

# Router Info Advertisement

draft-zhang-rtgwg-router-info-00

Kevin Wang, Jeffrey Zhang – Juniper  
Changwang Lin – New H3C

IETF 120, Vancouver

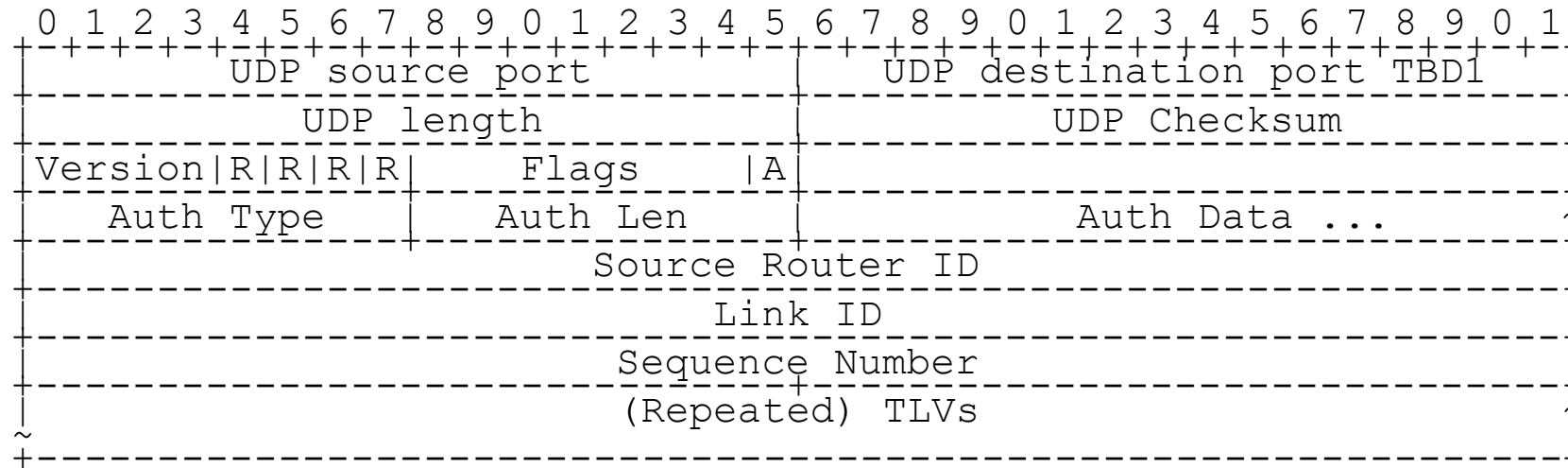
# Background

- Two IETF119 presentations/drafts
  - draft-wang-idr-next-next-hop-nodes-00
    - Consider next-next-hop's load information when load-balancing traffic
  - draft-liu-rtgwg-path-aware-remote-protection
    - Quick notification of remote down links for fast reroute purposes
- Both require fast flooding of link/neighbor/path information
  - Outside routing protocols

# Goals and Non-Goals

- Specify a generic way of flooding router information
  - Outside routing protocols
  - Easily extensible
  - Hardware friendly
    - Certain information may be sourced and handled in ASIC
- Non-goals
  - Re-flooding of received advertisements
    - E.g., B re-floods C's advertisement to A
      - B may advertise information that it learns/derives from C's advertisement but that is orthogonal to the flooding mechanism defined in this document
  - Specifying how often the information is flooded and how the information is retained/used

