DetNet Data Plane
PREOF for DetNet IP

draft-varga-detnet-ip-preof

Balázs Varga, János Farkas, Andrew Malis
DetNet WG
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• Intended status:
  • Informational

• Actual version:
  • draft-varga-detnet-ip-preof-00

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

Figure 1: PREOF scenario in a DetNet network

DetNet

Service
PREOF, e.g., sequencing
Forwarding
routing, e.g., SR
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
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
  • Looking for further comments
  • Asking for WG adoption
Thanks ...