

A Network Inventory Topology Model

[draft-wzwb-ivy-network-inventory-topology](#)

IVY WG, IETF#118

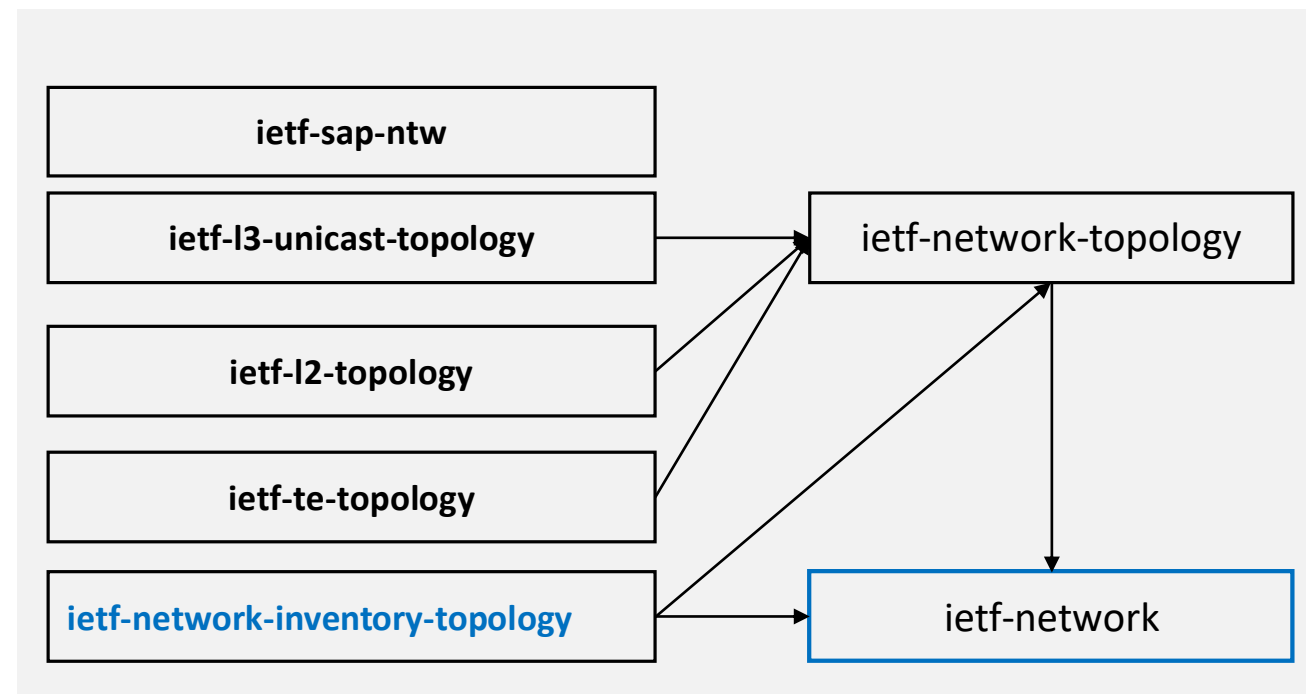
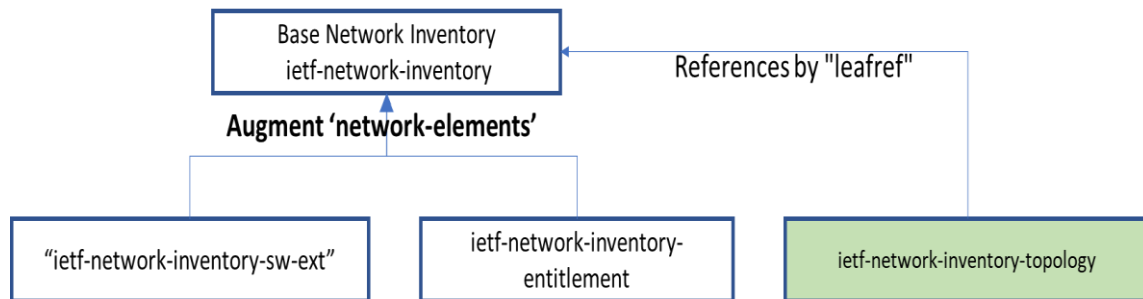
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Network Inventory Topology Model Overview

- The content is extracted from **draft-wzwb-opsawg-network-inventory-management** based on the feedback from WG.
- The Network Inventory Model is designed to complement the existing topology models to provide **physical network information, which is a gap that needs to be filled**. The existing topologies models are the technology-specific logical topologies.



