DHCPv6 - Route Option
Scenario 1 – Shared VLAN

Scenario:
- Single shared VLAN connects both clients
- It is desired that both clients use Router B as their default gateway (0/0)
- It is desired that only Client1 uses Router A as its primary gateway for destination subnet X/Y: A more specific route to X/Y via Rt A is thus required.
- It is required to operate in an environment where per client configuration on the Router is not possible
DHCPv6 - Route Option
Scenario 2 – Multi-homed Client

Scenario:
• Dual links (physical or logical) from client1 to Router A and B
• It is desired that client uses Router B as its default gateway (0/0)
• It is desired that Client1 uses Router A as its primary gateway for destination subnet X/Y. More specific route to X/Y is thus required.
• It is required to operate in an environment where per client configuration on the Router is not possible
DHCPv6 - Route Option
Scenario 1 – Shared VLAN

1. Client Requests DHCPv6 route option using ORO (likely among other options)
2. Server replies with Route Option for Prefix X/Y via Router A.
3. Client installs Route X/Y with Link-Local Next hop (Router A)
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Additional Background

• IGPs solve the problem but are often not feasible for deployment (e.g., Broadband DSL)
  – Simple on-demand configuration is preferred
  – Existing operational practice with IPv4 (DHCPv4 option defined in rfc3442)

• ICMPv6 (rfc4191) presents an RA based solution to this problem, however:
  – Requires provisioning of the edge router (not always possible, e.g., when router is operated by different organization).
  – In Scenario 1 forces all Clients to have the same route
  – Requires per subscriber RA state on the edge router
  – Can be an operational challenge when DHCPv4 practice is already used

• The DHCP mechanism is primarily envisaged to be used by broadband RGs acting as DHCP Clients (PD, etc)
Next Steps

- Authors would appreciate feedback from the WG
- Identify a way to progress draft between 6man and dhc