

An IPv6 Routing Header for Source Routes with RPL

(draft-ietf-6man-rpl-routing-header-00)

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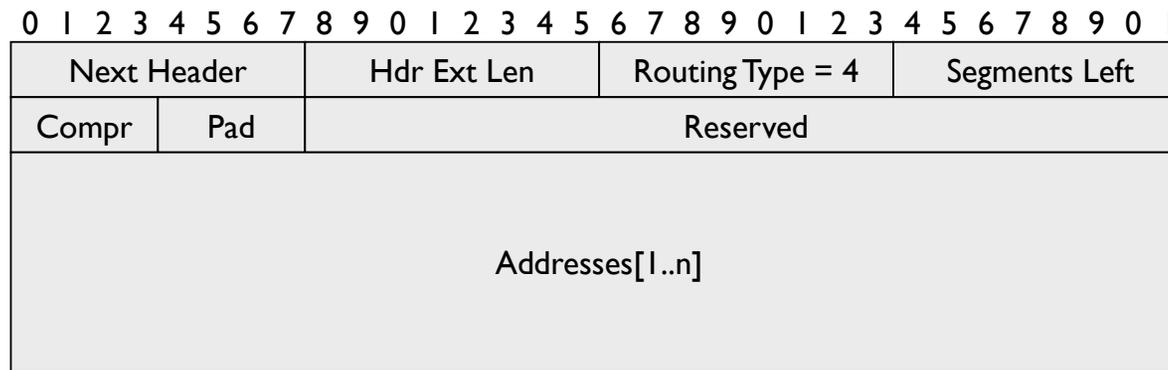
Background

- ROLL (Routing over Low-Power and Lossy nets)
- RPL - DV-based routing protocol for IPv6

- Problem
 - Route across nodes with very limited memory (< 8 kB)
- Solution
 - Use source routing in RPL domain to route across constrained nodes
 - Capable routers may insert/remove source routes on existing datagrams

Proposal

- Define new IPv6 Routing Header type (4)



- Same basic format as RH0
- Compr: Number of prefix bytes elided for each Address[i] (obtained from IPv6 dest address)
- Pad: Number of pad bytes after Address[n]

Proposal

- Processing similar to RH0 but adds constraints:
 - Used only for strict source route
 - Only used within a RPL routing domain
 - Verify that loops do not exist within the source route
- Define new ICMP Dest Unreach error
 - Sent when strict source route fails
- Use IP-in-IP when inserting/removing RH4
 - Does not modify original datagram
 - Addresses MTU issues

Status & Next Steps

- Just adopted as WG doc
- Comments/suggestions?