

# Distributing Address Selection Policy using DHCPv6

**draft-fujisaki-dhc-addr-select-opt-00**

Tomohiro Fujisaki  
*fujisaki@nttv6.net*  
NTT

# Introduction

- Proposed a DHCPv6 option for address selection policy distribution
  - 61st IETF in Washington, DC
    - source address selection information distribution
  - 62<sup>nd</sup> IETF in Minneapolis
    - Discussion in dhc wg:
      - Full RFC3484 policy table information should be distributed with this option
      - Need support of ipv6 people

Is this 'address selection policy option' useful?

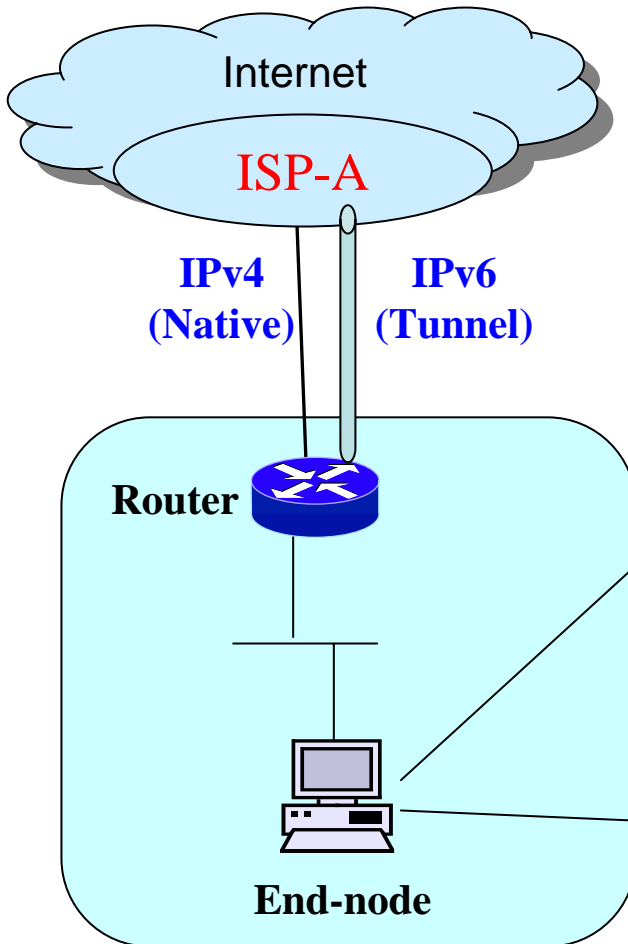
# What can we do with this option?

- RFC3484: Default address selection for IPv6
  - ‘Policy table’ function in RFC3484 provides a very powerful mechanism
    - Destination address selection
      - Prioritize destination addresses
    - Source address selection
      - Choose proper source address corresponding to a selected destination address
  - Controlling selection rule using a ‘policy table’

By distributing the ‘RFC3484 policy’, we can control the behavior of nodes in an organization’s network

# Practical usage of RFC 3484

- **Case 1: IPv4 or IPv6 prioritization**



When the administrator knows the communication quality of IPv4 is better than IPv6:

Prefix	Precedence	Label
::1/128	50	0
::/0	40	1
2002::/16	30	2
::/96	20	3
::ffff:0:0/96	100	4

# Practical usage of RFC 3484

- **Case 2: ULA or global prioritization**

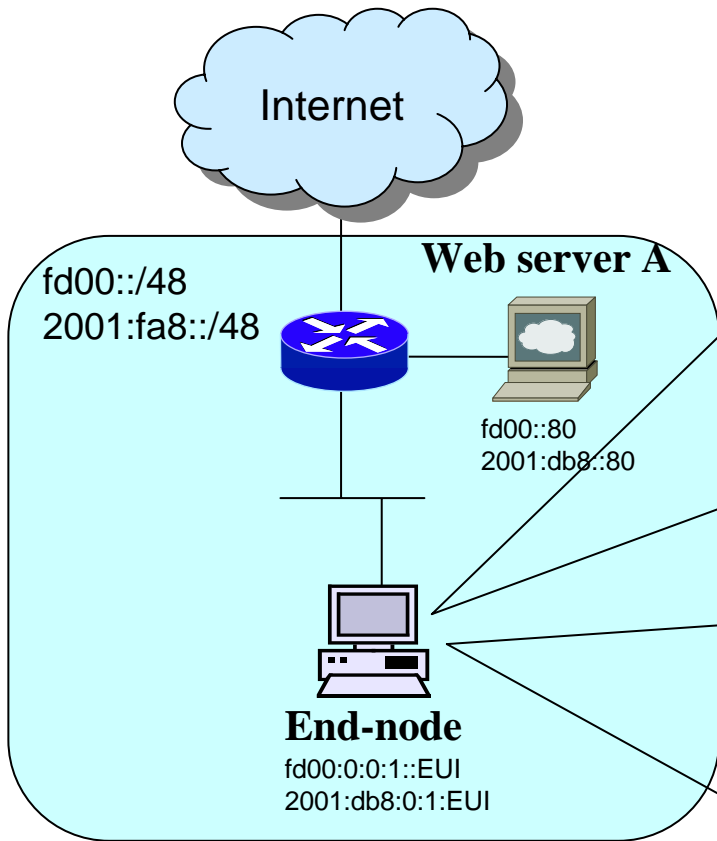
Access to Web Server A:

