




Layer2 DHCP Relay Agents

draft-miles-dhc-dhcpv6-ldra-02

draft-ietf-dhc-l2ra-04

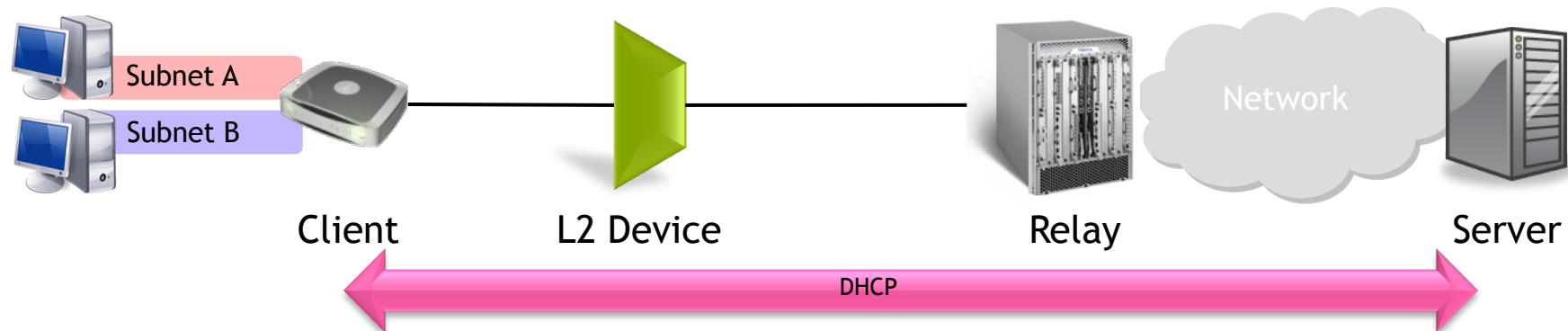


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IETF 74 - DHC Working Group

Problem Statement

- Insert Relay-Agent Options on non-routing devices
- No IP configuration (suitable for wholesale DSLAMS)
- Minimal Footprint and interaction with clients (avoid ND, ICMPv6, etc)
- For DHCPv4 and DHCPv6
- Minimal changes to client, existing L3 relays or server



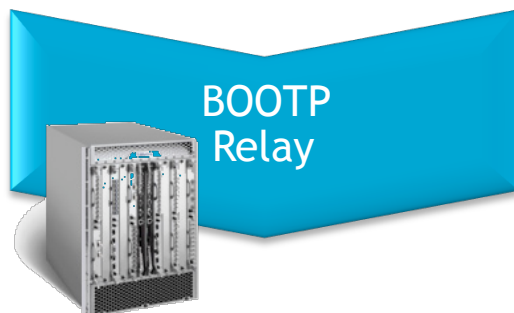
Layer 2 and Layer 3 Relay Agent Comparison

Layer 2 Relay Agents	Layer 3 Relay Agents
Adds relay options without updating giaddr (DHCPv4) or link-address (DHCPv6)	Updates giaddr and link-address with the IP interface address
Is not explicitly configured with DHCP server location	Is typically configured with DHCP server location
Broadcasts upstream DHCP messages to another relay	Typically unicasts upstream DHCP messages to a server
Is not an IP host	Is an IP host
Use the IP/link-layer address of the client	Use the IP/link-layer address of the Relay Agent

DHCPv4 (BOOTP) Relay Agent Behaviour (RFC 1542)

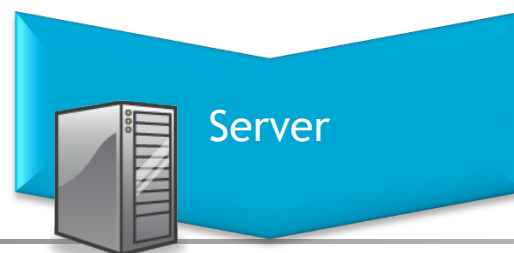


Src Client	Dst 0xffffffff	DISCOVER
giaddr 0.0.0.0	Option1	OptionX



Src Relay	Dst Server	DISCOVER
giaddr Relay IP	Option1	OptionX

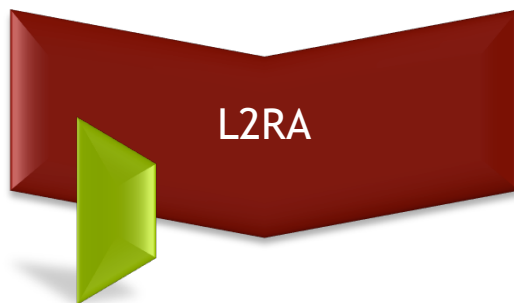
Relay Agent Options		
Option1	Option2	OptionX



Layer 2 Relay Agent Behaviour (draft-ietf-dhc-l2ra-04)



Src Client	Dst 0xffffffff	DISCOVER
giaddr 0.0.0.0	Option1	OptionX



Src Client	Dst 0xffffffff	DISCOVER
giaddr 0.0.0.0	Option1	OptionX

Relay Agent Options		
Option1	Option2	OptionX



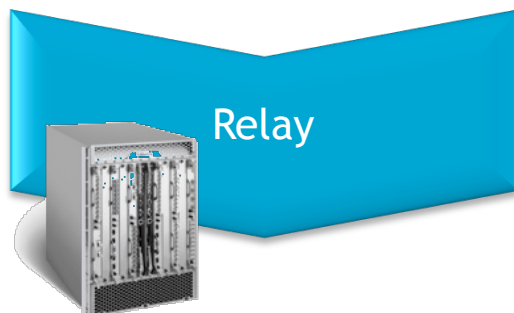
Layer 2 Relay Agent



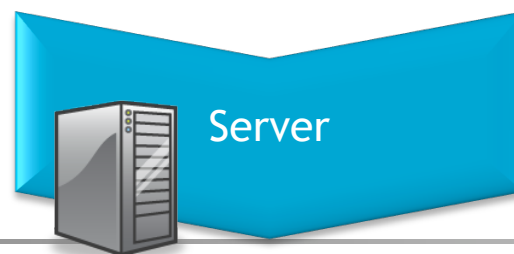
DHCPv6 Relay Agent Behaviour (RFC 3315)



