A YANG Data Model for Protocol Independent Service Topology: SFF Forwarder

draft-wang-i2rs-yang-sff-dm-00

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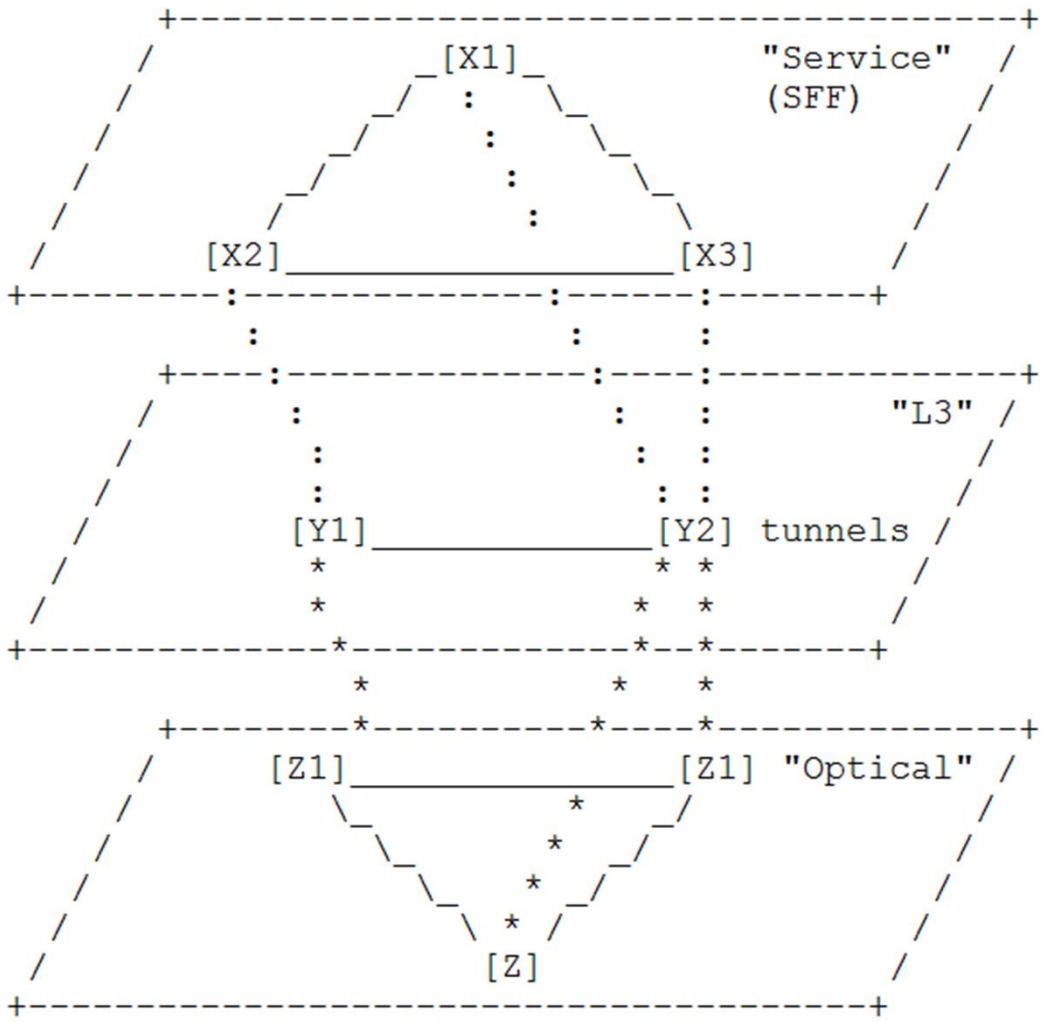
Relation to other topo models

- The SFF topology yang model augments generic network topo model defined in [I-D.clemm-i2rs-yang-network-topo].



Service

SFF topology

I2RS SFF Service Topology Model

- **Model is based on the generic model**
- **The SFF topology is built on top of one or more underlying networks.**
  - SFF topology is built on top of one or more underlying networks
  - Multiple SFF topologies can be built on top of the same underlying network.
  - Each tenant can only see its own service topology. But all the tenant's service topology can be mapped into the same L3 network topology.

- **Reading the topology**
  - I2RS Agent provides topology
  - Is pub/sub useful for this data?

- **The SFF topology comes from**
  - From I2RS Agent set static configuration
  - Service topology information is gathered from other source
    - IGPs or other data within the routing system
    - Other systems download by I2RS agent

SFF Yang Data Models

Å Node-type

- ✓ classifier-node
- ✓ sf-node
- ✓ sff-node

Å Node-extension

- ✓ Classifier-extension
- ✓ Sf-node-extension
- ✓ Sff-node-extension

SFF Yang Data Models

```
augment /nt:network-topology/nt:topology/nt:node
     +--rw node-type!
     |  +--rw classifier-node?  string
     |  +--rw sf-node?          string
     |  +--rw sff-node?         string
     +--rw next-hop*[hop-id]
     |  +--hop-id             node-id
     +--rw node-extension!
        +--rw classifier-extension!
        |  +--rw classifier-id  node-id
        |  +--rw sfc-policy     uint32
        |  +--rw sfp!
        |     +--rw sfp-id     uint32
        |     +--rw sf-list*[sf-id]
        |     |  +--rw sf-id  node-id
        |     +--rw sff-list*[sff-id]
        |        +--rw sff-id  node-id
        +--rw sf-node-extension!
        |  +--rw sf-id  node-id
        |  +--rw sf-node-locator  uint32
        |  +--rw sf-type!
        |  |  +--rw firewall?     uint32
        |  |  +--rw loadbalancer? uint32
        |  |  +--rw NAT44?        uint32
        |  |  +--rw NAT64?        uint32
        |  |  +--rw DPI?          uint32
        |  +--rw sf-inventory-data!
        +--rw sff-node-extension!
           +--rw sff-id   node-id
           +--rw (sffn-address)?
           |  +--:(ipv4-address)
           |  |  +--rw ipv4-address?     inet:ipv4-address
           |  +--:(ipv6-address)
           |     +--rw ipv6-address?     inet:ipv6-address
           +--rw sffn-virtual-context!
           |  +--rw context-id           uint32
           +--rw Attached-service-address!
           |  +--rw service-node*[service-node-id]
           |  |  +--rw service-node-id  node-id
           |  +--rw host-system*[host-system-id]
           |     +--rw host-system-id   uint32
           +--rw customer-support*[customer-id]
           |  +--rw customer-id  uint32
           +--rw customer-service-resource*[customer-resource-id]
           |  +--rw customer-resource-id  node-id
           +--rw sffn-vntopo!
```

Suggestion?