

DetNet Terminology

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DetNet WG

Background

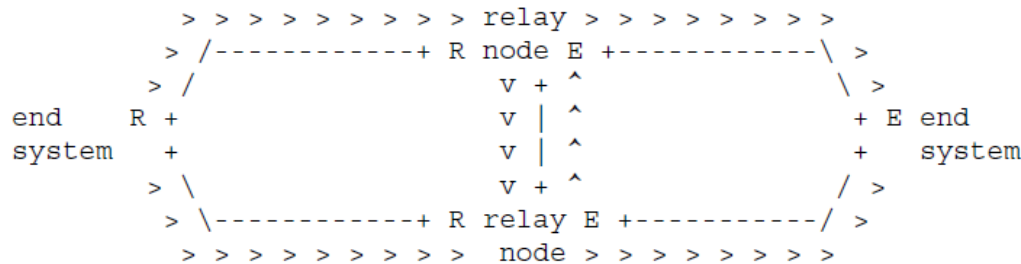
- Need to agree (or rather finalize) upon terminology to use in this WG.
- The terminology must allow us to distinguish between (borrowing Norm's IETF95 material):
 - The what: the DetNet term for the feature needed (e.g., "explicit routes")
 - The how: the particular term for an existing technology that satisfies that need (e.g., "LSPs").

Updates since IETF95

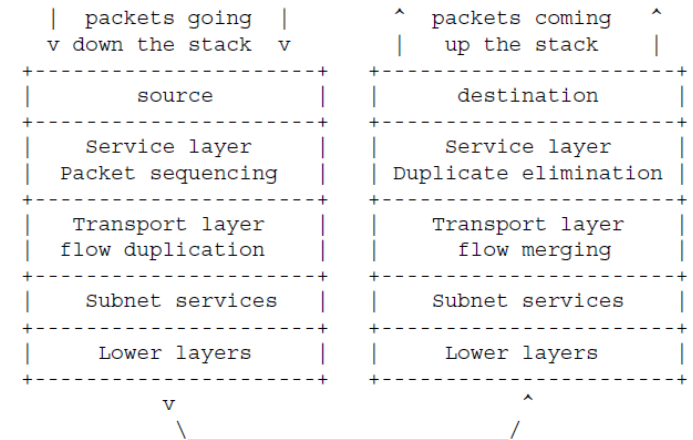
802.1CB	Use Cases	Architecture	Problem statement	Service model	Data plane alternatives
Stream	Stream	DetNet flow	flow	App / DetNet flow	DetNet Flow
Member Stream		Member stream			
Compound Stream		Compound Stream			
Talker	Source	Source		Source	Sender, Talker
Listener	Destination	Destination		Sink	Receiver, Listener
Explicitly configured paths	Pinned down / nailed up	Explicit routes, (fixed paths)		Explicit routes	Explicit routes
End system	End node	end system	End Node	End-system	end system
relay system		Intermediate node		Intermediate node	Intermediate node
System	Node	DetNet node	Node	DetNet node	(DetNet) Node
		Edge relay node		Edge node	Edge node
		Transit node		Transport node	Transit node
		DetNet Loss Prevention			DetNet Reliability
		Relay node			Relay node
				DetLink	
				DetNet AC	
				DetNet-UNI	
				DetNetwork	
				Native AC	
				App-flow	
		Service layer			Service layer
		Transport layer			Transport layer

Example: architecture diagrams and aligning the common terminology..

