

DHCPv6 through Tunnels

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Problem:

- Run stateless DHCPv6 over a link-layer that:
 - doesn't support multicast
 - has no link-local address
- Assumptions:
 - The unicast address of the DHCPv6 server is known

Solutions:

- Need to run DHCPv6 using global addresses.
 1. Local DHCPv6 relay integrated with client.
 2. Allow client – server communication using global addresses.

Issues:

- Core requirement for using multicast from client was to assure that packets always included relay information if client/server not on same "link"
- Note - this may be a non-issue if server or relay is at other end of tunnel.
- RFC3315 clearly noted that there may be networks where different transmission techniques may be required.
- as client typically only had link local best to use that as it was "always" available ... This also made sending to non-link local not possible (routers probably drop packets to global if source is link-local).
- if unicast used as destination, how is it discovered?
- as no alternative transmission standards existed, servers (& relays) may enforce multicast so that may be an issue for deployments (but likely as new / updated relays and servers are needed, this is minor).
- unicast provides no redundancy if destination is down (though perhaps there are ways around that - virtual address which moves or anycast address).
- for clients, there may be issues with certain set ups where client doesn't know what is upstream, so network specific transmission techniques might fail if the client is unaware. Or it may require special assistance from another element. (Think of tethered devices.)
- But other than the above, I don't see why unicast could not work. And in a tunnel environment, clearly some of the requirements above are not a concern.