PIM YANG Model
draft-liu-pim-yang-00

Yisong Liu, Feng Guo (Huawei)

IETF 91, Honolulu

Introduction

- Goal:
  - Define a standardized model for PIM configuration, operation and notification
- Use Case:
  - Unified provisioning system between vendors
  - Unified way to collect PIM protocol informations (states, timers, events…)
- PIM protocol family include PIM SM/SSM, DM, Bidir, BSR etc. specific protocols, current proposed model just includes PIM BSR & PIM SM/SSM

Main trees : configuration

```
module: pim
   +--rw PIM
      +--rw PIM_BSR
      |  +--rw PIM_BSR-Instances
      |     +--rw C-BSR-Instance* [vrfName]
      |     |  | ...
      |     +--rw C-RP-Instance* [vrfName]
      |     |  | ...
      +--rw PIM_SM
         +--rw PIM_SM-Instances
            +--rw PIM_SM-Instance* [vrfName]
               |  ...
               +--rw PIM-Static-RPs
               |  +--rw PIM-Static-RP
               |  |  | ...
               +--rw PIM-SPT-Switchs
               |  +--rw PIM-SPT-Switch* [sptGrpPlyName]
               |  |  | ...
               +--rw PIM_SM-Anycast-RPs
               |  +--rw PIM_SM-Anycast-RP
               |  |  | ...
               |    +--rw PIM_SM-RP-Peers
               |       +--rw PIM_SM-RP-Peer
               |       |  | ...
               +--rw PIM_SM-Interfaces
                  +--rw PIM_SM-Interface* [ifName]
                   |  ...
```

C-bsr Instance specific configuration

C-rp Instance specific configuration

PIM SM Instance specific configuration

Static-rp specific configuration

Spt-switch specific configuration

Anycast rp specific configuration

Anycast rp peer specific configuration

Interface specific configuration

Main trees : configuration(cont.)

Per-instance c-bsr configuration

```
+--rw C-BSR-Instance* [vrfName]
   |   | +--rw vrfName              string
   |   | +--rw addressFamily        enumeration
   |   | +--rw cBsrIfName           ifName
   |   | +--rw IPV4-cBsrIfAddr?      inet:ipv4-address
   |   | +--rw IPV6-cBsrIfAddr       inet:ipv6-address
   |   | +--rw cBsrHoldTime?         uint32
   |   | +--rw cBsrInterval?         uint32
   |   | +--rw cBsrHashLen?          uint32
   |   | +--rw cBsrPriority?         uint32
   |   | +--rw cBsrPlyName?          string
   |   | +--rw cBsrPlyIpv6?          string
   |   | +--rw cBsrAdminScope?       boolean
   |   | +--rw cBsrGlobalEnable?     boolean
   |   | +--rw cBsrGlobalHashLength?  uint32
   |   | +--rw cBsrGlobalPriority?   uint32
   |   | +--rw isFragable            boolean
```

Main trees : configuration(cont.)

Per-instance c-rp configuration

```
+--rw C-RP-Instance* [vrfName]
    |    +--rw vrfName         string
    |    +--rw cRpIfName        ifName
    |    +--rw cRpGrpPlyName?   string
    |    +--rw cRpPriority?     uint32
    |    +--rw cRpHoldTime?     uint32
    |    +--rw cRpAdvInterval?  uint32
    |    +--rw IPV4-cRpAddr?    inet:ipv4-address
    |    +--rw IPV6-cRpAddr     inet:ipv6-address
```

Main trees : configuration(cont.)

```
+--rw PIM_SM-Instances
        +--rw PIM_SM-Instance* [vrfName]
        +--rw vrfName            string
        +--rw addressFamily      enumeration
        +--rw assertHoldTime?    uint32
        +--rw jpHoldTime?        uint32
        +--rw probeInterval?     uint32
        +--rw jpTimerInterval?   uint32
        +--rw drPriority?        uint32
        +--rw helloHoldtime?     uint16
        +--rw helloLandelay?     uint16
        +--rw helloInterval?     uint32
        +--rw helloOverride?     uint16
        +--rw regCheckSum?       uint16
        +--rw regSuppInterval?   uint32
        +--rw embeddedRp?        boolean
        +--rw nbrCheckRecv?      boolean
        +--rw nbrCheckSend?      boolean
        +--rw regPlyName?        string
        +--rw regPlyIpv6?        string
        +--rw ssmPlyName?        string
        +--rw ssmPlyIpv6?        string
        +--rw srcPlyName?        string
        +--rw srcPlyIpv6?        string
        +--rw bsrPlyName?        string
        +--rw bsrPlyIpv6?        string
        +--rw embRpPlyName?      string
        +--rw sourceLifeTime?    uint32
        +--rw sptDetInterval?    uint32
        +--rw ipsecName?         string
        +--rw ipsecType?         enumeration
        +--rw uniIpsecName?      string
```

