draft-dhankins-dhcpinform-clarify-00

IETF 73

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ISC

DHCPINFORM Problems

- In use by clients that DORA'd.
  - RFC 2131 denies a server to "check for an existing binding". If the binding contains configuration state (lease->pool), then the server may send different configuration in reply.
  - This is a subtle compatibility issue; the client **does** reconfigure itself with the new DHCPACK contents, but now has a potentially invalid configuration.

- ciaddr, htype, hlen, chaddr, are zeroed.
  - RFC 2131 is non-normative that this is an invalid transmission, and server 'SHOULD' transmit reply to ciaddr.
  - What does that imply if you don't follow the SHOULD?
  - There are multiple server implementations that workaround compatibly ("be liberal in what you receive").

DHCPINFORM Problems

- 'chaddr' is a fixed magic value.
  - DHCPACKs made for DHCPINFORMs are directed as normal IP unicasts (sendto()) to the 'ciaddr' field contents, provided it is nonzero.
  - The DHCP server's OS will route the IP packet normally, in which case the "DHCP Relay" may appear to ARP for the 'ciaddr' contents, or the DHCP Server itself may ARP for the client if it is directly attached.
  - This creates an illusion in the eyes of client implementers that DHCPINFORM always directs the reply with ARP.

- 'giaddr' – do we still think it was a good idea to unicast to 'ciaddr' regardless?

Client Notes

- DORA clients want "other servers' options".
  - In case the binding server was not the only one.
  - Largely seeking option 252 (WPAD), but others too.
  - Will retransmit inform until satisfied. Providing 252 at DORA time (despite absence on PRL) works as a "poison pill."
  - Often the DORA and inform client are separate, but connected.

- The zeroed field clients are believed to be running under Microsoft ".Net".
  - But the author and speaker are not experts on the subject.

- The fixed 'magic chaddr' clients were identified by Ralph Droms.

Other RFC 2131 Notes

- 4.1: Relays relay to yiaddr. It is zero?
- 3.4: Non-normative language says 'yiaddr' zero.
- 4.3.5: Server SHOULD NOT fill in 'yiaddr'.
- 4.3.1 Table 3: DHCPINFORM's DHCPACK must have "'xid' from client DHCPREQUEST message".
    - Are we supposed to cache it?

dhcpinform-clarify Goals

- ## Permit read-only lease binding reads.
  - Clarify RFC 2131 demands no lease extension or permission-checking, so lease-specific config sourcing is legal.

- ## Clarify a single standard 'zeroed field' support.
  - Ted Lemon wrote the first workaround.
  - ISC has since "fixed" this twice.
  - Suggesting "third and final" peer reviewed algorithm.

- ## Clarify ARP is not universal.
  - 'magic chaddr' is illegal.

- ## Consider redrafting 'giaddr' behaviour to conform to other messages (DISCOVER/REQUEST).

dhcpinform-clarify Status

- More review by Alfred is pending for -01.
- The draft does not currently document 'giaddr' changes (except to assist with the chaddrless).
  - It is an open question.
- Client behaviour is explicitly spelled out.
- Server behaviour under construction; trying to review what ISC DHCP does and create a proper standard this time.
- Is this a WG item?