



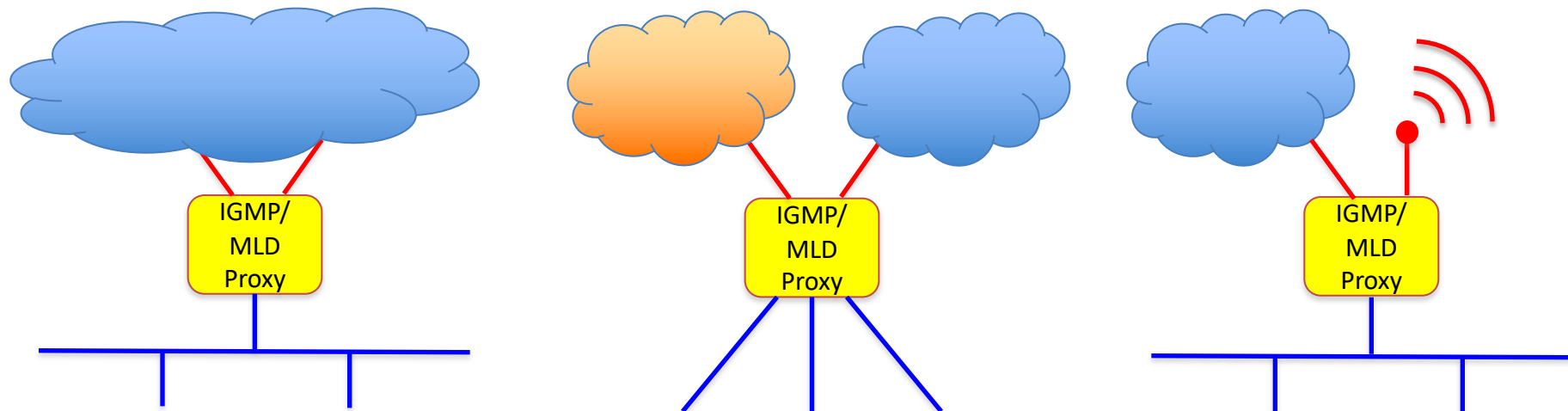
# Multipath Support for IGMP/MLD Proxy

draft-ietf-pim-multipath-igmpmldproxy-00

Hitoshi Asaeda (NICT), Luis M. Contreras (Telefonica)

# Background

- There are many situations where an IGMP/MLD proxy is multiply attached to the different networks (e.g., ISP-A and ISP-B) or by means of different interfaces (e.g., wired and wireless links, WiFi and 5G).
- RFC4605 does not support such multihoming situations.
- Enable an IGMP/MLD proxy device to use multiple upstream interfaces and receive multicast packets through these interfaces.



# Overview

- The proposed extension allows IGMP/MLD proxy devices to receive multicast sessions/channels through different upstream interfaces
  - Intended status is *Informational*
- Upstream interface selection
  - Subscriber-based upstream interface selection
  - Channel-based upstream interface selection
- Upstream interface configuration
  - Address prefix record
  - Interface priority
    - To enable either interface takeover or robust data reception
- Introduce dynamic upstream interface configuration
  - Signaling-based upstream interface configuration
    - IGMP/MLD protocol extension (intended status is *PS*) is described in a separate draft
  - SDN-like controller-based upstream interface configuration

# Upstream interface selection

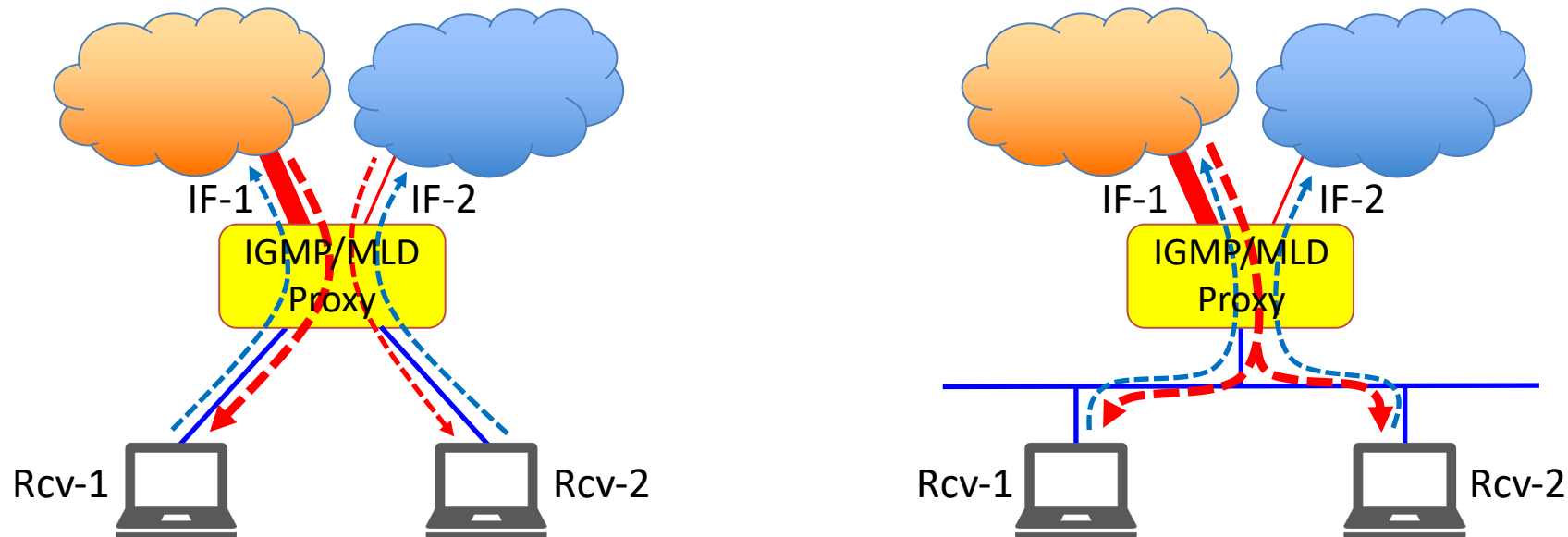
- Subscriber-based upstream interface selection
  - One or multiple upstream interface(s) is selected from candidate upstream interfaces based on subscriber address prefix
- Channel-based upstream interface selection
  - One or multiple upstream interface(s) is selected from candidate upstream interfaces based on channel/session ID
  - Source address prefix is prioritized
- Both subscriber-based and channel-based upstream interface selections can be coexisted
  - Subscriber-based upstream interface selection is prioritized
- Use default upstream interface if no/wrong configuration

# Upstream interface configuration

- Address prefix record consists of;  
(subscriber address prefix, (channel/session ID))  
where channel/session ID is;  
(source address prefix, multicast address prefix)
  - Each default value is null (=\*)
    - Possible combinations per interface can be: (Rcv,S,G), (Rcv,S,\*), (Rcv,\*G), (\*,S,G), (\*,S,\*), (\*,\*G), (\*,\*,\*) – prioritized order
- Interface priority
  - For interface takeover
    - Select one interface from multiple interfaces if address prefix record is identical but interface priority is not identical
  - For robust data reception
    - Use multiple interfaces if both address prefix record and interface priority are identical

# Attn: subscriber-based upstream selection

- Upstream interface selection “per subscriber/receiver”
  - Aim to differentiate receivers based on their contract or other matters/considerations
- Note that configuration mismatch happens if downstream link is a shared link



# Next steps

- Define default active interval to detect an inactive upstream interface for interface takeover
- Consider interaction with signaling methods (i.e., IGMP/MLD protocol extension)
- Request updating IGMP/MLD proxy YANG model (after publication)