Src Client	Dst All_DHCP	SOLICIT
Option1	Option2	OptionX



Src Relay	Dst Server	RELAY_FWD
Hop Count	Link Addr	Peer Addr
Relay Option1	Relay Option2	Relay OptionX

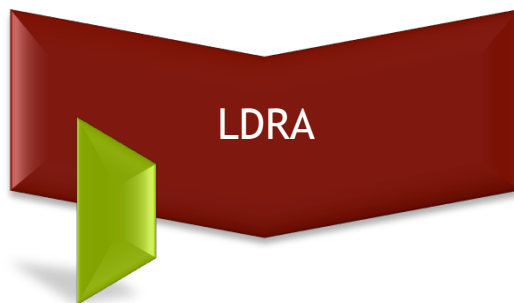


Relay-Message Option		
		SOLICIT
Option1	Option2	OptionX

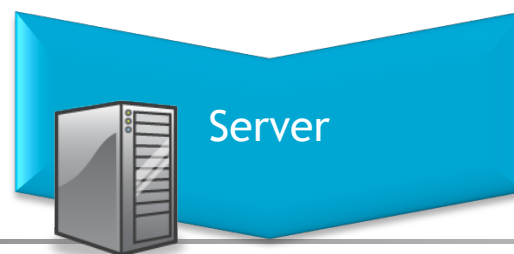
Lightweight DHCPv6 Relay Agent



Src Client	Dst All_DHCP	SOLICIT
Option1	Option2	OptionX

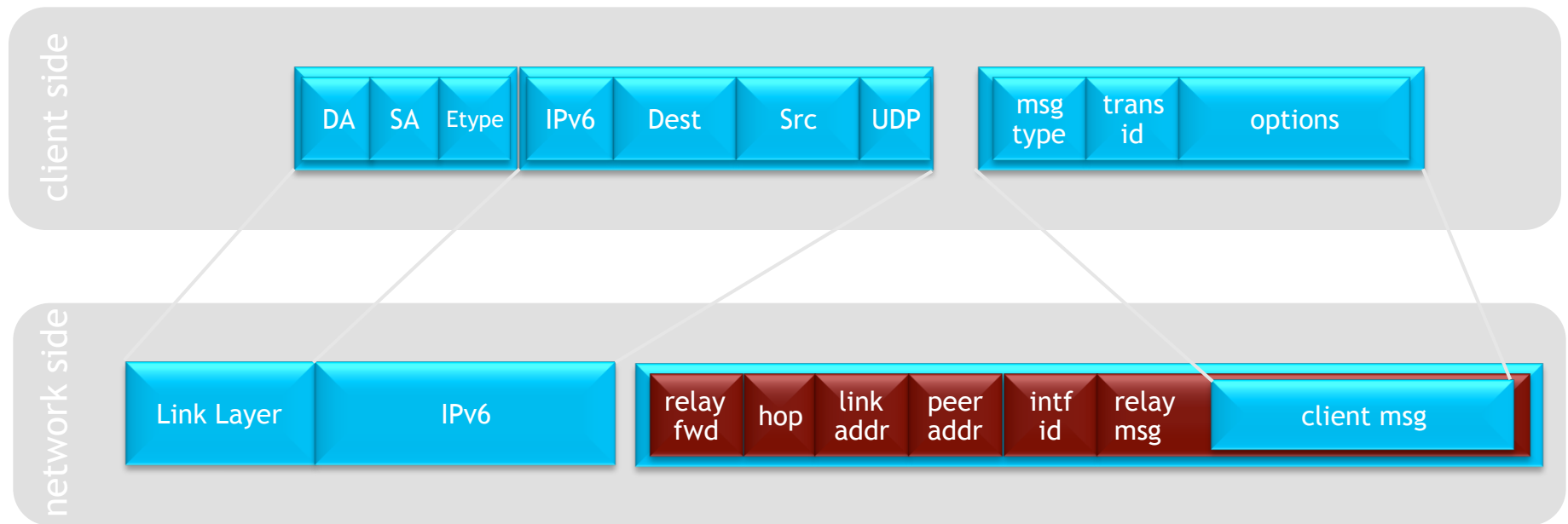


Src Client	Dst All_DHCP	RELAY_FWD
Hop Count	Link Addr	Peer Addr
Interface ID	Relay Option1	Relay OptionX



Relay-Message Option		
		SOLICIT
Option1	Option2	OptionX

Lightweight DHCPv6 Relay Agent



msg type RELAY_FORW(12)

link addr unspecified (::)

intf id opaque value

hop 0 (or hop-count+1)

peer addr client address

Closing

- Layer 2 Relay Agents (draft-ietf-dhc-l2ra-04) draft - Working group last call
- Lightweight DHCPv6 Relay Agents (draft-miles-dhc-ldra-02) draft - Working group adoption.