APNIC 33 CONFERENCE
27 February - 2 March 2012
NEW DELHI, INDIA

Overview of Proposals

APNIC 33 Policy SIG Meeting

Problems prop-101 aims to address

- Portable IPv6 assignments of available only if network is currently - or plans to be - multihomed within three months.
- There are technical or commercial reasons why some will not be multihomed
- If provider assigned IPv6 addresses are used, then any change of ISP would require renumbering

prop-101:

Removing multihoming requirement for IPv6 portable assignments

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prop-101: Proposed solution

- An organization will be eligible for a portable assignment if they have previously justified an IPv4 portable assignment from APNIC.
- A request for an IPv6 portable assignment will need to be accompanied by a reasonable technical justification indicating why IPv6 addresses from an ISP or other LIR are unsuitable.

prop-101: Proposed solution

- Only one IPv6 address block is to be given to an organization upon an initial request for a portable assignment;
  - Subnets may be to different sites;
- APNIC Secretariat applies sparse allocation so that subsequent requests would be accommodated through a change of prefix mask

prop-101: Proposed solution

- Subsequent request must be accompanied by information demonstrating:
  - Why an additional space is required, and why an assignment from from an ISP or other LIR cannot be used for this purpose instead;
  - That the use of previous assignment generated the minimum possible number of global routing announcements and the maximum aggregation of that block;
  - How the additional assignment would be managed to minimise the growth of the global IPv6 routing table.

Problems prop-098 aims to address

- LIRs feel they must fit their entire subscriber base in a single /32.
- Trying to pack everything into a /32 will lead to unnecessary disaggregation.
- Many network outages have been caused by bit-math errors. Nibble boundaries can reduce or eliminate these.
- The HD ratio leaves much to be desired as an address administration tool.

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prop-098:

Optimizing IPv6 allocation strategies (simplified)

prop-098: Proposed solution

- Utilization be measured in ‘Provider Allocation Units’ - smallest reassignment unit
  - 75% or more overall utilization, or
  - One or more facilities has reached a 90% utilization and no blocks available to expand

prop-098: Proposed solution

- Allow LIRs to request nibble-aligned blocks of any size greater than or equal to /36
  - Default minimum remains as /32
  - Maximum to accommodate 5 years
  - Subordinate LIR blocks count as fully utilized

prop-098: Proposed solution

- Subsequent allocations expand to the next nibble – existing allocation can be re-sized
  - **Optional** at the provider's discretion
- Allocation shall not exceed a /16, but, a provider may receive multiple /16s to meet justified needs
  - LIR is 'encouraged' to vacate their old allocations

Problems prop-099 aims to address

- Slow start policy allocates /32 then reduces the bit mask one bit at a time
- This causes fragmentation and complexity in large networks with POPs growing at different rates.
- IPv6 Policy does not take into account long-term (up to 5 years) future growth.

prop-099:

IPv6 Reservation for Large Network

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prop-099: Proposed solution

- Multiple prefix request
  - Separately justified (Prop-083)
- Subsequent allocations made within a reserved space as:
  - Extensions to existing prefixes and/or
  - New prefixes

prop-099: Proposed solution

- Reservation request for projected network growth up to 5 years
  - Long-term network plans
  - Environmental factors
- Reservation expires after 2 years unless re-justified
  - Allocated prefixes registered in whois
  - Reservation documented separately

Problems prop-102 aims to address

- IPv6 Allocations are currently based on a 1-2 year timeline while deployment plans are often based on a 5-10 year time-frame.
- Contiguous allocations are not guaranteed.
- Sparse allocation is used operationally, but not mandated by policy.
- The exact algorithm & parameters are not visible to members.

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prop-102:

Sparse allocation guidelines for IPv6 resource allocations

prop-102: Proposed solution

- Mandate use of sparse allocation when allocating IPv6 resources from APNIC address pools
- APNIC to publish the details of the sparse allocation framework on the APNIC website as a numbered document. With changes handled via APNIC-112

Proposal not accepted for discussion

- Author = Imtiaz ahmed

- A Member State of APNIC can be a member of adjacent RIRs
- Country should be able to choose their preferred RIR

- Judged to be outside the Policy SIG Charter
- Proposal referred to APNIC Secretariat

Thank you

Questions?