

# **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

# draft-gont-6man-ipv6-opt-transmit

- 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?