

IETF117 HotRFC



# Domain-based Routing and Forwarding for End-to-End QoS

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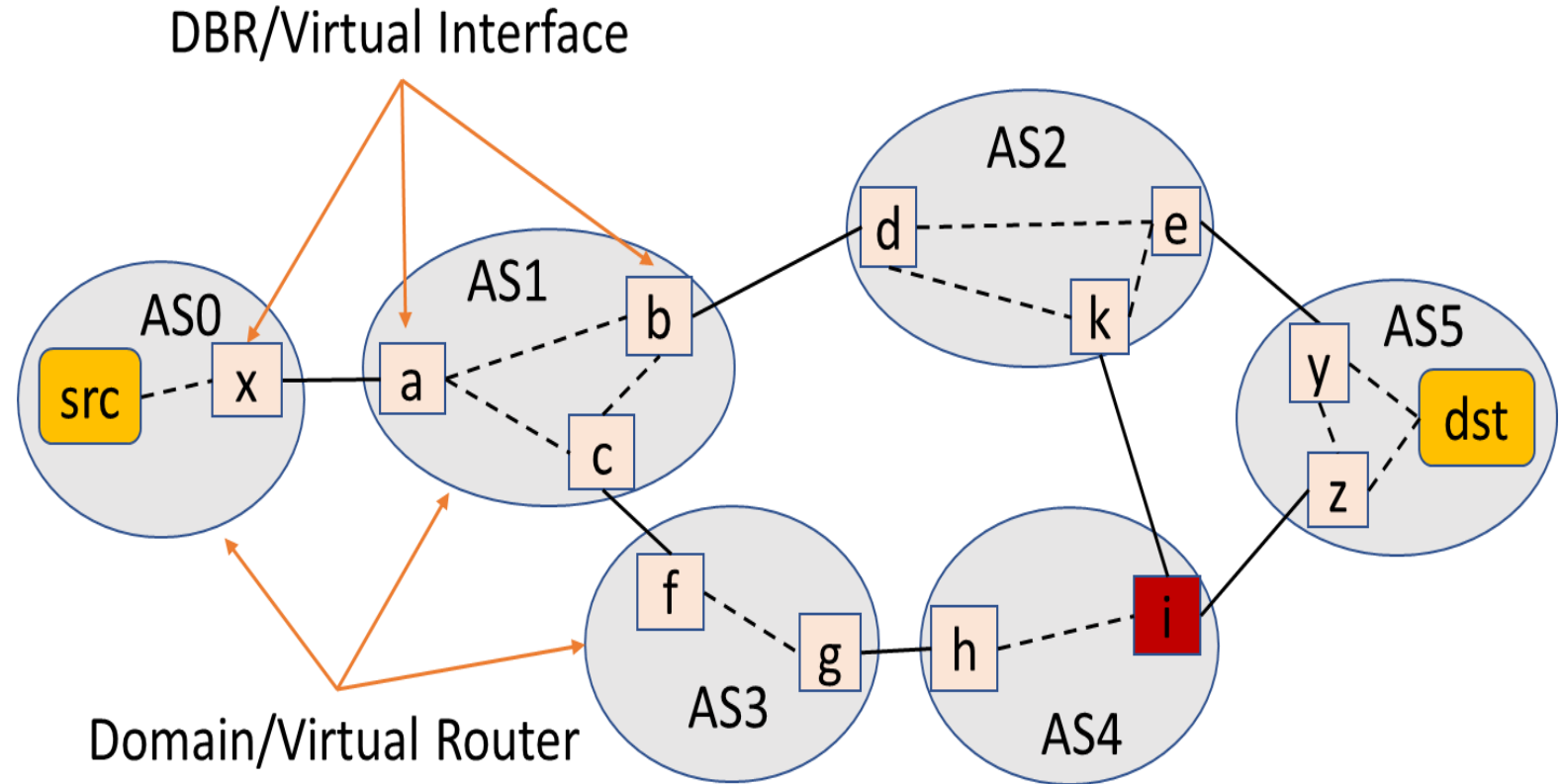
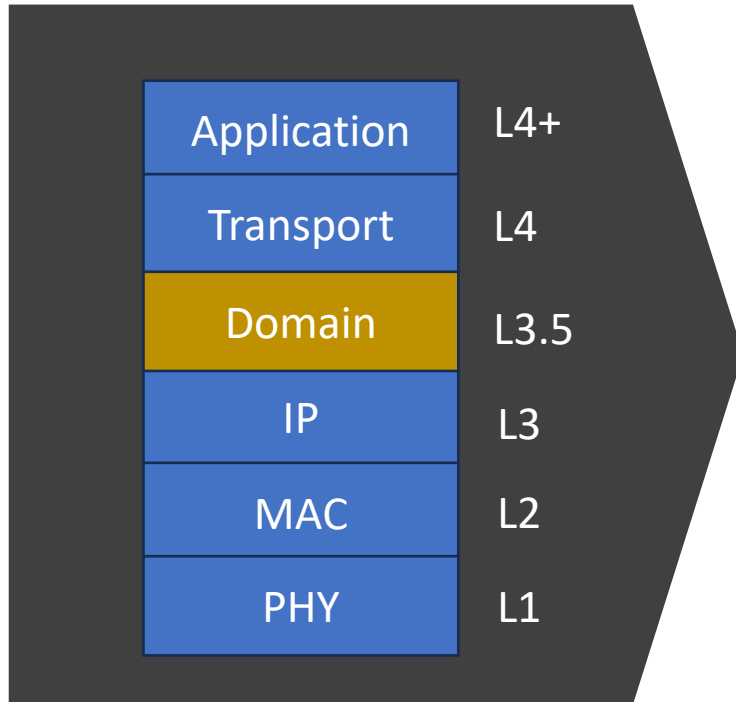


