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

3 level hierarchy relationship

➢ 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
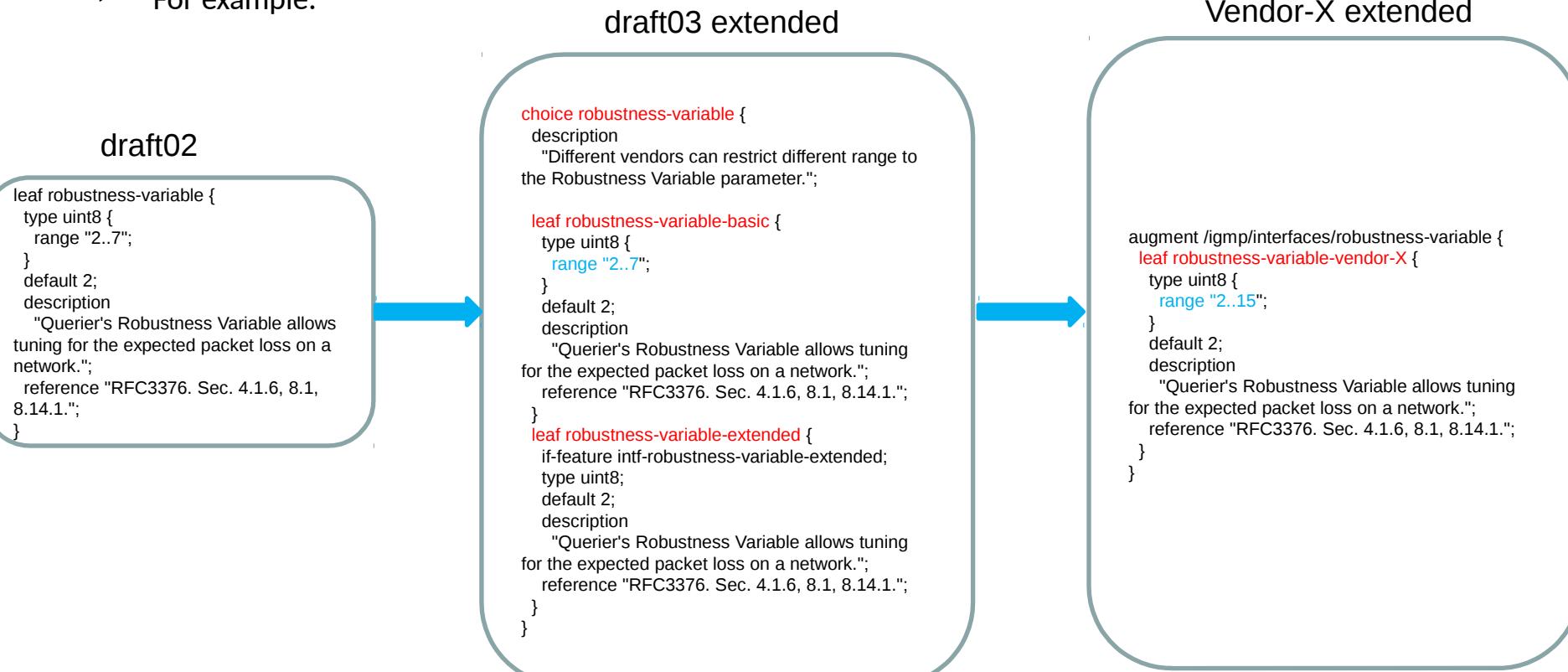
Draft Update Information-1

- 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:

draft02

```
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.";
  }
}
```

Draft Update Information-2

- Specify a default value for parameters to make it clearly

  what happens for every parameter

  ✓ For example:

  ```
  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?