

# Source Address Selection Using Just Routing Information for IPv6

draft-fujikawa-ipv6-src-addr-selection

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# RFC3484 src addr selection Rule. 8

- Src addr selection Rule. 8 in RFC3484 is sometimes inappropriate as said in RFC3484

Rule 8: Use longest matching prefix.

If  $\text{CommonPrefixLen}(\text{SA}, \text{D}) > \text{CommonPrefixLen}(\text{SB}, \text{D})$ , then prefer SA.

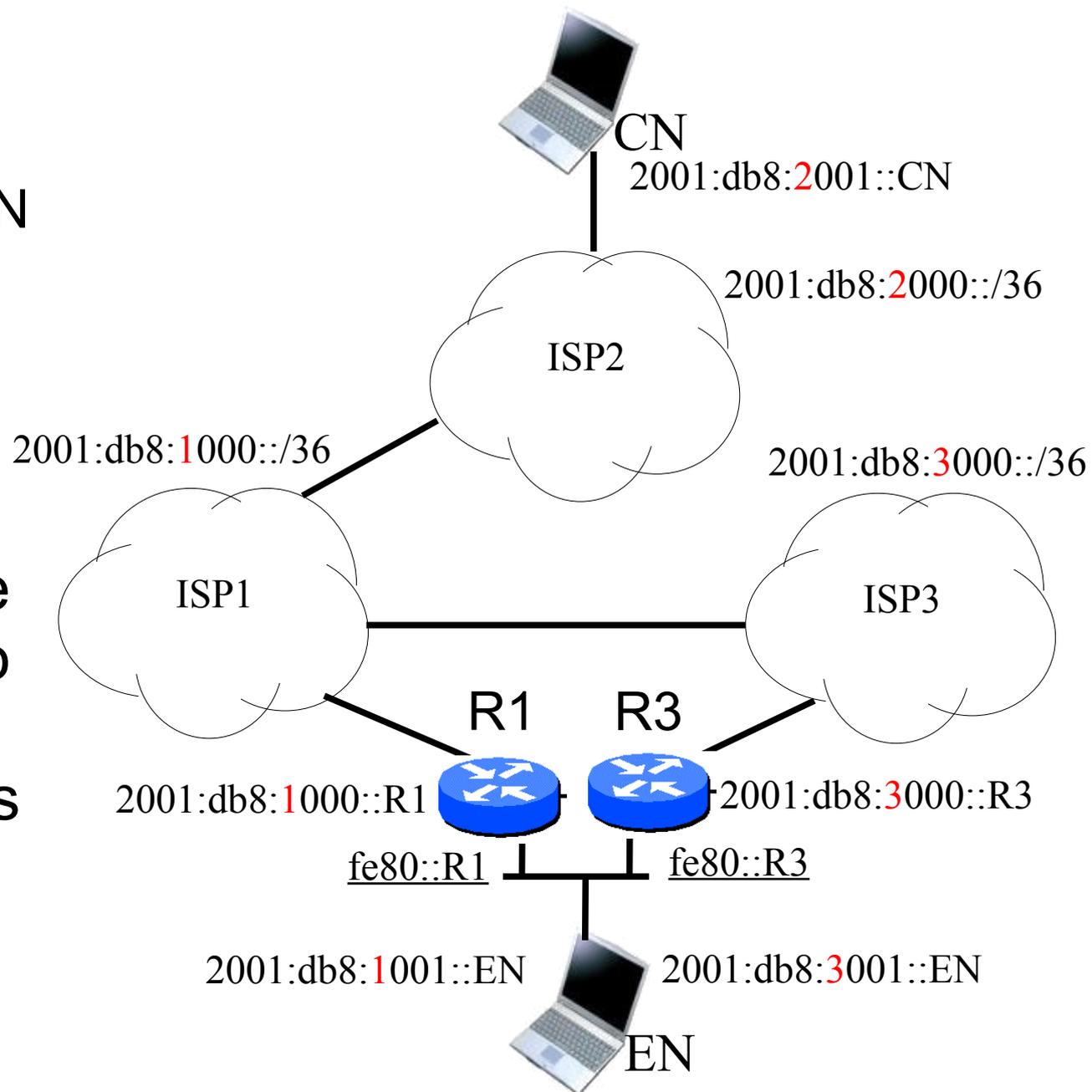
Similarly, if  $\text{CommonPrefixLen}(\text{SB}, \text{D}) > \text{CommonPrefixLen}(\text{SA}, \text{D})$ , then prefer SB.

Rule 8 may be superseded if the implementation has other means of choosing among source addresses. For example, if the implementation somehow knows which source address will result in the "best" communications performance.

- Shows an unsuitable situation when using Rule. 8, and then, an simple solution.