Inventory Topology Modelling

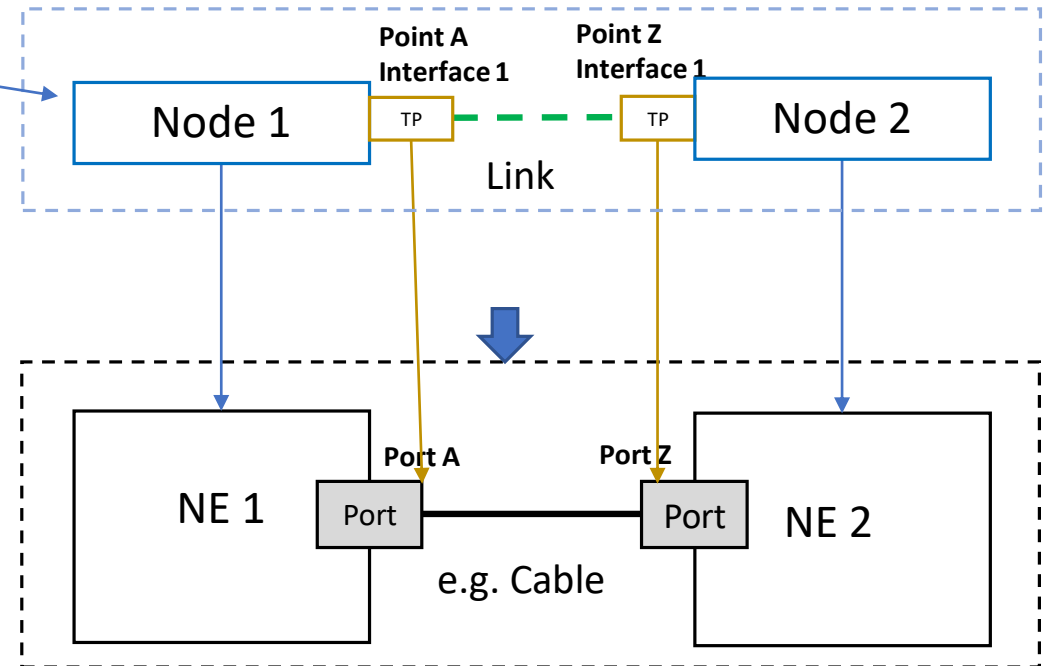
- **Goal:** Provide correlation with the existing topology models. As such, available network resources can be queried during service provisioning, and validating network configurations and forwarding state during service assurance, etc.
- **Modeling Method:** Augments RFC 8345 and establish **1:1 reference with NE and components** inventory, adds the **mount point** serve as the configuration or operation mount point and **interface relationship**.

```
module: ietf-network-inventory-topology
augment /nw:networks/nw:network/nw:network-types:
  +--rw network-inventory!

augment /nw:networks/nw:network/nw:node:
  +--rw name? string
  +--ro node-type? Identityref ((e.g. switch, router) )
  +--ro network-element-inventory-ref leafref
  +--rw system-mount-point target point
  +--ro oper-state? oper-state

augment /nw:networks/nw:network/nt:link:
  +--ro link-name? string
  +--ro cable-ref? leafref
  +--ro link-description? string
  +--ro link-type? string
  +--ro oper-state? oper-state

augment /nw:networks/nw:network/nw:node/nt:termination-point:
  +--ro tp-name? string
  +--ro tp-description? string
  +--ro tp-type? identityref
  +--ro port-component-inventory-ref? leafref
  +--rw interface-name? string
  +--rw system-mount-point
  +--ro oper-state? oper-state
```



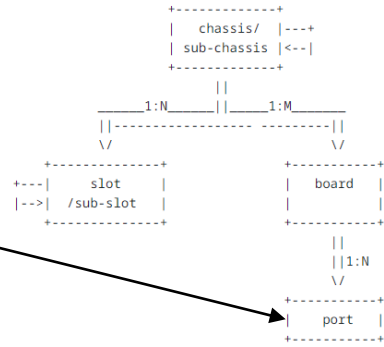
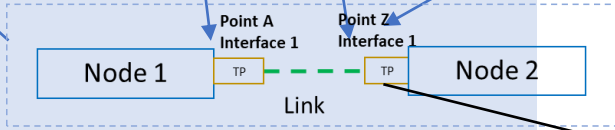
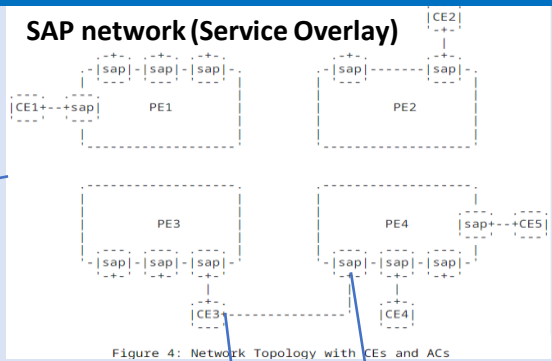
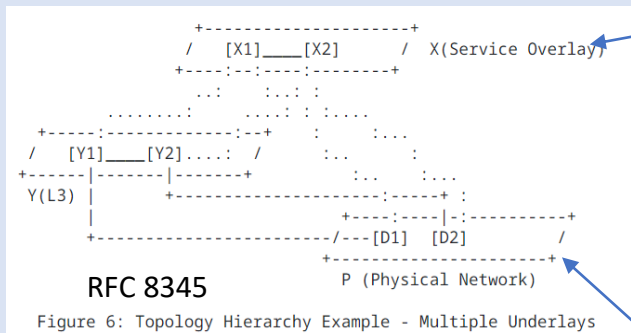
A Correlation Example of Inventory Topology

- Service Attachment Points (SAP, RFC 9408) network model maintains an inventory of customer-facing SAPs
- The Inventory topology can provide concrete interface reference and NE and Port components reference for SAP network to reference.

SAP topology contains all the UNI and NNI termination points (used and unused) of the network

'parent-termination-point' refers to a physical interface, not abstract one (RFC 9408)

```
augment /nw:networks/nw:network/nw:node:
  +--rw service* [service-type]
  +--rw service-type          identityref
  +--rw sap* [sap-id]
  +--rw sap-id                string
  +--rw description?         string
  +--rw parent-termination-point? nt:tp-id
  +--rw attachment-interface? string
```



Next Step

- Solicit for WG adoption
- Welcome reviews and comments