

IETF76, 6man

# Current Status of IPv6 Address Selection Design Team

draft-ietf-6man-addr-select-considerations-00

draft-arifumi-6man-addr-select-conflict-01

draft-arifumi-6man-rfc3484-revise-02

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# Address Selection Design Team

- Assembled after 72<sup>nd</sup> IETF
- Members: 15 ppl
  - Ruri Hiromi - Marc Blanchet- Tim Chown- Marcelo Bagnulo Braun- Suresh Krishnan- Tony Hain- Francis Dupont- Evans TJ- John.zhao- Sebastien Roy- Janos Mohacsi- Tim Enos- Teemu Savolainen- Tomohiro Fujisaki- Arifumi Matsumoto
- Goal
  - This team designs a protocol that dynamically updates RFC 3484 policy table.
  - And solves RFC5220 PS, satisfying RFC5221 REQ.

# Issues considered: Drivers for policy changes

- Examined each scenario in RFC 5220
  - Multiple Routers on a Single Interface
  - Ingress Filtering
  - Problem Half-Closed Network Problem
  - Combined Use of Global and ULA
  - Site Renumbering
  - Multicast Source Address Selection
  - (Temporary Address Selection)
  - IPv4 or IPv6 Prioritization
  - ULA and IPv4 Dual-Stack Environment
  - ULA or Global Prioritization

External triggers  
Reflects routing changes outside of the site

Internal triggers  
the site administrator chooses to change a local policy

- Other driver

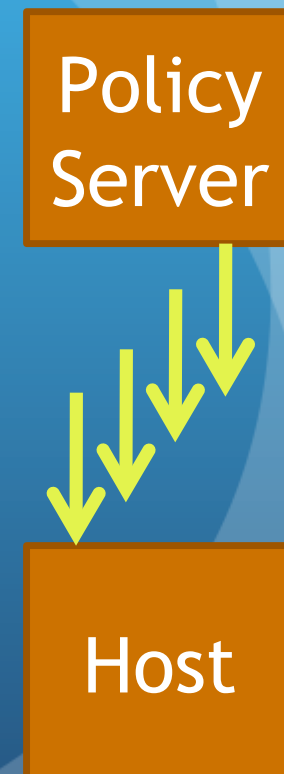
- A new address block is defined e.g. Teredo

IETF/IANA trigger

Issues considered:

How dynamic are the updates going to be ?

- Not frequent except the multi-home TE, host mobility cases.
- update frequency not generally different to general configuration requests (e.g. via DHCPv6)
- Only in the multi-home TE case, the router kicks the policy update.

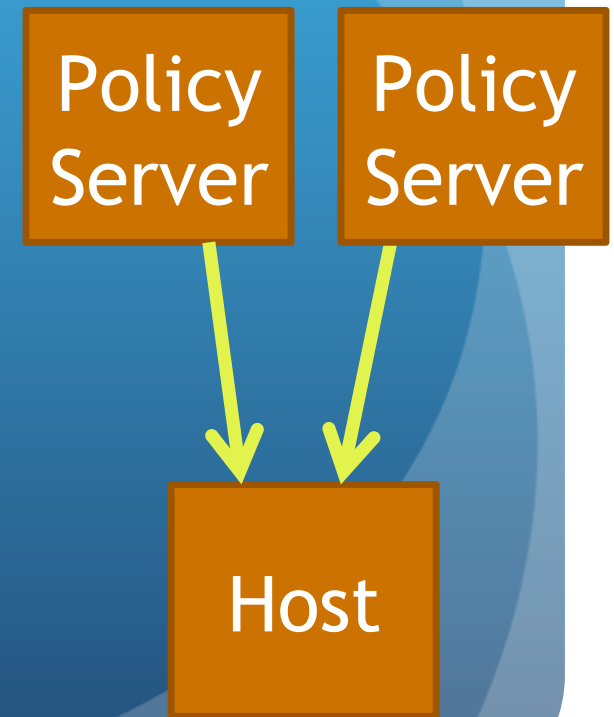


# Issues considered: RFC3484 Default Policy

- We believe radical changes for RFC3484 is not needed to combat address selection PS.
- But, RFC3484 is said to have some issues
- Many OSs have already modified RFC3484
- Minor changes of default behavior are suggested in
  - `draft-arifumi-6man-rfc3484-revise-02`

# Issues considered: differing administrative domains

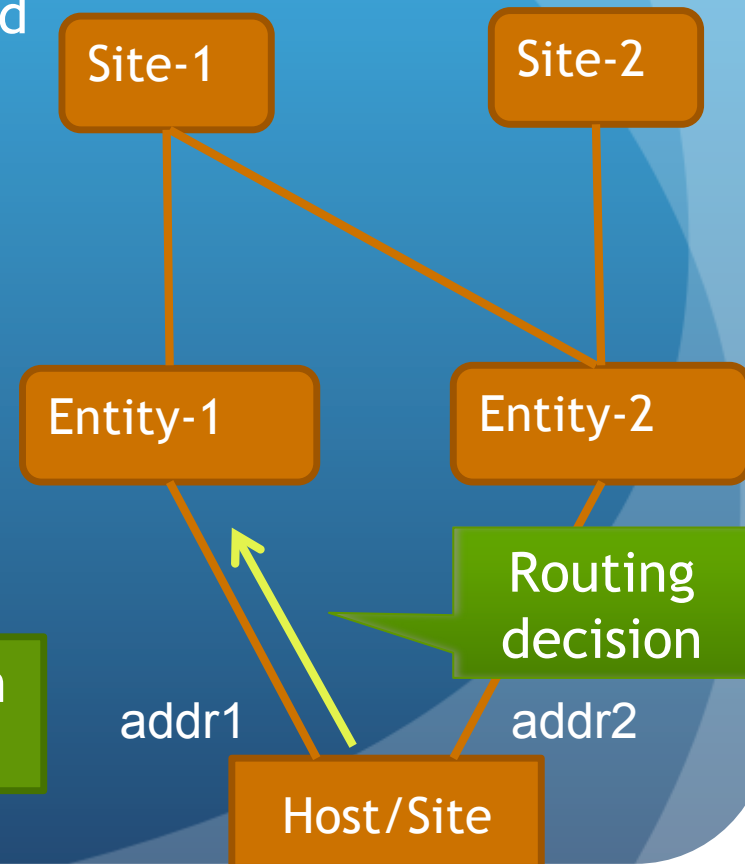
- When, for example, a host has multiple interfaces, it may have multiple policies.
- draft-arifumi-6man-addr-select-conflict-01
  - It tries to show a method to merge policies.
  - basically by obeying routing system's decision.



