Multipath Support for IGMP/MLD Proxy

draft-ietf-pim-multipath-igmpmldproxy-02
(draft-contreras-pim-multiif-config-03)
(draft-zcl-pim-multiif-igmp-mld-proxy-yang-01)

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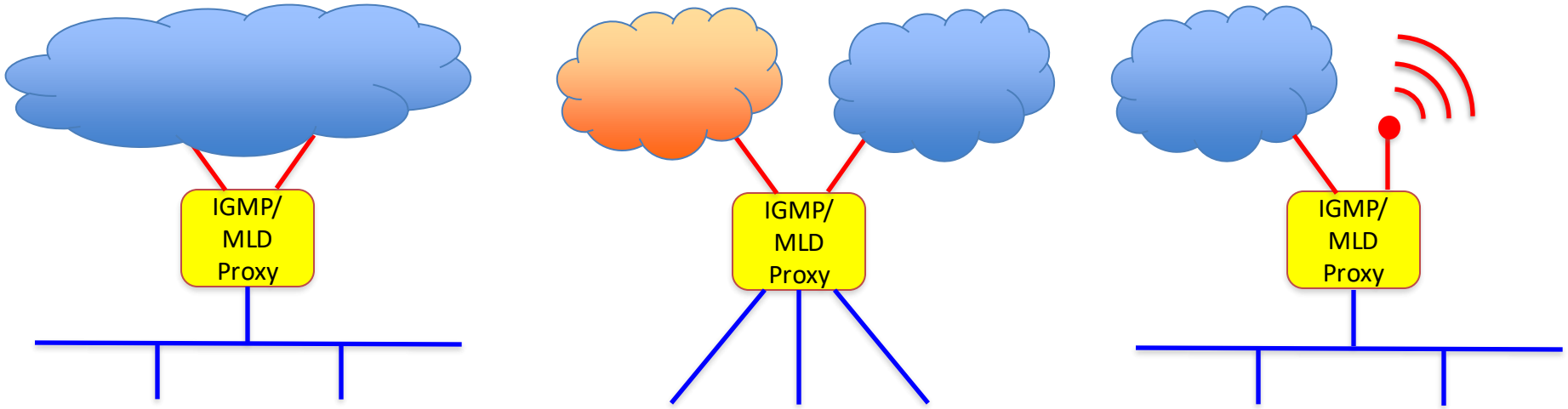
Background

- 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.



Three relevant drafts

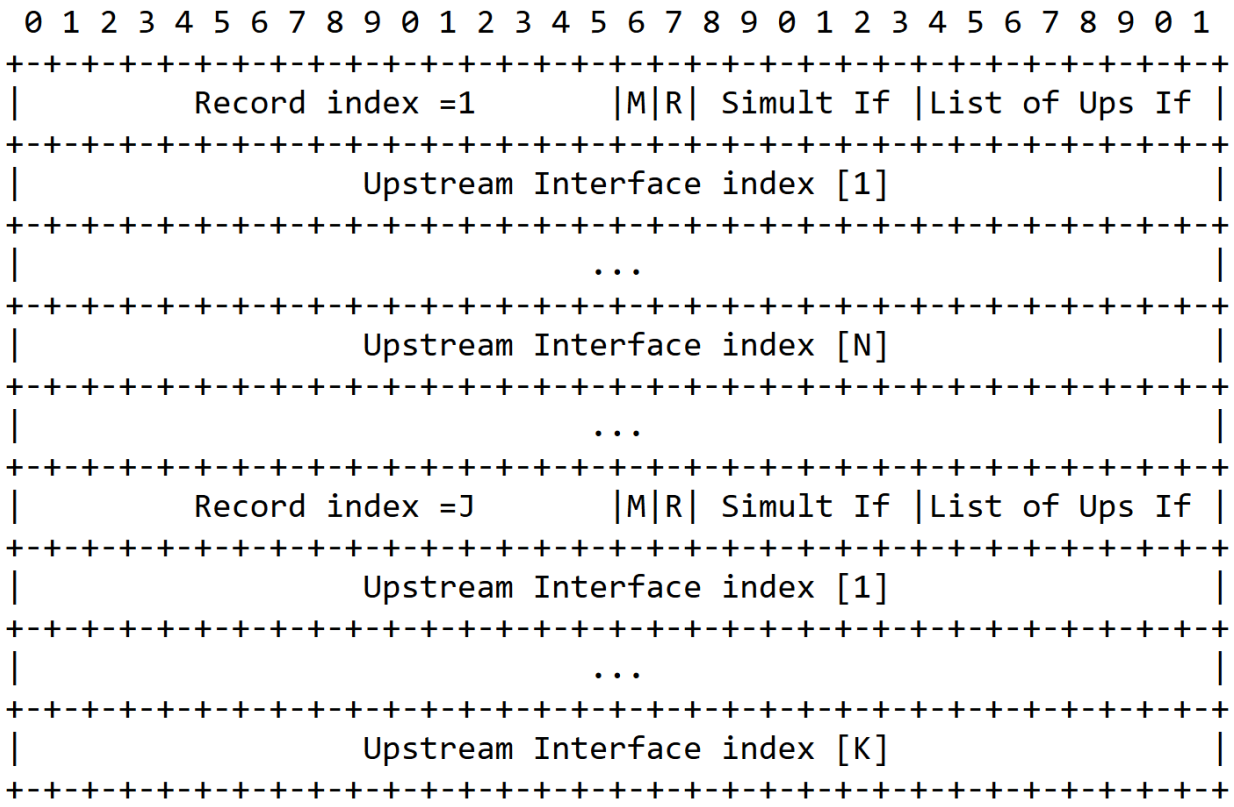
- draft-ietf-pim-multipath-igmpmldproxy
  - Static upstream interface configuration for IGMP/MLD proxy to receive multicast sessions/channels through different upstream interfaces
  - WG draft, intended status is ***Informational***
- draft-contreras-pim-multiif-config
  - Dynamic upstream interface configuration
  - Propose IGMP/MLD extension using IGMP/MLD extension field [RFC 9279]
  - Intended status is ***PS***
- draft-zcl-pim-multiif-igmp-mld-proxy-yang
  - IGMP/MLD proxy YANG model to support SDN-like controller-based upstream interface configuration

