IGMP & MLD Snooping YANG Model

draft-zhao-pim-igmp-mld-snooping-yang-03

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IETF100
Status

• version 03
  - Second version for presentation
  - A new agreement about the whole structure is reached. The igmp-snooping-instance is defined to configure the parameters and show the operational state. It also follows the NMDA standard.
  - Effort from multicast yang design team
    (Ericsson/Jabil/Huawei/Cisco)
The igmp-snooping-instance could fit for both bridge and VPLS scenario. It is determined by the value of "type".

The multicast router interfaces and L2 multicast routing group could be configured manually.
Structure

- The read-only attributes are the operational state data. There are 3 kinds of outgoing interface which is interface-ref, l2vpn-instance-ac-ref, or l2vpn-instance-pw-ref. We have utilized the existing ietf-interfaces and ietf-l2vpn module to indicate the outgoing interface.

  module: ietf-igmp-mld-snooping
    +--rw igmp-snooping-instances
      |  +--rw igmp-snooping-instance* [name]
      |     …
      |     +--ro bridge-mrouter-interface* if:interface-ref
      |     +--ro vpls-mrouter-interface* l2vpn-instance-pw-ref
      |     +--ro group* [address]
      |        |  +--ro address inet:ipv4-address
      |        |  +--ro mac-address? yang:phys-address
      |        |  +--ro expire? uint32
      |        |  +--ro up-time? uint32
      |        |  +--ro last-reporter? inet:ipv4-address
      |        |  +--ro source* [address]
      |        |     +--ro address inet:ipv4-address
      |        |     +--ro bridge-outgoing-interface* if:interface-ref
      |        |     +--ro vpls-outgoing-ac* l2vpn-instance-ac-ref
      |        |     +--ro vpls-outgoing-pw* l2vpn-instance-pw-ref
      |        |     +--ro up-time? uint32
      |        |     +--ro expire? uint32
      |        |     +--ro host-count? uint32 {explicit-tracking}?
      |        |     +--ro last-reporter? inet:ipv4-address
      |        |     +--ro host* [host-address] {explicit-tracking}?
      |        |        +--ro host-address inet:ipv4-address
      |        |        +--ro host-filter-mode? enumeration

- For example, l2vpn-instance-pw-ref is the leafref for

typedef l2vpn-instance-pw-ref {
  type leafref {
    path "/l2vpn:l2vpn/l2vpn:instances" +
    "/l2vpn:instance/l2vpn:endpoint/l2vpn:pw/l2vpn:name";
  }
}
Bridge scenario

- The igmp-snooping-instance could be referenced in bridge scenario.

```yaml
module: ietf-igmp-mld-snooping
+-rw igmp-snooping-instance* [name]
  |  +-rw name string
  |  +-rw id? uint32
  |  +-rw type? enumeration
  |  +-rw enable? boolean {admin-enable}?
```
l2vpn scenario

- The igmp-snooping-instance could be referenced in l2vpn scenario.

```
module: ietf-igmp-mld-snooping
  +--rw igmp-snooping-instance* [name]
    |   +--rw name                      string
    |   +--rw id?                       uint32
    |   +--rw type?                     enumeration
    |   +--rw enable?                   boolean {admin-enable}?
    |   +--rw igmp-snooping-instance?   igmp-snooping-instance-ref
```
IGMP snooping RPC

Clears the specified IGMP Snooping cache tables.

module: ietf-igmp-mld-snooping

ingen'rpcs:

  +---x clear-igmp-snooping-groups {rpc-clear-groups}?  
     |     +---w input
     |          +---w id?        uint32  
     |          +---w group?     inet:ipv4-address  
     |          +---w source?    inet:ipv4-address
Unsolved problem

• The attribute forwarding-mode maybe reconsidered because it only fits for instance, but doesn’t fit for interface.
• Counter to non-member leave would also be useful?
Next Step

• Apply for WG adoption
• Welcome more vendors and carriers involved
• Need more comments