IPv6 Point-to-Point Links

draft-palet-v6ops-p2p-links-04

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History and Goal

- Work started in 2006
  - Focus: P2P links from customer prefix

- Now, many networks use it (69%)

- A DHCPv6-PD option (2012) supports this
  - "Prefix Exclude Option for DHCPv6-based Prefix Delegation" (RFC6603)

- In IETF 101 WG considered that should be broadened to all possible p2p link choices

Summary (1)

- Intro
  - RFC6164 describes /127, using a dedicated pool for p2p links
    - Doesn't preclude other options:
      - "routers must support it recommendation"
    - In fact a big % of market uses /64 (62%)

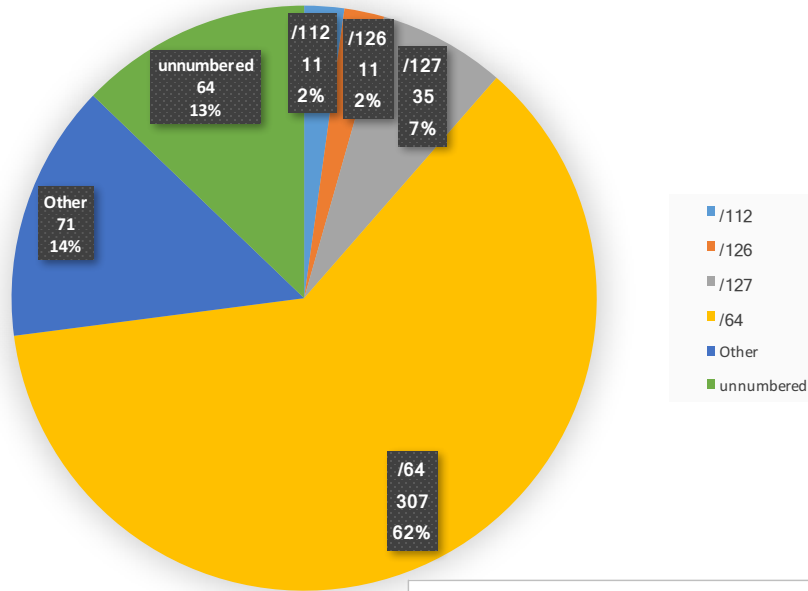- **The Ping-Pong problem (new)**

Summary (2)

- Prefix Size Choices
  - RFC7608 "IPv6 prefix length is a parameter"
    - /64 **(added reference to mitigations)**
    - /127 **(added text, ensure both end-points match)**
    - /126 and other choices **(reference added)**
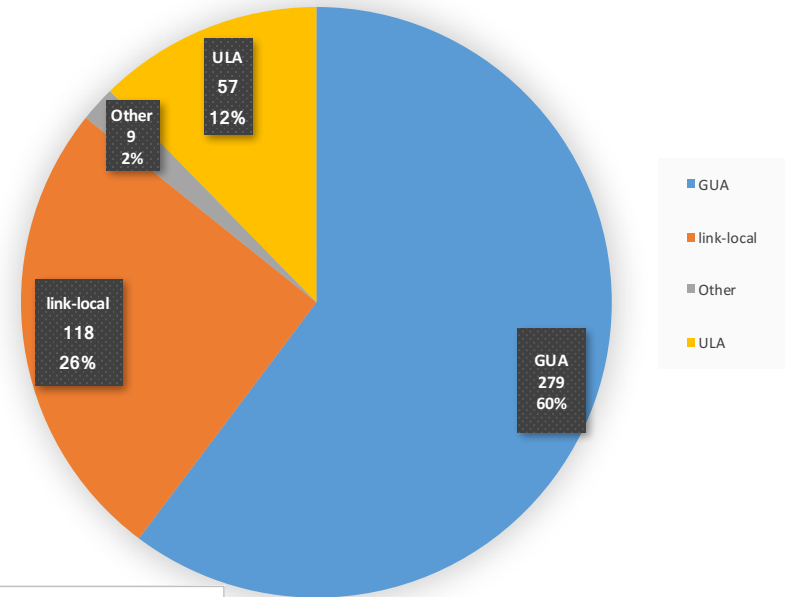   - Allocate /64 and use /127

Summary (3)

- Numbering Choices **(addressing scopes)**
  - GUA
  - ULA **(added reference to RFC6752)**
  - Link-Local **(it was unnumbered, clarifications)**
- Prefix Pool Choices
  - "IPv4 style" -> dedicated pool for p2p links
  - /64 from Customer prefix
    - Numbering interfaces
    - Routing aggregation
    - DHCPv6 Considerations
    - Router Considerations
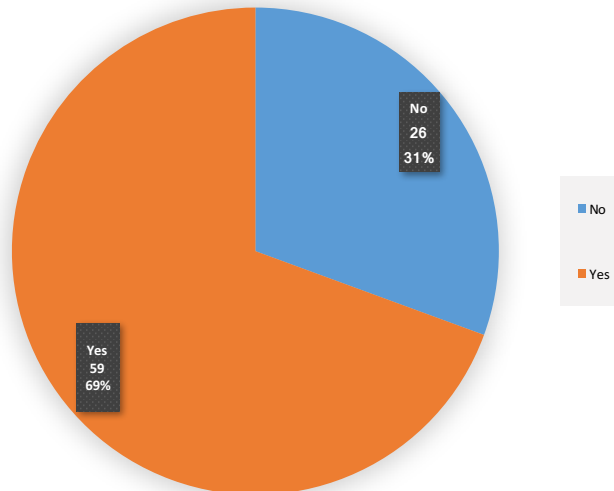
IPv6 Deployment Survey

WAN Prefix Size

- /112 — 11 — 2%
- /126 — 11 — 2%
- /127 — 35 — 7%
- /64 — 307 — 62%
- Other — 71 — 14%
- unnumbered — 64 — 13%

WAN Addressing Type

- GUA — 279 — 60%
- link-local — 118 — 26%
- Other — 9 — 2%
- ULA — 57 — 12%

WAN /64 from customer prefix

- No — 26 — 31%
- Yes — 59 — 69%

Next steps

- Questions ?

- Become a WG item ?

- Inputs ?