

DHCPv6 Route Option

(draft-dec-dhcpv6-route-option-03.txt)

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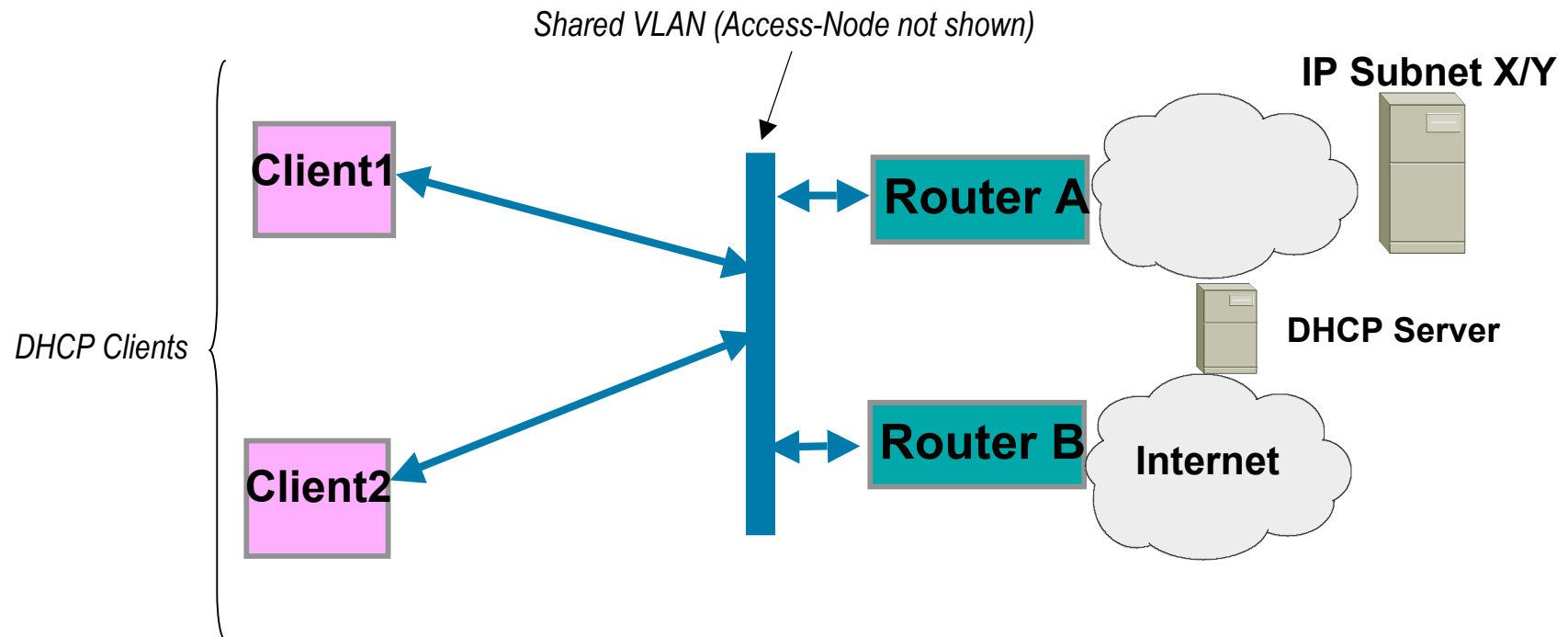
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DHCPv6 - Route Option

