DetNet Data Plane
PREOF for DetNet IP

draft-varga-detnet-ip-proof

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DetNet Data Plane
PREOF for DetNet IP

• Intended status:
  • Informational

• Actual version:
  • draft-varga-detnet-ip-preof-01

• Abstract:
  • This document describes how DetNet IP data plane can support the Packet Replication, Elimination, and Ordering Functions (PREOF) based on [RFC9025].

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Updates on DetNet IP PREOF

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• Some editorial updates
  • Typos, grammar

• Clarification added based on comments
  • The solution creates a set of underlay UDP/IP tunnels between an overlay set of DetNet relay nodes.

• Text is stable.
Summary & Next Steps

• **Summary**
  • This draft leverages existing DetNet Data Plane “building blocks”
  • No new header fields are specified
  • Generic IP solution
  • It is already available, both for IPv6 and IPv4
  • Defines PREOF at the DetNet service sub-layer, where it belongs to
  • Applicable irrespective of what routing technique is used “underneath” (i.e., at the DetNet forwarding sub-layer)
    • Any IP routing technique can be applied, e.g., SRv6
  • Does NOT require any additional processing on transit nodes ...

• **Next Steps**
  • Asking for WG adoption
Thanks ...
DetNet IP PREOF Goals

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• Add PREOF to DetNet IP

• Reuse existing DetNet data plane (e.g., [RFC8939] & [RFC9025] [*] [RFC8964])

• ➔ Provide DetNet service sub-layer for IP with minimal effort; minimal standardization and implementation effort

• Maintain DetNet service sub-layer and DetNet forwarding sub-layer characteristics
  • Service sub-layer includes PREOF functions, e.g., sequencing
  • Forwarding sub-layer includes routing functions, e.g., explicit routing provided by, e.g., Segment Routing (SR)

• ➔ Enable seamless use of existing routing techniques, e.g., SR (SRv6 in case of IPv6)
DetNet IP PREOF

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- Basic Concept
  - "UDP tunneling" between relay nodes
  - Maintain the 6-tuple-based DetNet flow identification in DetNet transit nodes

- Provides
  - Encapsulation,
  - Packet Processing
  - Flow aggregation
  - PREOF procedures
  - Control and management parameters