# UDP-based

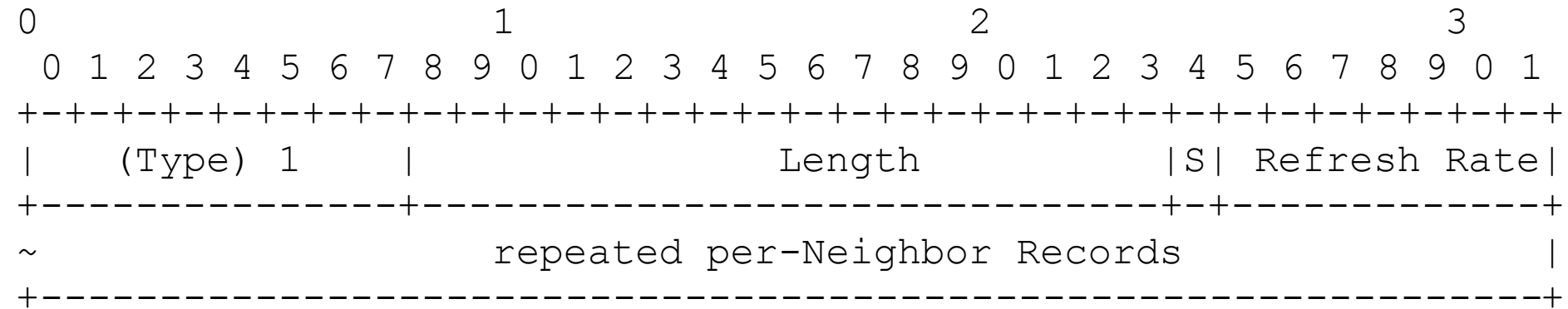


- Fragmentation is allowed; though unlikely used when timely flooding is needed
  - Multiple messages are used instead
- TLV-based
  - Typically a message only has one TLV for simpler hardware-based handling
- Authentication optional
- Acknowledgement optional

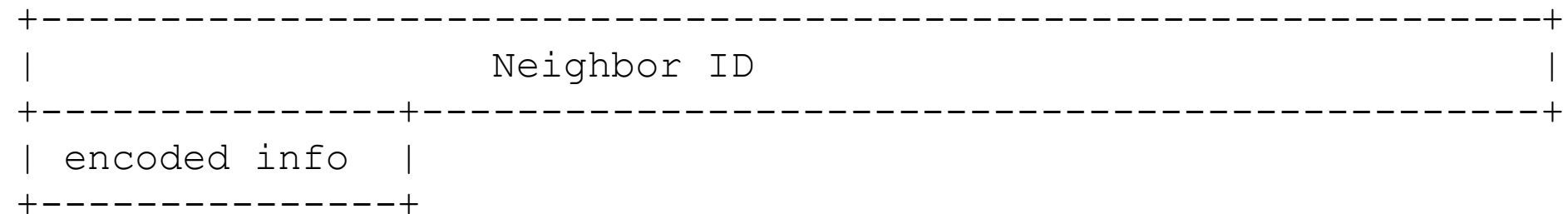
# Local/Remote Unicast/Multicast Flooding

- The Destination Address can be:
  - The IPv4 "All Routers on this Subnet" multicast address, or,
  - The IPv6 Node-local All Routers Address, or,
  - A local/remote unicast address, or,
  - A non-link-local multicast address

