Content

Overview

- Status
- Updates
- Next steps

IEEE 802.1TSN over DetNet
Status
Merge + impact + update

• Merge of existing drafts:
  - “draft-farkas-detnet-flow-information-model-00”
  - “draft-zha-detnet-flow-info-model-02”

• 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: 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
  • Should we consider Node specific objects as well?
  • How to deal with “member flows”?

• 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