# Motivation

*5G/6G, Metaverse*

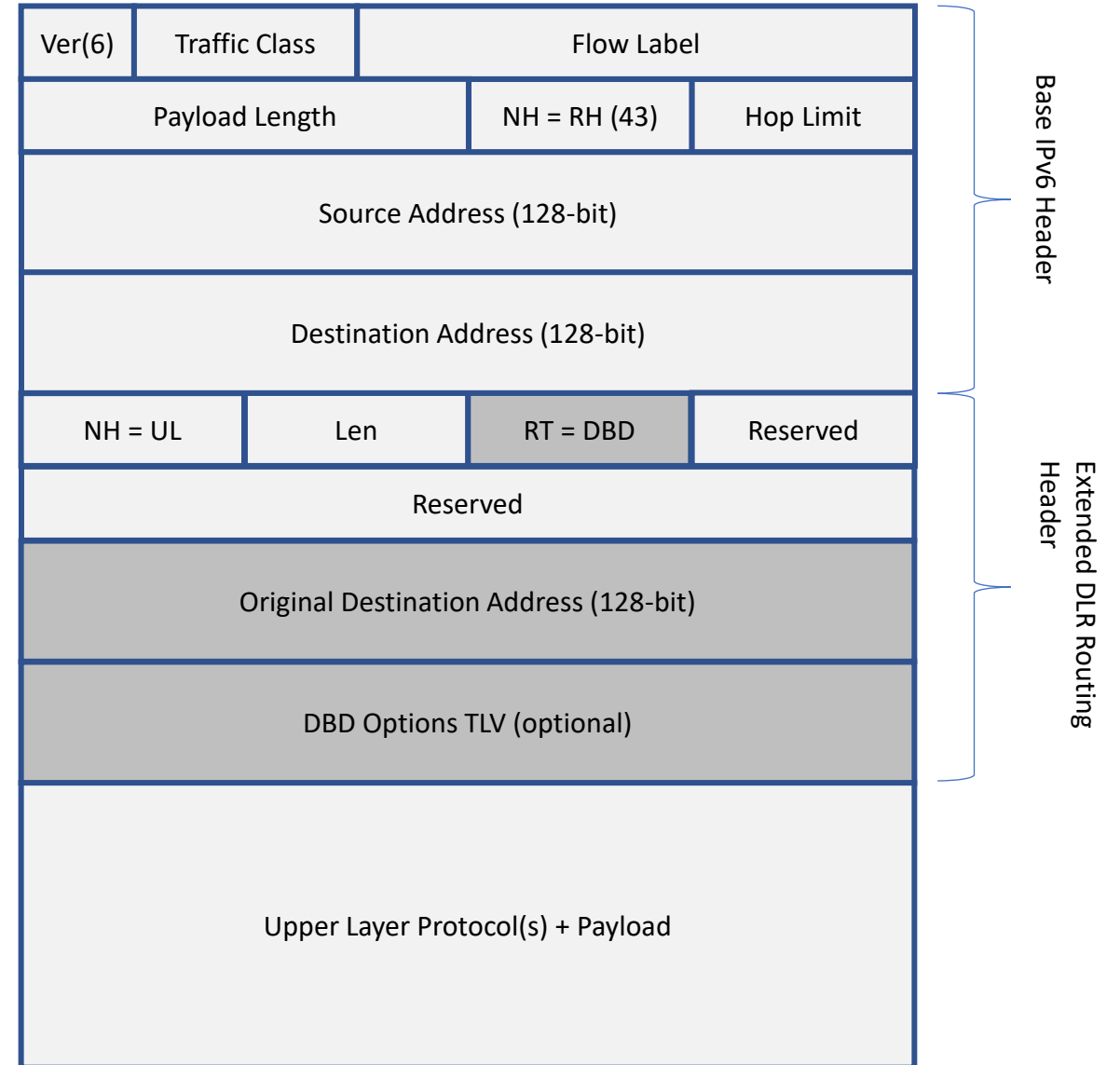
- Global reach, internet scale
- QoS sensitive interactive services
- Involve multiple service providers & types of networks
- Time to solve the long-lasting problem!

