Draft YANG model for PIM

draft-mcallister-pim-yang-00

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Agenda

- Introduction

- Scope of current model

- Top-level structure

- Current progress

- Unresolved issues

- How you can help

- Discussion

Introduction

- Drafts like this are under discussion by the YANG multicast design team

- Join us!

- Archive: http://www.ietf.org/mail-archive/web/yang-multicast/current/maillist.html

- Wiki: http://trac.tools.ietf.org/wg/pim/trac/wiki/yang

- This draft is versioned on github: https://github.com/mcallisterjp/pim-yang/

PIM Model Scope and Overview

- Will cover all core PIM and PIM protocol extensions
- Other multicast protocols will be covered by different drafts
  - Proposed YANG modules:

```
ietf-pim-base.yang
     +--ietf-pim-rp.yang
     +--ietf-pim-sm.yang
     +--ietf-pim-dm.yang
     +--ietf-pim-bidir.yang
```

Current Progress

- Design doctrine decided
- High-level structure done (modulo a few issues)
- Some configuration parameters done
- Still lots to do:
  - State
  - Notifications
  - Constraints
  - Policy
  - Statistics
  - …

Unresolved Issues

- Scope of address family
  - relative to instances
  - relative to interface tree

- RP config tree naming and indexing

- Some questions dependent on other groups:
  - How to configure BFD
  - How to express the general concept underlying ACL/policy

AF Hierarchy (Option 1)

Per-AF interface list

```
+--rw routing
   +--rw routing-instance* [name]
      +--rw routing-protocols
         +--rw pim
            +--rw address-family* [address-family]
               +--rw address-family          enumeration
               +--rw pim-interfaces
                  +--rw pim-interface* [if-name]
                     +--rw if-name                if-name
                     +--rw hello-interval?     uint32
                     +--rw dr-priority?        uint32
```

AF Hierarchy (Option 1)

Per-AF interface list

```
+--rw routing
   +--rw routing-instance* [name]
      +--rw routing-protocols
         +--rw pim
            +--rw pim-interfaces
            +--rw pim-interface* [if-name]
            +--rw if-name                   if-name
               +--rw address-family* [address-family]
               +--rw address-family          enumeration
                  +--rw hello-interval?     uint32
                  +--rw dr-priority?        uint32
```

AF Hierarchy (Option 2)

AF-mixed interface list

```
+--rw routing
   +--rw routing-instance* [name]
      +--rw routing-protocols
         +--rw pim
            +--rw pim-interfaces
               +--rw pim-interface* [if-name]
                  +--rw if-name                  if-name
                  +--rw hello-interval?     uint32  (feature a)
                  +--rw dr-priority?        uint32  (feature a)
                  +--rw address-family* [address-family]
                     +--rw address-family          enumeration
                           hello-interval (feature b)
                           dr-priority  (feature b)
```

AF Hierarchy (Option 3)

Compromise (augmentable)

```
+--rw routing
   +--rw routing-instance* [name]
      +--rw routing-protocols
         +--rw pim
            +--rw pim-interfaces
            +--rw pim-interface* [if-name]
            +--rw if-name                    if-name
               +--rw address-family* [address-family]
               +--rw address-family          enumeration
                  +--rw hello-interval?     uint32
                  +--rw dr-priority?        uint32
```

Entity-level config example: GR

Compromise (augmentable)

```
module: ietf-pim-base
augment /rt:routing/rt:routing-instance/rt:routing-protocols:
   +--rw pim
      +--rw address-family* [address-family]
         +--rw address-family      identityref
         +--rw graceful-restart {graceful-restart)
         |  +--rw enabled?    boolean
         |  +--rw duration?   Uint16
         +--rw graceful-restart-helper {graceful-restart-helper)
         |  +--rw enabled?    boolean
         |  +--rw duration?   uint16
```

Current static RP draft

```
augment /rt:routing/rt:routing-instance/rt:routing-protocols:
   +--rw pim
      +--rw address-family* [address-family]
         +--rw address-family      identityref
         +--rw interfaces
         +--rw pim-rp:rp
            +--rw pim-rp:static-rp
            |  +--rw pim-rp:ipv4-rp* [ipv4-addr]
            |  |  +--rw pim-rp:ipv4-addr      inet:ipv4-address
            |  |  +--rw pim-rp:policy-name?   string
            |  |  +--rw pim-rp:mode?          identityref
            |  +--rw pim-rp:ipv6-rp* [ipv6-addr]
            +--rw pim-rp:bsr {bsr}?
               +--rw pim-rp:bsr-candidate!
               +--rw pim-rp:rp-candidate* [interface]
                  +--rw pim-rp:interface    if:interface-ref
                  +--rw pim-rp:policy?      string
                  +--rw pim-rp:mode?        identityref
```

Better static RP idea

- Just non-mode-specific config in RP module

  - RP addresses

  - BSR config

- Other config is augmented from PIM mode modules

- Outstanding issues

  - How are policies/ACLs/group ranges expressed?

How you can help

- Discuss unresolved issues today

- Join in the design team discussion

- Fill in your implementation's features on the wiki

- Give us feedback (and pull requests) directly

- Write models for other multicast protocols

Discussion

Questions?