# MVPN YANG Model

## draft-liu-bess-mvpn-yang-03

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# Status

- version 03

  - First version for presentation

  - structure according to l3vpn yang model

  - Effort from Huawei/Ericsson/Cisco/Juniper

  - Passed validations

# MVPN global structure

```
module: ietf-mvpn
augment /ni:network-instances/ni:network-instance:
   +--rw l3vpn
      +--rw ipv4
      |  +--rw mvpn
      |  |  +--rw signaling-mode?        enumeration
      |  |  +--rw auto-discovery-mode?   enumeration
      |  |  +--rw config-type?           enumeration
      |  |  +--rw is-sender-site?        boolean
      |  |  +--rw rpt-spt-mode?          boolean
      |  |  +--……
      |  |  +--……
      +--rw ipv6
         +--rw mvpn
         |  +--rw signaling-mode?        enumeration
         |  +--rw auto-discovery-mode?   enumeration
         |  +--rw config-type?           enumeration
         |  +--rw is-sender-site?        boolean
         |  +--rw rpt-spt-mode?          boolean
```

◆ separated mvpn instances each for ipv4 or ipv6 according to l3vpn yang
◆ following slides just show the ipv4 mvpn yang model, ipv6 is the same as ipv4

# MVPN route target configuration

```
module: ietf-mvpn
  augment /ni:network-instances/ni:network-instance:
    +--rw l3vpn
      +--rw ipv4
      |  +--rw mvpn
      |  |  +--…
      |  |  +--rw mvpn-route-targets
      |  |  |  +--rw mvpn-route-target* [rt-type rt-value]
      |  |  |     +--rw rt-type     enumeration
      |  |  |     +--rw rt-value    string


module: ietf-bgp-l3vpn
    augment /ni:network-instances/ni:network-instance:
    +--rw l3vpn
      +--rw route-distinguisher
      |  +--rw config
      |  |  +--rw rd?    string
      |  +--ro state
      |     +--ro rd?    string
      +--rw ipv4
      |  +--rw unicast
      |     +--rw route-targets
      |     |  +--rw config
      |     |  |  +--rw rts* [rt]
      |     |  |  |  +--rw rt          string
      |     |  |  |  +--rw rt-type?    enumeration
      |     |  |  +--rw route-policy?    string
      |     |  +--ro state
      |     |     +--ro rts* [rt]
      |     |     |  +--ro rt          string
      |     |     |  +--ro rt-type?    enumeration
      |     |     +--ro route-policy?    string
```

mvpn can configure own route targets, and they may be not consistent with l3vpn unicast

route-targets in the current l3vpn yang for unicast

# MVPN I-PMSI tunnel configuration

```
|  |  +--rw mvpn-ipmsi-tunnel
|  |  |  +--rw tunnel-mode?                enumeration
|  |  |  +--rw (ipmsi-type)?
|  |  |     +--:(p2mp-te)
|  |  |     |  +--rw te-p2mp-template?         string
|  |  |     +--:(p2mp-mldp)
|  |  |     +--:(pim-ssm)
|  |  |     |  +--rw ssm-default-group-addr?    inet:ip-address
|  |  |     +--:(pim-sm)
|  |  |     |  +--rw sm-default-group-addr?     inet:ip-address
|  |  |     +--:(bidir-pim)
|  |  |     |  +--rw bidir-default-group-addr?  inet:ip-address
|  |  |     +--:(pim-dm)
|  |  |     |  +--rw dm-default-group-addr?     inet:ip-address
|  |  |     +--:(ingress-replication)
|  |  |     +--:(mp2mp-mldp)
```

# MVPN S-PMSI tunnel configuration

```
|  |  +--rw mvpn-spmsi-tunnels
|  |     +--rw switch-delay-time?   uint8
|  |     +--rw hold-down-time?      uint16
|  |     +--rw tunnel-limit?        uint16
|  |     +--rw mvpn-spmsi-tunnel* [tunnel-mode]
|  |        +--rw tunnel-mode                   enumeration
|  |        +--rw (spmsi-type)?
|  |        |  +--:(p2mp-te)
|  |        |  |  +--rw te-p2mp-template?           string
|  |        |  +--:(p2mp-mldp)
|  |        |  +--……
|  |        +--rw switch-threshold?              uint32
|  |        +--rw (address-mask-or-acl)?
|  |           +--:(address-mask)
|  |           |  +--rw ipv4-group-addr?           inet:ipv4-address
|  |           |  +--rw ipv4-group-masklength?     uint8
|  |           |  +--rw ipv4-source-addr?          inet:ipv4-address
|  |           |  +--rw ipv4-source-masklength?    uint8
|  |           +--:(acl)
|  |              +--rw group-acl-ipv4?            string
```

◆ how to configure group-source address range in private network for a S-PMSI

◆ 2 choices: address & mask mode or acl mode

Including ipv4 wildcard group address

Including ipv4 wildcard unicast address

# MVPN I-PMSI tunnel operational state

```
|      +--ro mvpn-ipmsi-tunnel-info
|      |  +--ro tunnel-mode?               enumeration
|      |  +--ro (pmsi-type)?
|      |  |  +--:(p2mp-te)
|      |  |  |  +--ro te-p2mp-id?           uint16
|      |  |  |  +--ro te-tunnel-id?         uint16
|      |  |  |  +--ro te-extend-tunnel-id?  uint16
|      |  |  +--:(p2mp-mldp)
|      |  |  |  +--ro mldp-root-addr?       inet:ip-address
|      |  |  |  +--ro mldp-lsp-id?          string
|      |  |  +--:(pim-ssm)
|      |  |  |  +--ro ssm-group-addr?       inet:ip-address
|      |  |  +--:(pim-sm)
|      |  |  |  +--ro sm-group-addr?        inet:ip-address
|      |  |  +--:(bidir-pim)
|      |  |  |  +--ro bidir-group-addr?     inet:ip-address
|      |  |  +--:(pim-dm)
|      |  |  |  +--ro dm-group-addr?        inet:ip-address
|      |  |  +--:(ingress-replication)
|      |  |  +--:(mp2mp-mldp)
|      |  +--ro tunnel-role?               enumeration
|      |  +--ro mvpn-pmsi-sg-ref-ipv4s
|      |     +--ro mvpn-pmsi-sg-ref-ipv4* [ipv4-source-address ipv4-group-address]
|      |        +--ro ipv4-source-address   inet:ipv4-address
|      |        +--ro ipv4-group-address    inet:ipv4-address
```

# MVPN S-PMSI tunnel operational state

```
|     +--ro mvpn-spmsi-tunnel-ipv4-infos
|        +--ro mvpn-spmsi-tunnel-ipv4-info* [tunnel-mode]
|           +--ro tunnel-mode              enumeration
|           +--ro (pmsi-type)?
|           |  +--:(p2mp-te)
|           |  |  +--ro te-p2mp-id?             uint16
|           |  |  +--ro te-tunnel-id?           uint16
|           |  |  +--ro te-extend-tunnel-id?    uint16
|           |  +--:(p2mp-mldp)
|           |  |  +--……
|           +--ro tunnel-role?             enumeration
|           +--ro mvpn-pmsi-sg-ref-ipv4s
|              +--ro mvpn-pmsi-sg-ref-ipv4* [ipv4-source-address ipv4-group-address]
|                 +--ro ipv4-source-address    inet:ipv4-address
|                 +--ro ipv4-group-address     inet:ipv4-address
```

# Future Plan

- Apply to become WG draft

- Welcome more vendors and carriers involved

- Need more comments