# Make Domain Explicit L3.5 Entity

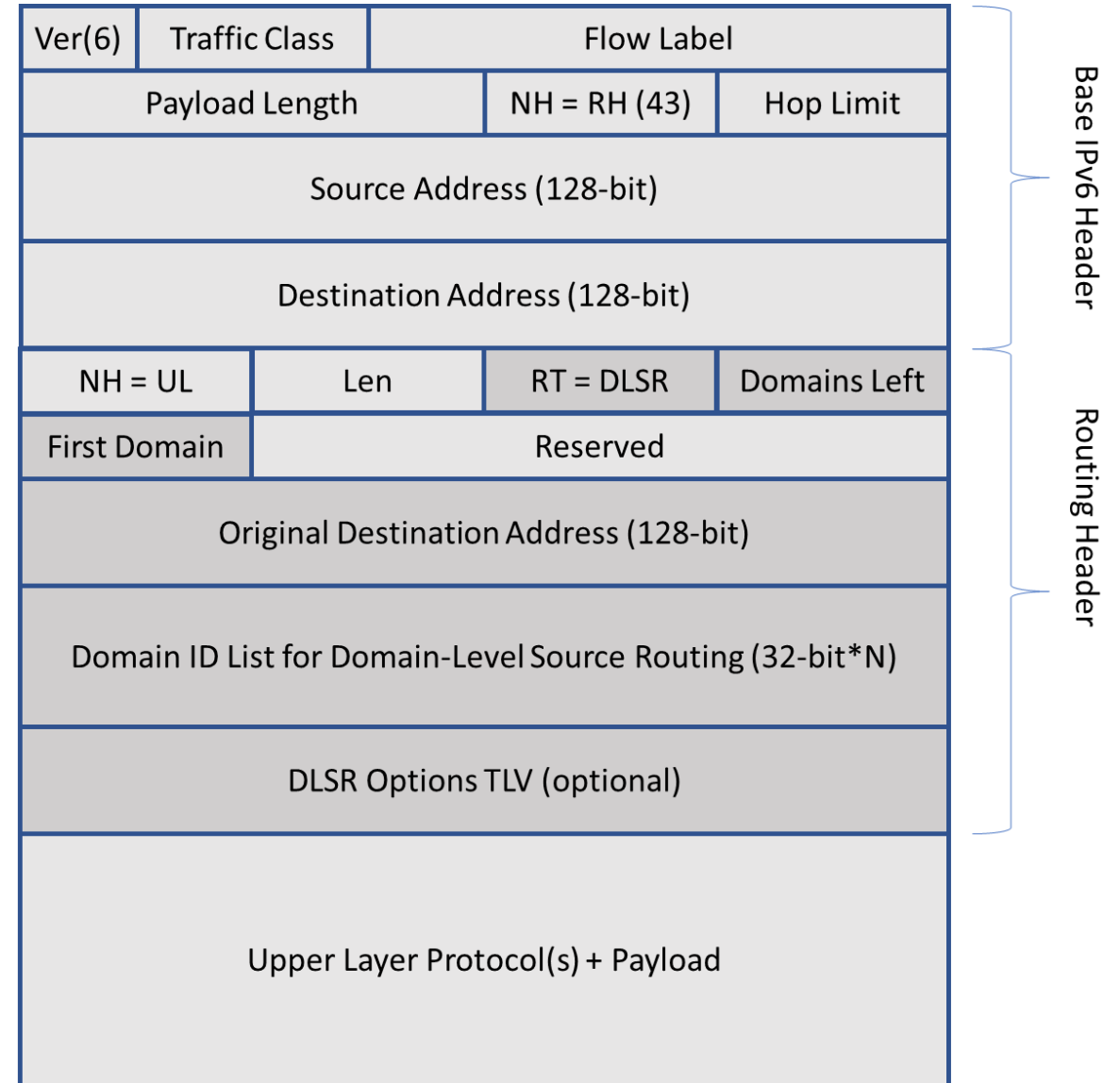


Each domain is a virtual router

# Domain-Based Routing (DBR)



# Domain Level Source Routing (DLSR)





# Benefits of Domain-based Routing and Forwarding

- Forster a business model to enable Internet-scale QoS with the right level of manageable entity
  - Limited number of "hops"
  - Vested service provider interests
  - Authority of control
- Hide the intra-domain routing/forwarding details
  - Clearly decouple the intra-domain and inter-domain
  - ~~Intra domain routing and traffic engineering as secret sauce~~
- Same OAM standards/tools can be applied at the domain level
  - Each domain is virtualized as a node
  - Auditable SLA



Thank You!

Feedback & Collaboration Welcome!

**Reference:**

1. *"Towards End-to-End Quality-of-Service by Domain-Level Routing and Forwarding"*, arXiv:2207.02326 [cs.NI], July 2022
2. *"Enable Cross-domain QoS for Internet-Scale Metaverse"*, IEEE MetaCom, June 2023