Considerations of

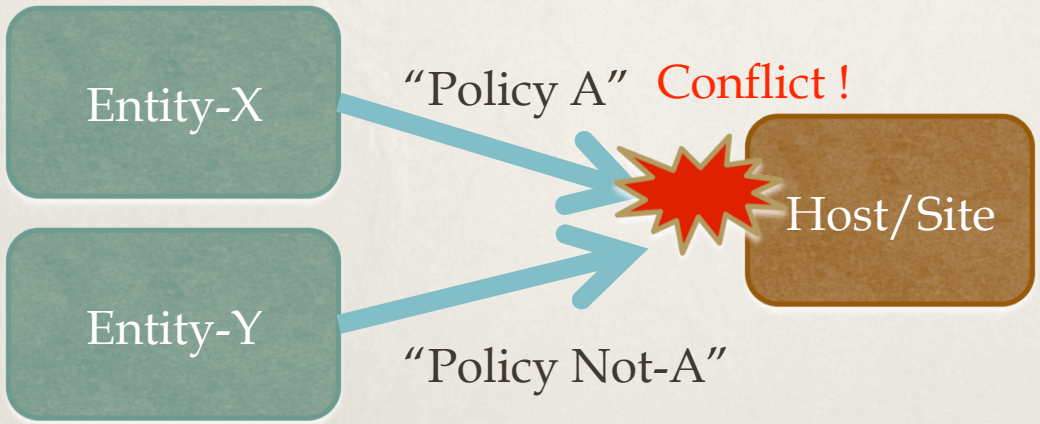
address selection policy conflicts

draft-arifumi-6man-addr-select-conflict-00

Arifumi Matsumoto
NTT PFlab

What is this document

* Design Team is working on address selection problems in a way of updating RFC 3484 policy table.
* This draft focuses on "conflict problem" that can happen when multiple entities, usually ISPs, update policy table.
* This draft does not assume any concrete updating mechanism, or propose any concrete solution mechanism.
* Just wants to see if we can share the goal.

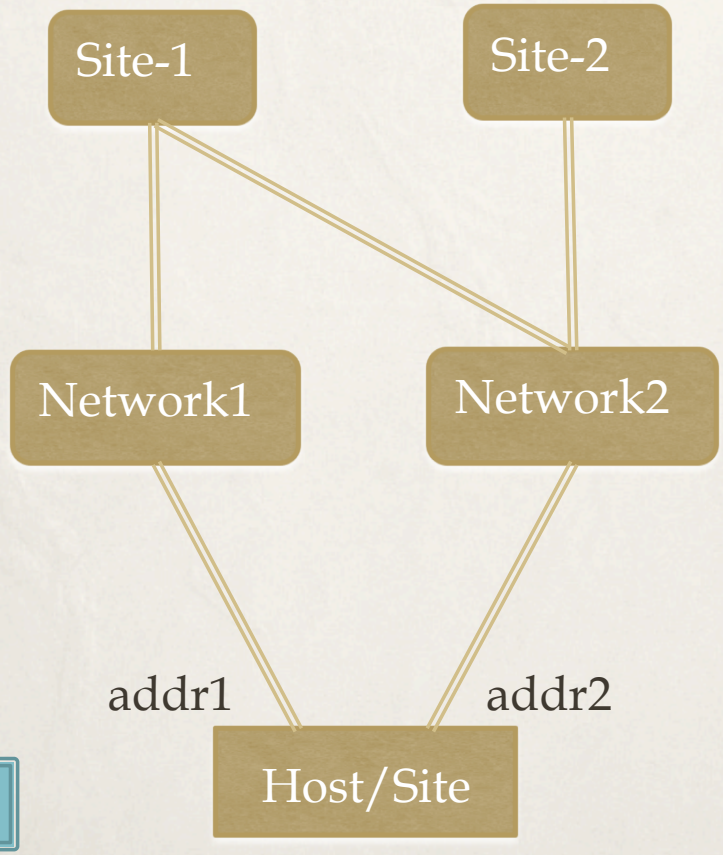


What is policy ?
How does it conflicts ?

