

Forcerenew Reconfiguration Extensions for DHCPv4 draft-fang-dhc-dhcpv4-forcerenew-extensions-01

Luyuan Fang, lufang@microsoft.com

Deepak Bansal, dbansal@microsoft.com

Fabio Chiussi, fabiochiussi@gmail.com

IETF 94, DHC WG, November 5, 2015

Problem Statement

- DHCP is used by cloud and network providers to distribute not just IP addresses, but also other configuration parameters
- In DHCP reconfiguration, it is desirable:
 - DHCP Client be able to distinguish whether reconfiguration includes IP address or only pertains to other configuration information
 - DHCP Client be able to decline reconfiguration if it only pertains to other configuration information
- This is achieved in DHCPv6 [draft-ietf-dhc-rfc3315bis-02], but not in DHCPv4
 - DHCPv6 is getting deployed, but the reality is that DHCPv4 will continue to be used in the network for many years, thus feature parity, when possible, is important

Purpose of This Draft

- Align DHCPv4 reconfiguration procedure with DHCPv6 reconfiguration procedure, to make it possible for the client to distinguish reconfiguration of information parameters other than IP address (i.e., without IP address renew) from reconfiguration involving IP address

Aligning DHCPv4 to DHCPv6 Reconfiguration

- In DHCPv6 [draft-ietf-dhc-rfc3315bis-02], the “server includes a Reconfigure Message option in a Reconfigure message to indicate to the client whether the client responds with a Renew message, a Rebind message, or an Information-request message.”
- In DHCPv4, when receiving DHCPFORCERENEW message [RFC 3203], the client must reply by initiating a Renew/Reply procedure
 - “usage of the FORCERENEW message to reconfigure a client address or local configuration parameters can lead to the interruption of active sessions”
 - The DHCPFORCERENEW mechanism is really meant to force a reconfiguration of the client’s IP Address, and should be extended to better handle the case of reconfiguration of only parameters other than IP address

DHCPFORCEINFORENEW for DHCPv4

- Introduce a new DHCPFORCEINFORENEW message
 - DHCP message type 53, value = DHCPFORCEINFORENEW (Ask IANA)
 - DHCP Client responds with DHCPINFORM message
 - DHCP Server abandons reconfiguration if it does not receive any response from client after exponential backoff
- Security considerations
 - Same as for the DHCPFORCERENEW ([RFC3203], [RFC6704])
 - Authentication as described in [RFC3118], [RFC6704]

Changes from -00

- Updated draft to incorporate comments from Christian Huitema and Bernie Volz

Next Step

- Gather more feedback from the WG
- Update draft to implement comments that we have received since -01 was published, and new comments from WG