

Router Info Advertisement & FANTEL

draft-zzhang-rtgwg-router-info

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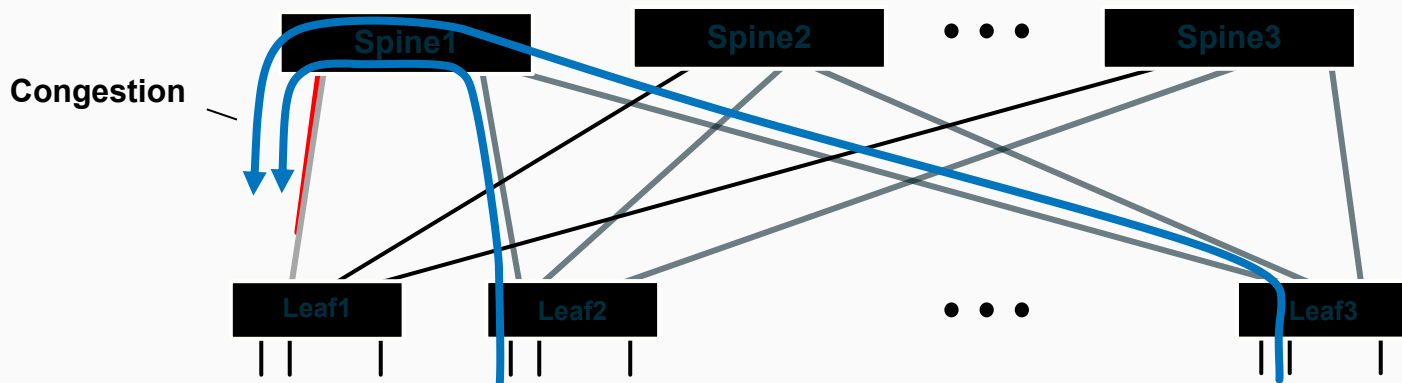
Background: FANTEL

- FANTEL discussions in past side-meetings and BOF
- FANTEL problem statement draft/presentation in this IETF
 - draft-dong-fantel-problem-statement

“A fast notification mechanism could help to address these gaps by providing lightweight, real-time, actionable alerts that complement existing tools and enable faster, more accurate network management decisions.”

Background: Global Load-Balancing (GLB)

- A solution for better load-balancing in CLOS AIDC by considering the utilization of both next-hop and next-next-hop links



