

YANG Data Model for DetNet Mapping with Network Slice

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

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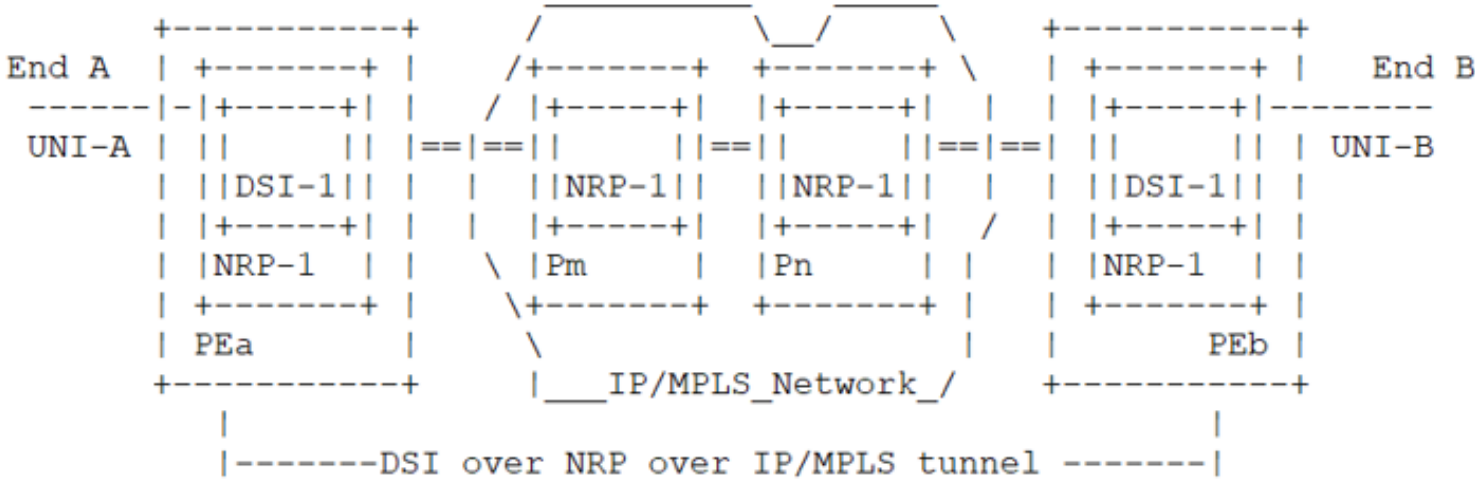
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Agenda

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

Use Case

- DetNet applied to Network Slice use case refers to [RFC 8578](https://www.rfc-editor.org/rfc/8578).
 - Non-DetNet-aware slice
 - DetNet-aware slice



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

Benefits

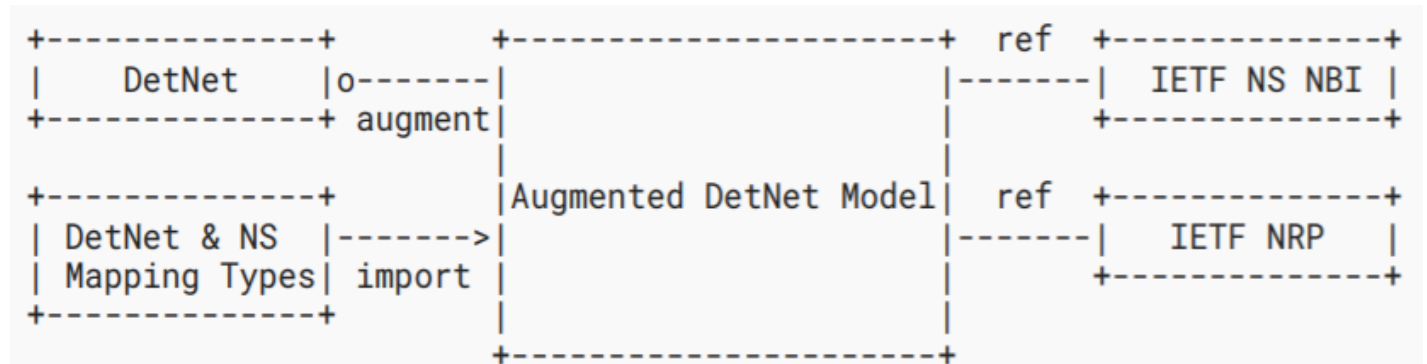
- Background
 - DetNet service with low-latency or reliability requires adequate network resource reservation and allocation realized through RSVP-TE, SR technology refer to [RFC 8655](#).
 - IETF Network Slice provides network resource guarantee with SLO/SLE satisfaction through enhanced technology such as NRP-aware-TE refer to [draft-ietf-teas-ns-ip-mpls](#).
- 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](#)
 - Network Slicing Model: Defined in [draft-ietf-teas-ietf-network-slice-nbi-yang-04](#)
 - 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