

Generic Notification Message for Mobile IPv4

draft-deng-mip4-generic-notification-message-00.txt

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Reasons

- In some situations, there is a need for Mobile IPv4 entities, such as the HA, FA and MN to send and receive asynchronous notification events during a mobility session. The base Mobile IP Specification [RFC3344] does not have a provision for this.
- In IETF-63 in Paris, the meeting participants indicated interest in defining a generic notification message.

This document

- Defines a generic message and a notification model that can be used by the Mobile IPv4 entities to send various notifications.
- Does not define any specific notification extensions or the actions that the receiving entity is required to perform on receiving the messages.
- Specific extensions and the corresponding handler actions are outside the scope of this document.

Notification Messaging Examples

- HA initiates a notification to MN (FA CoA and Co-located CoA)
- FA initiates a notification to MN.
- HA initiates a notification to FA.

A generic notification message

- is sent by a mobility agent to inform another mobility agent, or a mobile node of MIP-related information. These messages must use the same IP and UDP headers as any previous RRP to the same entity.

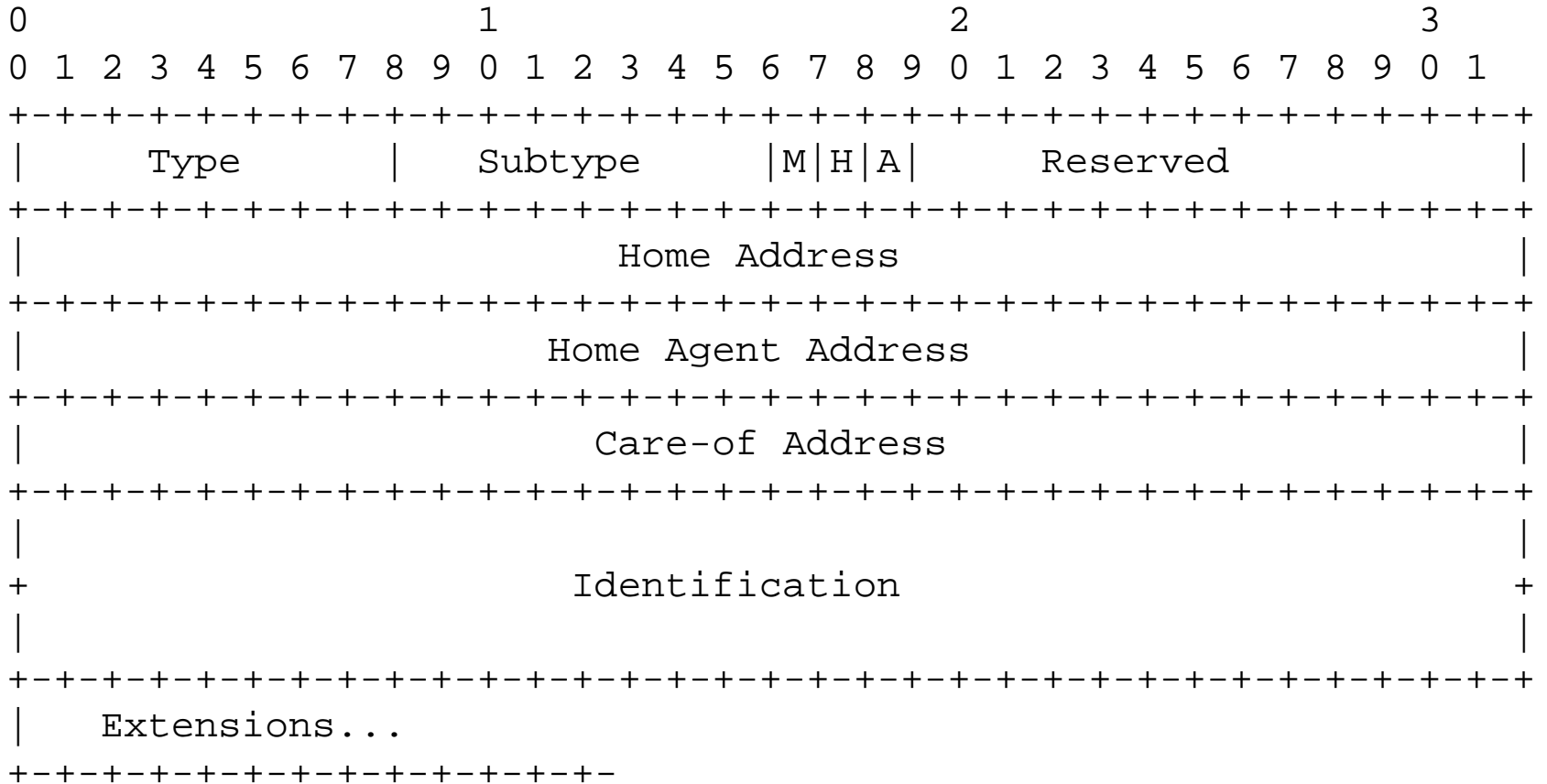
IP fields:

| | |
|---------------------|---------------------|
| Source Address | Sender's address. |
| Destination Address | Receiver's address. |

UDP fields:

| | |
|------------------|--|
| Source Port | <variable> |
| Destination Port | Same as the last Registration Reply/Request message. |

The UDP header is followed by the Mobile IP fields



Flag "A"

- This bit identifies whether the notification message **MUST** be acknowledged by the recipient.

