

# Source Address Selection Policy Distribution for Multihoming

draft-arifumi-multi6-sas-policy-dist-00  
draft-arifumi-ipv6-nd-source-address-selection-opt-01  
draft-hirota-dhc-source-address-selection-opt-00

Arifumi Matsumoto

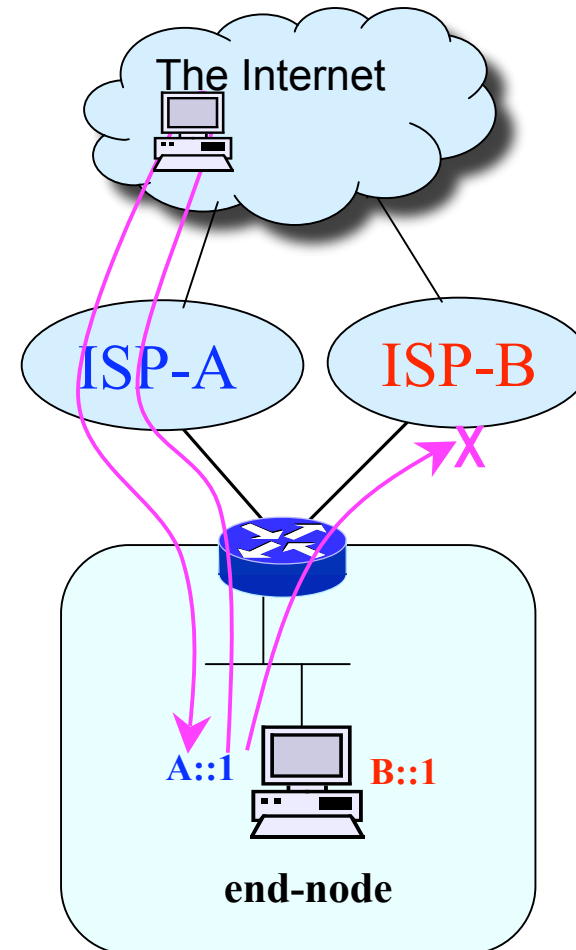
[arifumi@nttv6.net](mailto:arifumi@nttv6.net)

IP Network Technology Team, NTT

# Source Address Selection Problem

## -Case 1-

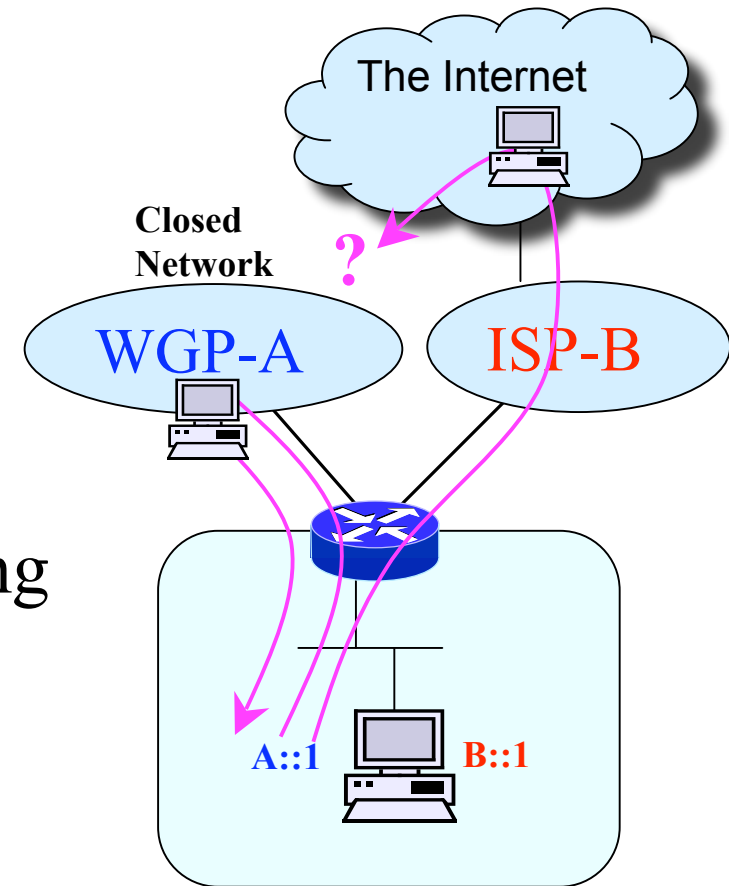
- Two or more Internet connectivity
  - When src and next-hop doesn't match, packets will be dropped by ISP's Ingress Filtering
  - End node never knows which src should be used for which dst.
  - RFC 3484 longest match doesn't solve this problem.



