

Source Address Selection Policy option for DHCPv6

draft-hiroataka-dhc-source-address-selection-opt-01

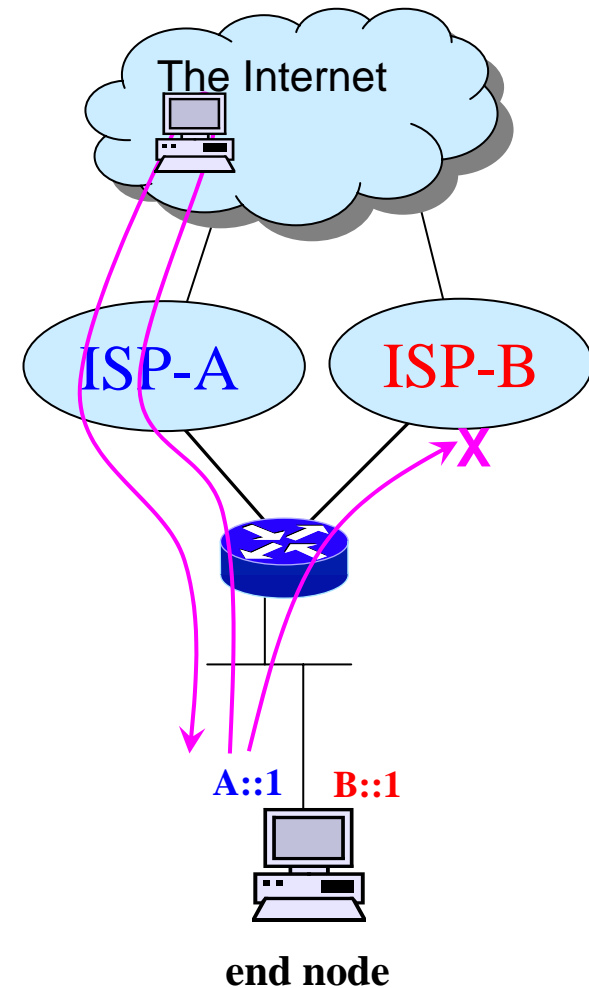
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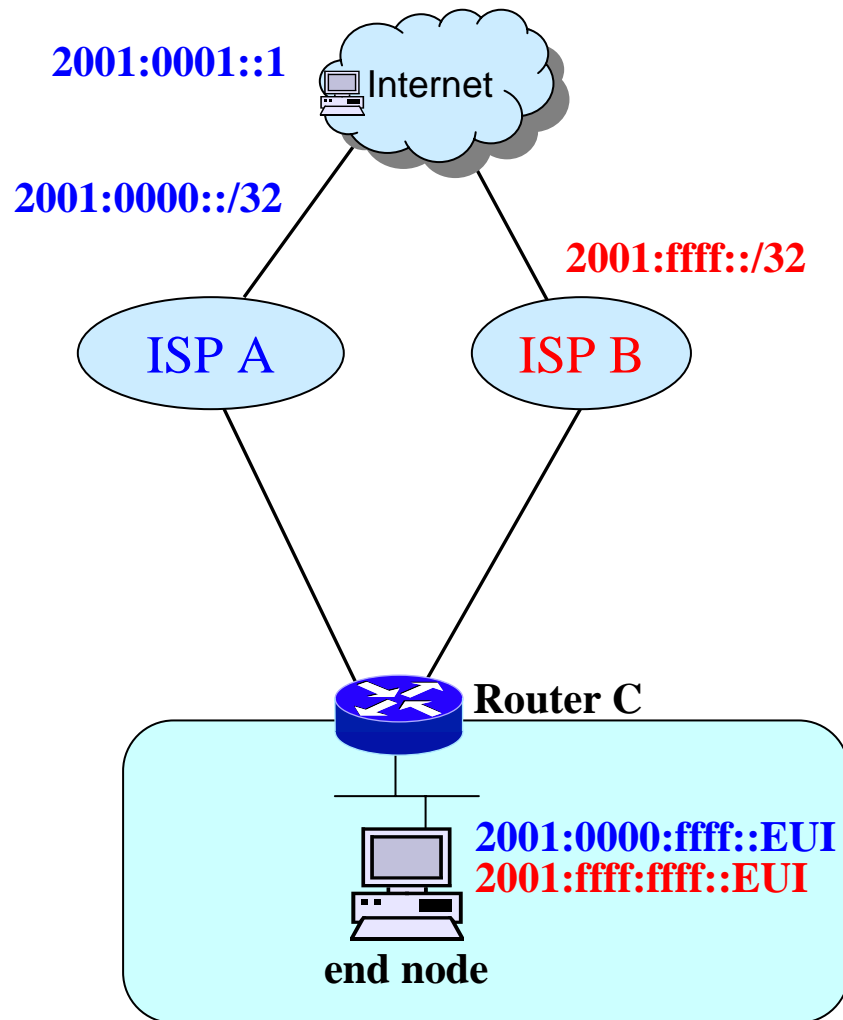
Problem:

Address Selection in IPv6

- In a multi prefix environment, proper source address selection is necessary.
 - Ingress filtering at up-stream routers
 - Multihoming between ISP and VPN
- Configuring RFC3484 source address selection policy solves this problem.
 - However, currently, no protocol to distribute the policy is available.

