Controlling Traffic Offloading Using Neighbor Discovery Protocol

IETF#83  Mif WG, 29 March 2012
draft-korhonen-mif-ra-offload-04
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Proposal update

• Typical scenario
  • Hosts equipped with 3G and WiFi interfaces
  • Offload cellular traffic to WiFi and vice versa
  • Dual stack 3G and possible dual stack WiFi
  • DHCP unavailable for hosts and access network
  • Mobile network driven
  • Not mandatory scenario
Proposal update

Destination

Internet

WLAN

Cellular

Router (e.g. PDN GW)

RA with Offload option
Proposal update

- Offload option in RA for IPv4 traffic offloading
  - Extensibility of ND
  - Push model
  - Complement RFC4191 of IPv6 offloading
  - ND deployment in mobile environment
  - DHCPv4 unavailable
  - Transition phase IPv4-to-IPv6
  - Default router
  - Specific routes
Proposal update

- Offload option
  - D bit
  - Length = 2 + n

<table>
<thead>
<tr>
<th>Type</th>
<th>Length</th>
<th>D</th>
<th>Reserved</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPv4 Gateway</td>
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<tr>
<td>GW Lifetime</td>
<td>Reserved</td>
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<td>Reserved</td>
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<tr>
<td>Specific Route Information</td>
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</tbody>
</table>

```plaintext
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
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</tbody>
</table>
```
Proposal update

- Specific route information
  - Multiple specific routes
  - Preference value for each specific route

<table>
<thead>
<tr>
<th>Route Lifetime</th>
<th>Prf</th>
<th>Resvd</th>
<th>Prefix Length</th>
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<td>More Specific Routes ...</td>
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</table>
Current status and summary

● Prototype implementation
● Feasibility test in live network
● Light-weight, on-demand offloading from network side
  ● 3G as commanding channel
  ● Efficient and avoid colliding wishes
  ● Multi-interface oriented

● Next ?