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# Multiple Upstream Interface Support for IGMP/MLD Proxy

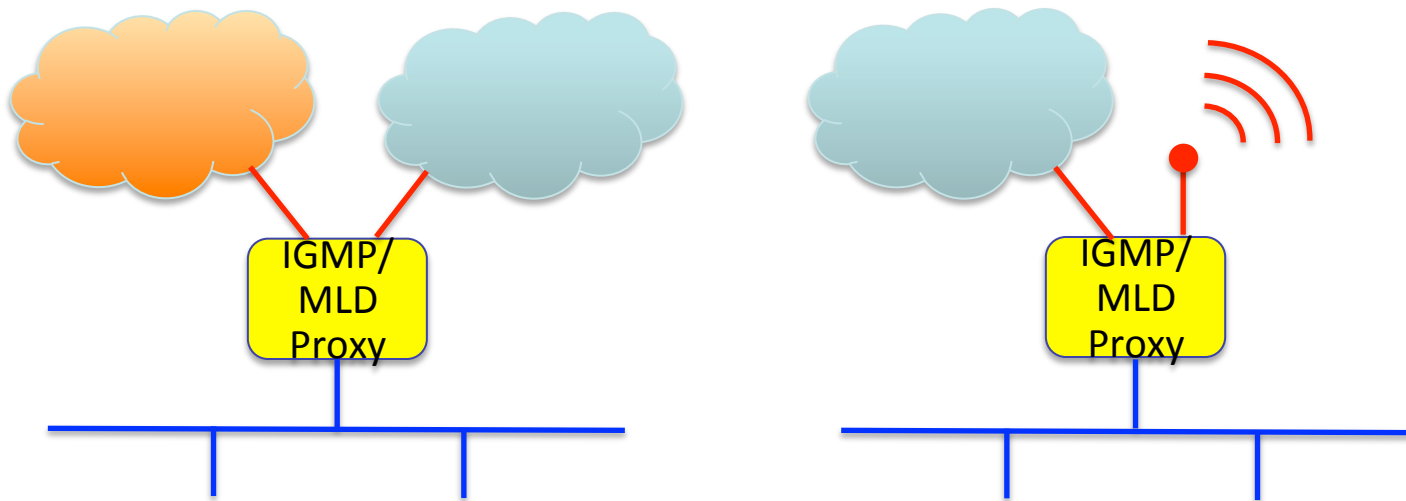
draft-asaeda-pim-mldproxy-multif-01

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# Overview

- Background
  - IGMP/MLD proxy attached to different networks (e.g., Internet and Intranet) and different interfaces (e.g., ethernet and wireless link)
- Proposal
  - Enable “per-channel load balancing” for IGMP/MLD proxy (with the extension of RFC4605)

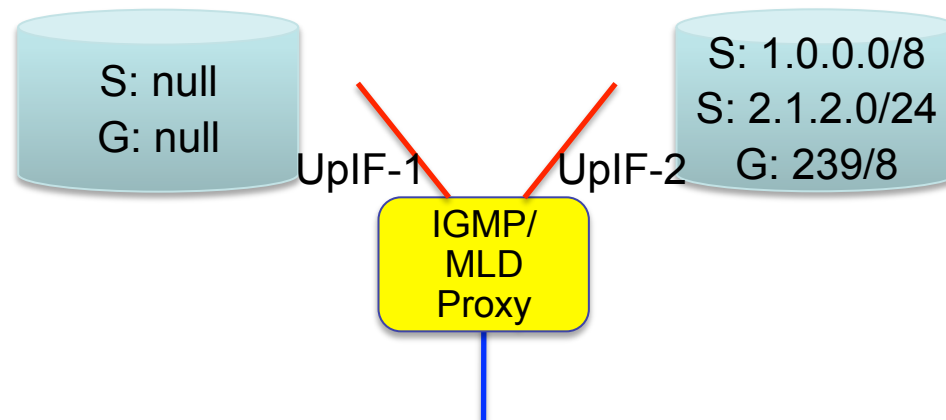


# Terminology, Configuration

- Candidate upstream interfaces
  - Manually configured
- Upstream interface (or selected upstream interface)
  - Selected from candidate upstream interfaces
- Supported address prefix
  - Address prefix for which a candidate upstream interface supposes to be an upstream interface
  - Two prefixes, “supported **source** address prefix” and “supported **multicast** address prefix”, can be configured
- Configuration
  - “Supported source/multicast address prefixes” on each configured upstream interface
  - “Interface priority” on each configured upstream interface