Src addr-sel policy and conflict

* Source address selection policy
  * "Use src addr A, for connecting addr B"
  * E.g. "Use fd00::100, when connecting 2001:db8::/64"
* Src. policies conflict when different src addrs are specified for a dst addr.
  * Entity-1: "Use addr1 for dst Site-1"
  * Entity-2: "Use addr2 for dst Site-1 and Site-2"

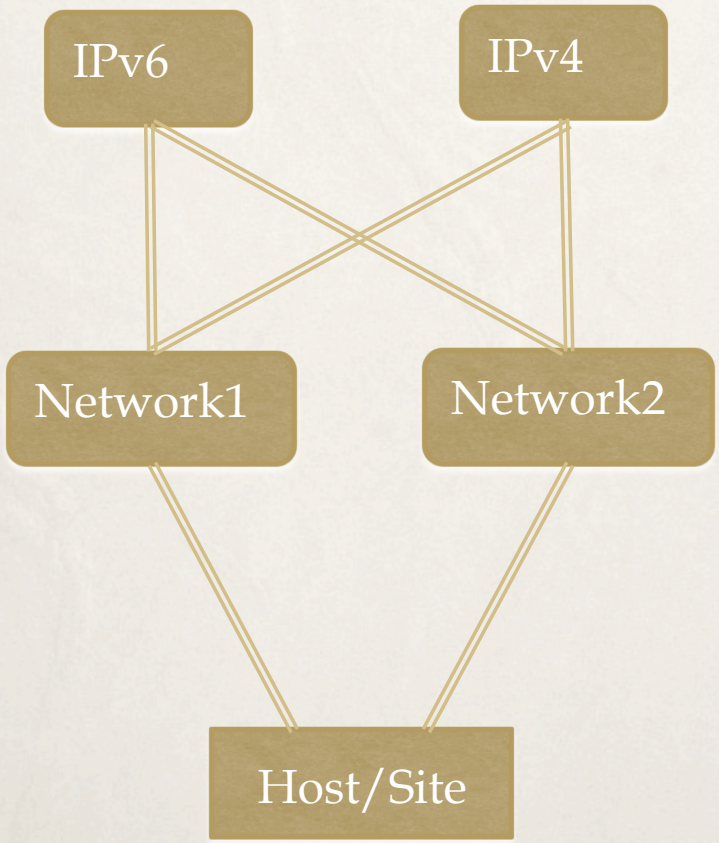
Which src address to be chosen for Site-1 ?



Dst addr-sel policy and conflict

* Destination address selection policy
  * "Prefer dst A rather than dst B."
  * E.g. "Prefer IPv6 rather than IPv4."
* Dst policies conflict when preferences are opposing.
  * Entity-1: "Prefer IPv6 rather than IPv4"
  * Entity-2: "Prefer IPv4 rather than IPv6"

Which to prefer, IPv6 or IPv4 ?



