

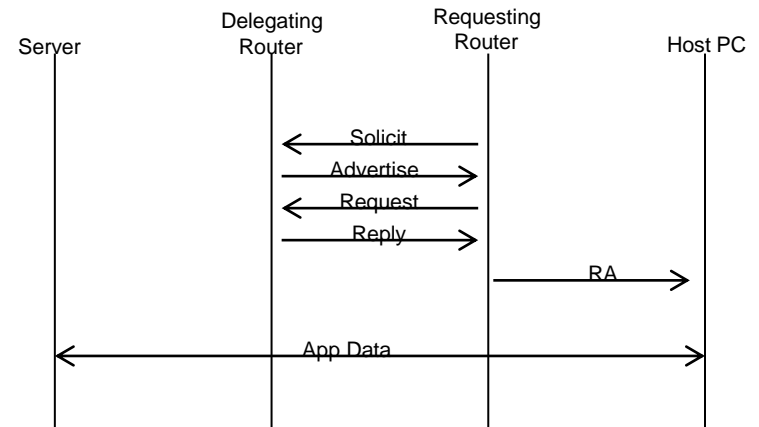
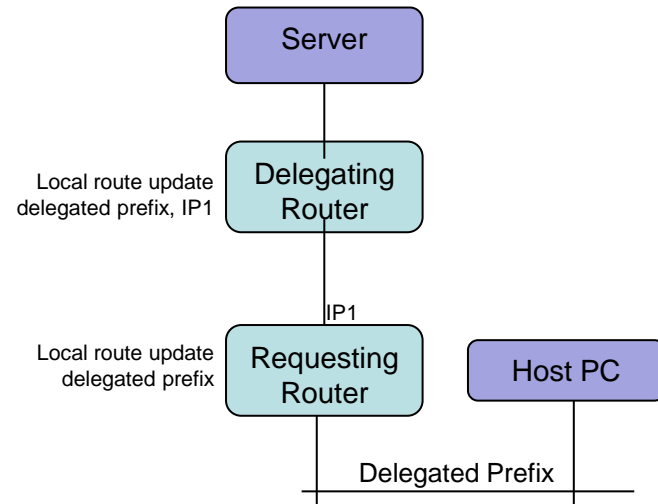
# Route Problem at Relay during DHCPv6 Prefix Delegation

`draft-petrescu-relay-route-pd-problem-00.txt`

Mohamed Boucadair, Leaf Yeh,  
Alex Petrescu (speaker)

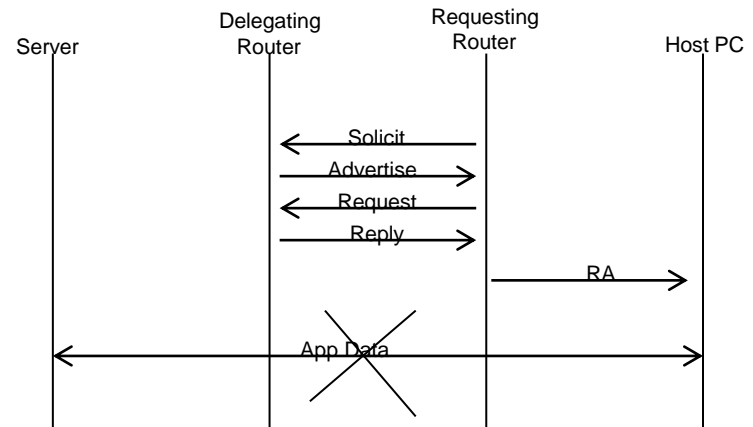
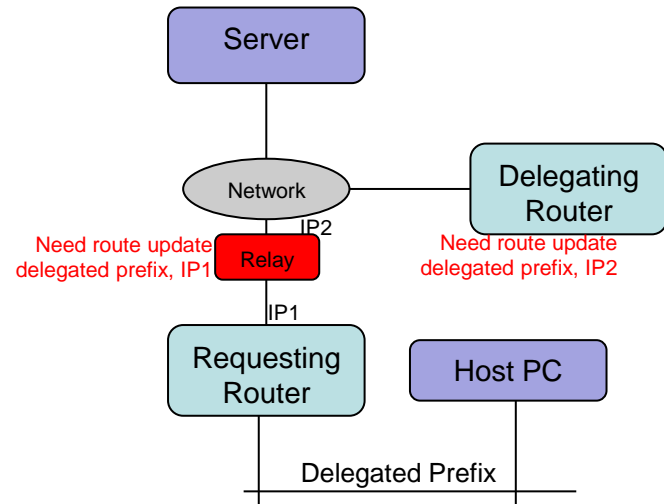
# Typical DHCPv6 Prefix Delegation operation

- DHCPv6 Prefix Delegation RFC3633
- Solicit/Advertise/Request/Reply
- Delegated Prefix
- Requesting Router requests a prefix to be used on its other interface.
- *Without* a Relay Agent everything is ok.