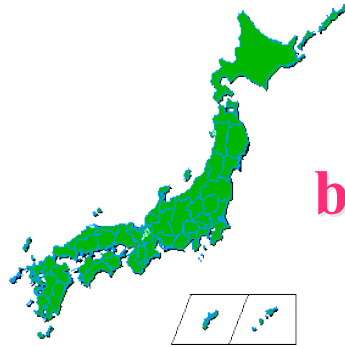
# Source Address Selection Problem

## -Case 2-

- Global-closed mixed connectivity has serious problem.
  - A packet with a wrong src address never returns, regardless of Ingress Filtering
  - It's closed because of ...
    - Security (VPN)
    - Service separation for better control (Multicast, QoS)

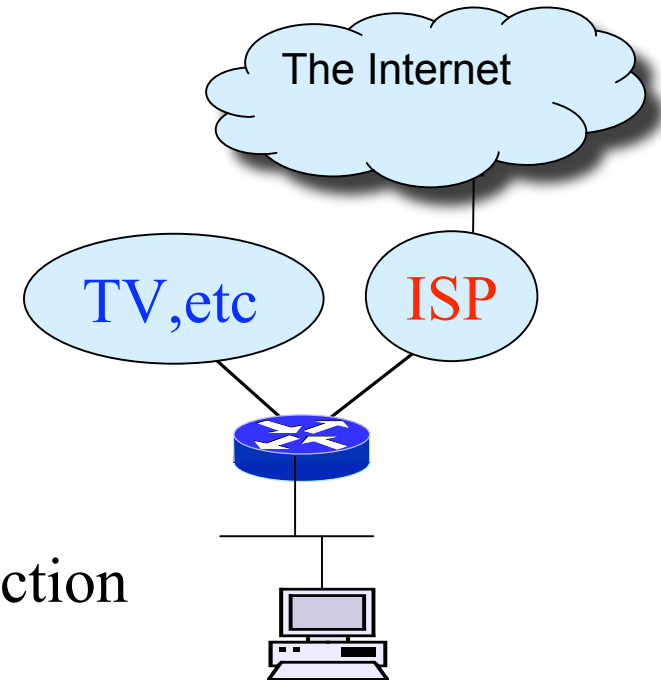


