <<< sinkhole.example @scratch-monkey.kumari.net +noquestion +noedns +norec
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NXDOMAIN, id: 54731
;; flags: qr aa; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 0

;; AUTHORITY SECTION:
. 604800 IN SOA a.as112.net. hostmaster.root-servers.org. 5 604800 4536000 604800 604800

;; Query time: 1 msec
;; SERVER: 204.194.22.8#53(204.194.22.8)
;; WHEN: Mon Jul 23 14:20:11 2012
;; MSG SIZE  rcvd: 115
Questions...

- .?
- .ARPA?
Questions?