

# **Update on BIER IPv6 Encapsulation**


**draft-xie-bier-ipv6-encapsulation-08**

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**IETF 108 Online,**

**Wednesday Session I, 11:00-12:40, July 29, 2020 (UTC)**

# History

- IETF 102 (v00 -> v01):
  - Initial proposal is a “Native IPv6” approach, using IPv6 extension header carrying BIER Header.
- IETF 103 (v01):
  - WG suggested a requirements draft.
- IETF 104 (v02 -> v00):
  - Split the drafts into requirement document and encapsulation document; Requirement document was adopted.
- IETF 105 (v00 ->v02):
  - BIER IPv6 covered in BIER charter was confirmed.
- IETF 106 (v02 -> v03):
  - Change multicast address to unicast address after WG discussion.
- IETF 107/interim (v03 -> v06):
  - add OAM support; Add a section about security, addressing all the previous comments.
-  • IETF 108 (v06 -> v08):
  - See following slides.

# BIERv6 Draft Update and BIER WG Feedback(rev-06)

- BIERv6 encapsulation update in rev-06 (2020-3-9):
  - Use the Next Header value 143 for Ethernet packet in IPv6. (<https://www.iana.org/assignments/protocol-numbers/protocol-numbers.xhtml#protocol-numbers-1>)
    - Eliminate the need for Next Header code point allocation.
  - Update the “security consideration” section.
- Comments received and addressed:
  - Detailed Review comments and some high level comments. (<https://mailarchive.ietf.org/arch/msg/bier/y96tvDJNrX3AegHqDBIwuSr4850/>)
  - All comments are answered and addressed in the mailing list.
- BIER WG’s feedback:
  - Review by the 6MAN WG is necessary before any further discussion in the BIER WG.

# BIERv6 Draft Update and 6MAN WG Feedback(rev-07)

- BIERv6 encapsulation update in rev-07 (2020-6-29):
  - Terminologies like “BIERv6 domain” are added or updated.
  - The use of “Proto” field in BIER header and “Next Header” field in IPv6 header is revised.
    - Simplified OAM mechanism and main technical improvement in this version.
  - Editorial changes in security considerations.
  - Issues raised by IDnits tool are fixed.
  - Co-authors are added.
- Comments from 6MAN Mailing List :
  - Review request is sent to 6MAN ML (sync to BIER as well).
  - Rev-07 is baseline version for 6MAN review.

# BIERv6 Draft Update and BIER WG Feedback(rev-08)

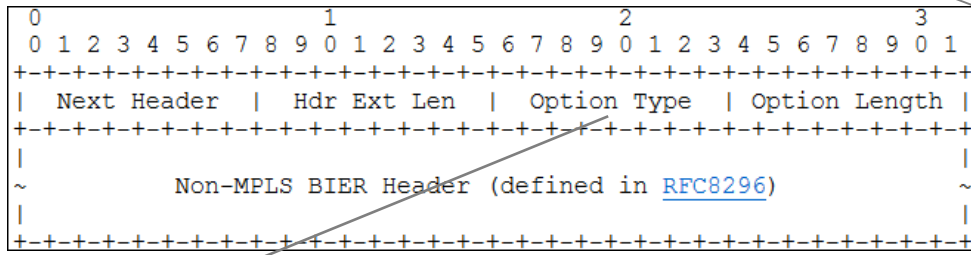
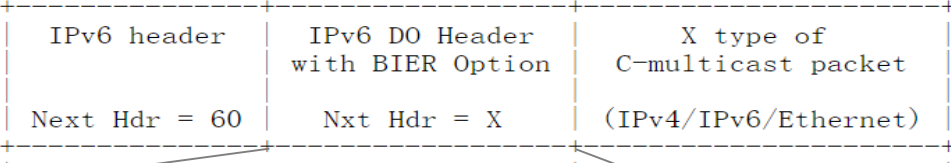
- BIERv6 encapsulation update in rev-08 (2020-7-12), per the suggestions received:
  - A diagram showing BIERv6 per hop packet processing in an IPv6 domain is added in section 4.
  - Clarification of BIERv6 aligning with BIER architecture is added in Appendix A.
  - References for control plane extension are noted in Appendix B.
  - Text for the use of unicast address in section 3.2 is moved to Appendix C.
- Comments from BIER Mailing list:
  - Request for adoption sent to BIER WG.
    - Positive feedback with lots of support.
    - No further technical concerns yet.

# What is the next?

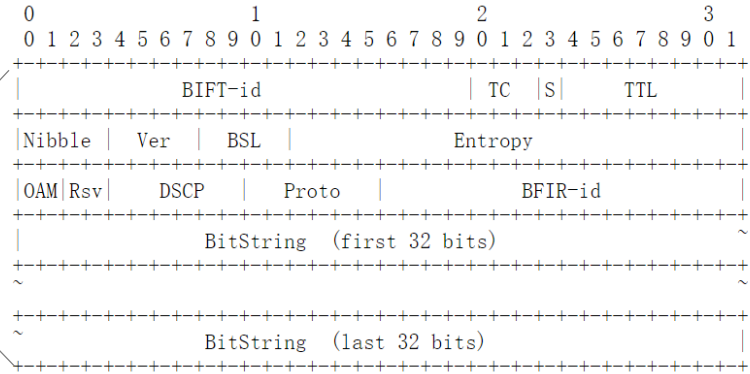
- Consecutive improvements are made according to comments from WG, including:
  - BIERv6 alignment with BIER architecture defined in RFC 8279.
  - Simplified BIERv6 OAM.
  - BIERv6 security well considered.
- Comprehensive and constructive discussion in IETF:
  - Acknowledgement and positive review from 6MAN WG.
  - Positive feedback for adoption request in BIER WG.
  - Consensus of IPv6 address semantics in IETF community.
- The authors believe the draft is mature and ready for WG adoption.

Thank you !

# BIERv6 Encapsulation



Hex Value	act	chg	rest	Description	Reference
0x70	01	1	10000	BIER Option	This draft





# Forwarding Procedure