GLB Mechanism

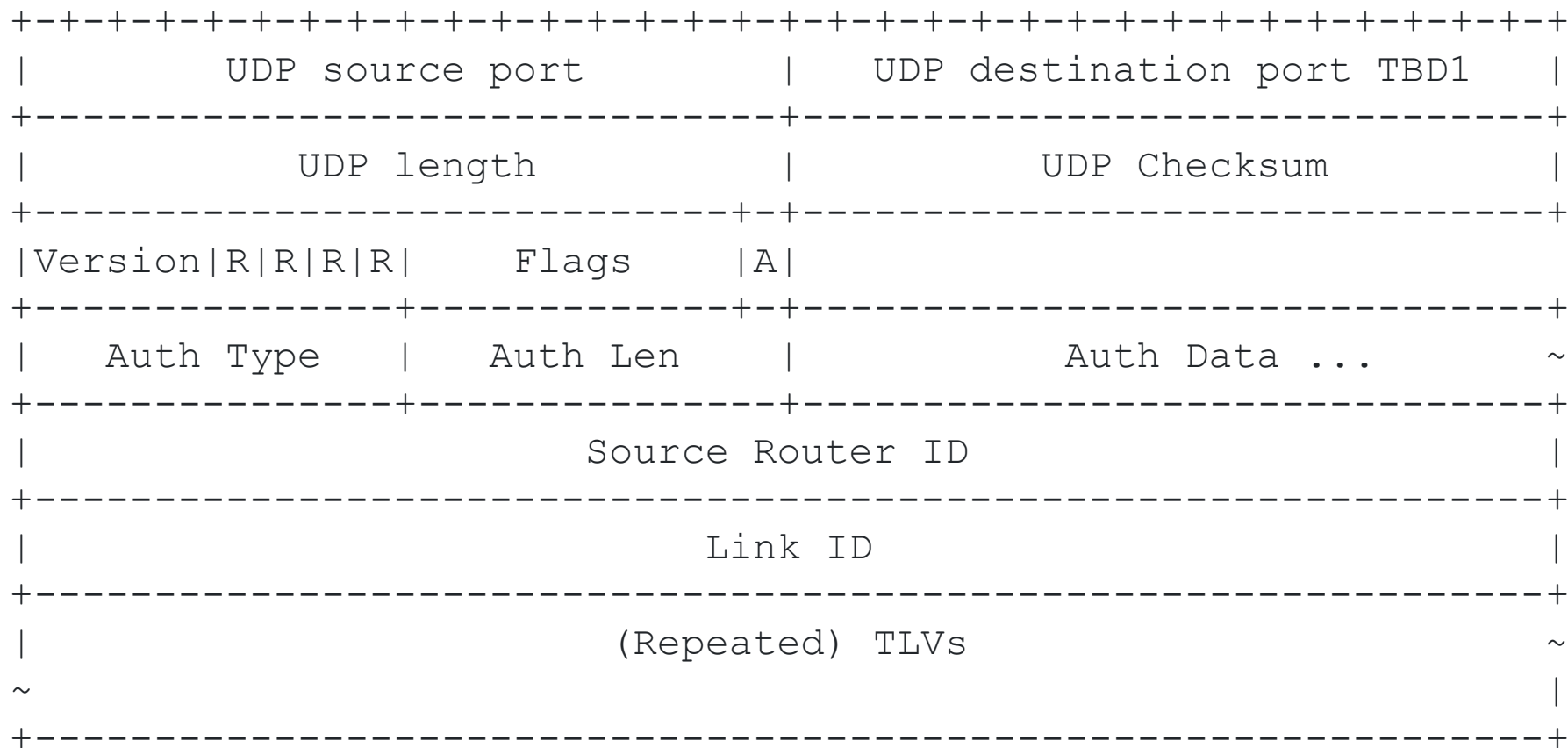
- draft-ietf-idr-next-next-hop-nodes: advertise next-next-hop for a route
- draft-zzhang-rtgwg-router-info: advertise link utilization to neighbors
 - This is a FANTEL solution used in the CLOS AIDC context, yet very generic and extensible
 - Extended/generalized from a merchant ASIC vendor's implementation
 - The “router-info draft” in the next few slides

The router-info draft 1/4

- UDP-based advertisement to:
 - All/some local nodes on a link via link-level multicast
 - Group of nodes in the network via individual unicast
 - Group of nodes in the network via multicast
- No re-advertisement defined
 - It's only about locally gathered information
 - which could be based on the received advertisement
- Fast/slow advertisements
- No information retention procedures; no session/adjacency
 - Just a message bus

The router-info draft 2/4

- TLV encoding at the top-level for any kind of information advertisement
 - Not just for FANTEL purposes
- In General, TLVs are not used at sub-levels for fast advertisements
 - If additional information needs to be added, just define a new top-level TLV



The router-info draft 3/4

- Advertisements can be fast/slow on a per top-level TLV base
 - Each top-level TLV has a “refresh rate”
 - This gives the recipient a hint on the retention period
 - Can be as fast as the hardware can handle
- A receiver can negotiate with the sender
- In the group notification case, different multicast groups could be used for different refresh rates

The router-info draft 4/4

- Currently defined TLVs
 - Neighbor Path Info
 - Link Info
 - Flow Redirection Info
 - Refresh Rate Negotiation

Status

- Two rounds of discussions about the router-info draft
 - First round after it was initially published
 - Second round in May 2025
 - All comments addressed
- GLB is supported by two vendors based on:
 - draft-ietf-idr-next-next-hop-nodes
 - the merchant ASIC vendor's implementation of:
 - Flooding of link utilization info
 - Which the router-info draft is about
 - LB based on the next-hop and next-next-hop routing/utilization info

Summary

- It is generic, flexible, and easily extensible
 - Whatever requirements the FATEL discussions may bring out, we're confident that they can be met by appropriate changes/extensions
- The draft is an extension to an existing implementation
 - We want a standardized solution, and we're not trying to just stamp the existing implementation
- We would like to see draft-zzhang-rtgwg-router-info adopted
 - Sooner than later