

IGMP & MLD Snooping YANG Model

draft-zhao-pim-igmp-ml-d-snooping-yang-01

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IETF99

Status

- version 01
 - First version for presentation
 - Structure according to IGMP & MLD model. (We have reached a new agreement about the whole structure just now. The draft needs update.)
 - Effort from multicast yang design team
(Ericsson/Jabil/Huawei/Cisco)

Structure

- Define a fully functional schema for IGMP Snooping profile

```
module: ietf-igmp-mld-snooping
  +--rw igmp-snooping-profile* [name]
    +--rw name string
    +--rw vlan-id? uint16
    +--rw enable? boolean {admin-enable}?
    +--rw forwarding-mode? enumeration
    +--rw explicit-tracking? empty
    +--rw send-query? Boolean
    +--rw fast-leave? empty {fast-leave}?
    +--rw last-member-query-interval? uint16
    +--rw query-interval? uint16
    +--rw query-max-response-time? uint16
    +--rw require-router-alert? boolean {require-router-alert}?
    +--rw robustness-variable? uint8
    +--rw version? uint8
    +--rw static-mrouter-interface* if:interface-ref {static-l2-multicast-group}?
    +--rw querier-source? inet:ipv4-address
    +--rw static-l2-multicast-group* [group source-addr] {static-l2-multicast-group}?
      +--rw group inet:ipv4-address
      +--rw source-addr source-ipv4-addr-type
      +--rw interface? if:interface-ref
    +--ro entries-count? uint32 // operational state data
    +--ro mrouter-interface* if:interface-ref // operational state data
    +--ro group* [address] // operational state data
      +--ro address inet:ipv4-address
      +--ro mac-address? yang:phys-address
      +--ro expire? uint32
      +--ro up-time? uint32
      +--ro interface? if:interface-ref
      +--ro last-reporter? inet:ipv4-address
      +--ro source* [address]
        +--ro address inet:ipv4-address
        +--ro up-time? uint32
        +--ro expire? uint32
        +--ro last-reporter? inet:ipv4-address
```

mld-snooping-profile is same as IGMP snooping except changing IPv4 addresses to IPv6 addresses.

Structure

- Prepared to work with other models by profile references

ieee 802.1Q bridge model:

```
module: ieee-dot1Q-bridge
```

```
  +--rw bridge* [name]
```

```
    +--rw name          dot1Qtypes:nameType
```

```
    +--rw igmp-snooping-profile      leafref
```

```
    +--rw bridge-vlan
```

```
      +--rw vlan* [vid]
```

```
      | +--rw vid          ieee:vlanid
```

```
      +--rw igmp-snooping-profile    leafref
```

```
module: ietf-igmp-mld-snooping
```

```
  +--rw igmp-snooping-profile* [name]
```

```
    +--rw name
```

```
    +--rw vlan-id?
```

```
    +--rw enable?
```

```
    +--rw forwarding-mode?
```

```
    +--rw explicit-tracking?
```

```
    +--rw send-query?
```

```
    +--rw mrouter-aging-time?
```

```
    +--rw fast-leave?
```

```
    ...
```

string

uint16

boolean {admin-enable}?

enumeration

string

boolean

uint16

empty {fast-leave}?



- Pros

- Can be fully, independently defined
- Can be augmented
- Easy references to and from other models
- Can be adjusted to bridge and VLAN cases

IGMP snooping RPC

Clears the specified IGMP Snooping cache tables.

```
module: ietf-igmp-mld-snooping
```

```
rpcs:
```

```
+---x clear-igmp-snooping-groups {rpc-clear-groups}?  
  +---w input  
    +---w vlan-id?    uint16  
    +---w group?     inet:ipv4-address  
    +---w source?    inet:ipv4-address
```

Unsolved problem

- How to extend igmp-snooping-profile to support VPLS?
- How to define operational state data? (Now I have defined some read-only attributes in the igmp-snooping-profile as operational state data . But we haven't reached an agreement yet.)

Next Step

- Welcome more vendors and carriers involved
- Need more comments