RPL Option for Carrying RPL Information in Data-Plan Datagrams
(draft-hui-6man-rpl-option-00)

Jonathan Hui
JP Vasseur

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Background

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

• Problem:
  • How to manage control overhead with reactivity to link state changes?

• Solution:
  • Slow proactive process - allow routing inconsistencies
  • Include routing info in data-plane packets to detect inconsistencies
  • React to inconsistencies when routes are used

• **Operate on data-plane timescales**
IPv6 Option for RPL

• Utilize IPv6 Ho-by-Hop Option to carry RPL info
  • Data carries TLVs to-be-defined in ROLL WG
  • Data may change en-route
  • Data may be ignored by routers that do not understand

• Only included in datagrams within a RPL domain
  • RPL edge router MUST remove option when forwarding to outside
  • RPL edge router MAY add option when forwarding to inside