Proposal 2005-1

Provider-independent IPv6 Assignments for End Sites

Need for PI Assignments

- Despite promises, no technology solution exists yet to replace PI Assignments
  - shim6
- Useful for multihoming
- Useful to avoid costly renumbering
- Lack of PI assignment policy or usable alternative is seen as suppressing migration to IPv6

2005-1 History

- Original proposal by Owen DeLong
  - Having an ASN automatically qualifies for direct assignment (/48)
- Did not achieve consensus at April 2005 meeting
  - Concerns about run on ASN's
  - Concerns about number of new prefixes created
  - Multihoming by itself may not be sufficient qualifier
- New proposal by Kevin Loch merged with 2005-1 and modified to address concerns

Current Proposal

- Requirements
  - End sites only
  - Currently multihomed
    - /48 assigned to applicant verified through swip/rwhois
  - 100,000 unique IPv6 capable devices
- Assignment size: /44
- No subsequent direct assignments

Why /44?

- Qualifying end sites will initially be large
- Ban on subsequent assignments suggests giving enough space to never need more
- Easily distinguishable from deaggregated /48's
  - Filtering by prefix length instead of prefix range
  - Just far enough from /48 to be meaningful
  - First nibble boundary to the left of /48

Is 100,000 the right number?

- Conservation vs practical deployment
- Start slow and lower requirements as we gain experience
- Problems of qualifying set being too small
- 25,000 was suggested as more realistic
  - Would allow usable sample size for further policy review
- If normalized against IPv4 policy the requirements would be ~1600 (not multihomed) or ~400 (multihomed)

Moving Forward

- Current 2005-1 is a simple framework that can be easily modified by future policy actions
- Even a high unique device requirement is better than no policy
- Can consensus be reached on a lower unique device requirement?
  - 25,000
  - 10,000
  - ?