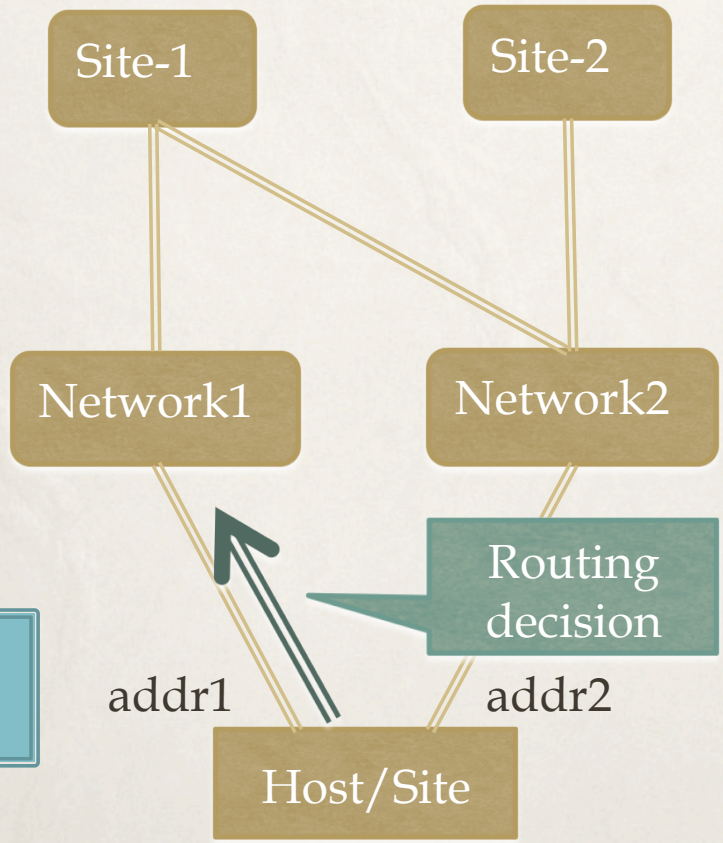
Solution part

Can we agree on what the goal is,
not how to reach the goal ?

Solving src policy 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.

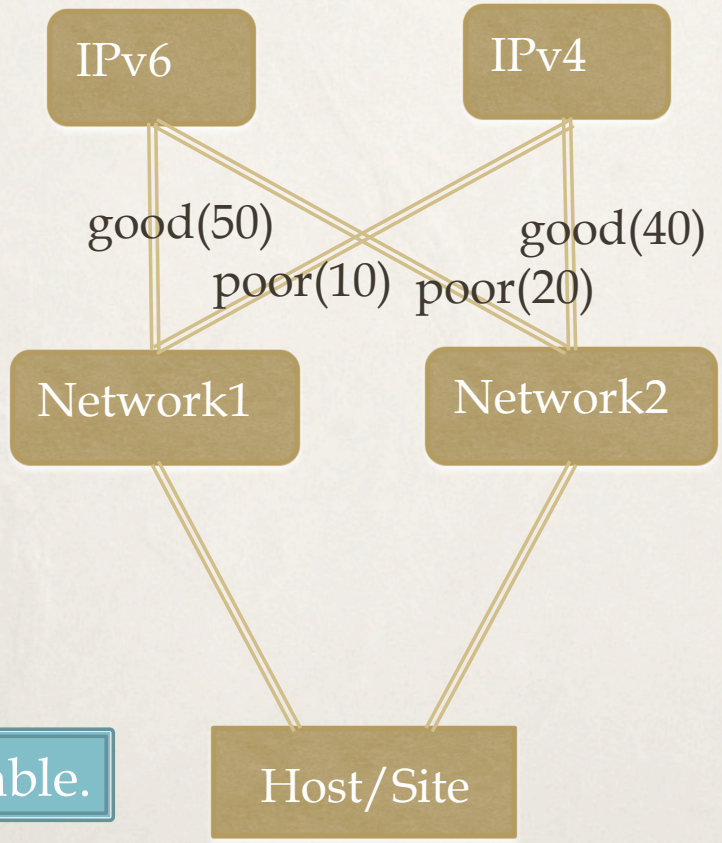
In other words, let the src addr selection avoid contradiction with routing system.



Solving dst policy conflict

* Conflict
  * Entity-1: “Prefer IPv6 rather than IPv4”
  * Entity-2: “Prefer IPv4 rather than IPv6”
* This looks very similar to a routing protocol. The above can be interpreted,
  * Via Entity-1, IPv6 is better than IPv4.
  * Via Entity-2, IPv4 is better than IPv6.
* By quantifying the degree of preference, these can get merged just like routing protocols do.
  * To IPv6 via Entity-1, with pref 50
  * To IPv4 via Entity-2, with pref 40

Also, it has to be coordinated with routing table.



At the end

* This document addresses:
  * What the dst/src address selection policy is.
  * How do they conflict.
  * Goal of solving the conflicts.
* Want to see if we can agree on what the goal is, not how to reach the goal ?
* Then, we can proceed to how to reach the goal.