Generic IPv6 Extension Header

draft-ietf-6man-exthdr-00.txt

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Background: Extension Headers

- The base IPv6 standard [RFC2460] defines extension headers
- An expansion mechanism to carry optional internet layer information.
- Extension headers, with the exception of the hop-by-hop options header, **are not usually processed on intermediate nodes**.

Advantages of GIEH

- Allows generic parsing routines for extension headers
- Reduces impact on the IP protocol numbers field
  - No need to use a new IP protocol number for each extension header
- Allows distinguishing between new transport protocols and new extension headers
- Allows packet analyzers to skip over unknown headers and continue to decode packets
  - Whether or not this is done is up to the policy settings

Open issue #1/1

- Issue raised by Manav Bhatia
- He requested adding a Header options field to the GIEH
- This is an 8-bit selector where the highest order two bits specify the action that must be taken if the processing IPv6 node does not recognize the extension header:
  - 00: skip over the header
  - 01: discard the packet.
  - 10: discard the packet. Send ICMPv6 even if dest addr is multicast
  - 11: discard the packet. Send ICMPv6 only if dest addr is not multicast

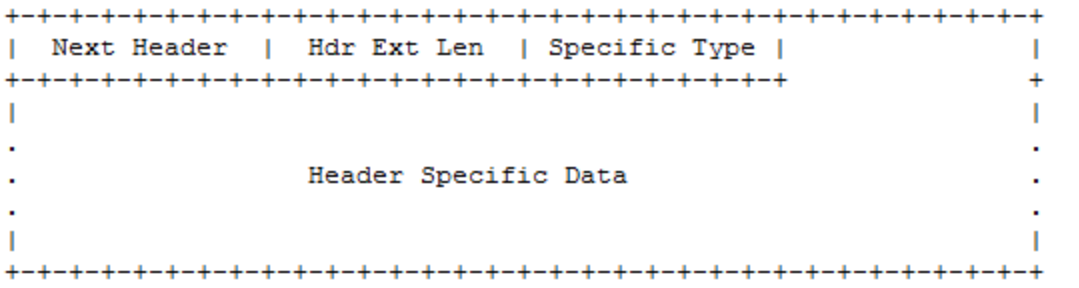
How do we go forward?

- We would like wg guidance on how to proceed?
  - Is it useful to add such a field?
    - We do not see the need for such a field
      - This behavior is better achieved using IPv6 Options
  - If so, is the proposed solution good enough
- Do we have any other open issues?

ERICSSON

Backup Slide: GIEH format

› For all new extension headers



Next Header	8-bit selector. Identifies the type of header immediately following the Extension header. Uses the same values as the IPv4 Protocol field.
Hdr Ext Len	8-bit unsigned integer. Length of the Extension header in 8-octet units, not including the first 8 octets.
Specific Type	8-bit unsigned integer. The actual IPv6 extension header type. This will be allocated from a new IANA registry.
Header Specific Data	Variable length. Fields specific to the extension header