DetNet Configuration YANG Model

draft-ietf-detnet-yang-02

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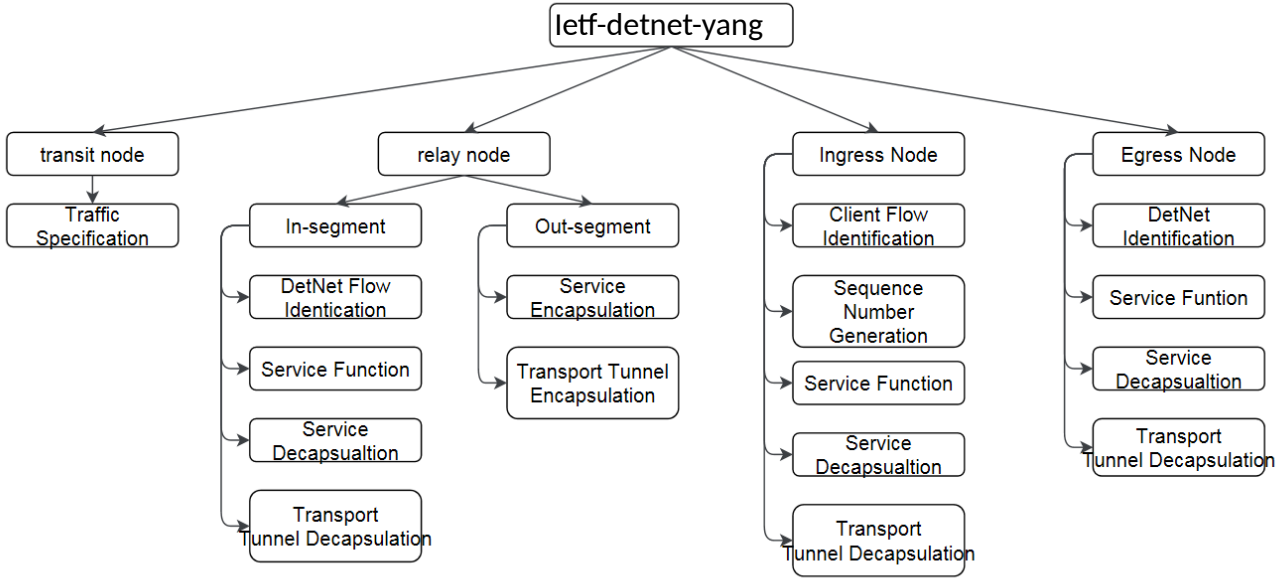
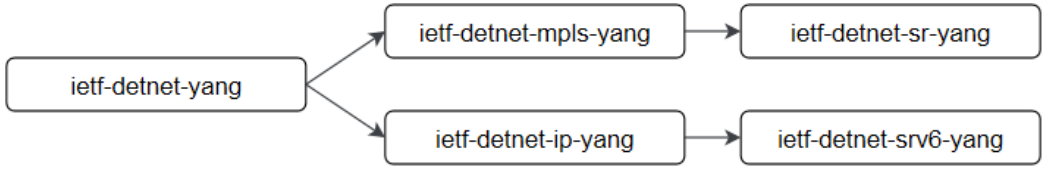
History

- 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

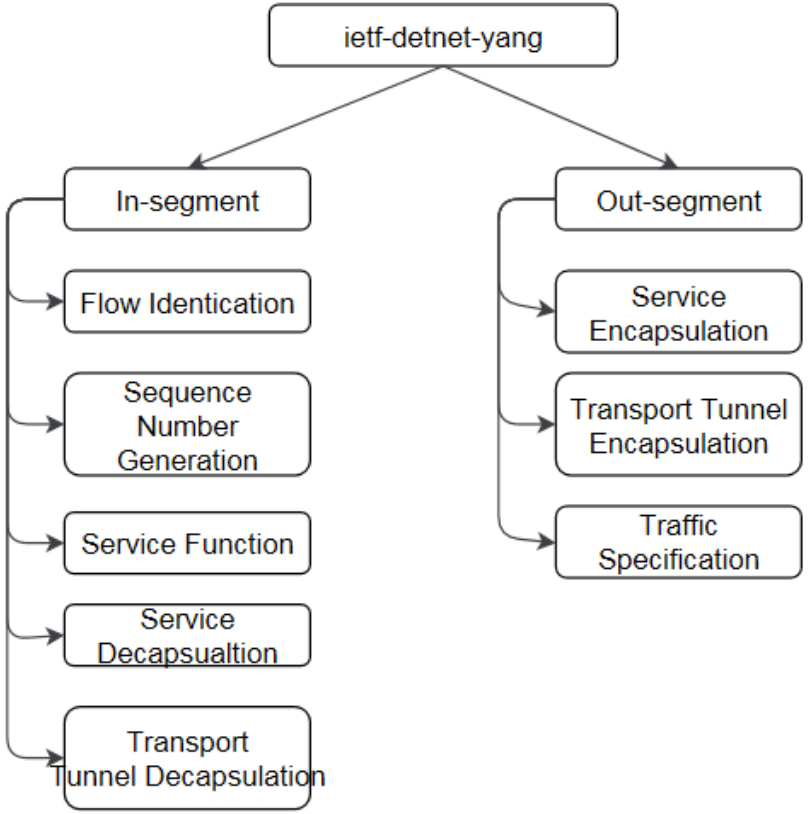
- Attributes are defined based on the role of the DetNet node:
  - Transit Node
  - Relay Node
  - Ingress Node/Egress Node
- Yang models of different data plane solutions are supposed to be defined independently:
  - Ietf-detnet-mpls-yang
  - Ietf-detnet-ip-yang
- The Yang model is complex and difficult to do mapping between different encapsulations



