

# IPv6 CE Routers LAN Prefix Delegation

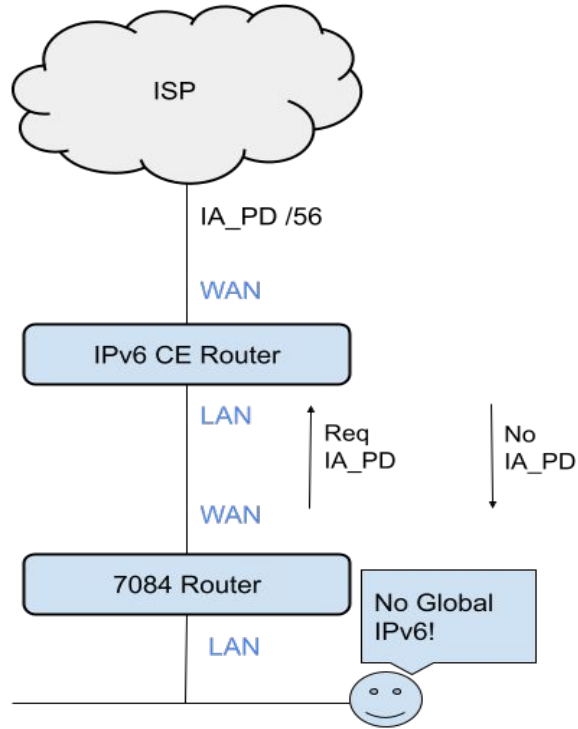
IETF 116 (v6ops)

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

# Problem Statement

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

# Topology



# Flat vs Hierarchical Model

## Hierarchical

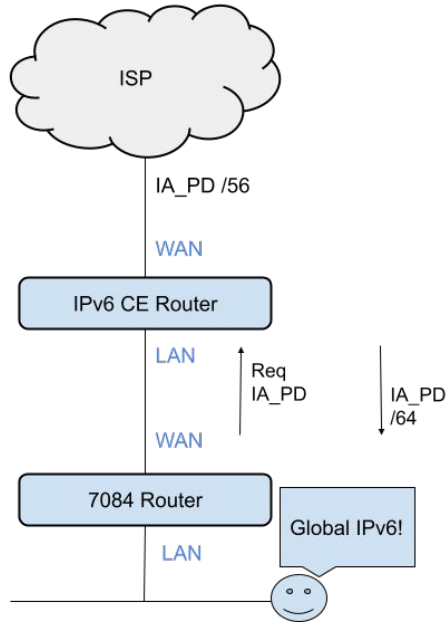
PD clients (7084 Router) ask for larger prefixes, the CE Router must have rules for dividing delegating prefix essentially making a tree of prefix in the house.

## Flat

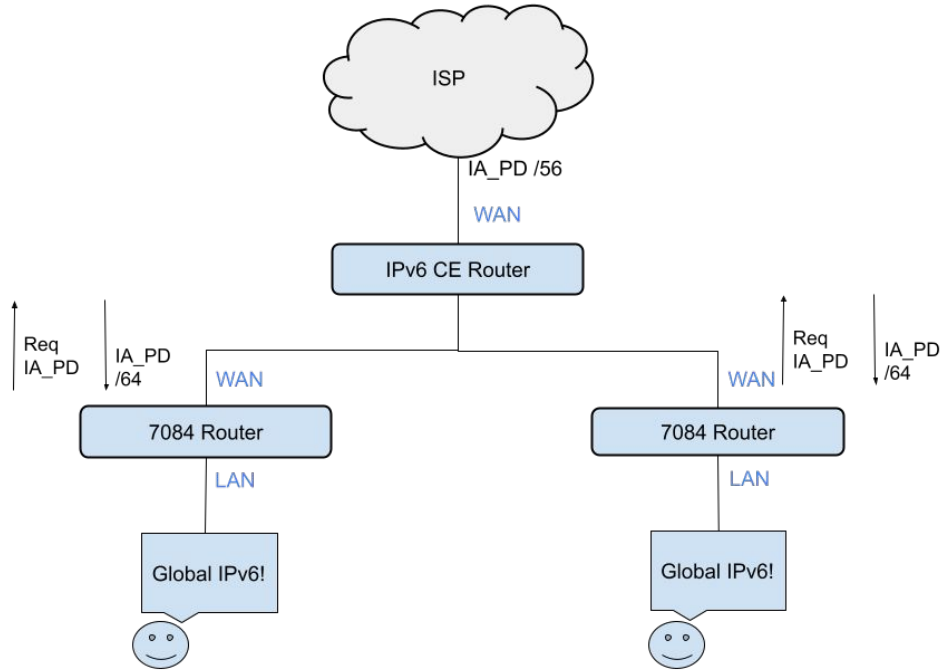
PD clients (7084 Router) can ask for multiple /64 IA\_PDs from the Customer Edge router.

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

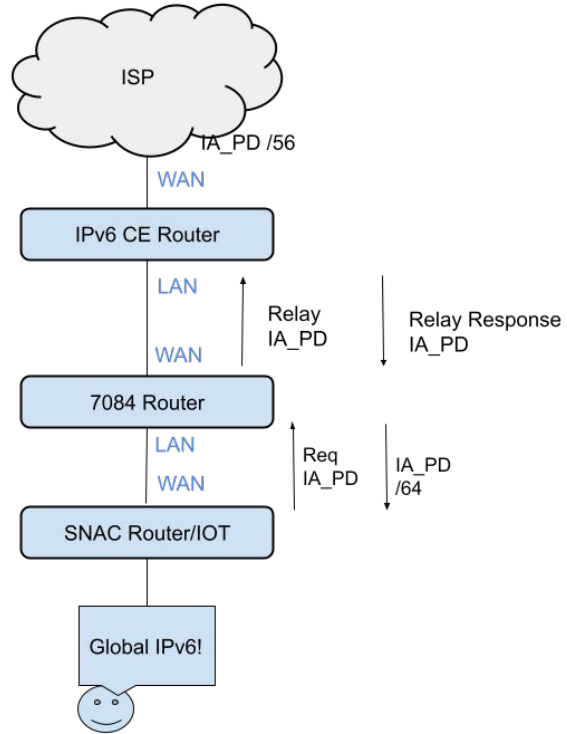
## 2 Network - Simple



## 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.
  - DHCPv6 IA\_NA doesn't get answered in DHCPv6 Relay
  - Must perform DHCPv6 Relay Route installs



## Next Steps

- If interested, follow the draft on v6ops mailing list.