v6 Address Randomness at IXPs

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Background.

- PCH v6 rollout
  - PCH has active peering presence at 39 locations.
  - New Server hardware upgrades designed to do v6 by default
  - Not doing it on older servers
  - 23 sites now can do v6.

Getting v6 addresses

- Three of those
  - Easy, just part of the regular allocation (and in fact we already had the v6 on the IXP for many years, without us knowing)
  - Moderately Easy. Hmm! this is still a ‘engineering project’, can you fill the form out? and then we get the address.
  - No Response, or something along the lines of ‘oh Yeah, we’re thinking of it.’

Wow, so many different formulas

- Using AS Numbers in one way or other seems to be popular, either as Hex, or decimal or just as a string.
  - the address generally ends with a :1
  - One IX has 32 bit ASN considered
- Using IX v4 address' last octet for v6
  - the address ends with :<v4 last octet>

and, we have no formulas

- Just like we do with v4, we just give the next address in the list

- FYI
  - draft-rgaglian-v6ops-v6inixp by Roque Gagliano, has a summary of most of these.

Side effect

- I know now that
  - 2A = 42
  - F10 = 3856
  - IBIB = 6939

Using AS Numbers

- We like ASN : 9
  - e.g 2001:7F8:1::A500:42:1

- We like ASN in Hex : 3
  - 2001:7F8:4:0::2A:1

Using v4 last octet

- v4 last octet : 6
  - 2001:43F8:60:1::122
    - (where v4 is 198.32.144.122)
- v4 last octet, but we think HEX : 3
  - 2001:504:D::35
    - (where v4 is 198.32.176.53)

Random Numbers

- There is nothing special for v6 : 2
- 2001:504:13:0:0:0:51
- 2001:7FA:0:1::CA28:A1E1

Prefix lengths

- /64 - 21
- /48 - 1
- /120 - 1

Lesson

- It can take time, just to get all the paperwork done, interfaces turned up and so on and so forth, specially existing sites
- Treat v6 turn-up the same as turning up another v4 interface, there are no shortcuts.
- New sites, ask for v6 on day 1.

Thanks

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