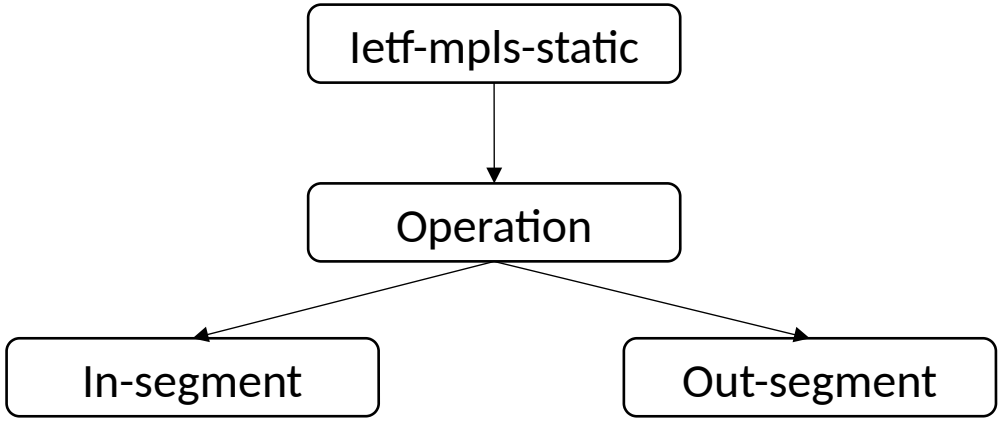


Ietf-detnet-yang Structure – Option 2

- 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



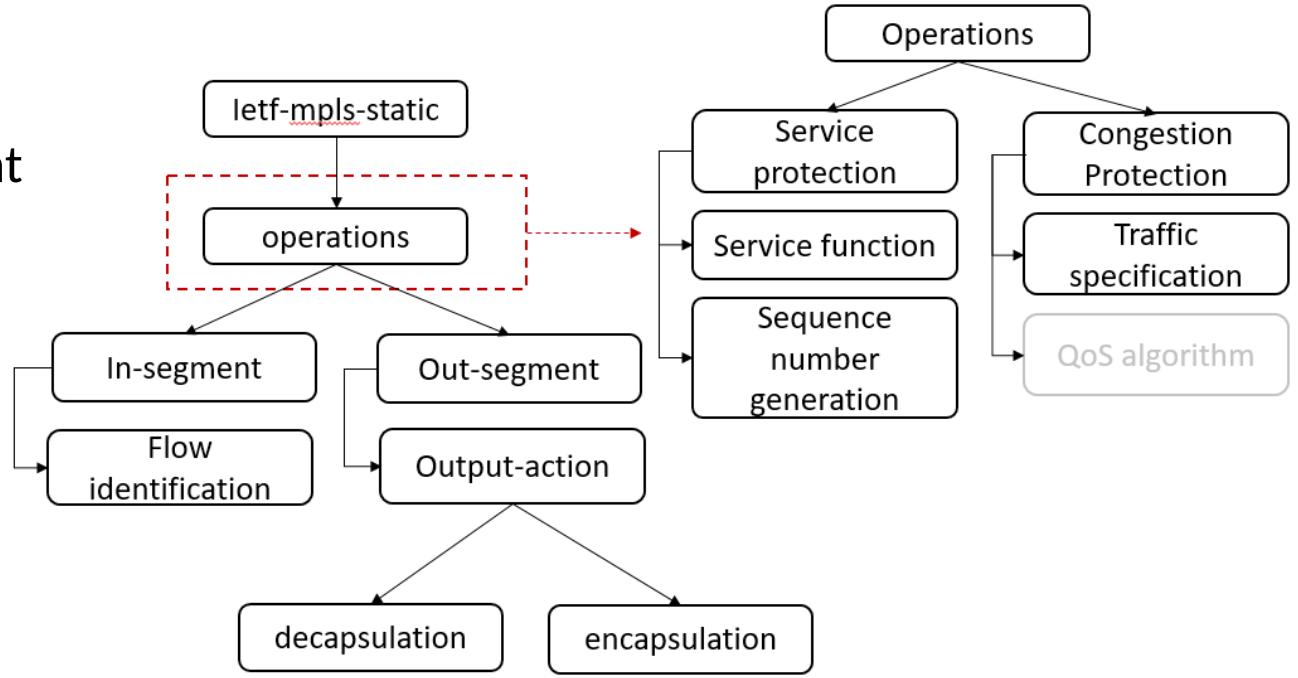
Learn from ietf-mpls-static-yang




```
module: ietf-mpls-static
  augment /rt:routing/mpls:mpls:
    +--rw static-lsps
       +--rw static-lsp* [name]
          +--rw name                string
          +--rw operation?          mpls:mpls-operations-type
          +--rw in-segment
          |  +--rw fec
          |     +--rw (type)?
          |        +--:(ip-prefix)
          |        |  +--rw ip-prefix?        inet:ip-prefix
          |        +--:(mpls-label)
          |           +--rw incoming-label?   rt-types:mpls-label
          |     +--rw incoming-interface?     if:interface-ref
          +--rw out-segment
             +--rw (out-segment)?
                +--:(nhlfe-single)
                |  +--rw nhlfe-single
                |     +--rw mpls-label-stack
                |        +--rw entry* [id]
                |           +--rw id               uint8
                |           +--rw label?           rt-types:mpls-label
                |           +--rw ttl?             uint8
                |           +--rw traffic-class?   uint8
                |        +--rw outgoing-interface?   if:interface-ref
                +--:(nhlfe-multiple)
                   +--rw nhlfe-multiple
                      +--rw nhlfe* [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