Transmission and Processing of IPv6 Options
(draft-gont-6man-ipv6-opt-transmit-02)

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Introduction

- A number of middle-boxes inspect the contents of IPv6 extension headers
  - this results in packet drops
- Host/router implementations would also benefit from clear validation rules
- Advice in this area (ala RFC7045) is necessary
- We hope this will e.g. help improve the situation wrt the dropping of packets containing EHs in some scenarios
Clarifies the default processing of IPv6 options

Think of it as “RFC 7045 for IPv6 options”
  - IPv6 options were considered “out of scope” of RFC7045

Recommendations in line with RFC 7045

Additionally, option validation is specified, e.g.:
  - Most IPv6 options have been specified to be employed with specific Extension Headers
  - Some options have additional requirements
    - e.g. whether more than one instance of the option is allowed
Considerations for all options

• Forwarding nodes:
  – SHOULD forward packets regardless of any IPv6 Destination Options that are present.
  – If they examine DOs, they MUST recognise and deal appropriately with all standard IPv6 options types and SHOULD recognise and deal appropriately with all experimental IPv6 options.
  – SHOULD not drop packets with unrecognized options. MUST react as specified in RFC2460.
Considerations for all options (II)

- Forwarding nodes:
  - If they discard a packet containing a standard IPv6 option, it MUST be the result of a configurable policy. Such policy MUST be individually configurable, and default to “allow all standard IPv6 options”
  - MUST discard a packet that contains an option not meant for Extension Header type containing the option
  - MAY discard packets with deprecated options. This SHOULD be configurable, and MUST default to not drop such packets
Changelog

- Requests IANA to update the IPv6 Parameters registry
  - A new column must be added, that notes which EHs each IPv6 option can be legally included in (Jen Linkova)
  - This simplifies the validation rules and the document in general

- Other editorial changes
Moving forward

- Adopt as wg document?