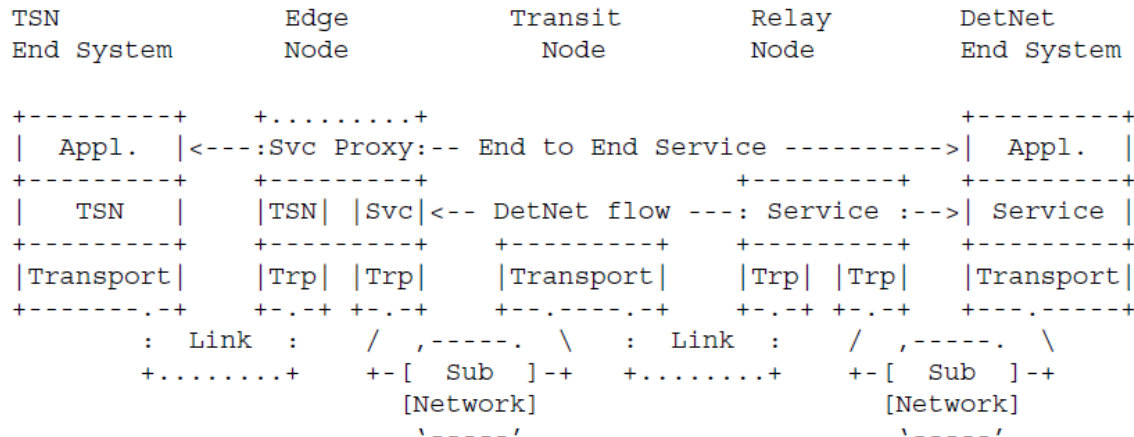
draft-finn-detnet-architecture-*



DetNet data plane protocol stack



draft-dt-detnet-dp-alt-*



More on terminology

- Although terms are ~same the semantics and meaning might differ..
- Some examples follow..

Terminology examples 1/6

DetNet Architecture

- DetNet transit node
 - "A node operating at the DetNet transport layer, that utilizes link layer and/or network layer switching across multiple links and/or sub-networks to provide paths for DetNet service layer functions. An MPLS LSR is an example of a DetNet transit node."

DetNet Data Plane Alternatives

- DetNet Transit Node
 - " A node that provides link layer and network layer switching across multiple links and/or sub-networks. Transit nodes provide packet forwarding services to DetNet nodes. An MPLS LSR, or IP router are example transit nodes. "

Very close.. can be removed from DP draft..

Terminology examples 2/6

DetNet Architecture

- Detnet relay node
 - "A DetNet service layer function that interconnects different DetNet transport layer protocols or networks (instances) to perform packet replication and elimination ([Section 3.4](#). A DetNet relay node typically incorporates DetNet transport layer functions as well, in which case it is collocated with a transit node, such as a bridge, a router, a Label Switch Router (LSR), a firewall, or any other system that participates in the DetNet service layer."

DetNet Data Plane Alternatives

- DetNet Relay Node
 - "A DetNet Service aware middle box that interconnects different network layer protocols or networks (instances). A relay node also understands enough of the DetNet service and service parameter semantics to make an intelligent processing (e.g., forwarding) decision. It may provide service supporting functions such as DetNet reliability."

Terminology examples 3/6

DetNet Architecture

- DetNet relay edge node
 - “An instance of a DetNet relay node that includes a service layer proxy function for DetNet loss prevention (e.g. packet sequencing and/or elimination) for one or more end systems, analogous to a Label Edge Router (LER).”

DetNet Data Plane Alternatives

- DetNet Edge Node
 - “A relay node with application level knowledge (i.e., basically a "proxy" node). Edge nodes include DetNet application level functions and are needed when interfacing (or inter-working) with nodes and end systems that are not DetNet-enabled.”

Terminology examples 4/6

DetNet Architecture

- Uses “DetNet loss prevention” for “DetNet Reliability”, one example of which is “Packet Replication and Elimination” that involves the following:
 - “Replicating packets.. “
 - “Providing sequencing information..”
 - “Eliminating duplicated packets..”

Should be OK although the term is only used in the Data Plane draft.

DetNet Data Plane Alternatives

- DetNet Reliability
 - “A set of mechanisms to increase the probability of lossless (i.e., zero loss) DetNet flow delivery across a network. Example mechanisms include packet replication and duplicate elimination.”

Terminology examples 5/6

DetNet Architecture

- Service layer
 - "The layer at which loss prevention services such as packet sequencing and the elimination part of replication and elimination (Section 3.4) are performed."

DetNet Data Plane Alternatives

- Service Layer
 - "The DetNet service layer provides adaptation of DetNet services. It is composed of a shim layer to carry deterministic flow specific attributes, which are needed during forwarding. DetNet enabled end systems originate and terminate the DetNet Service layer and are peers at the DetNet Service layer. DetNet relay and edge nodes also implement DetNet Service layer functions. The DetNet service layer is used to deliver traffic end to end across a DetNet domain."

Terminology examples 6/6

DetNet Architecture

- Transport layer
 - “The layer that splits and merges Detnet flows for packet replication and elimination ([Section 3.4](#)).”

DetNet Data Plane Alternatives

- Transport Layer
 - “The DetNet transport layer is required on all DetNet nodes. All DetNet nodes are end points and the transport layer. Non-DetNet service aware transit nodes deliver traffic between DetNet nodes. The DetNet transport layer operates below and supports the DetNet Service layer.”

Next steps

- Work out the terminology alignment..
- The architecture document is likely the "home" for all DetNet terminology.