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Mobility Header Signaling Message
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Status of this Memo

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Abstract

This document specifies a new Mobility Header message type that can be used between a mobile node and home agent to signal an event that requires attention.

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 RFC-2119 [1].

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1. Introduction

RFC 3775 [2] contains no provision to allow a home agent to inform a mobile node, or vice-versa, that there is an event that requires its attention. For example, a home agent may wish to handoff some of its mobile nodes to another home agent because it has come overloaded or it is going offline.

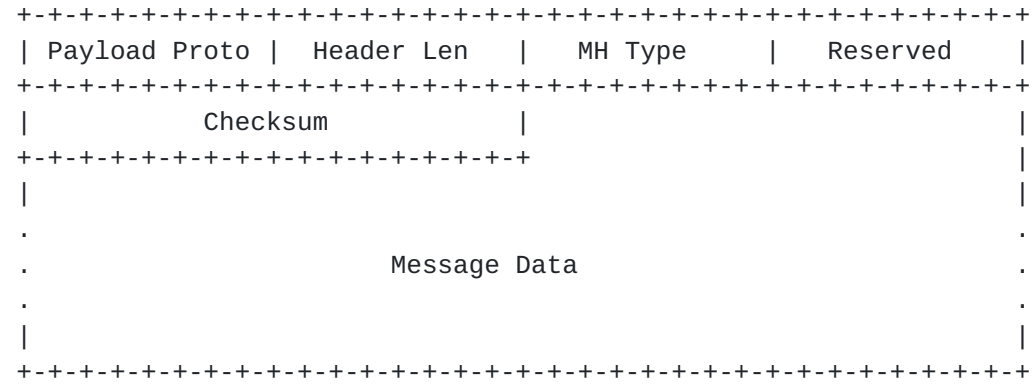
This protocol describes a generic signaling message type that can be used to send messages between home agents and mobile nodes securely.

This protocol does not describe the type of messages that might be exchanged, that information should be defined in the document for the specific Mobility option that will be used.

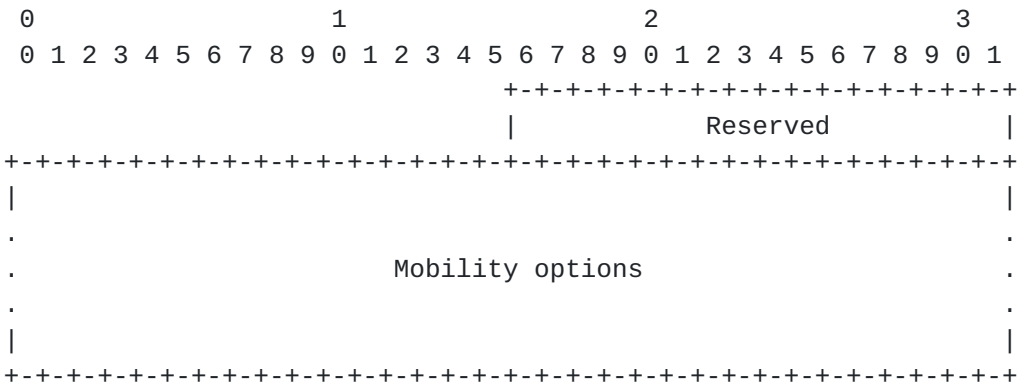
2. Mobility Header Signaling Message

The Mobility Header Signaling message is used by the home agent to signal the mobile node, or vice-versa, that there is an event that requires attention. Signaling messages are sent as described in Section 3.

The message described below follows the Mobility Header format specified in Section 6.1 of [2]:



The Signaling Message uses the MH Type value 8 (TBD). When this value is indicated in the MH Type field, the format of the Message Data field in the Mobility Header is as follows:



Reserved

16-bit field reserved for future use. The value MUST be initialized to zero by the sender, and MUST be ignored by the receiver.

Mobility options

Variable-length field of such length that the complete Mobility Header is an integer multiple of 8 octets long. This field contains zero of more TLV-encoded mobility options. The encoding and format of defined options MUST follow the format specified in Section 6.2 of [2]. The receiver MUST ignore and skip any options with it does not understand.

This specification does not define any options valid for the Signaling message.

If no options are present in this message, no padding is necessary and the Header Len field in the Mobility Header will be set to 0.

3. Sending Signaling Messages

When sending a Signaling message, the sending node constructs the packet as it would any other Mobility Header, except the MH Type field MUST be set to 8 (TBD).

Signaling messages SHOULD be subject to rate limiting in the same manner as is done for ICMPv6 messages [3].

4. Receiving Signaling Messages

Upon receiving a Signaling message, the Mobility Header MUST be verified as specified in [2], specifically:

- The Checksum, MH type, Payload Proto and Header Len fields MUST meet the requirements of Section 9.2 of [2].
- The packet MUST be covered by the IPsec ESP SA in place for Binding Updates and Acknowledgements (Section 5.1 of [2]).

If the packet is dropped due to the above tests, the receiving node MUST follow the processing rules as Section 9.2 of [2] defines. For example, it MUST send a Binding Error message with the Status field set to 2 (unrecognized MH Type value) if it does not support the message type.

5. IANA Considerations

A new Mobility Header type is required for the following new message described in Section 2:

8 Signaling message

6. Security Considerations

As with other messages in [2], the Signaling message MUST use the home agent to mobile node ESP encryption SA for confidentiality protection, and MUST use the home agent to mobile node ESP authentication SA for integrity protection.

7. References

7.1. Normative References

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

[2] Johnson, D. Perkins, C., and Arkko, J., "Mobility Support in IPv6", RFC 3775, June, 2004.

[3] Conta, A. and S. Deering, "Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification", RFC 2463, December 1998.

7.2. Informative references

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