Stateless Reconfiguration in DHCPv6

draft-jiang-dhc-stateless-reconfiguration-00

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Sheng JIANG (Speaker)
Bing Liu
Problem

- DHCPv6 stateless configuration allows network configuration information to be propagated to nodes
  - IPv6 addresses are obtained through some other mechanism
- There is no mechanism to inform these configured clients if some configuration information is changed
- Unsuitable approaches
  - Transplanting Reconfigure message of RFC3315 into stateless DHCPv6 does not work, because in stateful DHCPv6, servers send Reconfigure messages to clients using their UNICAST addresses
  - Information Refresh Time Option of RFC4242 assigns a lifetime to configuration information. Unfortunately, the minimum of refresh time is 10 minutes. It is also not suitable for unplanned configuration changes
Proposed Stateless Reconfiguration

- A mechanism for the DHCPv6 server to be aware of all relay agent destinations

- Link-local scope well-known all-client multicast

- DHCPv6 server propagates Stateless Reconfigure Message to all known relay agents by unicast. Then, the message is broadcasted to all on-link clients by link-scope multicast. Clients response Information-Request Message after random delay
Design Choices to be confirmed by WG

- \{Question to WG No.1\} There are three potential mechanisms to create relay agent destinations on the DHCPv6 server
  - a) network administrators manually configure static unicast addresses of all relay agents on the DHCPv6 server
  - b) define an ALL_RELAY_AGENT multicast address, for which network administrators need to maintain an all-relay-agent multicast group.
  - c) the DHCPv6 server dynamically records unicast addresses of all relay agents from client Information-request messages. The dynamic records need a keepalive mechanism between relay agents and servers

- \{Question to WG No.2\} directly advertise new configuration or trigger client information-request?
  - The authors prefer latter, which is similar with stateful reconfiguration, and also provide the potential possibility that the server response to information-request differently according to various user policies
Design Choices to be confirmed by WG (2)

- {Question to WG No.3} direct Stateless-Reconfigure message or encapsulated Relay-Reply message
  - the current form of this document is based on latter, which is similar with stateful DHCPv6 reconfiguration and have minimum impact to relay behavior

- Upon receipt of a valid Stateless-Reconfigure message, after a random delay time, the client responds with an Information-request message. {Question to WG No.4} Should we define a maximum time of random delay time? If yes, should it come from server by a new option?
Comments are welcomed!

Is that a real issue that DHC WG should work on?

Thank You!