

DetNet

DetNet Flow Information Model

draft-farkas-detnet-flow-information-model-01

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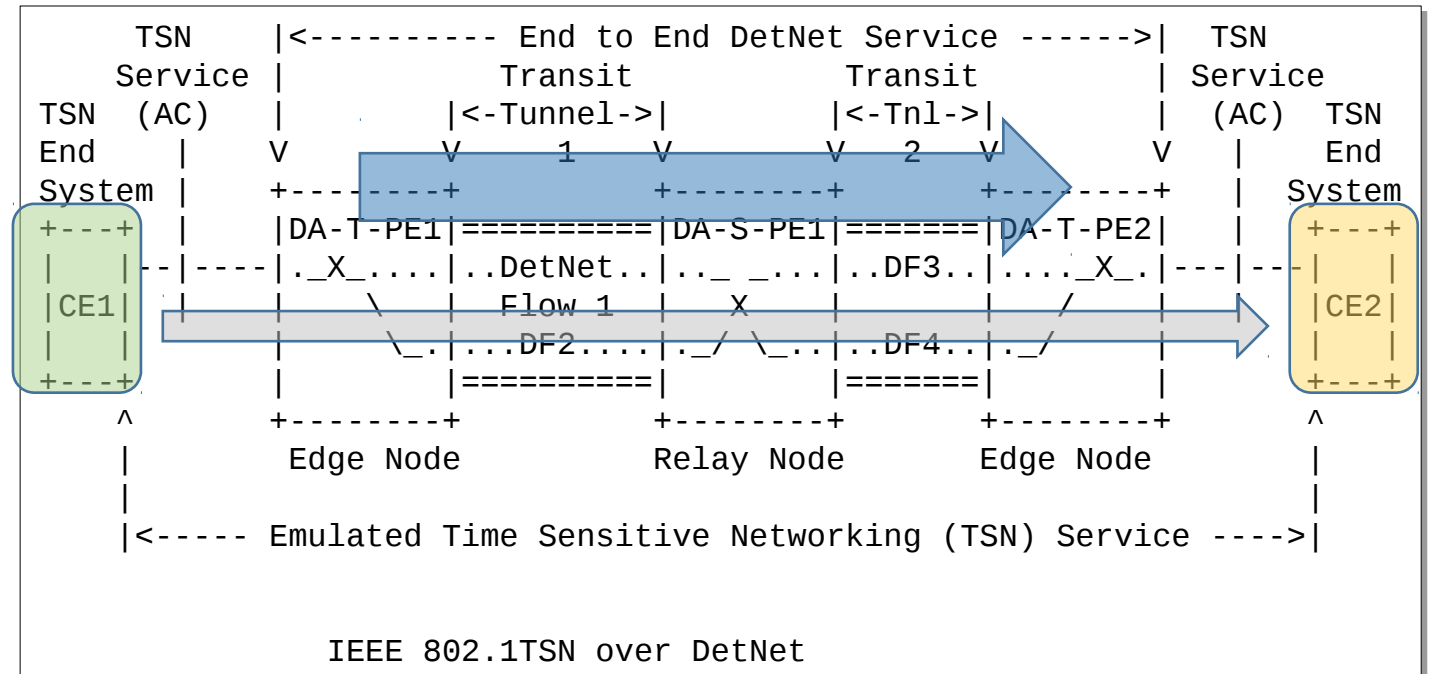
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DetNet WG

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Content Overview

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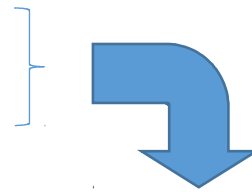


Status

Merge + impact + update

- Merge of existing drafts:

- “draft-farkas-detnet-flow-information-model-00”
- “draft-zha-detnet-flow-info-model-02”



draft-farkas-detnet-flow-information-model-01

- Impacted by:

- Data Plane design with updated encapsulation: draft-dt-detnet-dp-sol-01

- Updated with:

- DetNet domain related flow information model (v00 focused on flow at Edge node; v01 includes Relay and Transit node)
- Possible TrafficSpecification extensions

Update:

