Problem Statement of Default Use Of RFC3484 Rules and Requirements for policy distribution

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http://www.nttv6.net/dass/draft-arifumi-v6ops-addr-select-req-00.txt

Necessity of policy distribution

- IPv6 supports multi-prefix
- Distribution of automatic source address selection policies will be necessary in multi-prefix environment
  - without this mechanism, users encounter lots of troubles

Problem 1:
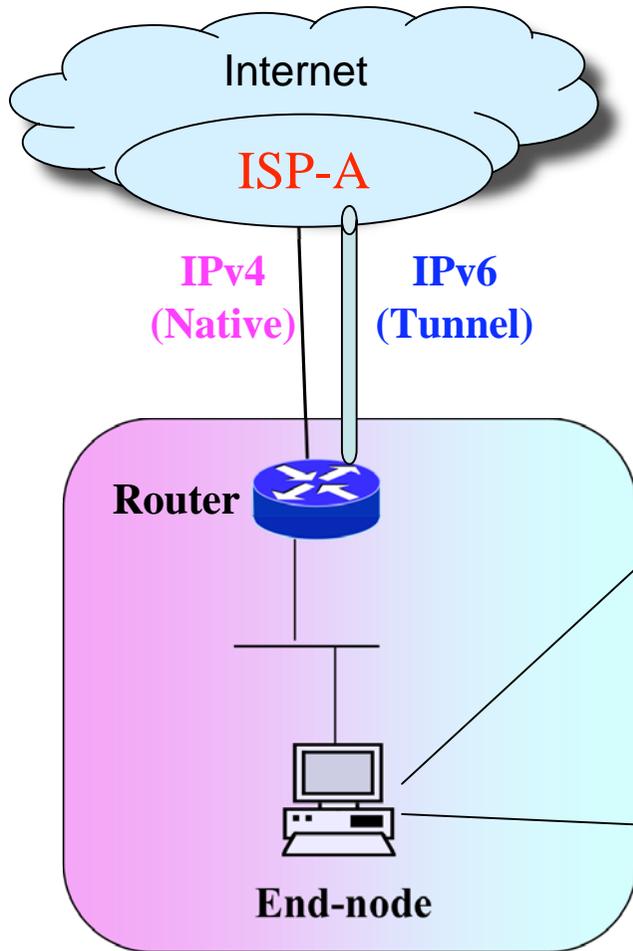# Combine use of ULA and Global Network
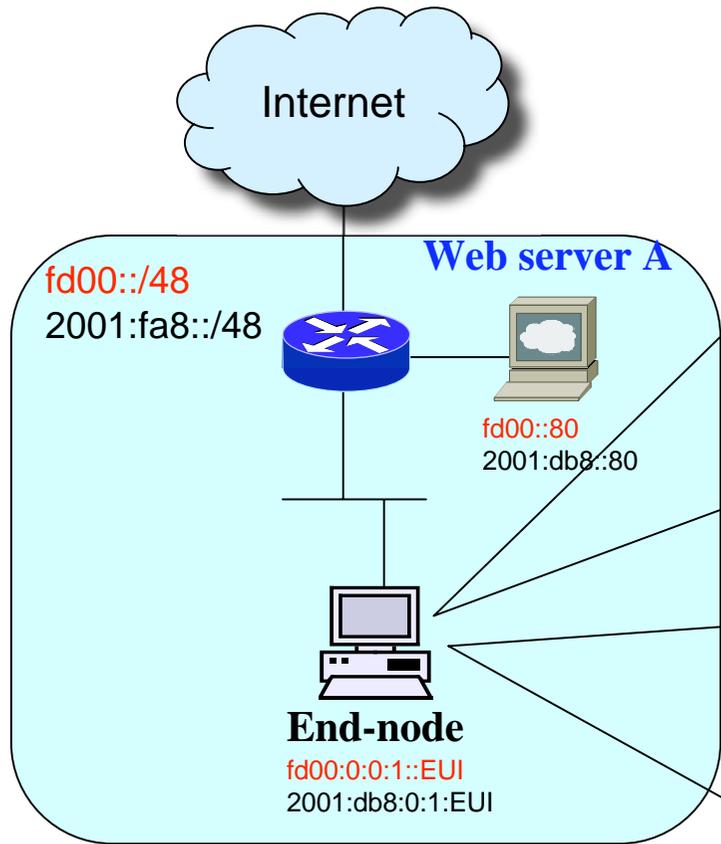
Access to Web Server A:

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

Internet

Web server A

fd00::/48
2001:fa8::/48

fd00::80
2001:db8::80

End-node
fd00:0:0:1::EUI
2001:db8:0:1:EUI

Problem 2:
v4 & v6 prioritization

Internet

ISP-A

IPv4
(Native)

IPv6
(Tunnel)

When the administrator knows the
communication quality of IPv4 is
better than IPv6 tunnel, wants to set
high priority to IPv4

Router

End-node

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

History of our 'automatic RFC3484 policy distribution' proposal

- Presented at v6ops@IETF66 in Montreal
  - Described problems using RFC3484 default policy within a multi-prefix environment
    - (We believe) v6ops members supports our work
  - Reflects some comments in draft-arifumi-v6ops-addr-select-ps-01.txt
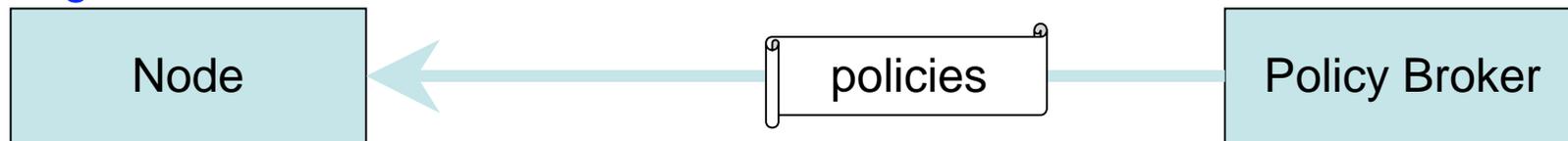- This time we wrote 'requirements' and comparison for distribution protocol

Requirement for policy distribution protocol

- automatic mechanism is needed especially for residential users

- our comparison shows the policy distribution is the current best practice

- Requirements Documents for distributing RFC3484 address selection policy is:
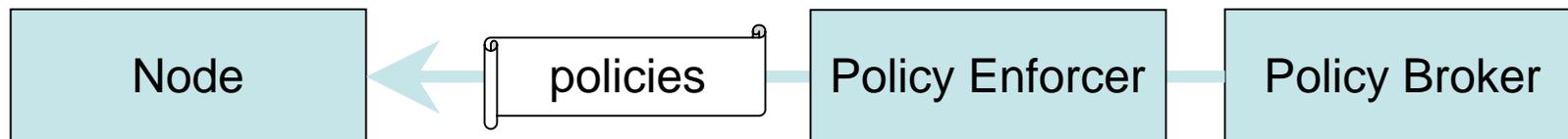 - *http://www.nttv6.net/dass/draft-arifumi-v6ops-addr-select-req-00.txt*

The distribution model

- Focused on "policy distribution" to utilize RFC3484 more effectively

Fig.1 Basic Model

| Node | ← policies | Policy Broker |

Fig.2 Extended Model

| Node | ← policies | Policy Enforcer | Policy Broker |

Comparison of policy distribution protocols

	advantages	disadvantages
RA	used as delivering prefix	• not common between PE and CPE • using multicast (hard to deliver host specific policies) • Very limited message size
dhcpv6	most used as prefix delegation Centralize management	• Limited message size (UDP size) • Dynamic update
other protocol (http, ftp, whatever)	no new transport mechanism	• no service discovery mechanism • no distribution information • no notification mechanism
new protocol	suitable for policy distribution can be defined	• Must define new protocol semantics and packet format
routing information	no new distribution mechanism	Limited environment

Other multi-prefix solutions

- other discussion and quick review on possible policy distribution mechanisms
  - Routing System Assistance
  - RFC3484-update
  - shim6

Conclusion & Next step

- Problem Statement has updated to -01.txt

- For protocol work, there should be a "distribution requirement"

  - It was submitted and will be available

  - Currently on

    - http://www.nttv6.net/dass/draft-arifumi-v6ops-addr-select-req-00.txt

- Can v6ops support this?

  1. any comments for modification of requirements?

  2. "problem statement" and "requirement for policy distribution" are authorized as v6ops docs?

  3. support to move dhcp solution to dhc-wg?

references

- Updates of problem statement to -01
  - http://www.ietf.org/internet-drafts/draft-arifumi-v6ops-addr-select-ps-01.txt

- Requirements for distribution of RFC3484-policy
  - http://www.nttv6.net/dass/draft-arifumi-v6ops-addr-select-req-00.txt

- DHCPv6 option for distributing RFC3484-policy
  - http://www.ietf.org/internet-drafts/draft-fujisaki-dhc-addr-select-opt-02.txt

That's all, thank you