MNA for Deterministic Networks with MPLS Data Plane

draft-varmir-mpls-detnet-mna

Greg Mirsky
Balazs Varga

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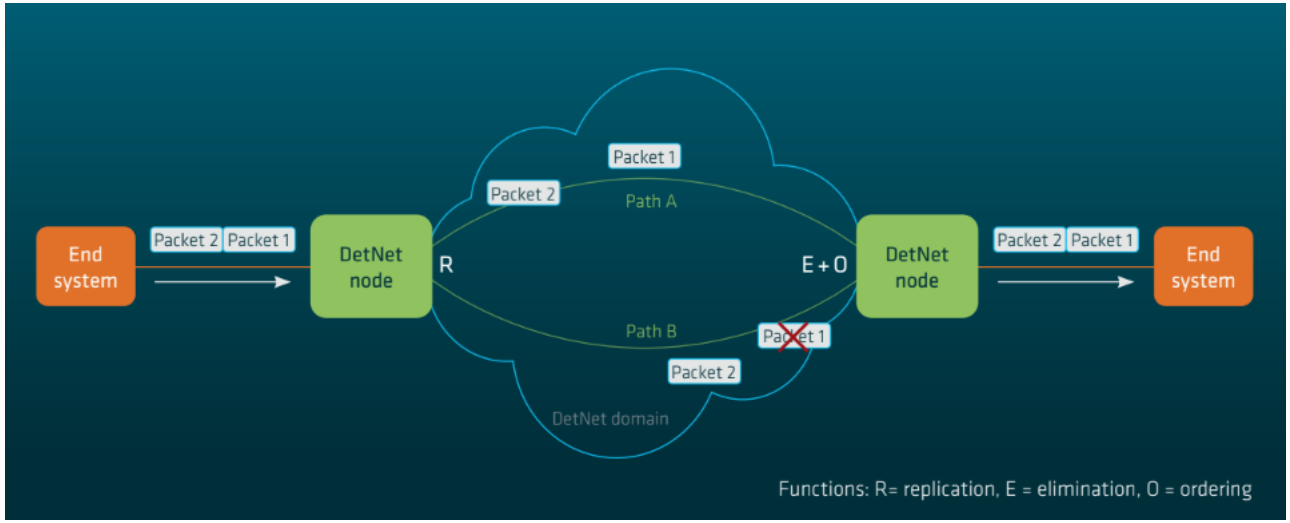
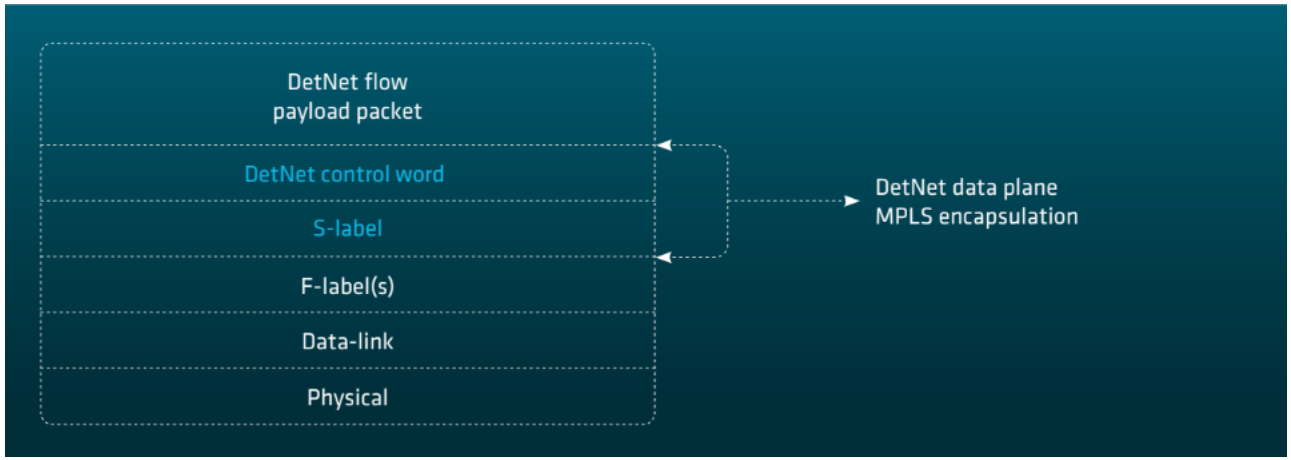
Deterministic Networking



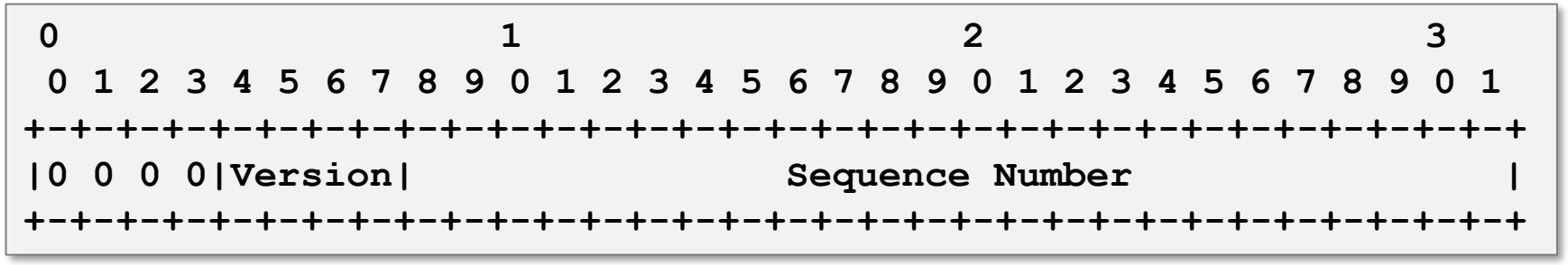
- DetNet forwarding layer – IP or MPLS
- DetNet service layer – improve on-time delivery and low packet loss
- DetNet prohibits use of load-balancing in ECMP

