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Cryptographically Generated Addresses (CGA) Extension Field Format

Status of This Memo

This document specifies an Internet standards track protocol for the Internet community, and requests discussion and suggestions for improvements. Please refer to the current edition of the "Internet Official Protocol Standards" (STD 1) for the standardization state and status of this protocol. Distribution of this memo is unlimited.

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Abstract

This document defines a Type-Length-Value format for Cryptographically Generated Address (CGA) Extensions. This document updates RFC 3972.

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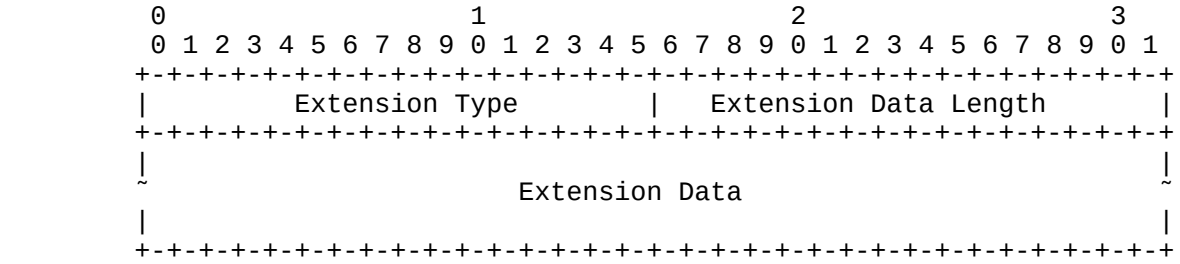
1. Introduction

The Cryptographically Generated Address (CGA) specification [1] defines Extension Fields that allow additional information to be included in the CGA Parameter Data Structure. So far there seems to be enough interest in including additional data items into the CGA Parameter Data Structure through these Extension Fields that it seems reasonable to expect that more than one mechanism will require its usage. In order to simplify the addition of multiple data items, this document updates RFC 3972 [1], and it defines a Type-Length-Value format for the Extension Fields.

2. CGA Extension Field Format

Data items to be included in Extension Fields of the CGA Parameter Data Structure MUST be encoded using the following Type-Length-Value (TLV) format:



Extension Type: 16-bit identifier of the type of the Extension Field.

Extension Data Length: 16-bit unsigned integer. Length of the Extension Data field of this option, in octets.

Extension Data: Variable-length field. Extension-Type-specific data.

3. IANA Considerations

The IANA has created and will maintain a registry entitled, "CGA Extension Type". The values in this name space are 16-bit unsigned integers. Initial values for the CGA Extension Type field are given below; future assignments are to be made through Standards Action [2]. Assignments consist of a name and the value.

As recommended in [3], this document makes the following assignments for experimental and testing use: the value 0xFFFD, with name Exp_FFFD; the value 0xFFFE, with name Exp_FFFE, and the value 0xFFFF, with name Exp_FFFF.

4. Security Considerations

No security concerns are raised by the adoption of the CGA Extension format described in this document. However, proper security analysis is required when new CGA Extensions are defined in order to make sure that they introduce no new vulnerabilities to the existing CGA schemes.

5. Acknowledgements

Comments to this document were provided by Sam Hartman, Allison Mankin, Pekka Savola, Thomas Narten, Tuomas Aura, Stefan Rommer, Julien Laganier, and James Kempf.

6. Normative References

[1] Aura, T., "Cryptographically Generated Addresses (CGA)", RFC 3972, March 2005.

[2] Narten, T. and H. Alvestrand, "Guidelines for Writing an IANA Considerations Section in RFCs", BCP 26, RFC 2434, October 1998.

[3] Narten, T., "Assigning Experimental and Testing Numbers Considered Useful", BCP 82, RFC 3692, January 2004.

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