

Transmission and Processing of IPv6 Options

(draft-gont-6man-ipv6-opt-transmit-00)

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Introduction

- A number of middle-boxes inspect the contents of IPv6 extension headers
- This results in packet drops
- Advice in this area (ala RFC7045) is deemed necessary

Introduction (II)

- 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
- This can be employed as a basic criteria for IPv6 option validation

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

- Clarifies the default processing of IPv6 options, in the hopes of improving the current state of IPv6 EHs/options in the public Internet
- Think of it as “RFC 7045 for IPv6 options”
 - IPv6 options were considered “out of scope” for RFC7045
- Heavily based on RFC7045
 - Version -00 benefits from the time and feedback of Mike Heard and Brian Carpenter

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

Considerations for all options (II)

- Forwarding nodes:
 - If they discard a packet containing a standard IPv6, 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 meant for some other Extension Header type
 - SHOULD discard deprecated options
 - Unrecognized options should be processed according to the high-order two bits of option type

Moving forward

- Adopt as a 6man wg item?