

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?