IPv6 over the TSCH mode of IEEE 802.15.4e

12 February 2016 Webex

Chairs:
Pascal Thubert
Thomas Watteyne

Etherpad for minutes:
http://etherpad.tools.ietf.org:9000/p/6tisch?useMonospaceFont=true
Note Well

This summary is only meant to point you in the right direction, and doesn't have all the nuances. The IETF's IPR Policy is set forth in BCP 79; please read it carefully.

The brief summary:

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• BCP 25 (on the Working Group processes)
• BCP 78 (on the IETF Trust)
• BCP 79 (on Intellectual Property Rights in the IETF)
Reminder:

Minutes are taken *
This meeting is recorded **
Presence is logged ***

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*** From the Webex login
Agenda

- Administrivia [3min]
  - Agenda bashing
  - Approval minutes from last meeting
  - Misc including recharter
- ETSI 6TiSCH #2 plugtest - report [20min]
- draft-munoz-6tisch-examples-00 [10min]
- 6LoRH discussion and next Steps [15min]
- Status suggested 6P enhancements and next steps [10min]
- AOB [1min]
Administrivia
Admin is trivia

- Approval Agenda
- Approval minutes
ETSI 6TiSCH #2 plugtest - report

Maria Rita Palattella
Context

- ETSI 2nd 6tisch plugtest
- Implements the following:
  - https://datatracker.ietf.org/doc/draft-ietf-6tisch-minimal/
  - https://datatracker.ietf.org/doc/draft-wang-6tisch-6top-sublayer/
- Full examples of (parsed) packets were needed
Status

- draft-munoz-6tisch-examples-00 to be published in the next days
- Based on 6TiSCH Wireshark dissector at https://github.com/openwnsn-berkeley/dissectors
- Authors:
  - Jonathan Muñoz, Gridbee Communications - Inria
  - Emmanuel Riou, Gridbee Communications
  - Guillaume Gaillard, Orange Labs
  - Dominique Barthel, Orange Labs
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6LoRH discussion and next Steps

Pascal Thubert
News

• Draft split complete
  • draft-ietf-6lo-paging-dispatch-01
  • draft-ietf-6lo-routing-dispatch-03
• Validation at ETSI plugtest
• New draft
  • draft-thubert-6lo-inner-compression
  • Updates RFC 6282
  • RFC 6282 stateless => LL prefix FE80::
  • Proposal to get prefix from outer header
  • Also from 6LoRH even if no IP in IP
Issues

• Better compression for various length
  • Current: only powers of 2
Issues

- Better compression for various length
  - Current: only powers of 2
- RPI-6LoRH
  - Generic Name in RFC6550
  - Expands into RPL opt in HbH
  - Should it be named more specifically?
- RH3-6LoRH
  - Specific Name inherited from RFC6554
  - But called SRH in that spec, not specific
  - Compressed format valid for other RH types
  - Should it be named less specifically?
e.g. 6LoRH – RPI only, ICMP

IPv6 header | HbH header | RPL option | ICMP header | ICMP Payload

With inner-compression:
LOWPAN_IPHC stateless based on root prefix for source and destination
e.g. Fragmented 6LoRH – IP-in-IP + RPI

With inner-compression:
LOWPAN_IPHC stateless based on outer packet source and destination
Proposed order

I think that the original proposal  MAC RH3-6LoRH*  RPI-6LoRH IP-in-IP-LoRH IPHC blah  Works better

Reason 1: We modify the RH3-6LoRH on the way, popping the first address as we go. It is easier to do if it is the first header of the compressed packet so we always play with the very beginning of the packet

Reason 2: So that IP header always TERMINATES the 6LoRH encapsulation,

   When there is no IP in IP, this is already true for instance MAC RPI-6LoRH IPHC

   One needs to differentiate a case that in UNCOMPRESSED form is

   IP-in-IP  RPI  RH3  IP  blah  vs.  IP-in-IP IP RPI RH3 blah

With a format like  MAC IP-in-IP-LoRH  RH3-6LoRH*  RPI-6LoRH IPHC blah  You cannot tell :

With this format we have a clear separation for IP in IP in IP all the way


   The separation of which header is in which encaps is clearly delineation with the IP header that terminates the encapsulated 6LoRH-headers.
UDP packet forwarded by the root

One may note that the RPI is provided. This is because the address of the root that is the source of the IP-in-IP header is elided and inferred from the InstanceID in the RPI. Once found from a local context, that address is used as Compression Reference to expand addresses in the RH3-6LoRH.

With inner-compression:
LOWPAN_IPHC stateless based on outer packet source from header source (itself from root)
Last Hop (Dest) from last RH3-6LoRH entry
AOB ?
Thank you!