Static upstream interface configuration

- ~~Subscriber-based upstream interface selection~~
- Channel-based upstream interface selection
  - One or multiple upstream interface(s) for multicast channel/session is selected from candidate upstream interfaces
- Interface priority configuration
  - Interface takeover mode
    - Select one interface from multiple interfaces if interface priority is not identical
  - Robust data reception mode
    - Use multiple interfaces if interface priority is identical
- Use default upstream interface if no/wrong configuration

Dynamic upstream interface configuration

- Signaling-based upstream interface configuration, requiring extensions to IGMP/MLD messages [RFC 9279]



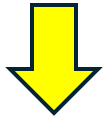
Controller-based upstream interface configuration

- SDN-like controller-based upstream interface configuration by means of SDN-like central management, requiring augmentation of existing IGMP/MLD YANG data models [RFC 9398]

```
module: ietf-multipath-igmp-mld-proxy
  augment /rt:routing/rt:control-plane-protocols/rt:control-plane-protocol/igmp-mld-proxy:igmp-proxy:
    +--rw default-upstream-interface?    -> ../igmp-mld-proxy:interfaces/interface/name {multipath-
igmp-proxy}?
    +--rw upstream-interface-takeover?   boolean {multipath-igmp-proxy}?
  augment /rt:routing/rt:control-plane-protocols/rt:control-plane-protocol/igmp-mld-proxy:igmp-
proxy/igmp-mld-proxy:interfaces/igmp-mld-proxy:interface:
    +--rw interface-priority?   uint32 {multipath-igmp-proxy}?
    +--rw active-interval?      uint32 {multipath-igmp-proxy}?
    +--rw subscriber* [address-prefix] {multipath-igmp-proxy}?
       +--rw address-prefix    inet:ipv4-address-no-zone
       +--rw group* [address-prefix]
          +--rw address-prefix    rt-types:ipv4-multicast-group-address
          +--rw source* [address-prefix]
             +--rw address-prefix    inet:ipv4-address-no-zone
```

Questions

- We would like to merge the signaling draft (draft-contreras-pim-multiif-config) into the static configuration ***WG*** draft (draft-ietf-pim-multipath-igmpmldproxy).
  - IGMP/MLD proxy YANG model draft is kept as a separate document.



- Please review the signaling draft (draft-contreras-pim-multiif-config)
- Can we submit the merge drafts (draft-ietf-pim-multipath-igmpmldproxy) whose intended status is changed to ***PS*** before the next IETF?
  - Do we need to confirm it in the ML?
  - Or, do we need to confirm it in the next IETF meeting?