DHCPv6 Prefix Delegating Relay

draft-fkhp-dhc-dhcpv6-pd-relay-requirements-02

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Introduction

- Operational experience of mainstream commercial relay/router implementations have shown a number of problems when the delegating router/relay function is separated from the DHCPv6 server

- The draft uses the term ‘delegating relay’ to describe this device
What Problems have we seen?

• Messages not being forwarded by the relay
  – Relay decides if the message will be forwarded or not
• Relay generating messages/errors on behalf of server
• Loss of PD state on reboot
  – The relay loses PD state and client traffic can’t be forwarded
• Multiple PD leases by a single client
  – Relay will only create a single prefix binding per-DUID
• Dropping messages with duplicate MAC or DUID received on different interfaces
What has RFC8415 got to say about it?

- RFC8415 is sketchy on how this is meant to work (section 19.1.3):

  A relay agent forwards messages containing prefix delegation options in the same way as it would relay addresses (i.e., per Sections 19.1.1 and 19.1.2).

  If a server communicates with a client through a relay agent about delegated prefixes, the server may need a protocol or other out-of-band communication to configure routing information for delegated prefixes on any router through which the client may forward traffic.

- This is true, but incomplete – the relay needs to implement a state machine synchronized with the server and client

- The lack of existing specification makes it difficult for to get implementations with

- This draft describes problems that and defines a set of requirements
Requirements

• Follows the RFC7084 approach of an Informational document with RFC2119 requirements language (changed in -v02)

• 4 categories of requirements
  – General
    • Message forwarding, multiple prefixes, lease/timer maintenance
  – Routing
    • Only deals with routing between relay and client, prefix re-distribution is not covered
  – Service continuity
    • PD persistent storage, lease query and client link failures
  – Operational
    • PD state and maintenance
Next Steps...

• Some comments have been received
  – v02 incorporates these
• Any additional reviews or feedback welcome!
  – Especially interested in any additional problems that have been observed in operator deployments
  – Suggestions for additional requirements

• Call for WG adoption?