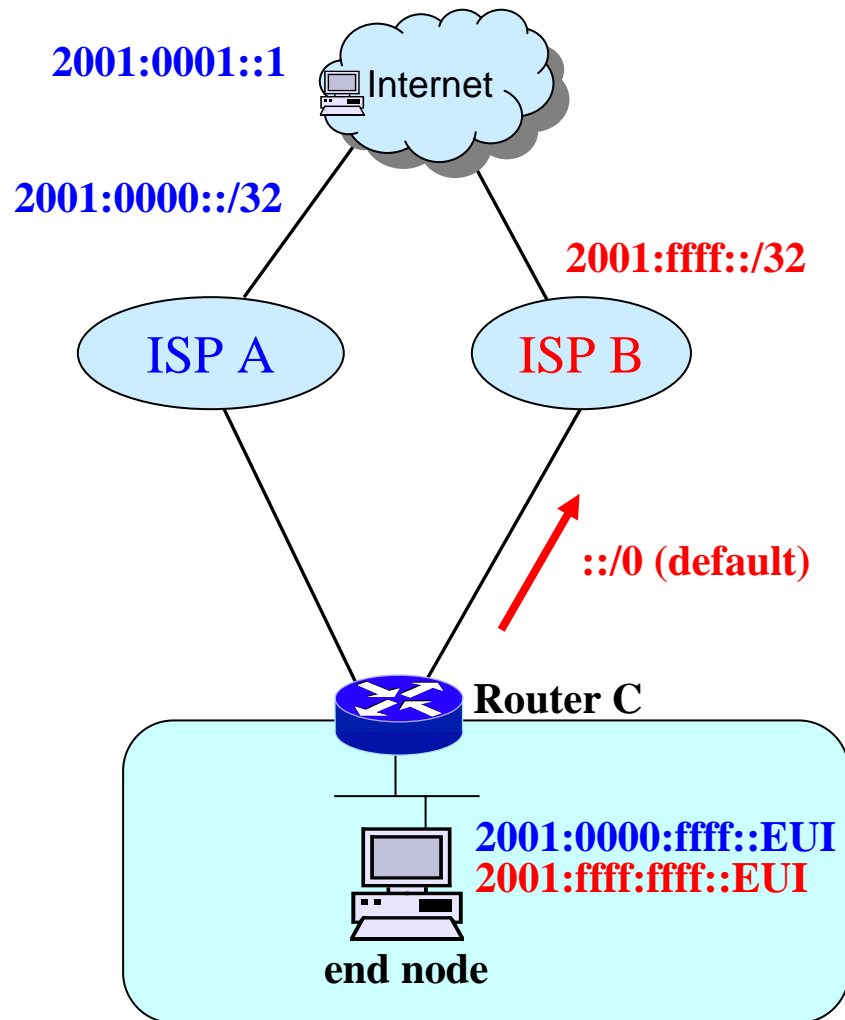


Example of source address selection problem: case 1



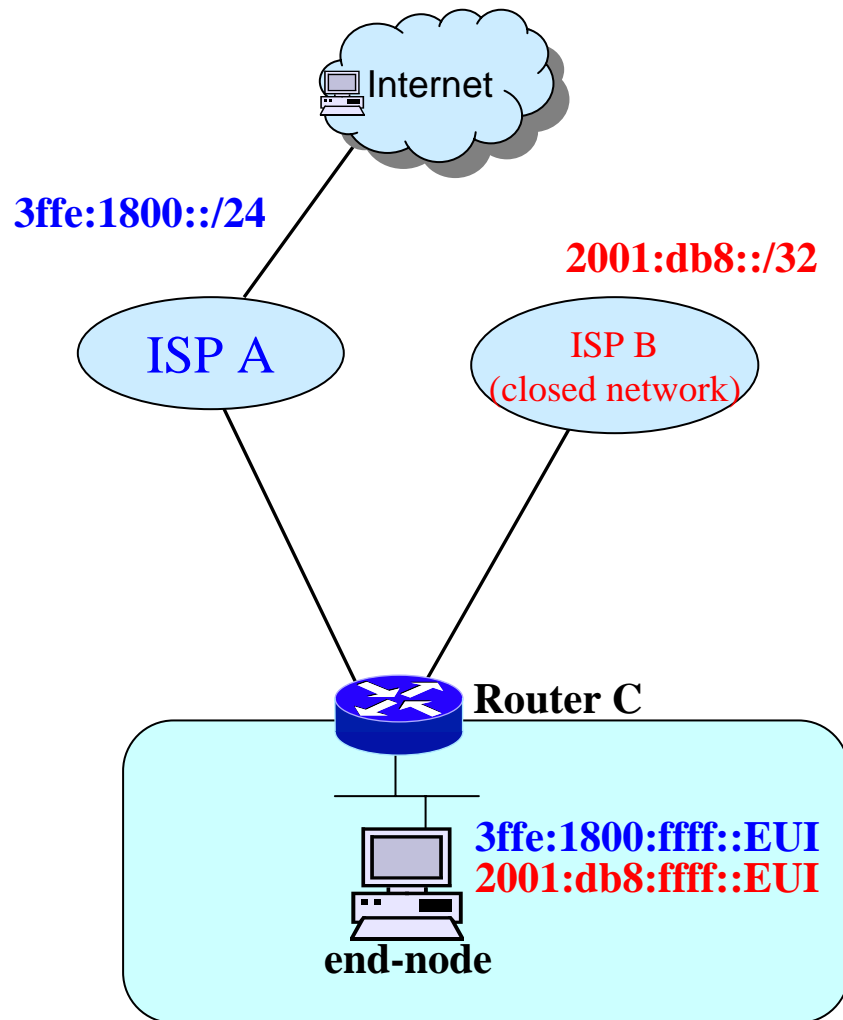
- To connect server **2001:0001::1**, source address **2001:0000:fff::EUI** will be chosen by default
 - Selected source address is independent of router C's forwarding path.
 - End nodes can select more suitable source address if they have more information.

Example of source address selection problem: case 1

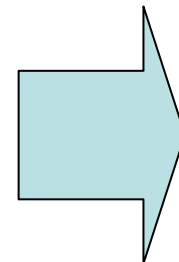


