Using NTP Extension Fields without Authentication

draft-mizrahi-ntp-extension-field-01

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The NTP header includes:
- Fixed fields.
- Optional fields.

Optional fields (NTPv4):
- Message Authentication Code (MAC)
- Extension fields
Extension Field Format (NTPv4)

<table>
<thead>
<tr>
<th>Field Type</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td></td>
</tr>
<tr>
<td>Padding (as needed)</td>
<td></td>
</tr>
</tbody>
</table>
Goal of this Draft

The problem:
- RFC 5905, 5906 imply that extension fields are generic tools for future features, independent of authentication.
- RFC 5905, 5906 imply that extension fields can only be used when a MAC is present.

2 Goals:
- Clarify the ambiguity in RFC 5905 / 5906.
- Update RFC 5905 / 5906 WRT usage of extension fields, allowing a more flexible and unambiguous usage.
Updates to RFC 5905 / 5906

- **Extension field with MAC:**
  Extension field specifies
  - Existence of MAC.
  - MAC algorithm.
  - MAC length.
  - Note: needed for Autokey v2

- **Unknown extension fields:**
  - Receiver ignores the extension field.
  - MAY drop the extension field if causes inconsistent parsing, or if policy requires it.
Changes in the Current Draft

- Danny Mayer has joined as a co-author.

- We have separated the draft into two sections:
  - Section 3 describes how extension fields can be used in the absence of a MAC according to the existing RFC 5905 and 5906.
  - Section 4 defines further extensions for using extension fields, and therefore updates RFC 5905.

- Intended status changed to “Standards Track”.
Next Steps

- Feedback from WG.
- Adopt as WG document.

- Issue an erratum for RFC 5905, rephrasing:
  “In NTPv4, one or more extension fields can be inserted after the header and before the MAC, which is always present when an extension field is present.”