# Supported Address Prefix

- Longest match
  - Candidate upstream interface having longest prefix is selected as the upstream interface
  - Default values of both source and multicast address prefixes are a wildcard null value



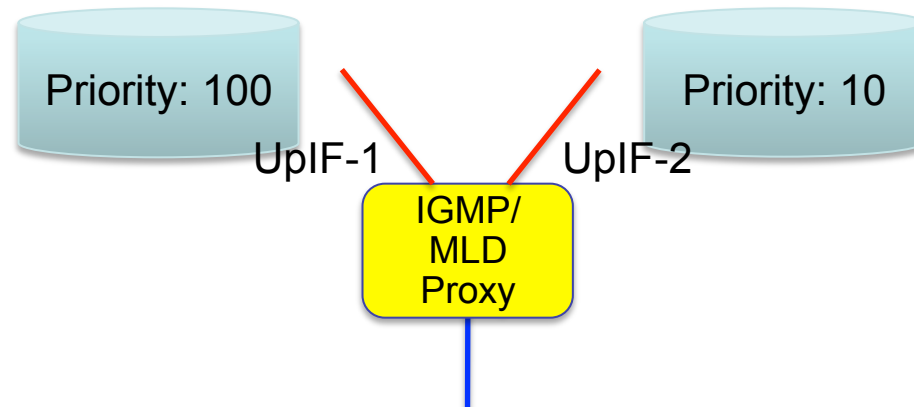
# Supported Address Prefix

## – Possible Scenarios

- No address prefix configured on each candidate upstream interfaces
  - UpIF is selected based on “interface priority” values
- Multiple candidate upstream interfaces configure same address prefixes
  - UpIF is selected based on “interface priority” values
- Configured address prefix is overlapped among multiple candidate upstream interfaces (e.g., 1/8 and 1.1/16, or 239/8 and 239.254/16)
  - UpIF having longest prefix is selected
- For (S,G) channel, S’s prefix matches UpIF-1’s configuration and G’s prefix matches UpIF-2’s configuration
  - Source prefix is takes priority over multicast address prefix, hence UpIF-1 is selected for the (S,G) channel

# Interface Priority

- Each configured upstream interface has own priority value
  - Default value is the lowest value



# Interface Priority

## – Possible Scenarios

- Upstream interface is selected based on the interface priority values of candidate upstream interfaces, when;
  - None of the candidate upstream interfaces configure the supported address prefix, or
  - The supported source and multicast address prefixes defined by candidate upstream interfaces are identical, or
  - The supported source address prefix mismatches, but the multicast address prefix matches and is identical, or
  - Neither source nor multicast address matches the supported address prefixes for all candidate upstream interfaces

# Upstream Interface Take-Over

- A new upstream interface takes over the originally selected upstream interface, when;
  - An IGMP proxy recognizes that an adjacent upstream router is not working, or
  - The originally selected upstream interface is going down
- How to detect the situation and when the candidate upstream interface takes over the upstream interface, etc. are left to the implementation



# Default Values

- The default of “supported address prefixes” is “(null, null)”
- The default of “interface priority” is “lowest value”
- When all values are default, the configured upstream interface having lowest IP address is selected as the upstream interface for all multicast channels

# Open Issue

- Non-selected upstream interfaces can be the downstream interface or should not be the downstream interface?
  - We prefer; “should not be the downstream interface”

# Next Step

- We've sought comments about this draft on Homenet ML as well
- WG item?