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IPv6 Destination Option for Conex
draft-krishnan-conex-destopt-00

Abstract

Conex is a mechanism by which senders inform the network about the congestion encountered by packets earlier in the same flow. This document specifies an IPv6 destination option that is capable of carrying conex markings in IPv6 datagrams.

Status of this Memo

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Conex Destination Option

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[1.](#) Introduction

Conex is a mechanism by which senders inform the network about the congestion encountered by packets earlier in the same flow. This document specifies an IPv6 destination option that can be used for performing conex markings in IPv6 datagrams.

[2.](#) Conventions used in this document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [[RFC2119](#)].

[3.](#) Background

The Conex working group came up with a list of requirements that had to be met by any marking mechanism. It then considered several alternative mechanisms and evaluated their suitability for conex marking. There were no mechanisms found that were completely suitable, but the only mechanism that came close to meeting the requirements was IPv6 destination options. The analysis of the different alternatives can be found in [[draft-krishnan-conex-ipv6](#)].

4. Conex Destination Option (CDO)

The Conex Destination Option (CDO) is a destination option that can be included in IPv6 datagrams that are sent by conex-aware senders in order to inform conex-aware nodes on the path about the CDO has an alignment requirement of (none).

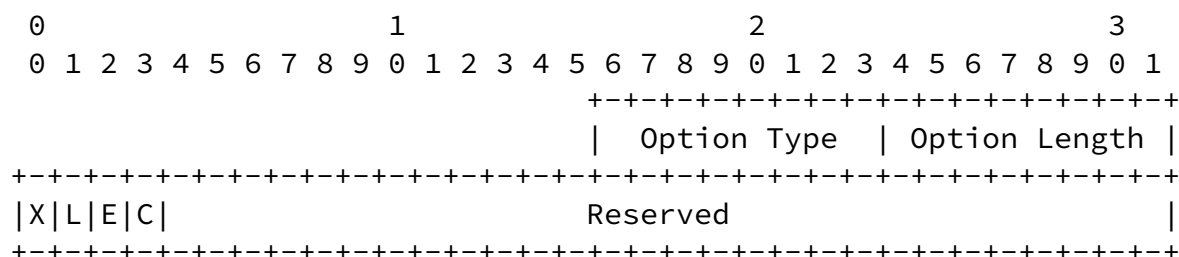


Figure 1: Conex Destination Option Layout

Option Type

8-bit identifier of the type of option. The option identifier for the conex destination option will be allocated by the IANA.

Option Length

8-bit unsigned integer. The length of the option (excluding the Option Type and Option Length fields). This field **MUST** be set to the value 4.

X Bit

When this bit is set, the transport sender is using ConEx with this packet. If it is reset, the sender is not using ConEx.

L Bit

When this bit is set, the transport sender has experienced a loss. If it is reset, the sender has not experienced a loss.

E Bit

When this bit is set, the transport sender has experienced ECN-signaled congestion. If it is reset, the sender has not experienced ECN-signaled congestion.

C Bit

When this bit is set, the transport sender is building up congestion credit. Otherwise it is not.

[5.](#) Acknowledgements

The authors would like to thank Marcelo Bagnulo, Bob Briscoe, Ingemar Johansson, Joel Halpern and John Leslie for the discussions that led to this document.

[6.](#) Security Considerations

This document does not bring up any new security issues.

[7.](#) IANA Considerations

This document defines a new IPv6 destination option for carrying conex markings. IANA is requested to assign a new destination option type in the Destination Options registry maintained at <http://www.iana.org/assignments/ipv6-parameters> <TBA1> Conex Destination Option [RFCXXXX] The act bits for this option need to be 10 and the chg bit needs to be 0.

8. Normative References

- [CAM] Briscoe, B., "Congestion Exposure (ConEx) Concepts and Abstract Mechanism", [draft-ietf-conex-abstract-mech-01](#) (work in progress), March 2011.
- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [RFC2460] Deering, S. and R. Hinden, "Internet Protocol, Version 6 (IPv6) Specification", [RFC 2460](#), December 1998.

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