Yang Data Model for L2 Topology

draft-dong-i2rs-l2-network-topology

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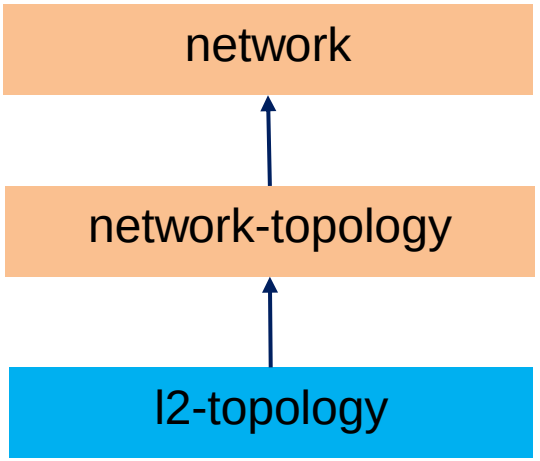
Introduction

- The requirement of collecting network information “under layer-3” is specified in
  - draft-medved-i2rs-topology-requirements and
  - draft-amante-i2rs-topology-use-cases
- The relationship between L2 topology model and generic topology model is described in
  - draft-clemm-i2rs-yang-network-topo
- This document defines data model for L2 network topology

L2-Topology Data Model

- Based on the generic network and network-topology model defined in
  - draft-clemm-i2rs-yang-network-topo-04

- With layer-2 specific augments
  - l2-network-type
  - l2-network-attributes
  - l2-node-attributes
  - l2-link-attributes
  - l2-termination-point-attributes

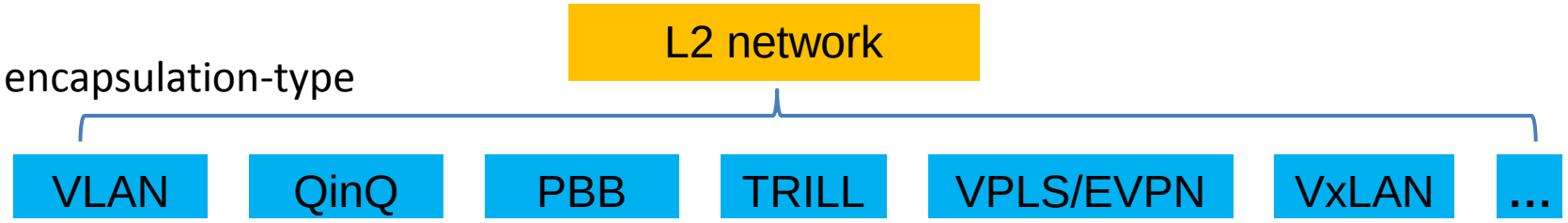


Summary of Version -01

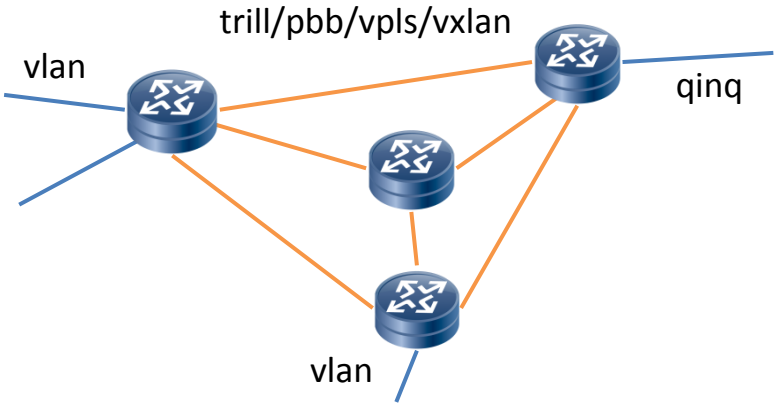
- Align with the updated generic network & network-topology model
- Draw a line between topology properties and inventory information
  - Inventory related information is specified in a separate model
- Open to incorporate different L2 capabilities and parameters
  - VLAN
  - QinQ
  - PBB
  - TRILL
  - VPLS
  - VXLAN
  - …

Incorporate Different L2 Technologies

- L2 has different encapsulations



- Different layer-2 encapsulations may be used to build one L2 topology



- Encapsulation-type as an attribute of L2 termination-points

L2-topology Yang Model Overview

```
module: l2-topology
augment /nt:network/nt:network-types:
   +--rw l2-network!
augment /nt:network:
   +--rw l2-network-attributes
      +--rw name?   string
      +--rw flag*   flag-type
augment /nt:network/nt:node:
   +--rw l2-node-attributes
      +--rw name?                  string
      +--rw description?           string
      +--rw chassis-id?            yang:mac-address
      +--rw management-address*    inet:ip-prefix
      +--rw management-vid?        vlan
      +--rw nick-name?             nickname {TRILL}?
      +--rw flag*                  flag-type
augment /nt:network/ntopo:link:
   +--rw l2-link-attributes
      +--rw name?   string
      +--rw rate?   decimal64
      +--rw flag*   flag-type
```

```
augment /nt:network/nt:node/ntopo:termination-point:
   +--rw l2-termination-point-attributes
      +--rw description?          string
      +--rw mac-address?          yang:mac-address
      +--rw port-vlan-id?         vlan
      +--rw ppvid
      |  +--rw ppvid?         vlan
      |  +--rw ppvid-flags?   bits
      +--rw vlan-name* [vlan-id]
      |  +--rw vlan-id      vlan
      |  +--rw vlan-name?   string
      +--rw encapsulation?        identityref
      +--rw maximum-frame-size?   uint32
      +--rw link-aggregation
      |  +--rw aggregation-status?   bits
      |  +--rw aggregated-port-id?   string
      +--ro tp-state?             enumeration
```

- Q: How to represent tunnels in L2 topology model?
  - May treat tunnels as supporting-links and supporting-termination-points

Next Steps

- Revise the model/draft based on feedbacks
- Encourage people to join this work
- Prepare for WG adoption?