2001:db8::80 for destination and fd00::/48 for source address

Prefix	Precedence	Label
fd00::/48	10	0
::/0	10	1
2001:db8::/64	100	0

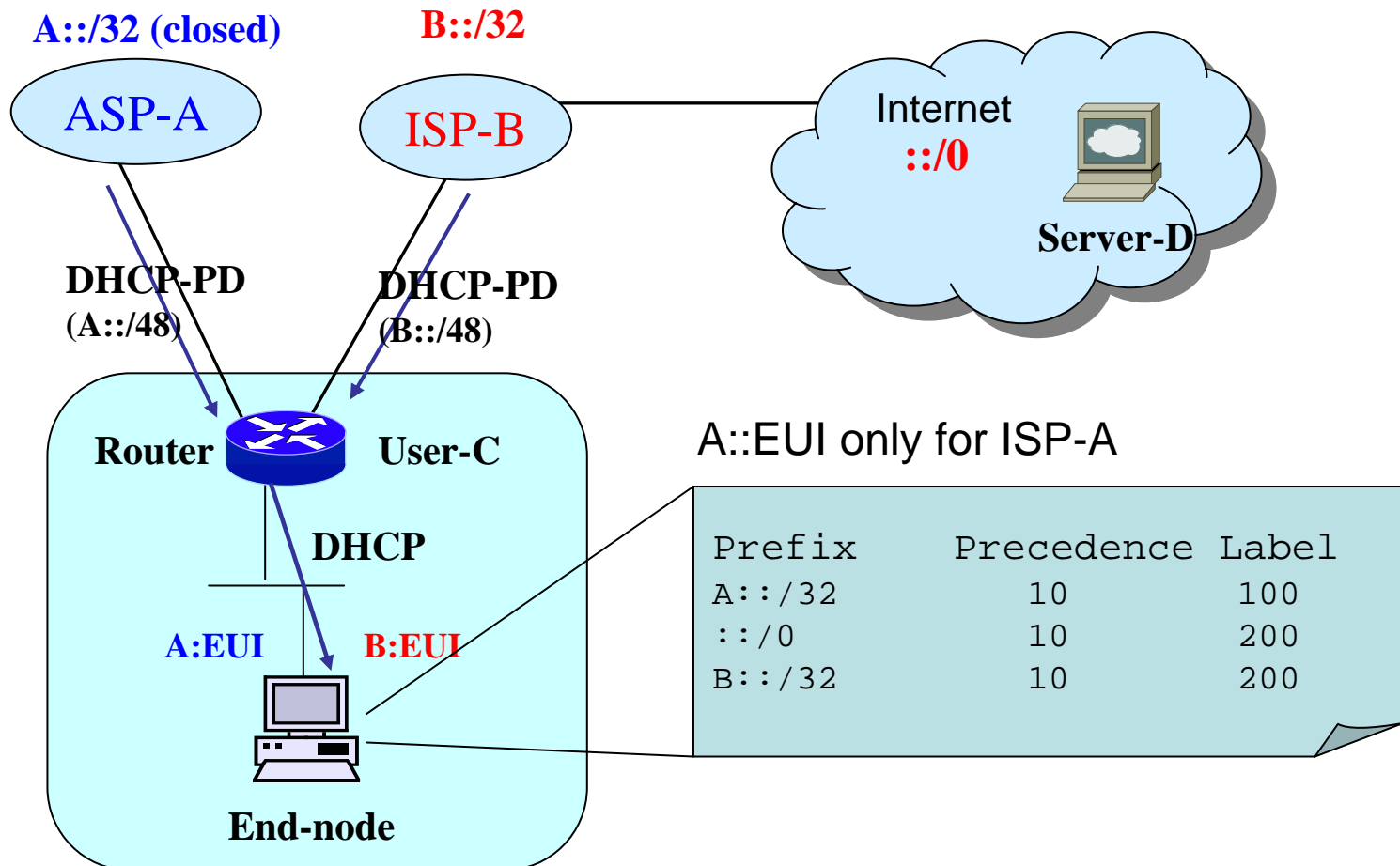
fd00::80 for destination and 2001:fa8::/48 for source address

