A proposal for IPv6 Reservation for Large Networks (prop-099)

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Introduction

- This proposal extends the IPv6 request process to allow large ISPs to request multiple prefixes within a single, contiguous, reserved space.
  - Large block, for example /18
  - Aggregation in each Pop

Current problem

- The current IPv6 address allocation and assignment policy (apnic-089-v010)
  - The organization provides comprehensive documentation of planned IPv6 infrastructure which would require a larger allocation; or
  - The organization provides comprehensive documentation of all of the following: (……)
- Large networks are facing challenges deploying IPv6 networks.
  - The current slow start policy is to allocate a /32 and then reduce the bit mask one bit at a time on subsequent allocations (i.e. /31, /30, /29 etc.).

Other RIRs

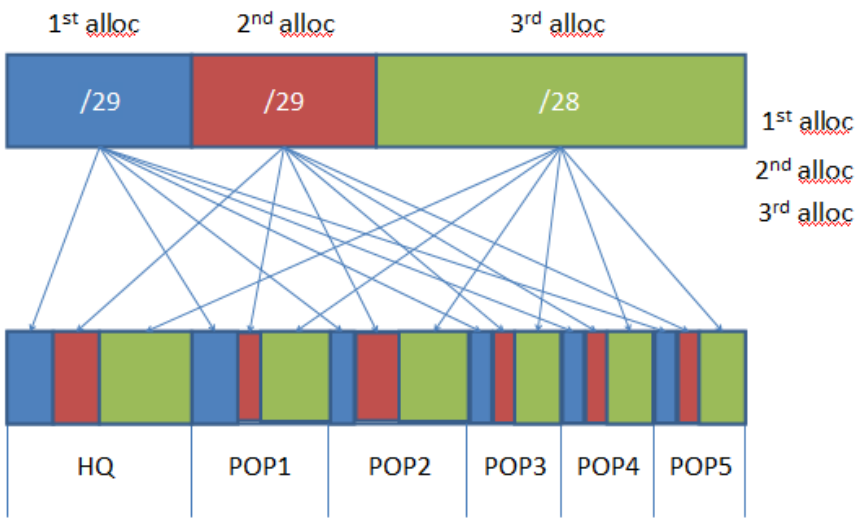
- No similar policy or policy proposal is available in the other RIRs.

Proposal

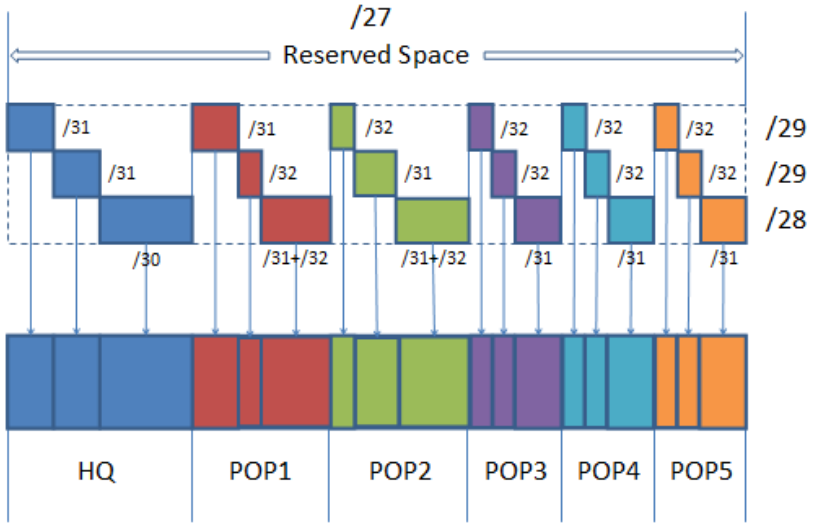
- Suggest to add bullet 'c' in the current policy
  - The organization provides comprehensive documentation of long term (up to 5 years) IPv6 infrastructure which would require a larger allocation:
    - Larger initial allocation will be via a multiple-prefix request, conventional allocation policies will be applied in assessment of each prefix requested, subsequent allocation requests can include extensions to previously allocated prefixes and/or new prefixes as needed;
    - Each IPv6 request will be able to specify a proposed reservation for the entire network, to contain all allocated prefixes, and room for their future growth;
    - In case of a multiple-prefix allocation, only the individual allocated prefixes will be registered in whois, or included in resource certificates; the reservation itself will not be registered, however it may be separately documented.

Comparison

Standard Allocations



Proposed Allocations



Benefits/disadvantages

- Advantages:
  - This proposal enables large networks to make long-term network plans and reduce internal routing complexities.
  - The reserved space is aggregated, and can be globally routed as a single prefix once the space is fully allocated.
- Disadvantages:
  - Initial allocation from the reserved space could be made in multiple disaggregated prefixes that have to be announced separately on the global routing table.
  - Additional work for APNIC Secretariat to manage the request process, and regular renewals of reservations.

Implementation

- Proposed timeframe to implement the decision
  - 3 months from consensus
- Update apnic-089-v010
  - add bullet 'c'
- Identify any impact to NIRs
  - The proposal allows NIRs to choose when to adopt this policy for their Members.

Summary

- This proposal extends the IPv6 request process to allow large ISPs to request multiple prefixes within a single, contiguous, reserved space.
  - Large block, for example /18
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