# In a country...



**18,000,000  
broad-band users !**

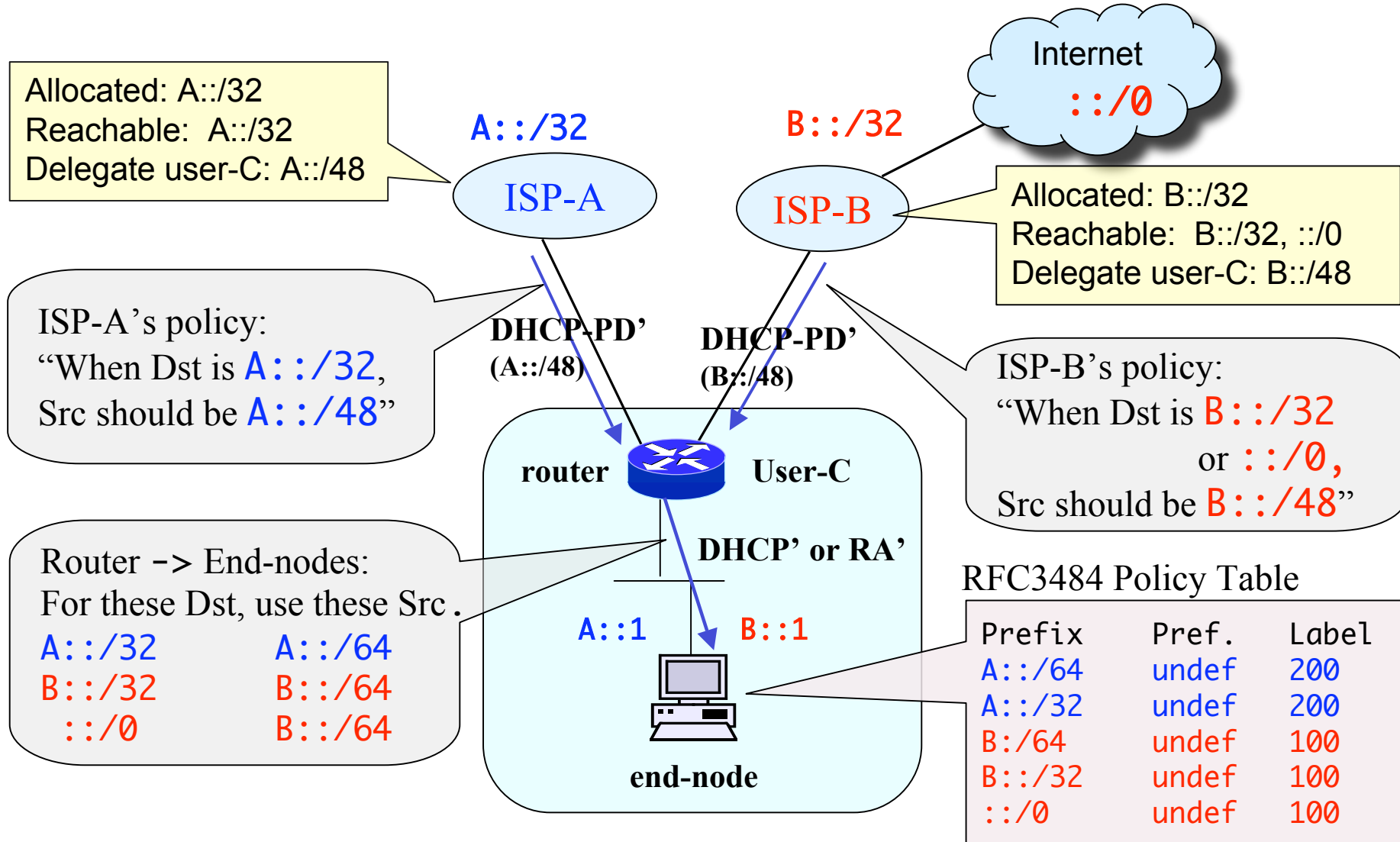
- Half of the broad-band users fall into the global-closed mixed case.
- Closed network services are:
  - TV streaming, TV-Phone, File Sharing...
  - **on IPv6 already!**
- This country is gonna be facing a great difficulty because of source address selection problem.



