Updates from Address Selection Design Team

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Address Selection

• Who?
  • Composed of 16 people, working for almost 2 years!
  • Chartered to work on RFC3484 policy table updating mechanism

• What have we done?
  • Examined the problematic cases to see:
    • how dynamic the updating mechanism needs to be.
    • what kind of policy needs be distributed.
  • Examined the solution space including a policy merging algorithm.
After IETF 77

- We worked intensively after IETF77 to discuss the remaining issues and almost reach consensus within the DT.
- kicked by BBF’s demands for a mechanism to update address selection policy.
- **draft-troan-ipv6-multihome-without-ipv6-nat**
- to propose the next step forward, after the investigation and discussion.
Recent discussions/changes in
draft-ietf-6man-addr-select-considerations-02

• Configuration frequency and timing
  • Frequent policy changes are due to routing changes or host mobility, where routing hints (ICMP errors) for address selection may help
  • In a managed site, there is likely to be a managed policy, and DHCP available
  • The handling policy conflict is a host issue, how to deliver the policy is a network issue
  • We focus on the network issue, since the host issue is common with many other parameters
  • We should avoid delaying progression of a 3484 policy update method applicable to e.g. managed enterprise networks
Proposal from DT 1/3

- Re. Policy Merging
  - By its nature, conflict always happens when you merge two set of policies.
  - A heuristic approach can merge policies. But, there is no distinct/established algorithm for it.
  - So, we propose not to standardize the merging process. (at least for now)
  - This issue should be up to an implementation or a user, just like DNS server selection.
  - e.g. The NIF metrics are used for choosing primary interface and can be used for policy set selection.
  - The candidate algorithm is explored in draft-arifumi-6man-addr-select-conflict
Proposal 2/3

- Re. What protocol carries the policy
  - RA is better to work with the routing.
    - Easy to reflect routing status, easy to update.
  - DHCP is better in management.
    - it has a lot more space.
    - host-specific policy enforcement.
    - DHCP-relay function is useful in large-scale network.
- Don’t see any other good protocols if we will support general environments like enterprise, residential network, etc.
- So, we propose to go with DHCP, and if necessary RA and ICMP error based mechanism supplementary.
Proposal 3/3

- Re. RFC 3484 revision
  - It’s known to have several faults, and obviously needs update
  - DT improves the revision proposal:
    - draft-arifumi-6man-rfc3484-revise-03
    - 6to4/teredo is de-prioritized than IPv4
    - protection from mis-use of deprecated addresses
    - TBD: NAT64 WKP should be included in the default policy
  - DT proposes these changes to the default rules should be made, along with policy distribution mechanism.
In the end

- Ready for WG adoption?
- 6man should be the right place for RFC3484 revision.
  - draft-arifumi-6man-rfc3484-revise-03
- The home for DHCP policy distribution mechanism should also be 6man, with some review from dhc and mif wg.
  - draft-fujisaki-dhc-addr-select-opt