Per-instance PIM SM configuration

Main trees : configuration(cont.)

```
+--rw PIM-Static-RPs                    Per-static-rp configuration
        |  +--rw PIM-Static-RP
        |    +--rw IPV4-staticRpAddr     inet:ipv4-address
        |    +--rw IPV6-staticRpAddr     inet:ipv6-address
        |    +--rw staticRpPlyName?      string
        |    +--rw staticRpPlyNameIpv6?  string
        |    +--rw preference?           enumeration
```

Main trees : configuration(cont.)

Per-spt-switch configuration

```
+--rw PIM-SPT-Switchs
      | +--rw PIM-SPT-Switch* [sptGrpPlyName]
      |    +--rw infinity?       boolean
      |    +--rw sptThreshHold?    uint32
      |    +--rw isACLEnable      boolean
      |    +--rw sptGrpPlyName     string
      |    +--rw sptGrpPlcyOrder?  uint32
```

Main trees : configuration(cont.)

Per-anycast-rp configuration

```
+--rw PIM_SM-Anycast-RPs
     | +--rw PIM_SM-Anycast-RP
     |    +--rw IPV4-rpAddress        inet:ipv4-address
     |    +--rw IPV6-rpAddress        inet:ipv6-address
     |    +--rw local-IPV4-Address    inet:ipv4-address
     |    +--rw local-IPV6-Address    inet:ipv6-address
```

Per-anycast-rp-peer configuration

```
+--rw PIM_SM-RP-Peers
     |      +--rw PIM_SM-RP-Peer
     |        +--rw IPV4-rpPeer-Address    inet:ipv4-address
     |        +--rw IPV6-rpPeer-Address    inet:ipv6-address
     |        +--rw fwdSaSwt?             boolean
     |        +--rw fwdPolicy?            string
     |        +--rw fwdPolicyIpv6?        string
```

Main trees : configuration(cont.)

+--rw PIM_SM-Interfaces

      +--rw PIM_SM-Interface* [ifName]

   +--rw vrfName   string

   +--rw addressFamily   enumeration

   +--rw ifName   ifName

   +--rw pimsmEnable   boolean

   +--rw drPriority?   uint32

   +--rw helloInterval?   uint32

   +--rw helloHoldtime?   uint16

   +--rw helloOverride?   uint16

   +--rw helloLanDelay?   uint16

   +--rw jpTimerInterval?   uint32

   +--rw jpHoldtime?   uint32

   +--rw jpPlyName?   string

   +--rw jpPlyIpv6?   string

   +--rw jpAsmPlyName?   string

   +--rw jpAsmPlyIpv6?   string

   +--rw jpSsmPlyName?   string

   +--rw jpSsmPlyIpv6?   string

   +--rw nbrPlyName?   string

   +--rw nbrPlyIpv6?   string

   +--rw assertHoldtime?   uint32

   +--rw requireGenId?   boolean

   +--rw pimBsrBoundary?   enumeration

   +--rw bfdEnable?   boolean

   +--rw bfdMinTx?   uint32

   +--rw bfdMinRx?   uint32

   +--rw bfdMultiplier?   uint16

   +--rw isSilent?   boolean

   +--rw isDrSwtDelay?   boolean

   +--rw drSwtDelayInterval? uint32

   +--rw ipsecName?   string

   +--rw ipsecType?   enumeration

Per-interface configuration

Main trees : operations

- TBD

Main trees : notifications

- TBD

Next Steps

- Review on the current proposal model from PIM point of view
  - What are the missing informations of configuration for PIM BSR and PIM SM/SSM now?
  - Is the model organization appropriate for implementors?
  - Need to agree on defaults, possibly feature specific containers, conditional leafs…
- Seek some comments and feedback
- Add PIM DM, Bidir etc. critical protocol configuration on the current model
- Add PIM operations and notifications on the current model
- Looking at co-authors