

# IETF 94 Yokohama

## BFD YANG Data Model

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draft-ietf-bfd-yang-00

# What is in draft-ietf-bfd-yang-00

- \* After WG adoption, draft-zhang-bfd-yang-04 became draft-ietf-bfd-yang-00
- \* Support VRF centric model by augmenting routing-protocol
- \* Support for BFD IP single-hop, IP multi-hop, MPLS-TE tunnel, MPLS-LDP FEC and LAG
- \* BFD IP single-hop configuration “exported” to routing applications by having a grouping which contains interval(s), multiplier and enabled flag

# What is NOT in draft-ietf-bfd-yang-00

- \* BFD over VCCV (PWs)
- \* BFD over MPLS-TP
- \* 5884-bis. Need to add discriminator to the BFD session key since FEC is not sufficient (oper model)
- \* RPCs. Needed for what?
- \* S-BFD. To be addressed in separate draft?

# Issues & inconsistencies in draft-ietf-bfd-yang-00

- \* VRF-centric model makes sense for IP but for services such as LAG and MPLS-TP, there might be no VRF
- \* IP SH config in routing applications but only partially (the basic parameters). No authentication config in the routing apps, so it was put under interface in BFD. This means that BFD IP SH config is split between the routing apps and BFD.
- \* Operational model for MPLS-TE is per TE tunnel, it should be per LSP

# Potential solutions for issues in draft-ietf-bfd-yang-00

- \* Instead of augmenting routing-protocol, we add reference to VRF where needed
- \* Put all IP SH and MH config (base parameters, auth etc) under BFD. Certain implementations have the ability to have separate BFD session per application (to same peer on same i/f), they would need to augment the base BFD model to reflect that.
- \* Specify BFD state per MPLS-TE LSP, requires importing from LSP model of MPLS-TE. Alternative is to augment MPLS-TE LSP operational model

# Future BFD YANG Tree (SH)?

```
module: ietf-bfd
  +--rw bfd
    +--rw bfd-cfg
      +--rw bfd-session-cfg
        +--rw session-ip-sh* [interface dest-addr]
          +--rw interface                if:interface-ref
          +--rw dest-addr                inet:ip-address
          +--rw source-addr?            inet:ip-address
          +--rw local-multiplier?       multiplier
          +--rw (interval-config-type)?
            +--:(tx-rx-intervals)
              +--rw desired-min-tx-interval    uint32
              +--rw required-min-rx-interval  uint32
            +--:(single-interval)
              +--rw min-interval              uint32
          +--rw demand-enabled?           boolean
          +--rw admin-down?              boolean
          +--rw enable-authentication?    boolean
          +--rw authentication-parms {bfd-authentication}?
            +--rw key-chain-name?        string
            +--rw algorithm?            bfd-auth-algorithm
          +--rw desired-min-echo-tx-interval?  uint32
          +--rw required-min-echo-rx-interval? Uint32
```

# Future BFD YANG Tree (MH)?

```
module: ietf-bfd-
  +--rw bfd
    +--rw bfd-cfg
      | +--rw bfd-session-cfg
      |   +--rw session-ip-mh* [source-addr dest-addr vrf]
      |     +--rw source-addr          inet:ip-address
      |     +--rw dest-addr            inet:ip-address
      |     +--rw vrf                  rt:routing-instance-ref
      |     +--rw local-multiplier?    multiplier
      |     +--rw (interval-config-type)?
      |       | +--:(tx-rx-intervals)
      |       | | +--rw desired-min-tx-interval    uint32
      |       | | +--rw required-min-rx-interval  uint32
      |       | +--:(single-interval)
      |       | +--rw min-interval                uint32
      |     +--rw demand-enabled?              boolean
      |     +--rw admin-down?                  boolean
      |     +--rw enable-authentication?       boolean
      |     +--rw authentication-parms {bfd-authentication}?
      |       | +--rw key-chain-name?          string
      |       | +--rw algorithm?              bfd-auth-algorithm
      |     +--rw tx-ttl?                      ttl
      |     +--rw rx-ttl                       ttl
```

# Other open issues

- \* Is YANG for BFD over LAG in IETF scope?
- \* How does BFD YANG fit with LIME? Discussions in progress.