DetNet Interim
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Detnet working group, January 2018 interim
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Reminder from last round..
DetNet dataplane decisions

• #1 On-wire formats:
  ✓ Both MPLS and IPv6-based data planes have their own encapsulation formats.

• #2 Split of data plane documents:
  • Both MPLS and IPv6-based data planes will have their own documents.
  ✓ Document structured in a way that MPLS and IPv6 are clearly separated!
DetNet data plane decisions cont’d

• #3 Sequence numbering:
  ✓ Rough consensus with zero nibble + 28 bits of SN.. Current text makes the effective size configurable.

• #4 Data plane solution:
  ✓ “DetNet Data plane” -> systematic PW carve out started.
  ✓ Describe “all” including data plane encapsulation, and node semantics where needed (e.g., DetNet relay functionality) -> initiated but a lot to do.
PREF decisions

• #5 Multiple layers of PREF e.g., for aggregation purposes. (rather a statement) -> not done.

✓ #6 Both ring and ladder deployments have to work. (rather a statement) -> implicitly supported.

• #7 Describe Packet R & E functions at a box level (normative). Internal behavior may be described for reference (informative).
  • Initiated but discussion ongoing.. Editor is confused about the current state of the “rough consensus”, if any.
Intermediate summary

• Heavy document restructuring done -> MPLS & IPv6 split preparation.
• Systematic terminology alignment with DetNet Architecture draft.
• MPLS-based DetNet data plane -> no PWs, simplified label stack with just DetNet CW (=SN), S-label and T-labels.
• Sequence Number format fixed -> 28 bits.
• Heavy restructuring on IPv6 side of the DetNet data plane
• PREF text is few and likely broken.
• DetNet node descriptions and considerations text is few and likely broken.
Big questions from the editor

• PREF details obviously.. <- Packet Replication & Elimination Function_s_
  • How much in details we can go?
  • Is a node level description adequate i.e., specific input produces specific output and stop details there.

• IPv6 in general..
  • Now flow identification is based on Source Address + Flow label -> everybody OK?
  • Current text proposes a solution based on Destination Option for Sequence Numbers -> that has certain implications when and how the DetNet Service layer functions can be applied (see RFC8200 extension handling guidance).
  • Explicit routes -> Use of Destination Option suggests the use of source routing headers.
  • Extension headers add/remove along path uses tunneling approach -> Do we actually want to enforce this RFC8200 rule.
  • Look into draft-xu-mpls-unified-source-routing-instruction-00, bryant-mpls-unified-ip-sr-00
  • Move away from SR? 5-tuple mapping..
Cont’d

• MPLS DetNet data plane..
  • Current approach OK?
Thank you!