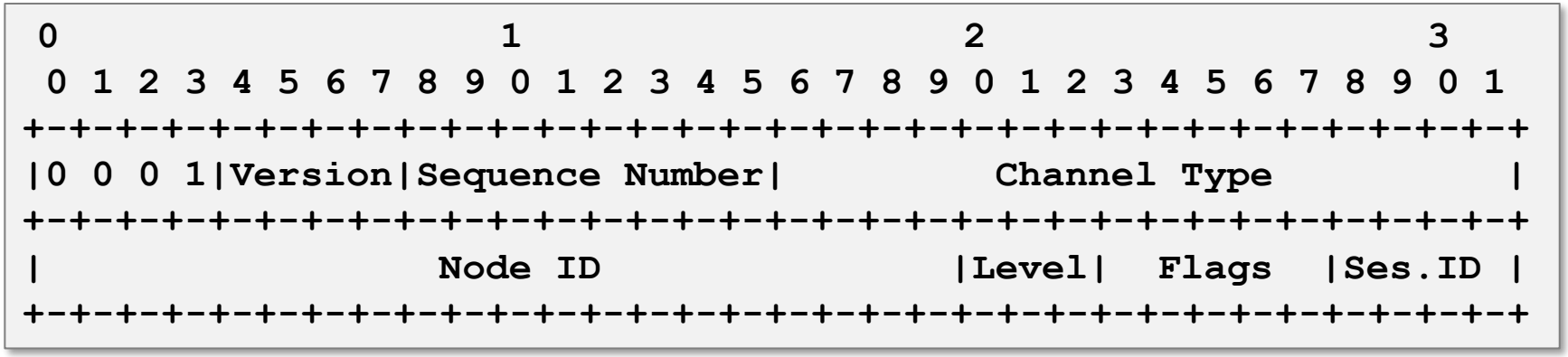
DetNet with MPLS Data Plane



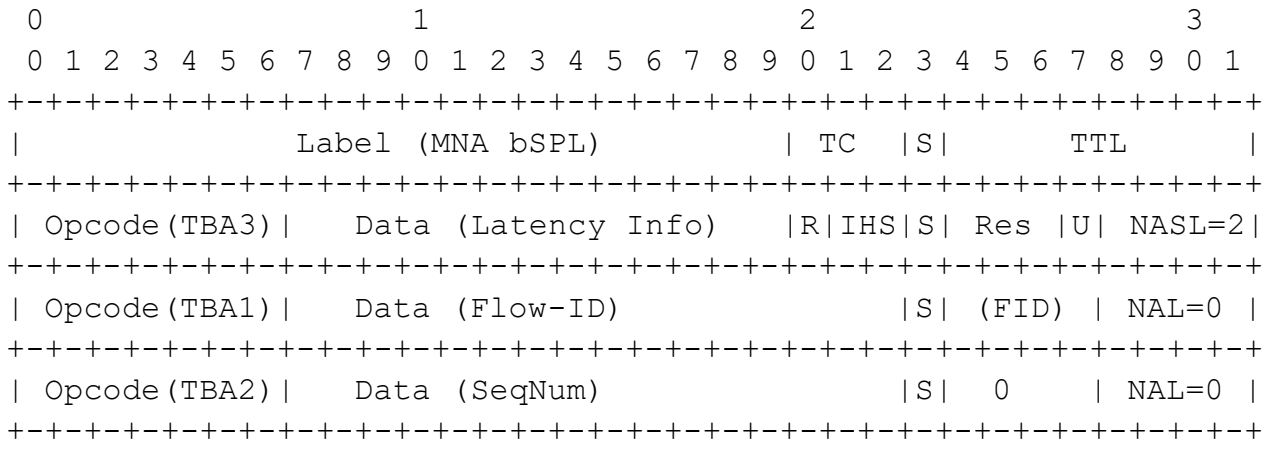
- RFC 8964 DetNet over MPLS leverages PW encapsulations for data and active OAM

d-CW and d-ACH


0 1 2 3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
|0 0 0 0|Version| Sequence Number |


0 1 2 3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
|0 0 0 1|Version|Sequence Number| Channel Type |
| Node ID |Level| Flags |Ses.ID |

MNA for DetNet over MPLS



- All DetNet specific NAI use "Select" mode, so usage of these NAIs may be restricted for DetNet-aware nodes if the operator intends to do so.
- Because DetNet does not allow for load-balancing, data mutability for DetNet MNA is not a problem.
- Latency Info – is used by every node along the path those perform latency related action (e.g., queuing). This NAI must be ignored if unrecognized. Latency can have Hop-by-hop scope.
- Flow-ID - Flow-ID is used for flow identification, and this NAI must be ignored if unrecognized. Flow-ID can have Hop-by-hop scope.
- Sequence Number – is used only by the last node on the path defined by the F-Label(s) performing the PREOF action. If this NAI is unrecognized the packet may be dropped. SeqNum can have Ingress-to-Egress (I2E) scope.

Next steps

- Welcome your questions and comments
- Address comments to improve the draft
- Then, WG AP

Thank you!