DetNet Configuration YANG Model

draft-ietf-detnet-yang-02

Xuesong Geng (gengxuesong@huawei.com)
Mach Chen (mach.chen@huawei.com)
Zhenqiang Li (lizhengqiang@chinamobile.com)
Reshad Rahman (rrahman@cisco.com)
History

• Version 00: accepted as a WG document after IETF 102

• Version 01: *ietf-detnet-topology-yang* is defined independently

• Version 02: updated following the feedback from IETF103
  • Add ‘Sequence Number Generation’
    • OAM considerations
  • Add ‘DetNet Service Decapsulation’
  • Add ‘DetNet Transport Tunnel Decapsulation’
Ietf-detnet-yang Structure – Option 1

- Attributes are defined based on the role of the DetNet node:
  - Transit Node
  - Relay Node
  - Ingress Node/Egress Node

- Yang models of different data plane solutions are supposed to be defined independently:
  - Ietf-detnet-mpls-yang
  - Ietf-detnet-ip-yang

- The Yang model is complex and difficult to do mapping between different encapsulations
Ietf-detnet-yang Structure – Option 2

• All the attributes of different DetNet nodes are defined in the same structure:
  • In-segment/Out-segment
  • Configure different nodes by choosing different attributes

• All the data plane encapsulations are defined in the same structure
  • Easy to do mapping between different encapsulations

• But, this structure may be hard to be used
  • Functions of different layers are defined together
Learn from ietf-mpls-static-yang

module ietf-mpls-static
  augment /rt:route/mpls:
    +rw static-lsp
      +rw static-lsp [name]
      +rw name string
      +rw operation? mpls:mpls-operations-type
      +rw in-segment
        +rw fec
          +rw (type)?
            +rw ip-prefix? inet:ip-prefix
            +rw (mpls-label)
              +rw incoming-label? rt-types:mpls-label
              +rw incoming-interface? if:interface-ref
        +rw out-segment
          +rw (out-segment)?
            +(nhife-single)
              +rw nhife-single
                +rw mpls-label-stack
                  +rw entry? [id]
                  +rw id
                  +rw label? rt-types:mpls-label
                  +rw ttl? uint8
                  +rw traffic-class? uint8
                  +rw outgoing-interface? if:interface-ref
            +(nhife-multiple)
              +rw nhife-multiple
                +rw nhife* [index]
                  +rw index string
Ietf-detnet-yang Structure – Option 3

- Similar structure as ietf-mpls-static
- In-segment and out-segment can cover different DetNet encapsulations
- Define new operations:
  - Service Protection
  - Congestion Protection
- Support flow aggregation
Next Step

• Which structure shall we choose for the next version?

• DetNet Transport QoS: in or out of the scope of DetNet WG?
  • There is still no conclusion after IETF103

• Comments and contributions are always welcome
Thanks