DetNet
DetNet Flow Information Model
draft-ietf-detnet-flow-information-model-06

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DetNet WG
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Agenda

• Model related reminders
• Updates in the draft
• Next steps
Information/Data models for DetNet
Service / Flow / Configuration

- **DetNet**: three models are distinguished:
  - **Flow information model**: describes characteristics of data flows. It includes in detail all relevant aspects of a flow that are needed to support the flow properly by the network between the source and the destination(s).
  - **Service information model**: describes characteristics of services being provided for data flows over a network. It can be treated as a network operator independent information model.
  - **Configuration data model**: describes in detail the settings required on network nodes to serve a data flow properly.
Updates in the draft
v04 → v05 → v06

• v05
  • Many editorial updates
    • clarifications,
    • attribute formats,
    • etc.
  • Added security considerations
  • New co-author: Don Fedyk

• v06
  • Added attribute: “IPSecSpi” (for flow identification)
## Structure of the Attributes
### App-flow, DetNet flow and DetNet service

#### App-flow
**Characteristics**
- FlowID: unique (manag.) ID
- FlowType: Eth, MPLS, IP
- DataFlowSpecification: src/dst-addr, label, VLAN, etc.
- FlowEndpoints: Src, Dst(s)
- FlowRank
- FlowStatus

**Requirements**
- FlowRequirements: MinBW, PD, PDV, Loss, etc.
- FlowBiDir

Service Requirements similar to e.g., 802.1Qcc Attributes like UserToNetworkRequirements

#### DetNet flow
**Characteristics**
- DnFlowID: unique (manag.) ID
- DnPayloadType: Eth, MPLS, IP
- DnFlowFormat: MPLS, IP
- DnFlowSpecification: Label, 6-tuple
- DnTrafficSpecification: interval, packet-size, max-packet
- DnFlowEndpoints: Ingress, Egress(s)
- DnFlowRank
- DnFlowStatus

**Requirements**
- DnFlowRequirements: MinBW, MaxLatency, MaxLatencyVariation, MaxLoss, MaxConsecutiveLossTolerance, MaxMisordering
- DnFlowBiDir

A DetNet flow contains one or more App-flows (N:1 mapping).

#### DetNet flow
**Characteristics**
- DnFlowID: unique (manag.) ID
- DnPayloadType: Eth, MPLS, IP
- DnFlowFormat: MPLS, IP
- DnFlowSpecification: Label, 6-tuple
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- DnFlowEndpoints: Ingress, Egress(s)
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- DnFlowStatus

**Requirements**
- DnFlowRequirements: MinBW, MaxLatency, MaxLatencyVariation, MaxLoss, MaxConsecutiveLossTolerance, MaxMisordering
- DnFlowBiDir

A DetNet service supports one or more DetNet-flows (M:1 mapping).

#### DN Service
- DnServiceID: unique (manag.) ID
- DnServiceDeliveryType: Eth, MPLS, IP
- DnServiceConnectivity: p2p, p2mp
- DnServiceRank
- DnServiceDeliveryProfile:
  - MaxBW, MaxLatency, MaxLatencyVariation, MaxLoss, MaxConsecutiveLossTolerance, MaxMisordering
- DnServiceBiDir
- DnServiceStatus
Next Steps

• Any missing attributes?
• Inline with YANG?

• Ready for WG last call?
Thanks ...
Terminology
Flows and Reference points

Based on architecture draft:

• **App-flow:**
  • The payload (data) carried over a DetNet service.

• **DetNet flow:** App-flow + DetNet encaps.
  • A DetNet flow is a sequence of packets which conform uniquely to a flow identifier, and to which the DetNet service is to be provided. It includes any DetNet headers added to support the DetNet service and forwarding sub-layers.

Note: In some scenarios App-flow and DetNet flow look similar on the wire (e.g., IP App-flow over a DetNet IP network).

Note: DetNet flow can be treated as an application level flow (App-flow) e.g., at DetNet flow aggregation or in a sub-network that interconnects DetNet nodes.

New terms:

• **Source:**
  • Reference point for an App-flow, where the flow starts.

• **Destination:**
  • Reference point for an App-flow, where the flow terminates.

• **DN Ingress**
  • Reference point for DetNet flow, where it starts. Networking technology specific encapsulation may be added here to the served App-flow(s).

• **DN Egress:**
  • Reference point for DetNet flow, where it terminates. Networking technology specific encapsulation may be removed here from the served App-flow(s).