YANG Data Model for DetNet Mapping with Network Slice

draft-sw-detnet-network-slice-mapping-yang-02

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Agenda

• Use Case
• Benefits
• Mapping Considerations
• Modeling Considerations
• Recent Updates
• Next Steps
Use Case

- DetNet applied to Network Slice use case refers to RFC 8578.
  - Non-DetNet-aware slice
  - DetNet-aware slice

An example for Low-latency (e.g., <50ms) deterministic service over NRP
Benefits

• **Background**
  - DetNet service with low-latency or reliability requires adequate network resource reservation and allocation realized through RSVP-TE, SR technology refer to [RFC 8655](https://tools.ietf.org/html/rfc8655).
  - IETF Network Slice provides network resource guarantee with SLO/SLE satisfaction through enhanced technology such as NRP-aware-TE refer to [draft-ietf-teas-ns-ip-mpls](https://tools.ietf.org/html/draft-ietf-teas-ns-ip-mpls).

• **Benefits of DetNet applied to Network Slice**
  - Network slicing provides flexibility of resource reservation and service quality customization to DetNet service with specific latency-sensitive properties.
  - Network slicing applied to latency-sensitive deterministic service improves delivery service level from best effort to SLO/SLA guarantee.
  - The DetNet flows are mapped to the underlying NRP resources and transported to its destination with resource guarantee.
Mapping Considerations

• DetNet service sub-layer mapping with IETF Network Slice SLO/SLE template
  • Abstract DetNet latency-sensitive service parameters and map to SLO/SLE template of NS

• DetNet forwarding sub-layer mapping with IETF Network Slice NRP-id
  • Path selection per NRP topo
  • Resource reservation per hop per NPR policy
Modeling Considerations

• Relationships to Related Models
  - DetNet Model: Defined in draft-ietf-detnet-yang-17
  - NRP Model: draft-bestbar-teas-yang-nrp-policy-03 and draft-bestbar-teas-yang-topology-filter-04

• Create new DetNet-NetworkSlice mapping-type YANG
  - New IETF Network slice binding
  - IETF Network slice sharing
  - IETF Network slice modification

• Augment DetNet YANG
  - Service sub-layer SLO/SLA mapping
  - Forwarding sub-layer NRP mapping

• This document
  • ietf-ns-detnet-mapping-types
  • ietf-ns-detnet-service-mapping
Recent Updates

• Removed problem statement section
• Added use case for DetNet applied to Network Slice
• Fixed YANG errors
Next Steps

• Address comments and questions
• Update modeling section
• Improve YANG module
• Look for collaboration to advance the YANG solution