# An Unsuitable Situation

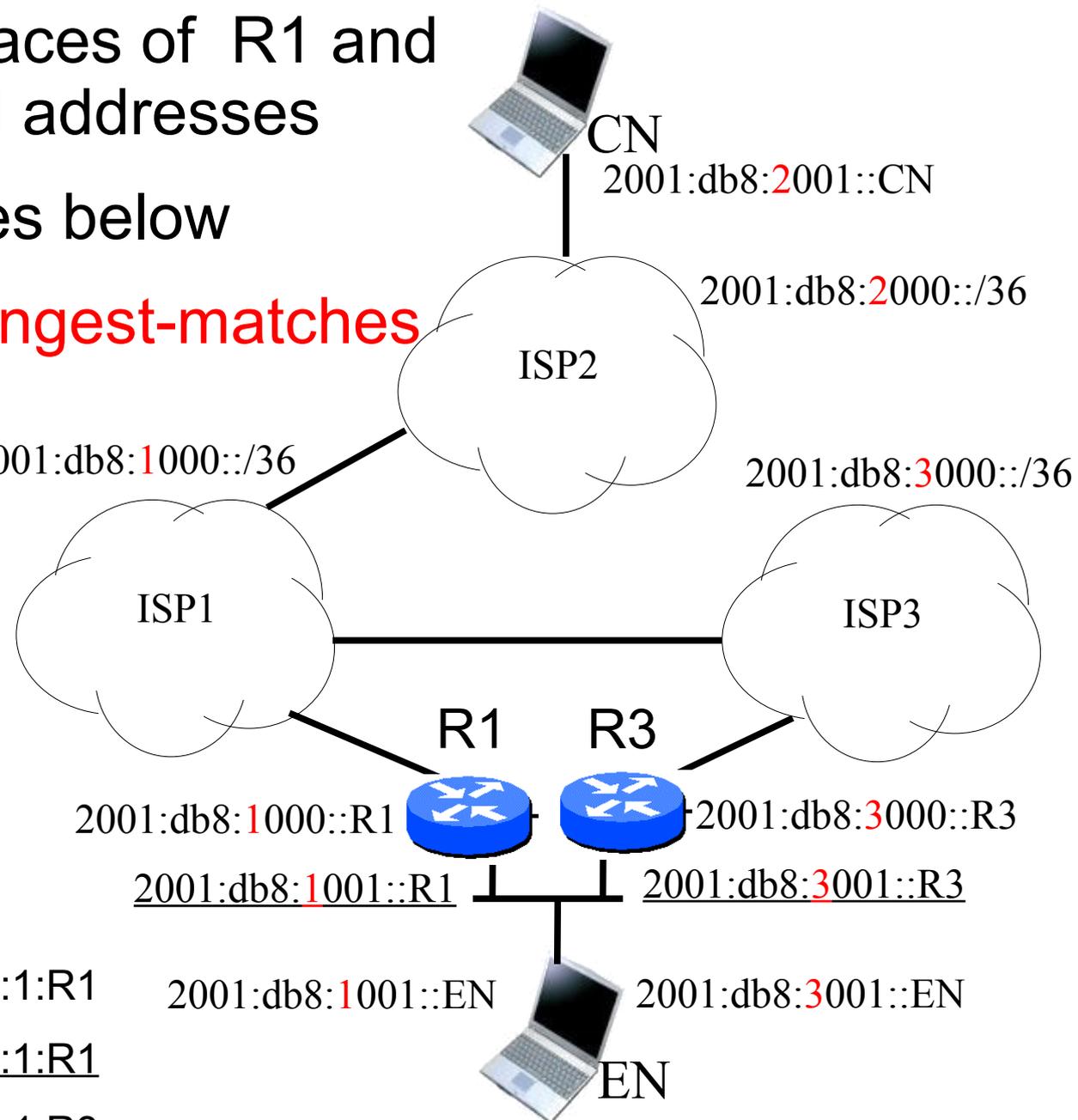
- For a packet sent from EN to CN, src addr 2001:db8:3001::EN is selected using Rule.8, because it longest-matches to CN's addr.
- This requires a some mechanism for EN to choose R3 as the next hop, and causes a roundabout path.



# A Proposed Method

- The downstream interfaces of R1 and R3 are assigned global addresses
- Set up the routing tables below
- Select a src address **longest-matches to the next hop** router

Destination	Next Hop
2001:db8:1000::/36	2001:db8:1000::R1
2001:db8:2000::/36	2001:db8:1001:1:R1
2001:db8:3000::/36	2001:db8:3001:1:R3



# Some Issues

- EN must keep the full routes?
  - No, using a default route, the routing table size is suppressed. In this case, of course cannot select the best path, but still has an advantage that a special mechanism choosing a suitable edge router is not required. This is executed by a traditional routing mechanism.
- How to deliver routing information?
  - RIPng or some other routing protocol should be employed
- This method can be applied to a single router case
  - See draft

# Discussions

- As a standard track, adding longest-match-to-the-next-hop rule before Rule 8. in RFC3484 is the best, I think, but,
- Information RFC as one implementation may be reasonable.
  - In Section 7 in RFC3484, there is the following note
    - Implementations may also use the choice of router to influence the choice of source address. For example, suppose a host is on a link with two routers. One router is advertising a global prefix A and the other router is advertising global prefix B. Then when sending via the first router, the host may prefer source addresses with prefix A and when sending via the second router, prefer source addresses with prefix B.
- Questions and Comments?