Signalling DHCPv6 Prefix Delegation Availability

draft-ietf-6man-pio-pflag-01

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Recap: Problem Statement

- Companion to draft-ietf-v6ops-dhcp-pd-per-device
- Defines a way to hint to the device whether to use PD or not
- On some networks, it’s advantageous to delegate a prefix to every device
  - Network might have plenty of space, but have scaling problems tracking individual /128s
- Other networks (e.g., home network with a /60) have no address scaling problem, but don’t have enough prefixes to hand out a /64 per device
Recap: Proposed Solution

- Add a new P flag to the PIO
  - “If you understand this flag, please use DHCPv6 PD to get a unique prefix, and assign addresses from that prefix, instead of using SLAAC on the on-link prefix”

- Why in the PIO?
  - Must be available to the device before it does SLAAC => must be in RA
  - Specific to the particular prefix
    - Allows, for example, to SLAAC for ULA and PD for global space
    - In a multihoming situation, different upstreams might support different mechanisms
Host behaviour

- Host SHOULD keep PD client running whenever it has at least one PIO with the P bit and non-zero Preferred Lifetime
  - MUST issue REBIND if any such prefix is added or removed (e.g., if prefix deprecated)

- If host assigns addresses locally from prefix
  - MAY form as many addresses as it chooses
  - SHOULD do source address selection as though addresses assigned to upstream interface
  - MAY assign prefix to downstream interface or bridge and act as router. If so:
    - MUST ensure that addresses are on downstream interface for purposes of ND / DAD
    - For multi-prefix multihoming and rule 5.5, MUST associate prefix with link-local address of relay that sent it the DHCP reply

- Host MUST NOT send / forward packets bound for prefix to interface it got prefix on

- Anything else we need to say here?
Update since IETF 118

- Companion draft-ietf-v6ops-dhcp-pd-per-device is now with IESG
- Draft was adopted shortly after IETF 118
  - No comments, only minor changes to text since then
Next steps

- WGLC

- Submit request for early allocation of P bit, per process in RFC 7120
Questions?