Multicast Protocol for LLNs
(draft-ietf-roll-trickle-mcast-02)

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History

• 2012-07-13: draft-ietf-roll-trickle-mcast-01

• 2012-10-19: draft-ietf-roll-trickle-mcast-02
  – IPv6-in-IPv6 encapsulation
  – Proactive + Reactive Propagation
  – Discard packet on unrecognized HBH Option
  – Add reserved bits to HBH Option
Issues

- 103: Disable proactive propagation
- 104: Missing security considerations
- 105: How to determine scope of MPL domain?
- 106: Always use IPv6-in-IPv6 encapsulation?
- 107: Support multiple parameter sets?
- 108: Explicit version field?
- 109: Use well-known multicast addr?
- 110: Receive non-MPL multicast packets?
105: MPL Domains

• How to limit scope of MPL dissemination?
  1. Physical extent of connected MPL devices
  2. Something smaller than Option 1.

• How to identify the MPL domain?
  – Application IPv6 multicast addresses
  – Explicit IPv6 multicast address
  – MPL Domain/Instance identifier
How to determine MPL domain?
Application IPv6 multicast addresses

• Combine domain and app endpoint identifiers
  – Outer IPv6 Destination Address (when used)
    • Well-known link-local MPL address
  – Inner IPv6 Destination Address
    • Full address defines application endpoints
    • Prefix defines MPL domain

• Comments
  – Does not require 6in6
  – Link-local destination address in outer header
  – Forwarding logic requires both MPL Option (outer) and IPv6 Destination (inner)
  – How to support arbitrary multicast addresses?
How to determine MPL domain?
Explicit IPv6 multicast address

- Separate domain and app endpoint identifiers
  - Outer IPv6 Destination Address (when used)
    - Non-link-local multicast address identifies MPL domain
  - Inner IPv6 Destination Address
    - Identifies application endpoints

- Comments
  - Requires 6in6 encapsulation when MPL domain and endpoint addresses do not match
  - Non-link-local destination address in outer header
  - Forwarding logic inspects a single header
  - Must configure MPL interfaces with MPL group address
How to determine MPL domain?

MPL Instance ID

• Include “Instance ID” in MPL Option
  – Outer IPv6 Destination Address (when used)
    • Well-known link-local MPL address
  – Inner IPv6 Destination Address
    • Identifies application endpoints

• Comments
  – Does not require 6in6
  – Link-local destination address in outer header
  – Forwarding logic inspects a single header
  – Must configure MPL interfaces with Instance ID