IPv6 CE Routers LAN Prefix Delegation

IETF 116 (v6ops)

draft-winters-v6ops-cpe-lan-pd-02

Problem Statement

- Many ISP will assign a prefix larger then /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. **This document does not cover dealing with multi-provisioned networks with more than one provider.**

# Topology
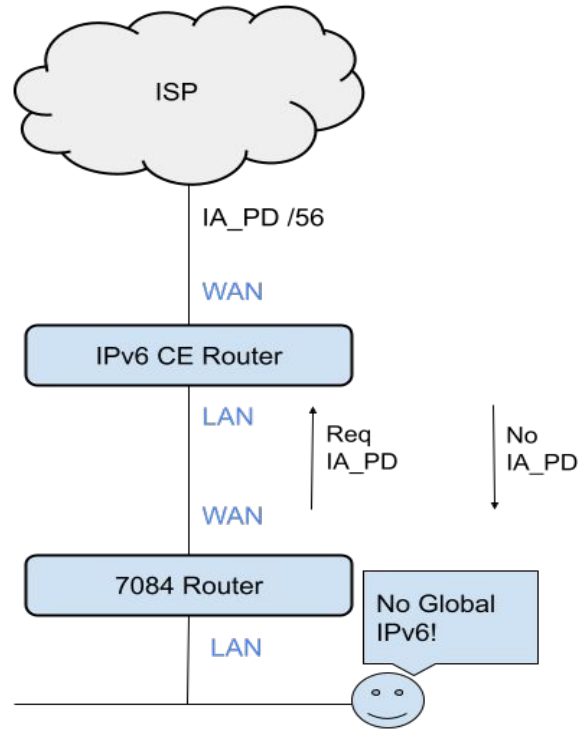
Flat vs Heirarchical Model

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.
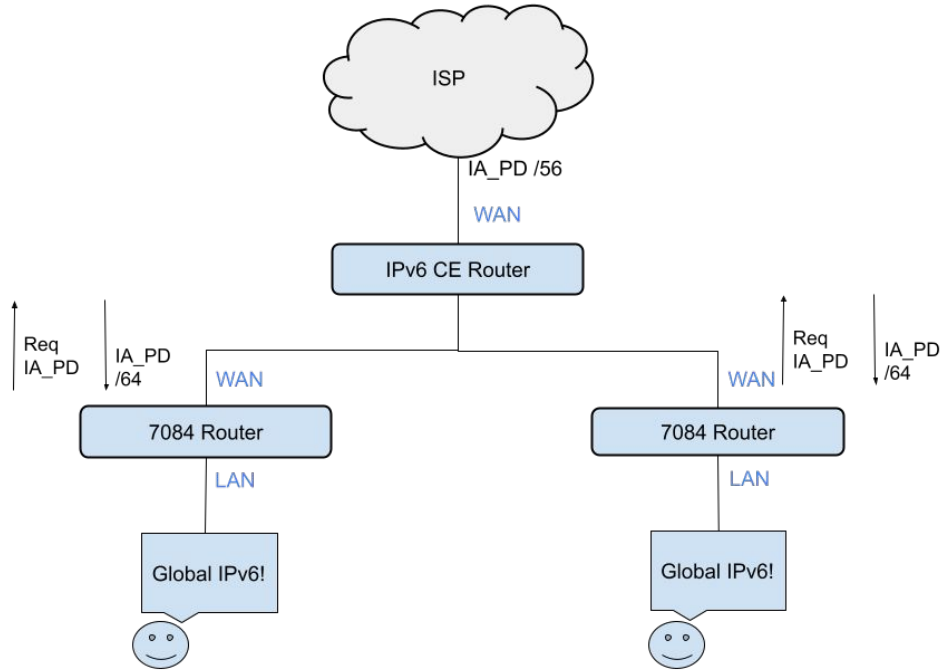
Flat

PD clients (7084 Router) can ask for multiple /64 IA_PDs from the Customer Edge router.

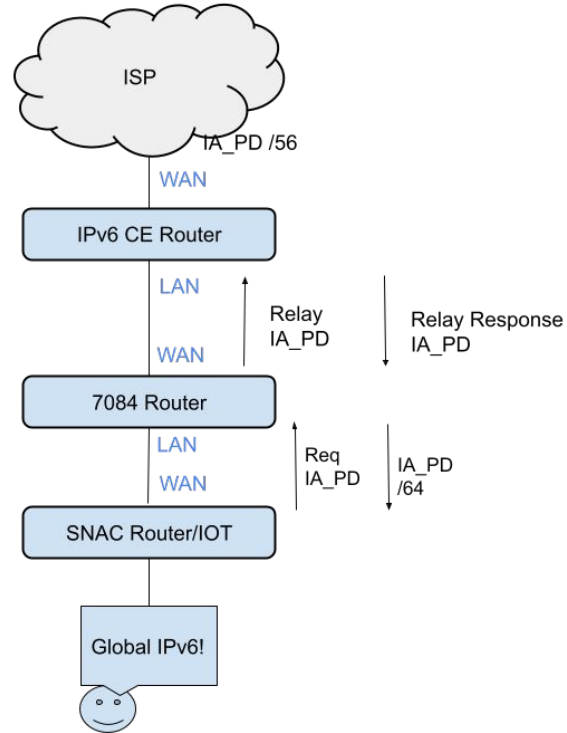Draft chooses **Flat** for simplicity and ease of deployment.

2 Network - Simple
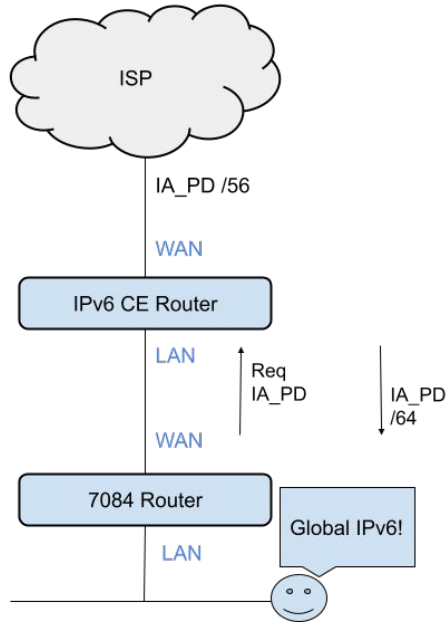
2 Network - Complex

3 Network

Requirements Changes

- DHCPv6 Server capable of IA_PD.
  - MUST use prefix length of 64 when assigning prefixes.
  - MUST be capable of process DHCPv6 Relay message.
- DHCPv6 Relay Agent, if they only receive prefix-length of /64.

Choose your own Adventure

- 7084 was written in 2015 is it time to update?
  - If yes go to next slide
  - If no skip to the last slide

7084bis?

- Update RFC references (8200/8201/8415/8504)
- Prefix Delegation LAN
- Remove Transition text (6RD/DS-Lite) and reference RFC 9096
- MUST Ingress Filtering (Anti-Spoofing)

Next Steps

- Adopt?
- Other interest?