Scenario 1 – Shared VLAN



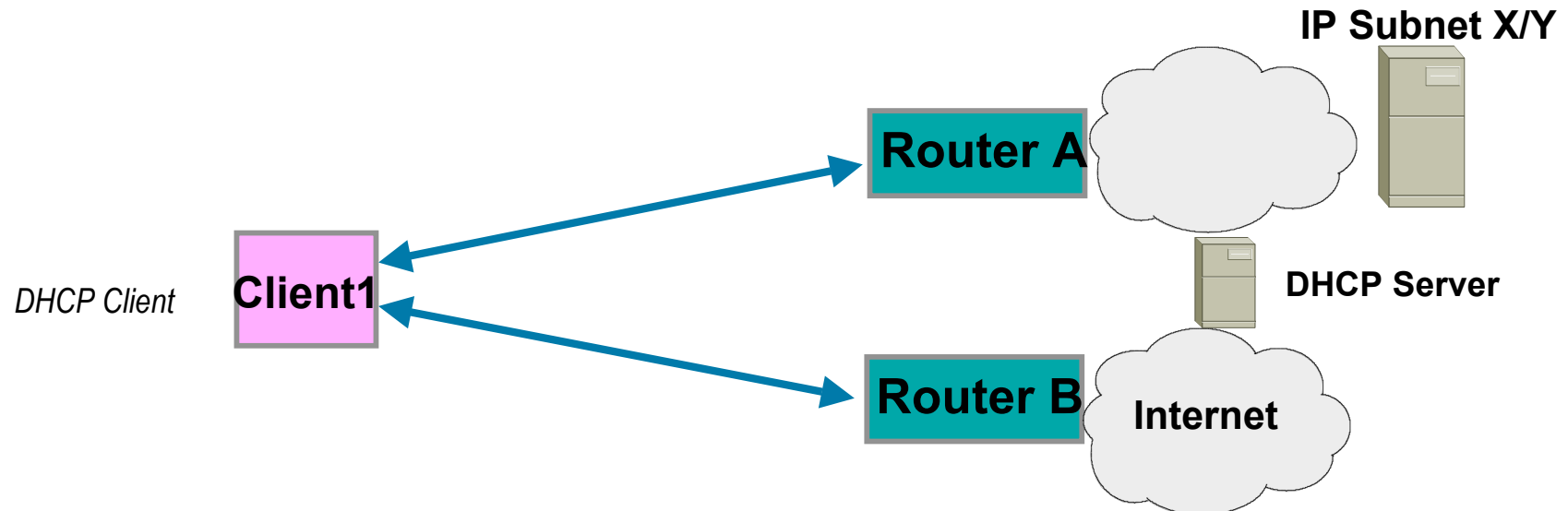
Scenario:

- 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

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Scenario 2 – Multi-homed Client

(Access-network not shown)

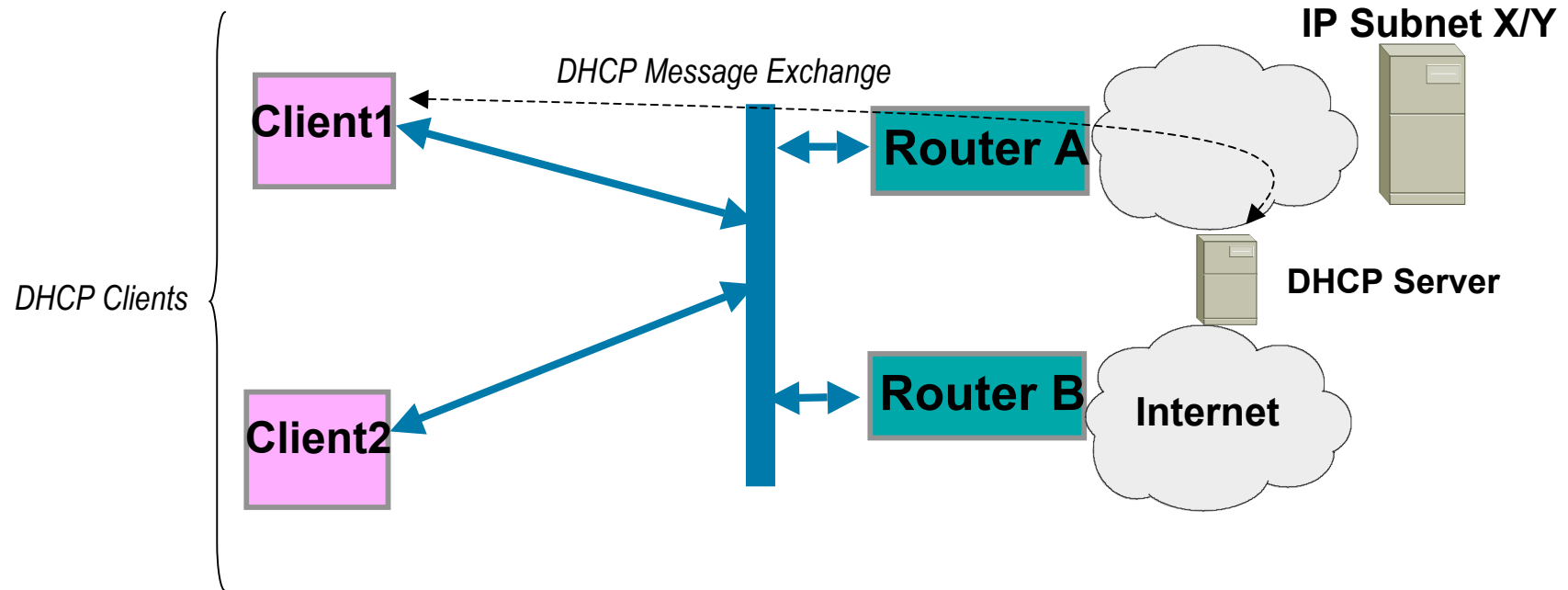


Scenario:

- 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

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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 (eg 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, eg 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