

# IPv6 CE Routers LAN Prefix Delegation

IETF 117 (v6ops)

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# Problem Statement

- Many ISP will assign a prefix larger than /64 to the CE Router, as recommended in [RFC6177]. If an IPv6 CE Router doesn't support IA\_PD on the LAN it will not be able to assign any prefixes beyond itself, limiting the usefulness of assigning prefixes larger than /64. Supporting IA\_PD on the LAN interfaces will allow for those unused prefixes to be distributed into a network.

# Flat vs Hierarchical Model

## Hierarchical

PD clients (7084 Router) ask for larger prefixes, the CE Router must have rules for dividing delegating prefix essentially making a tree of prefix in the house.

## Flat

PD clients (7084 Router) can ask for multiple /64 IA\_PD's from the Customer Edge router.

Draft chooses **Flat** for simplicity and ease of deployment.

## Text added to 03

“Two models, hierarchical prefix and flat, have been proposed in the past for prefix sub-delegation. Hierarchical prefix delegation requires more complexity for the IPv6 CE Router. When no routing protocol is present to discover the network topology it's possible to have unbalanced prefix delegation tree. This document uses the flat model which allows for DHCPv6 clients to ask for multiple prefixes of size 64 to avoid the complexity in favor a simpler solution.”

# Prefix Delegation on the LAN

- The single goal of this draft is to enable DHCPv6 prefix delegation on LAN interfaces.
- Prefix Delegation beyond the border router is important for supporting in home solutions (Matter/Thread).
- A path forward that I'm not super excited about, document the different options for sub-delegation and let implementations choose.

# Next Steps

- Document and possibility mitigate some of the Prefix Delegation leases issues.
  - Releasing a PD on a reboot.
- Adopt?