Layer 2 Relay Agent
DHC WG
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Little bit of history

- During Chicago WG meeting, we discussed draft draft-joshi-dhc-layer2-relay-agent-01. This draft described the Layer 2 Relay Agent [L2RA] functionality and some extension to it. This draft focussed on extension assuming Layer 2 Relay Agent functionality is widely known.

- In WG meet and on mailing list, it was discussed that an Informational document on Layer 2 Relay Agent is required which describes the Layer 2 Relay Agent functionality and how some of the existing Layer 2 Relay Agent implementations works.

- This is why draft 'draft-joshi-dhc-l2ra-00.txt' is created.

Layer 2 Relay Agent

- A layer 2 device that snoops DHCP messages and appends/removes relay agent information option before forwarding them.

- Need of a Layer 2 Relay Agent [L2 RA]

  - In some network scenarios, a DHCP server can not uniquely identify the end host using the Relay Agent Information appended by Layer 3 Relay Agent [L3 RA]. In these cases, the closest layer 2 device appends/removes Relay Agent Information option.

  - Some Layer 2 devices snoops DHCP messages to create MAC-IP binding table. This helps in preventing MAC and IP spoofing attempts
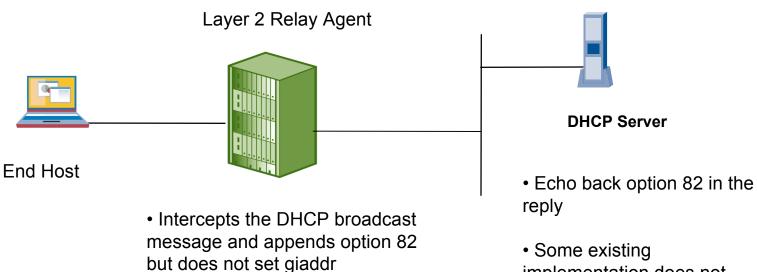
L2RA – L3RA

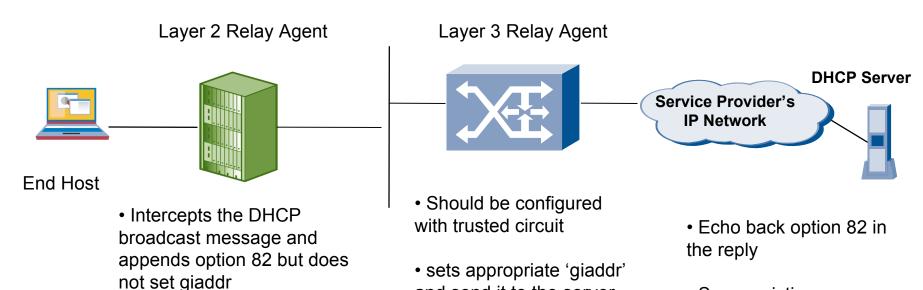| L2RA	L3RA
• Adds Option 82 but does not set 'giaddr' . • Does not has DHCP server information • Broadcasts the upstream DHCP messages towards L3RA or DHCP server. • May intercept unicast DHCP messages if it maintains lease information	• Adds Option 82 and populate 'giaddr' as it deems appropriate. • Has the DHCP server information • Unicasts the DHCP messages to the DHCP server •Usually does not intercept unicast DHCP messages

Network Scenario #1

Layer 2 Relay Agent

DHCP Server

End Host

• Intercepts the DHCP broadcast message and appends option 82 but does not set giaddr

• Intercepts the reply message and removes option 82 and may use it to identify the outgoing interface

• Some existing implementation intercepts unicast DHCP request and reply message and appends/remove option 82.

• Echo back option 82 in the reply

• Some existing implementation does not support this as 'giaddr' is not populated

• Some existing implementation does not support echoing back option 82 in reply to a unicast message.

Network Scenario #2

Layer 2 Relay Agent

Layer 3 Relay Agent

DHCP Server

Service Provider's IP Network

End Host

• Intercepts the DHCP broadcast message and appends option 82 but does not set giaddr

• Intercepts the reply message and removes option 82 and may use it to identify the outgoing interface

• Some existing implementation intercepts unicast DHCP request and reply message and appends/remove option 82.

• Should be configured with trusted circuit

• sets appropriate 'giaddr' and send it to the server

• Echo back option 82 in the reply

• Some existing implementation does not support echoing back option 82 in reply to a unicast message.

Next Step

- Working Group Item?

- More review on mailing list for both L2 RA draft.

Thanks!