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 mechanisms 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 mechanisms.
In the end

- 6man is now in adoption call for RFC3484 revision
- draft-arifumi-6man-rfc3484-revise-03
- We prefer 6man as a home for policy distribution. We need input from dhc and mif wg.
- draft-fujisaki-dhc-addr-select-opt