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D. Shaw
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The Camellia Cipher in OpenPGP
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Status of this Memo

Abstract

This document presents the necessary information to use the Camellia symmetric block cipher in the OpenPGP protocol.

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1. Introduction

The OpenPGP protocol [RFC4880] can support many different symmetric ciphers. This document presents the necessary information to use the Camellia [RFC3713] cipher in the OpenPGP protocol.

2. Requirements notation

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. Camellia

Camellia is specified in [RFC3713]. It is a 128-bit block cipher (as are AES and Twofish in OpenPGP), that supports 128-bit, 192-bit, and 256-bit keys. This document defines the use of Camellia in OpenPGP.

Camellia Key Length	OpenPGP Symmetric-Key Algorithm Number
128	XXXX
192	YYYY
256	ZZZZ

[[To be allocated by IANA. Please fill this in: presumably XXXX == 11, YYYY == 12, and ZZZZ == 13]]

OpenPGP applications MAY implement Camellia. If implemented, Camellia may be used in any place in OpenPGP where a symmetric cipher is usable, and is subject to the same usage requirements (such as its presence in the Preferred Symmetric Algorithms signature subpacket) as the other symmetric ciphers in OpenPGP.

While the OpenPGP algorithm preferences system prevents interoperability problems with public key encrypted messages, if Camellia (or any other optional cipher) is used for encrypting private keys, there could be interoperability problems when migrating a private key from one system to another. A similar issue can arise when using an optional cipher for symmetrically encrypted messages, as this OpenPGP message type does not perform cipher negotiation. Those using optional ciphers in this manner should take care they are using a cipher that their intended recipient can decrypt.

4. Security Considerations

At publication time, there are no known weak keys for Camellia, and the Camellia algorithm is believed to be strong. However, as with any technology involving cryptography, implementers should check the current literature, as well as the Camellia home page at <http://info.isl.ntt.co.jp/camellia/>, to determine if Camellia has been found to be vulnerable to attack.

5. IANA Considerations

This document requires IANA to assign three algorithm numbers from the registry of OpenPGP Symmetric-Key Algorithms that was created by [RFC4880].

6. Normative References

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

[RFC3713] Matsui, M., Nakajima, J., and S. Moriai, "A Description of the Camellia Encryption Algorithm", RFC 3713, April 2004.

[RFC4880] Callas, J., Donnerhacke, L., Finney, H., Shaw, D., and R. Thayer, "OpenPGP Message Format", RFC 4880, November 2007.

Author's Address

David Shaw

Email: dshaw@jabberwocky.com

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