Prefix	Precedence	Label
fd00::/48	10	0
fd00::/64	100	1
::/0	10	1
2001:db8::/48	10	1



# Practical usage of RFC 3484

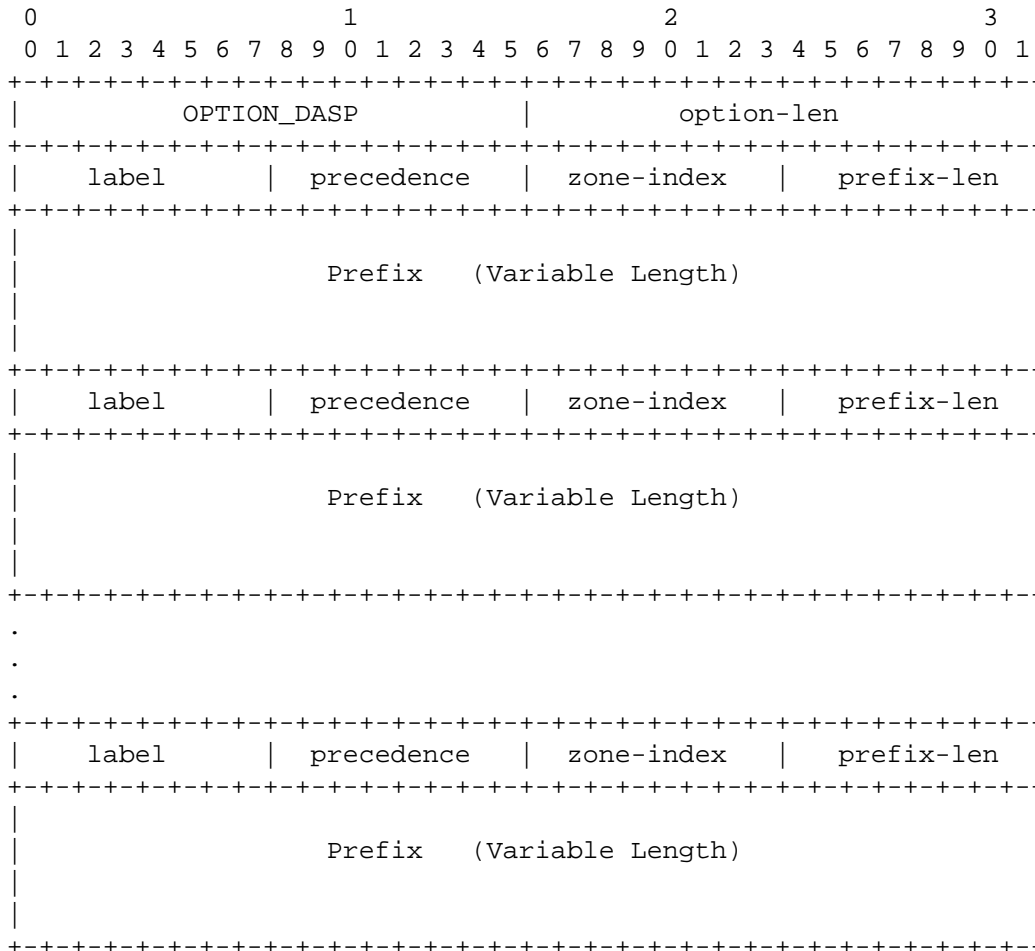
- **Case 3: Global and closed mixed connectivity**



## Distributing RFC3484 policy table using DHCPv6

- Several OSes have already been implemented the RFC 3484 policy table function
  - see <http://www.nttv6.net/dass/>
- We believe distribution of the ‘RFC3484 policy’ will be useful to control the behavior of nodes

# Proposed default address selection policy option



Prefix	Precedence	Label
A::/32	10	100
::/0	10	200
B::/32	10	200

- Map the policy table elements to 8-bit fields.
- Prefix encoding method is same as 'default router selection' draft



# Issues

- Usage of 'Zone index'
- Is number of bits in each field suitable?
  - Currently, each field has 8-bit length
- Should temporary address handling be included?

# Summary

- Proposed a default address selection policy distribution option for DHCPv6.
  - With this option, administrators can control the address selection behavior of nodes in their network.
- To move this draft forward, I want to know how many people think this option is useful.