IOAM-related IPPM WG Drafts

draft-ietf-ippm-ioam-ipv6-options
draft-ietf-ippm-ioam-flags
draft-ietf-ippm-ioam-direct-export
In-situ OAM IPv6 Options

draft-ietf-ippm-ioam-ipv6-options

IETF 109, IPPM
November 2020
draft-ietf-ippm-ioam-ipv6-options
Updates since IETF 108

• -02 -> -03
  • Implement the guidance from the WG chairs: Merge in draft-ioametal-ippm-6man-ioam-ipv6-deployment-03 "as is", i.e. only editorial changes were made, like resolving references which would otherwise have been circular.
  • Implement the result of discussion in the last WG meeting: Removed the paragraph that started with "In order for IOAM to work in IPv6 networks..." which included a set of original deployment considerations which are updated, refined and further detailed with the content from draft-ioametal-ippm-6man-ioam-ipv6-deployment-03
-03 -> -04
  • Editorial updates (Thanks Tommy Pauly!)

Next steps
  • Address Issue #197 (IPv6 draft should reduce author list): Suggestion from chair (Tommy): “I’d strongly suggest going down the same route we did for the IOAM data draft, which was to have an editor model with all authors listed out separately”
    -> Suggestion for Editors: Shwetha Bhandari, Frank Brockners
  • WGLC
In-situ OAM Flags

draft-ietf-ippm-ioam-flags-03

Tal Mizrahi, Frank Brockners, Shwetha Bhandari, Ramesh Sivakolundu, Carlos Pignataro, Aviv Kfir, Barak Gafni, Mickey Spiegel, Jennifer Lemon

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Status of this Draft

• Version 02 addresses the loopback-on-the-reverse-path open issue.

• Highlights of the solution:
  
  • When an IOAM packet is looped back it has its loopback flag turned off.
  
  • On the reverse path IOAM transit nodes continue to push IOAM data.
  
  • At the edge of the IOAM domain the IOAM encapsulating node detects a looped-back-packet by comparing the Node ID of the first hop to its own Node ID.
Next Steps

• Open issues have been resolved.

• The authors believe the draft is ready for WG last call.
In-situ OAM Direct Exporting

draft-ietf-ippm-ioam-direct-export-02

Haoyu Song, Barak Gafni, Tianran Zhou, Zhenbin Li,
Frank Brockners, Shwetha Bhandari, Ramesh Sivakolundu, Tal Mizrahi

IETF 109, IPPM,
November 2020
Status of this Draft

• This draft is the product of a design team that worked on combining two documents (PBT-I and immediate exporting).

• Open issues:
  • Definition of fields already specified in draft-ietf-ippm-ioam-data-10 (for other IOAM Option-Types)
    • DEX Hop Count field (→ Trace Option-Type: Hop_lim)
    • DEX Sequence number (→ E2E Option-Type: Sequence number)
  • Direct Exporting option length.

• Changes in version 02:
  • Discussion about Hop Count was moved to an appendix.
Open Issue – Hop Count

• Question: should the DEX option include an explicit Hop Count field, or is the Hop_Lim/Node_ID data field sufficient?

• No Hop Count:
  • Using existing functionality: Hop_Lim/Node_ID data field can be used, copied from the TTL/Hop Limit from the lower layer, and included in the exported packet.
  • The DEX option does not need to be modified by transit switches.

• Explicit Hop Count:
  • The lower layer TTL may not be accurate, e.g., L2 or hierarchical VPN.
  • Allows to detect IOAM-capable node that fails to export packets.

• Version 02:
  • The DEX option does not include a Hop Count field.
  • Discussion in an appendix.
Open Issue – DEX Option Length

• The DEX option has two optional fields: Sequence Number, Flow ID. Two possible lengths: 8 octets / 16 octets. The length is known from lower layer header.

• What happens if we want to add another field in the future?

• **Solution 1:**
  • Use reserved flags for indicating whether the Sequence Number and Flow ID are present.
  • No need to rely on length from lower layer header.

• **Solution 2:**
  • Define a constant DEX option length (8 octets) without optional fields.