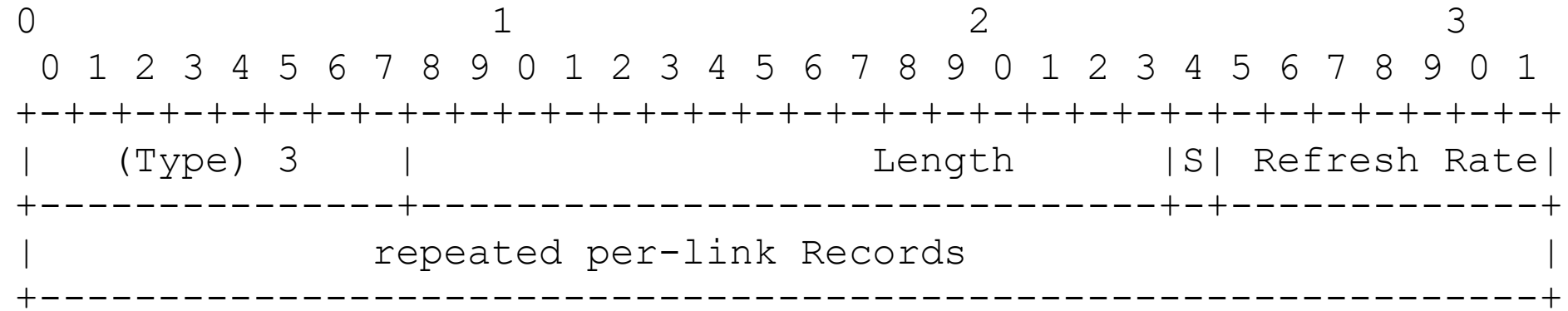
# Neighbor Path Info TLV



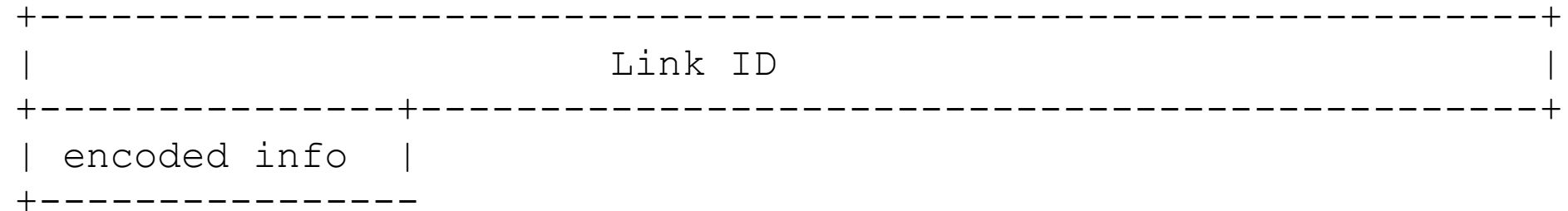
The per-Neighbor record:



# Link Info TLV



The per-link record:



# ***Encoded Info***

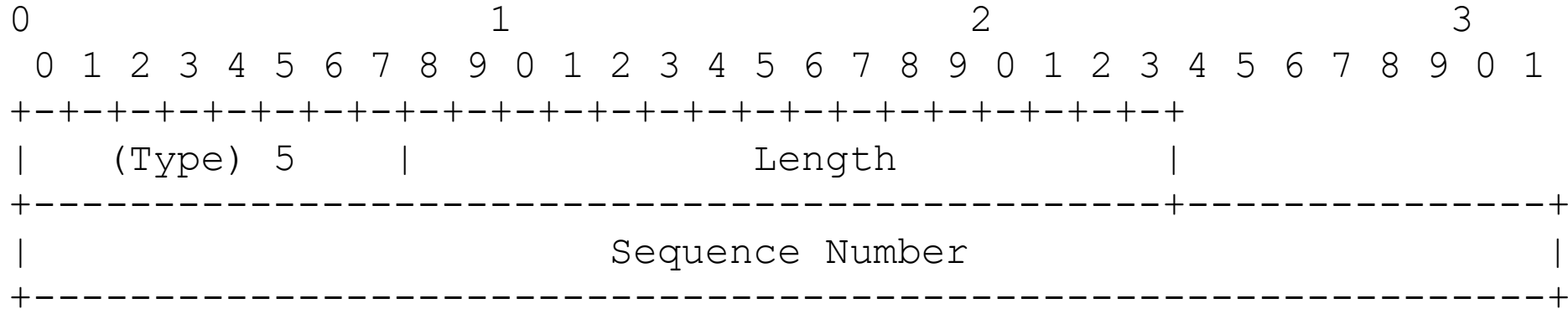
- Currently, only value 0 is defined
  - Indicating the link/path is down
  - Used for draft-liu-rtgwg-path-aware-remote-protection
- Other values may be defined for load information
  - Used for draft-wang-idr-next-next-hop-nodes-00
  - Further discussions/agreements needed



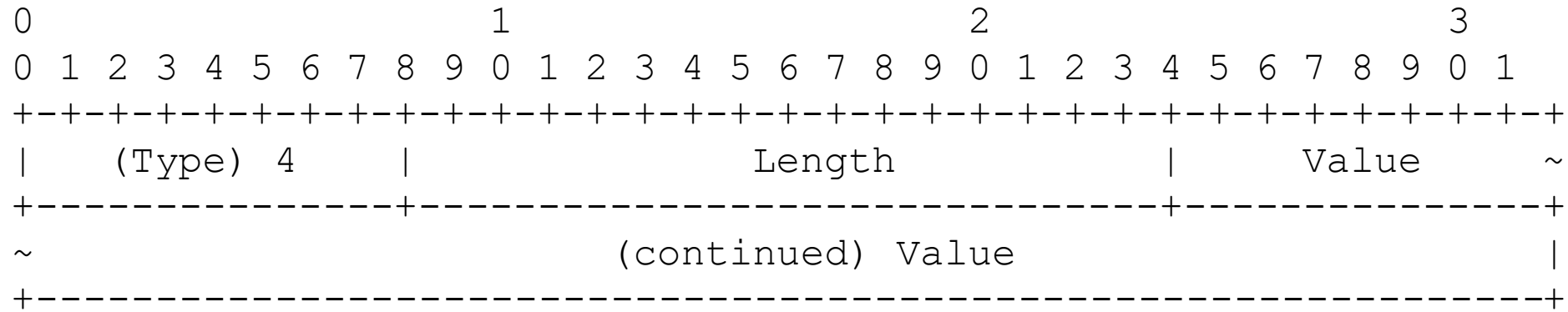
# Acknowledgment, Refreshing, and Aging

- If the sequence number is not zero, explicit ack is needed
- Otherwise, the received info is to be aged out
  - After a period of refreshing rate \* 3
- The sender can change the refreshing rate
  - Proactively, e.g., when the info changes more frequently or less frequently, or,
  - Reactively, e.g., when a receiver requests it to slow down via Notification
  - The refreshing rate MUST not be more frequent than the notified/requested refreshing rate (if any)