# Our Approach: **Distribute Source Address Selection Policy**

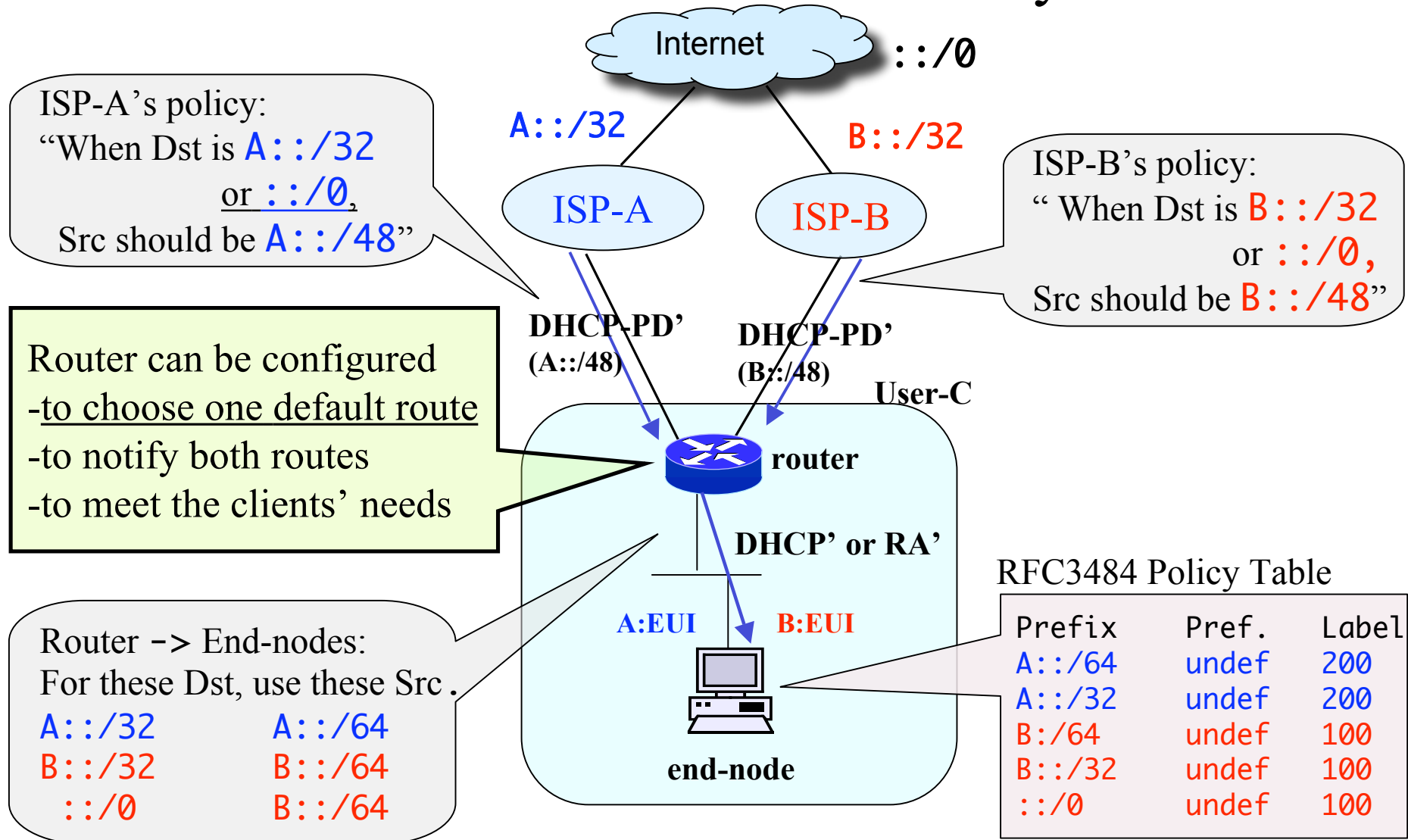
- RFC3484 defines an address selection method
  - Each IPv6 node has Policy Table for address selection
  - Good policy enables an IPv6 node to select an appropriate src address for a given dst prefix
- But, no protocol to distribute the policy
  - Need a mechanism for policy distribution
  - Esp. automatic policy distribution will be important in un-managed networks (residential or SOHO network)

# Distribution of Source Address Selection Policy - Global-closed Mixed -



# Distribution of Source Address Selection Policy

## - Two Global Connectivity -



# Discussions

- Why DHCP-PD, instead of RIPng or OSPF ?
  - The info. itself is same, the usage is different.
  - SAS policy should be more stable than routing info.
  - Routing protocol impl. cannot be adopted as is.
- RA or DHCP ?
  - DHCP is preferable in data length.
  - RA is lightweight and simple.

# Summary

- We proposed a method to distribute SAS Policy from ISPs to end-nodes
- With regard to Multi6 WG activity,
  - Our method provides failure avoidance, but not perfect(end-to-end) failure detection nor immediate failure recovery
  - Target time-scale might be different: our method can be used sooner.
- Our method isn't a entire multi-homing solution, but a necessity for a lot of networks.

Questions or Comments ?