IPv6 Prefix Assignment to end-users

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Jordi Palet

jordi.palet@theipv6company.com

Background

- Several I-D on point-to-point links
- RIPE-690 BCOP

Common Questions

- What size for the point-to-point links?
- How to number the point-to-point links?
- What pool to use for the point-to-point links?
- What prefix size should be assigned to customers?
- Should the customers prefixes be persistent?

Point-to-Point Links

- The ping-pong issue
- Prefix size choices (/64, /127, /126, others …)
- Numbering choices (GUA, ULA, LL)
- Prefix pool
  - dedicated pool
  - /64 from customer assigned prefix
    - Numbering interfaces
    - Routing aggregation
    - DHCPv6 considerations
    - Router considerations

Prefix Assignment

- /48 in all cases
- Differentiate residential from business with different prefix size (/48 vs /52 or /56)
- Avoid prefixes longer /56
- Considerations for cellular operators
  - /64xPDP vs providing broadband services

Prefix Persistency

- No scarcity, no need for non-persistent
- Non-persistent perceived as ”easier”
- Non-persistent is harmful (flash renumbering)
- Persistent is best current practice

Summary

1. The prefix assigned to end-site MUST be a GUA /48, using DHCPv6-PD .
2. The prefix assigned to end-site MUST be persistent.
3. The prefix for the WAN link point-to-point SHALL be a GUA /64. A /127 MAY be used for the actual numbering of the interfaces in each side.
4. It is RECOMMENDED that the prefix for the WAN point-to-point is the first /64 from the assigned end-site prefix, using the Prefix Exclude Option for DHCPv6-based Prefix Delegation.
5. The assigned prefix MUST NOT, ever, be longer than /56.

Next steps

- Questions ?
- Inputs ?