DetNet Configuration YANG Model

draft-ietf-detnet-yang-00

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DetNet Configuration YANG

DetNet flow info model

Flow data model

Service data model

User

Controller

Topology data model

Flow Config model

Transport QoS model

Network

DetNet flow information Model

DetNet Configuration YANG Models
DetNet Topology YANG Overview of version 0

Augmentation to ietf-te-topology

- Node Attribute: Packet Processing Delay
- LTP* Attribute: Queuing Attribute (buffer size/delay), PREOF Capability
- Link Attribute: Bandwidth for DetNet

Controller

Client Flow
DetNet Service

DetNet Domain

*LTP: Link Termination Point
DetNet Flow Configuration YANG Overview of version 00

*An example of the classical scenario of DetNet service*
Split the flow configuration models into:
- MPLS flow configuration model
- IP flow configuration model

Add ‘Sequence Number Generation’
- OAM considerations
- MPLS flow configuration model only

Add ‘DetNet Service Decapsulation’
- MPLS flow configuration model only

Add ‘DetNet Transport Tunnel Decapsulation’
MPLS Flow Configuration – Edge Node

```
typedef sequence-number-generation {
  type enumeration {
    enum "copy-from-app-flow" {
      description
      "DetNet flow sequence number is copied from application flow."
    }
    enum "generated-by-edge-node" {
      description
      "DetNet flow sequence number is generated by DetNet edge node."
    }
  }
  description
  "DetNet sequence number generation types."
}
grouping detnet-sequence-number {
  description
  "DetNet sequence number."
  leaf sequence-number-generation-type {
    type sequence-number-generation;
    description
    "The way on how sequence number is generated."
  }
  leaf sequence-number-length {
    description
    "DetNet sequence number length."
    type uint8;
  }
}
```
MPLS Flow Configuration – Relay Node
IP Flow Configuration

*An example of the classical scenario of DetNet service
Issues: Transport QoS Configuration

- TSN Queuing YANGs in IEEE:
  - IEEE P802.1 Qci
    - Per-Stream Filtering and Policing: https://github.com/YangModels/yang/blob/master/standard/ieee/802.1/draft/ieee802-dot1q-psfp.yang
  - IEEE P802.1 Qcw:
    - Scheduled Traffic: https://github.com/YangModels/yang/blob/master/standard/ieee/802.1/draft/ieee802-dot1q-psfp.yang
    - Frame Preemption: https://github.com/YangModels/yang/blob/master/standard/ieee/802.1/draft/ieee802-dot1q-preemption.yang
  - IEEE P802.1 Qcr
    - Stream Filter and Stream Gate: https://github.com/YangModels/yang/blob/master/standard/ieee/802.1/draft/ieee802-dot1q-stream-filters-gates.yang

- QoS YANG in IETF:
  - RFC 2475
    - Architecture for Differentiated Services
  - draft-asechoud-rtgwg-qos-model
    - YANG Model for QoS

- DetNet Transport QoS YANG in IETF?
  - Augment to IETF QoS YANG? (there are some preliminary thoughts, but not included in the current draft yet)
  - Leave it to IEEE? (Existing TSN QoS models are separated in different YANG models, and it is to be figure out how to apply them to DetNet)
Next Step

• Split the draft into two drafts?
  • DetNet Topology YANG in TEAS WG
  • DetNet Flow Configuration YANG in DetNet WG

• DetNet Transport QoS: in or out of the scope of DetNet WG?
  • Define an independent DetNet Qos YANG model?
  • Do augmentation to IEEE YANG models?

• Comments and contributions are always welcome
Thanks