- To connect server **2001:0001::1**, source address **2001:0000:ffff::EUI** will be chosen by default
 - Selected source address is independent of router C's forwarding path.
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Example of source address selection problem: case 2

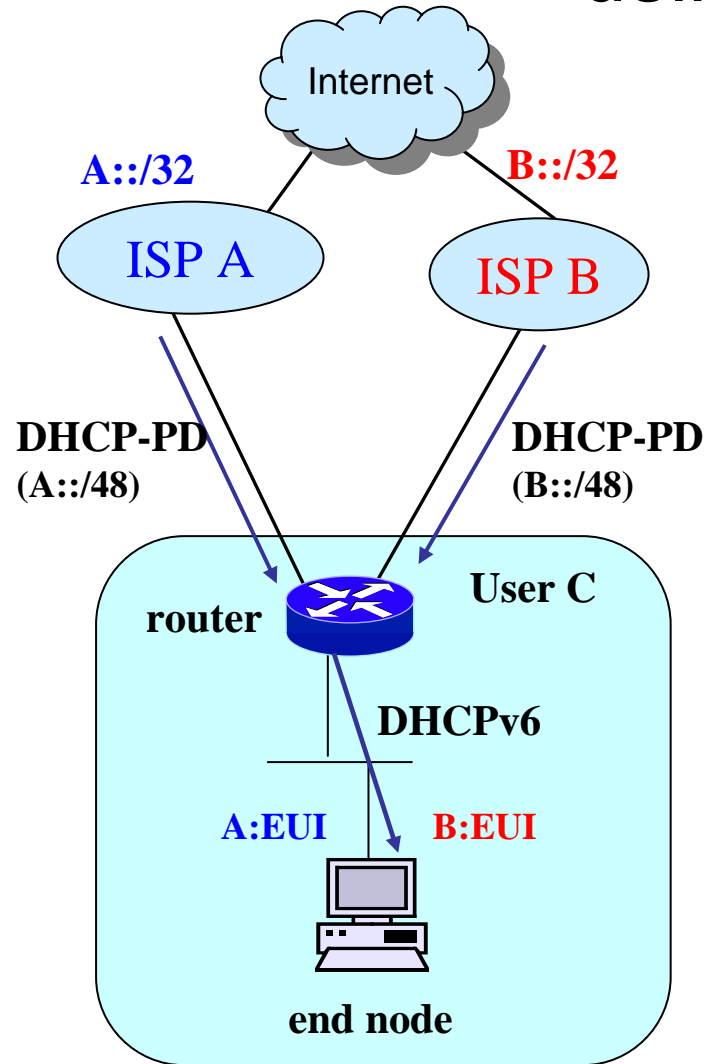


- All the packets to 2000::/3 address (IPv6 Internet) will have the source address **2001:db8:ffff::EUI**



RFC 3484 and source address selection policy distribution can solve these problems.

