Update on BIER IPv6 Encapsulation

draft-xie-bier-ipv6-encapsulation-08
Presenter: Xuesong Geng
BIER WG, IETF 109
BIERv6 Overview

• BIERv6 encapsulation:
  • IPv6 Header with Destination Address indicating BIERv6 process
  • BIERv6 Destination Options Header
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 draft into requirement document and encapsulation document; Requirement document was adopted.

• IETF 105 (v00 -> v02):
  • It was confirmed that BIER IPv6 is covered by BIER WG charter.

• IETF 106 (v02 -> v03):
  • Change multicast address to unicast address after WG discussion.

• Before IETF 107/interim (v03 -> v06):
  • add OAM support; Add a section about security, addressing all the previous comments.

• IETF 107/108/109 (v06 -> v08):
  • See following slides.
BIERv6 Draft Update and BIER WG Feedback (rev-06)

• BIERv6 encapsulation update in rev-06 (2020-3-9):
  • 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 during IETF 107:
  • Review by the 6MAN WG about this topic is necessary before any further discussion in 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).
  - IPv6 Alignment is confirmed by 6MAN people
BIERv6 Draft Update and BIER WG Feedback (rev-08)

- BIERv6 encapsulation update in rev-08 (2020-7-12), per the suggestions received in 6MAN:
  - 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.

- Discussions in BIER Mailing list:
  - Request for adoption sent to BIER WG.
  - Positive feedback with lots of support.
  - No further technical concerns yet.

- BIER WG’s feedback in IETF 108:
  - WG Agreement in requirement document should come first.
Efforts on BIER IPv6 Requirement

• Team work with BIER IPv6 requirement document authors, including authors from other BIER IPv6 solution.

• Get feedback from WG and address comments in the mailing list.

• Make sure the BIER IPv6 requirement document get WG consensus and this document align with the requirement document.
Summary

For BIERv6:

• 2+ Years since first presentation in IETF
• 7 Presentations
• 8 Revisions according to the comments from WG
• 100+ Emails on BIER ML and 6MAN ML
• 5 Operators support as co-authors
• 5 Drafts reference the draft-xie-bier-ipv6-encapsulation
Next Step

- WG adoption
Thanks