Registering Self-generated IPv6 Addresses using DHCPv6

draft-wkumari-dhc-addr-notification-04

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IETF115, London, Nov 2022

Quick Recap

What: a new DHCPv6 message to inform DHCPv6 server about statically configured or SLAAC addresses (like DHCPINFORM)

Why:

- Better visibility to IPv6 addresses used by devices
- Useful for troubleshooting and security/forensics
- Easy to integrate into existing DHCPv6 logging/IPAM infra
- Allows host to send network other information, such as hostname

More details: IETF114 Slides

Changes Since IETF114

Sending Registration Message

Message MUST be sent…

- from the address being registered
    - combined with SAVI/L2 security - reduced spoofing
    - *implies that each message contains one IA_NA only*
- via the interface the address is configured on
    - *to deal with multihomed hosts*

MUST NOT be sent for DHCPv6-provided addresses

- *so only SLAAC/Static addresses are registered*

Receiving Registration Message

Discard the message if:

"the address is not appropriate for the link" (RFC8415)

Valid message:

Mark the address as unavailable, do not offer it

SHOULD it be doing this? Or MAY?

Log the binding

Retransmits

Proposed approach:

- ADDRREG_XMIT *(default: 3)* packets
- ADDREG_RT_DELAY *(default: 3 secs)* between each packet
- Jittered
- Variables SHOULD be configurable

Not much point adding ACKs, since initially no servers will respond

Registration Refresh

Refresh messages frequency is minimal of:

- 4 hrs

- ⅓ of Valid Lifetime in the PIO which caused the address creation
  - *to avoid issues caused by subsequent PIOs with different lifetimes*

Retransmit logic as described on the previous slide

Another retransmit option (not in -04)

Retransmit strategy as per RFC8415 section 15:

    IRT: REG_TIMEOUT

        REG_TIMEOUT: new, default: 1 sec

    MRT: 3600

    MRC: 0

    MRD: 0

Takes care of refreshing as well

Next Steps

More comments, suggestions?

Open questions:

Retransmit strategy?

Rename "Registration" to "Inform"?

Adoption Call?