Source Address Selection Policy Distribution using DHCPv6



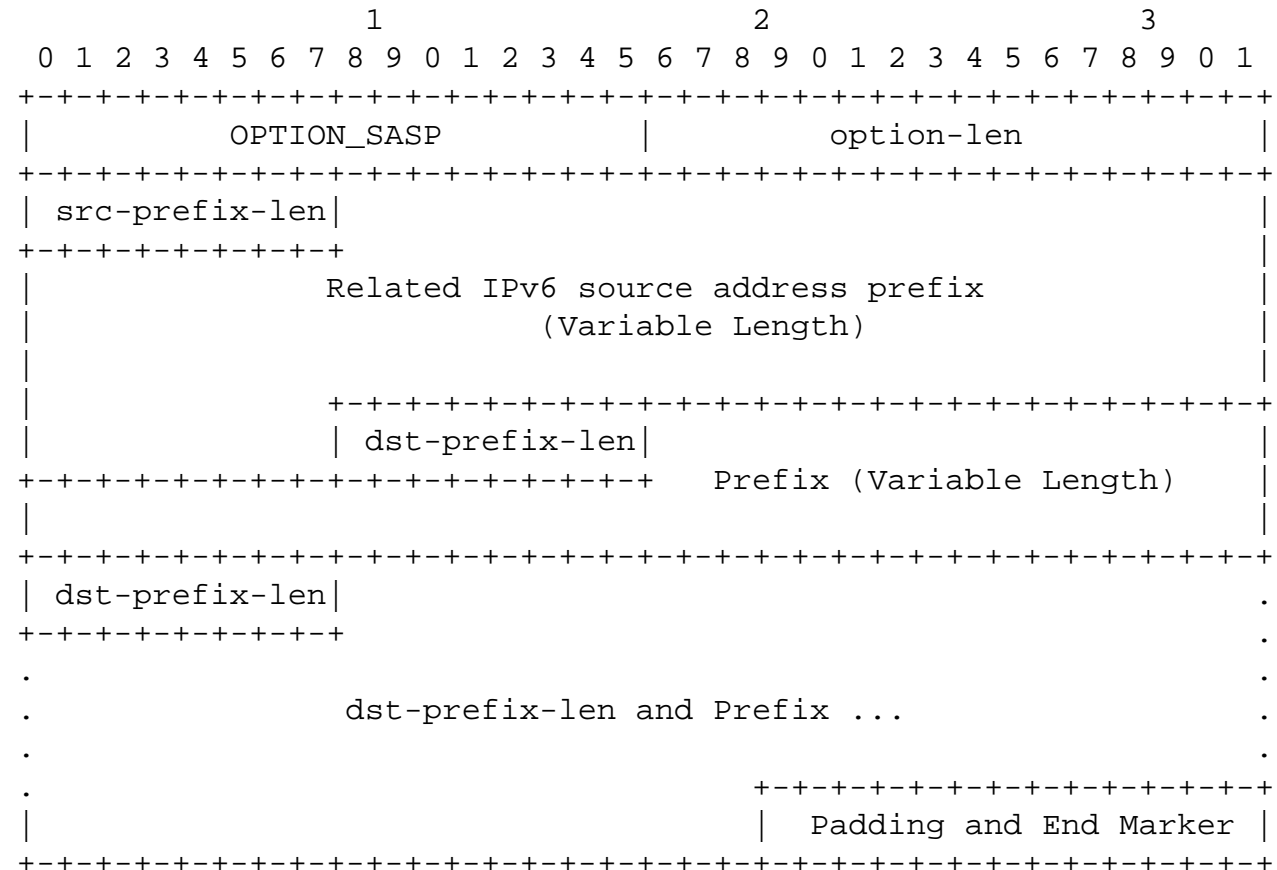
- New DHCPv6 option for distributing the policy
 - Define a stateless DHCPv6 option for policy distribution
- Automatic policy distribution
 - from ISPs to a user site
 - with DHCPv6 prefix delegation mechanism (RFC3633)
 - Distribution to each node in the end-user network
 - Using DHCPv6 option

Differences between -00 and -01

- Change the prefix encoding format
 - Reduce the total packet size
 - Similar method with ‘default router selection’ draft being discussed in IPv6 WG
- Some draft revisions
- Add some definite example to usage draft
 - draft-arifumi-ipv6-sas-policy-dist-00.txt

Proposed DHCPv6 source address selection policy option (revised format)

The "Policy" is a set of destination address prefixes and a corresponding assigned prefix



Number of destination prefix will be 2-3 per one up-stream (default and an address prefix of the upstream)

Summary

- I proposed a source address selection policy option for DHCPv6.
 - With this DHCPv6 option, all IPv6 nodes can automatically receive proper source address selection policies in a multi prefix environment.