Problem Statement with Aggregate Header Limit for IPv6

draft-liu-6man-aggregate-header-limit-problem

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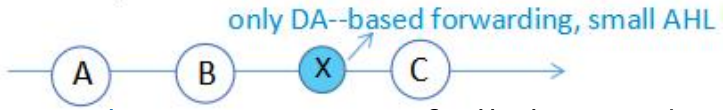
6MAN WG IETF#123 Jul, 2025

One-Page Summery

Recap

- **Aggregate header limit for IPv6 (IPv6-AHL)**
  - indicates the total header size that a router is able to process at full forwarding rate for IPv6 packets
- **IPv6-AHL of the nodes/path needs to be awared**
  - Can I enable the use of IOAM, Network Slicing (and etc) together along a certain SRv6 path ?
  - Can the controller calculate a path that can process packets under certain IPv6 EH size?
- **IPv6-AHL Collection Methods**
  - RFC8021(PMTUD) Style: may not work well due to the similar reasons for PMTUD
  - RFC9268(HBH for PMTU) Style: IPv6-AHL collected may be smaller than the size that the path is actually able to process



  - IGP MSD Style: IPv6-AHLs of all the nodes collected regardless of the amount or type of the paths

Update Since IETF122

based on Éric's comments and the discussion around draft-ietf-6man-eh-limits

- **Update on the definition of IPv6-AHL**
  - IPv6-AHL is the total header size(i.e, from the IPv6 header chain up to any headers that are part of network encapsulation, e.g, the innermost transport layer, ethernet frame, or another IP header) that a router is able to process at full forwarding rate(e.g, at fast path). For some devices designed with parsing buffer, this limit is related with its buffer size and buffer design.
- **Update on the security considerations**
  - Based on the AHL, the system design may be indirectly speculated, such as the size of the buffer, the hardware configuration and system version.
  - The AHL-collection function SHOULD only be used within a trusted domain

Next Steps

- Welcome feedback and comments !
  - Is the concept of IPv6-AHL needed ?
  - Is the definition of IPv6-AHL accurate ?
  - Is the collection of IPv6-AHL required ?

- Work on the IPv6-AHL collection mechanism after there's a consensus on the problem space in 6MAN.