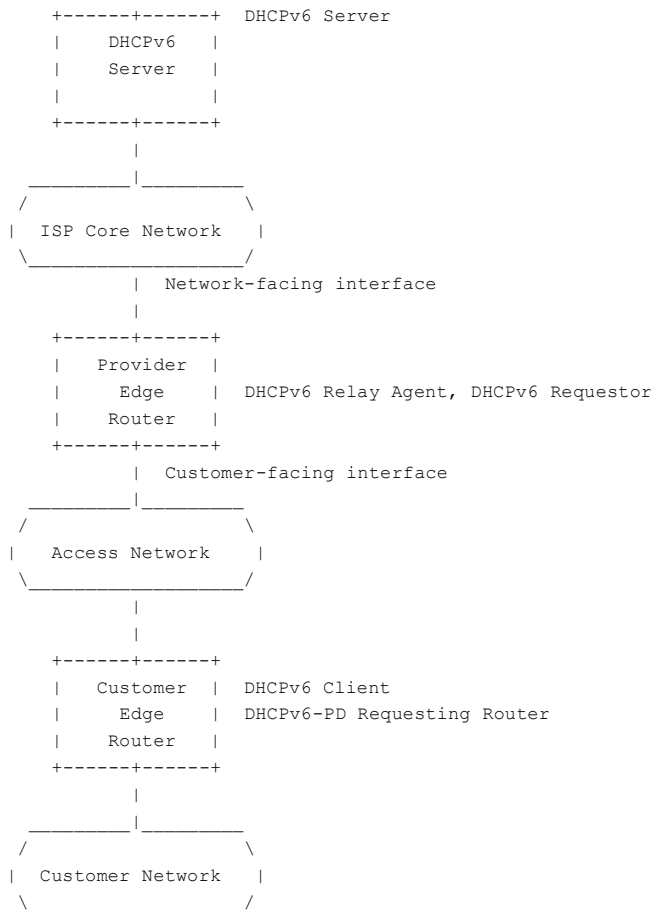
# DHCPv6 PD with a Relay Agent

- DHCPv6 Prefix Delegation RFC3633 section 14 needs '**a protocol or other out of band communication to add routing information for delegated prefixes**'
- Relay Agent is not interpreting contents of Advertise/Reply
- Relay Agent needs to set up routing for the delegated prefix and the (dynamic) IP1
- *With* a Relay Agent some implementations 'snoop'.

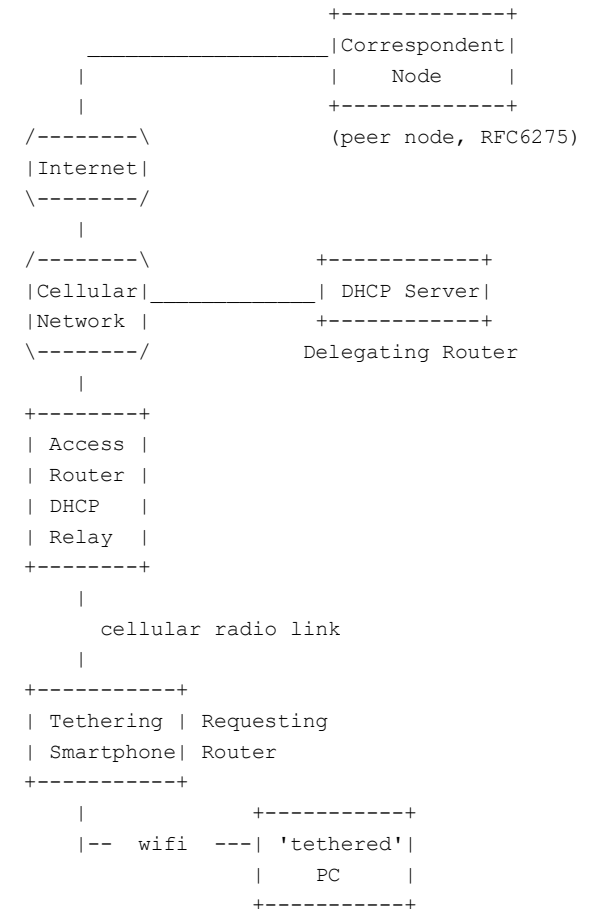


# Large-scale Deployments

## Home Access (ADSL)



## Mobile Hotspot (cellular)



# Requirements

- A deterministic dynamic means for route announcements and aggregation to be undertaken by PE routers while ensuring consistency with DHCP prefix assignment states
  - Optimizing the size of routing messages and forwarding tables (aggregation)
  - Avoid failing to deliver incoming app packets to a customer serviced behind a given PE router.
  - Triggers to drive the level of route aggregation and required route announcement actions.
  - Prefix assignments and routing actions must be correlated.

# Solutions

- DHCPv6 message snooping for PD-prefix
  - draft-lemon-dhc-topo-conf-01 static prefix assignment policies
  - draft-ietf-dhc-dhcpv6-agentopt-delegate for PD-prefix
  - draft-ietf-dhc-dhcpv6-prefix-pool-opt-03 for prefix pool of PD
  - draft-joshi-dhc-dhcpv6-aggr-route-opt for aggregation route of PD
  - draft-stenberg-pd-route-maintenance-00
  - (ICMP Redirect)
- 
- See pros/cons of each, in this draft

# Conclusions & future work

- Is it interesting to work in this space?
- Shall we improve the draft?
- Should one design a solution?
- Are there other solutions that we may have missed?