IGMP & MLD YANG Model

draft-ietf-pim-igmp-mld-yang-03

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IETF98
Status

• version 03
  – Reviewed by yang doctor
  – Updated according to the review comments
  – Passed validations
IGMP & MLD yang global structure

module: ietf-igmp-mld

augment /rt:routing/rt:control-plane-protocols/rt:control-plane-protocol:
  | +--rw igmp
  |    +--rw global
  |         | +--rw enable? boolean {global-admin-enable}?
  |         | +--rw max-entries? uint32 {global-max-entries}?
  |         | +--rw max-groups? uint32 {global-max-groups}?
  | +--rw interfaces
  |    +--------
  |    +--rw version? uint8
  |    | +--rw interface* [interface-name]
  |    |    +--rw interface-name if:interface-ref
  |    |    +--rw enable? boolean {intf-admin-enable}?
  |    +--------

augment /rt:routing/rt:control-plane-protocols/rt:control-plane-protocol:
  | +--rw mld
  |    +--rw global
  |         | +--rw enable? boolean {global-admin-enable}?
  |         | +--rw max-entries? uint32 {global-max-entries}?
  |         | +--rw max-groups? uint32 {global-max-groups}?
  | +--rw interfaces
  |    +--------
  |    +--rw version? uint8
  |    | +--rw interface* [interface-name]
  |    |    +--rw interface-name if:interface-ref
  |    |    +--rw enable? boolean {intf-admin-enable}?
  |    +--------

◆ Separate model for IGMP and MLD to make it easier for implementations which may optionally choose to support specific address families

◆ Global level: IGMP or MLD configuration attributes for the entire routing system

◆ Interface-global: IGMP or MLD configuration attributes applicable to all interfaces whose interface level attributes are not existing, with same attributes’ value

◆ Interface-level: IGMP or MLD configuration attributes specific to the given interface

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 Global level: IGMP or MLD configuration attributes for the entire routing system

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 Interface-level: IGMP or MLD configuration attributes specific to the given interface
Global level and interface-global level covers different scopes. Global level attributes consider status of the whole instance, not interface. For example:

- **max-entries** or **max-groups** counts entries of the whole instance not for interfaces

Interface-global covers interface scope, applied to an interface if there is no per interface configuration on the interface. For example:

- In interface-global level we have configured query interval with **200s** and we have 3 interfaces: E1, E2 and E3
- If on E1 we also have configured query interval with **100s**, the actually on E1 IGMP uses query interval with **100s**, and E2 and E3 both use query interval with **200s**

There are some differences between interfaces-global and interface-specific, for example:

- **group-policy**, **verify-source-subnet**, **immediate-leave** etc. parameters only in interfaces-specific for per interface configuration
Draft Update Information-1

- Augment level change (errata)
  - Former: /rt:routing/rt:control-plane-protocols
  - Current: /rt:routing/rt:control-plane-protocols/rt:control-plane-protocol

- Define extended parameters for different value range
  - Former: use wide constant range (maximum and minimum for all of the vendors)
  - Current: define extended parameter leaf for vendor specific implementation
  - For example:

```
leaf robustness-variable {
  type uint8 {
    range "2..7";
  }
  default 2;
  description "Querier's Robustness Variable allows tuning for the expected packet loss on a network.";
  reference "RFC3376. Sec. 4.1.6, 8.1, 8.14.1."
}
```

```
draft03 extended

choice robustness-variable {
  description "Different vendors can restrict different range to the Robustness Variable parameter."

  leaf robustness-variable-basic {
    type uint8 {
      range "2..7";
    }
    default 2;
    description "Querier's Robustness Variable allows tuning for the expected packet loss on a network.";
    reference "RFC3376. Sec. 4.1.6, 8.1, 8.14.1."
  }

  leaf robustness-variable-extended {
    if-feature intf-robustness-variable-extended;
    type uint8;
    default 2;
    description "Querier's Robustness Variable allows tuning for the expected packet loss on a network.";
    reference "RFC3376. Sec. 4.1.6, 8.1, 8.14.1."
  }
}
```

```
Vendor-X extended

augment /igmp/interfaces/robustness-variable {
  leaf robustness-variable-vendor-X {
    type uint8 {
      range "2..15";
    }
    default 2;
    description "Querier's Robustness Variable allows tuning for the expected packet loss on a network.";
    reference "RFC3376. Sec. 4.1.6, 8.1, 8.14.1."
  }
}
```
Specify a default value for parameters to make it clearly what happens for every parameter

For example:

```plaintext
leaf enable {
  if-feature intf-admin-enable;
  type boolean;
  default false;
  description
  "true to enable IGMP on the interface;
  false to disable IGMP on the interface."
}
```

Add more description and revise description detailed errors
Future Plan

• Apply to WGLC

• Any more comments?