# Acknowledgment TLV

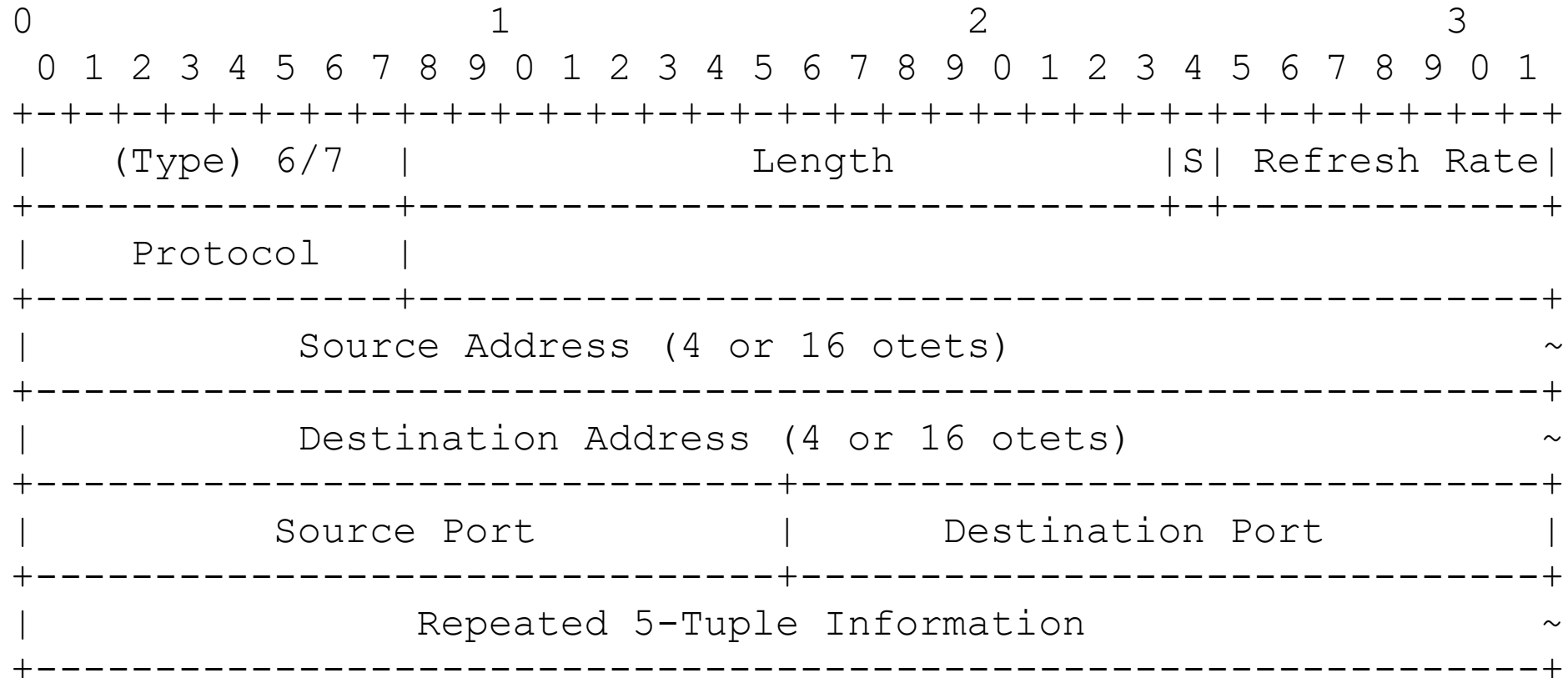


# Refreshing Rate Notification TLV



- The value part includes the TLVs for which the notification is for
  - w/o the per-neighbor/path/link records

# Flow Redirection TLV



# Next Steps

- Security Considerations
- Load information advertisement
- Discussions, comments, and suggestions requested