# Solving srcaddr policy's conflict

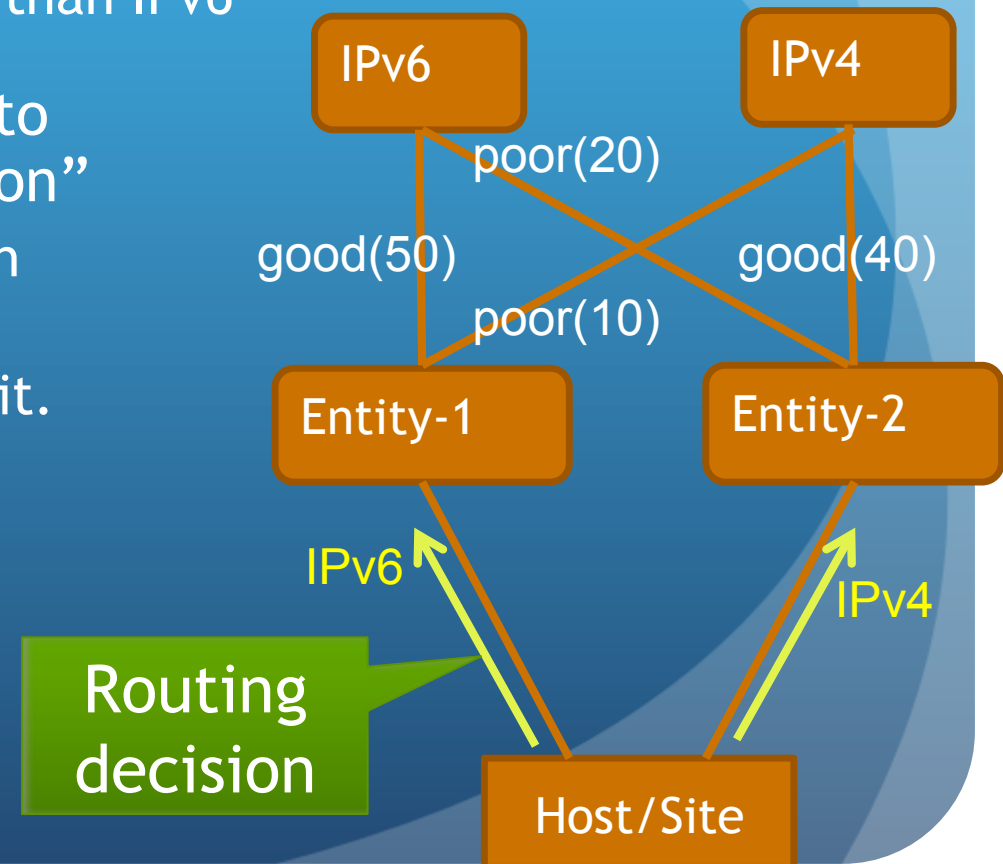
- Conflict
  - Entity-1: “Use addr1 for dst Site-1”
  - Entity-2: “Use addr2 for dst Site-1 and Site-2”
- Solution: “let’s leave which to choose to the routing decision”
  - Routing system decides which way to take for Site-1.
  - Then, adopt the policy from it.

In other words, let the src addr selection avoid contradiction with routing system.



# Solving dstaddr policy's conflict

- Conflict
  - Entity-1: “Prefer IPv6 rather than IPv4”
  - Entity-2: “Prefer IPv4 rather than IPv6”
- Solution: “let’s leave which to choose to the routing decision”
  - Routing system decides which way to take for the prefix.
  - Then, adopt the policy from it.
- Example in the fig.
  - IPv6 via Entity-1 pref 50
  - IPv4 via Entity-2 pref 40





The background is a blue gradient with several overlapping, semi-transparent circular shapes of varying shades of blue, creating a layered effect. The text is centered on the right side of the image.

Next Step

is to see HOW

# How to deliver policy

- RA option
  - Easier to kick policy refresh by a router
    - to support multi-home TE case.
  - Limited data space. at most 20 entries
- DHCP option
  - Hard to kick policy reconfigure by a server.
  - Abundant data space, host specific policy.
- Routing Protocol like mechanism
  - Easier to deliver changing policy
  - Applicability is different from above two

# We need inputs regarding...

- The overall considerations draft needs detailing HOW.
  - draft-ietf-6man-addr-select-considerations-00
- Merging method needs review by more people.
  - draft-arifumi-6man-addr-select-conflict-01
- RFC3484 bis also needs more reviews.
  - draft-arifumi-6man-rfc3484-revise-02
- Regarding the distribution mechanism,
  - We will prepare RA option spec.
  - Modify DHCPv6 option to meet the merging method.