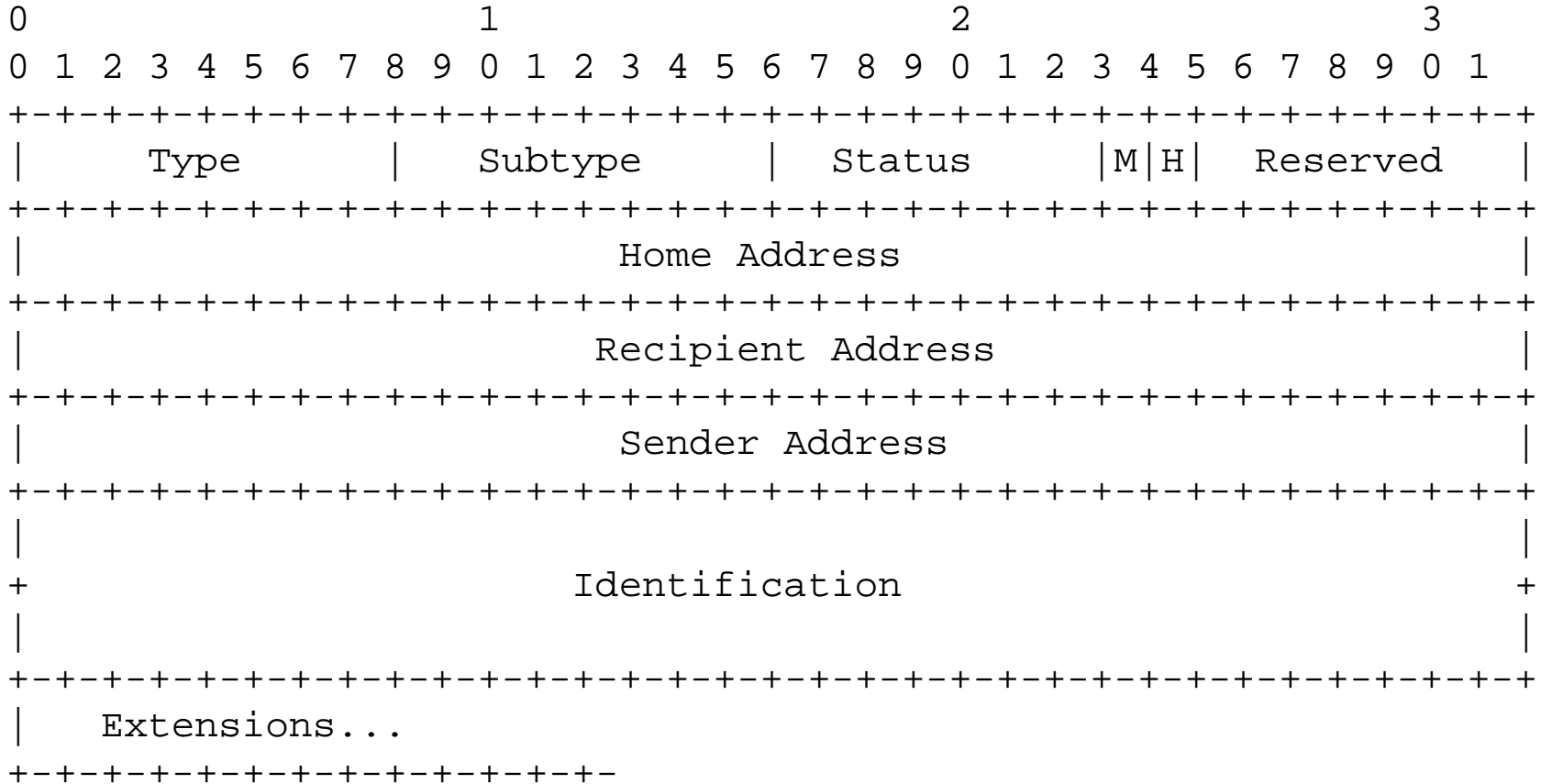
Set to "1" to indicate **MUST** be acknowledged.

Set to "0" to indicate need not be acknowledged.

Generic notification acknowledgement message

- IP fields:
 - Source Address Typically copied from the destination address of the Generic Notification to which the agent is replying.
 - Destination Address Copied from the source address of the generic notification to which the agent is replying.
- UDP fields:
 - Source Port <variable>
 - Destination Port Copied from the source port of the corresponding generic notification.

The UDP header is followed by the Mobile IP fields



Some Issues

- Should we specify that notifications MUST be acknowledged, MAY be acknowledged, or should we use the proposed 'A' (MUST Acknowledge) bit, or some other variation on the theme?
- Support for the case of MNs with co-located CoA which are registered through an FA because of the 'R' bit in the agent advertisements would cause a lot of complications. We propose to not support this case. Acceptable?

Usage Example

- Registration revocation (RFC 3543 functionality) really should have been formulated using a Generic Notification message
- Asynchronous user notification, with the Generic String Extension carrying the message (Out of credit, coming service interruption, ...)
- Asynchronous MN or Agent notification - may be necessary for High-availability scenarios in cases with long registration lifetimes