Communicating Prefix Cost to Mobile Nodes

(draft-mccann-dmm-prefixcost-02)

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Introduction

When an MN moves from one IP attachment point to another, it does not know about:

- amount of state in network on behalf of this prefix
- amount of transport resources to tunnel/route packets

The network does not know:
- the state of the connection flow (e.g., middle of download?)

Proposal in this draft:
Network provides the “cost” of maintaining IP prefixes to the MN.

Notes:
(a) Prefix-cost is not about e2e jitter or latency.
(b) Link layer changes do not affect prefix cost.
Motivation (1)

Current Mobile Network/first router (PGW)

Flatter Architecture

(1) Sub-optimal route with centralized gateway/anchor (PGW).
(2) Routers located closer to MN’s point of attachment are more optimal.

**When MN changes point of attachment, cost of the maintaining the prefix increases.**
(state in gateways, tunnels – and suboptimal route)
Network provides the cost of maintaining IP prefixes. MN decides when to use new IP prefix.
Prefix Cost Sub-option
(Router Advertisement)

The prefix cost is carried as a 16-bit, unsigned number in network byte order. A higher number indicates an increased cost.

Uses: draft-korhonen-dmm-prefix-properties-04
IETF next steps

Review with 6man, mif

Feedback?
Backup - Policy, Source Address Selection

- Operator policy on “prefix cost” values.
- RFC 6724 source address selection rules should be factored in
  → Re-select IP address if current IP address exceeds [cost-ceiling].
  → If new-IP-address has [acceptable cost], present new addr to application.