Data Plane design + IP specific attributes

- Two DP encapsulation defined
 - MPLS PSN: PW over MPLS
 - Flow-ID: PW-label; Seq-Num: PW Control Word
 - IP PSN: native IPv6
 - Flow-ID: Flow-label; Seq-Num: Destination Header Option
- Update 6.1 Identification and Specification of Flows
 - 6.1.1 DetNet L3 Flow Identification and Specification at **UNI**
 - Added “Flow-label”; Removed “MPLS label”
 - 6.1.2 DetNet L2 Flow Identification and Specification at **UNI**
 - Added “Ether-type”
 - 6.1.3 **DetNetwork Flow** Identification and Specification
 - Based on DP encapsulation fields
 - Added SourceIpAddress, DestinationIpAddress, IPv6FlowLabel, MplsLabel

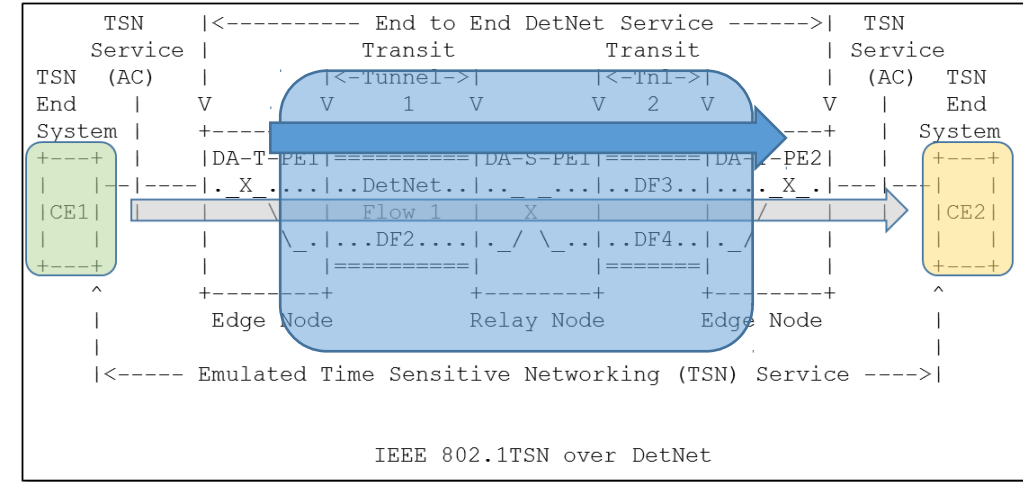
Update:

Data Plane design + IP specific attributes (cont.)

- Update: 6.2 Traffic Specification
 - Current definitions
 - Allow any type of traffic (CBR, VBR, etc.)
 - Provides worst case values for resource allocation
 - Possible candidates for VBR traffic
 - Optional attributes: might be worth for flows with limited requirements (i.e., only loss sensitive; only delay sensitive, but not both delay-and-loss sensitive)
 - Options
 1. Average attributes: “AveragePacketsPerInterval” and “AveragePayloadSize”
 2. RFC6003 like extension: Bandwidth Profile concept, Committed / Excess Rate
 3. Applications based model: like defined in 3GPP, periodic, approximately-periodic and event/triggered traffic type
- Update: 6.3 Flow Rank
 - Flow Rank preference (L3 higher value vs. L2 lower value)

Update: DetNet network object

- Added: 10. DetNet Domain
 - L2/L3 flow encapsulated in DetNet data plane
 - DetNet Domain object specifies:
 - The behavior of the DetNet domain for the flow (how flow is encapsulated).
 - The requirements of the forwarded flow from the network
 - The capabilities of the DetNet domain
 - Attributes
 - a. DataFlowSpecification (Section 6.1)
 - b. TrafficSpecification (Section 6.2)
 - c. FlowRank (Section 6.3)
 - d. DetnetDomainCapabilities (Section 10.1)
 - e. UserToNetworkRequirements (Section 9.3)
 - Discussion items



- DetnetDomainCapabilities
 - specifies the network capabilities, which can be used to provide DetNet service.
 - Attributes
 - a. EncapsulationFormat
 - b. PREF-Capable

Next steps

- Discuss further attribute candidates in the work group
 - DetNet domain specific extensions
 - Format of attributes (e.g., TrafficSpecification, etc.)
- Call for WG adoption