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
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

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.