Internet Engineering Task Force
Internet-Draft
Intended status: Standards Track
Expires: September 15, 2016

H. Stenn
Network Time Foundation

March 14, 2016

Network Time Protocol Last Extension Field
draft-stenn-ntp-last-extension-00

Abstract

NTPv4 is defined by RFC 5905 [RFC5905], and it and earlier versions of the NTP Protocol have supported symmetric private key MAC authentication. MACs pre-date the Extension Fields introduced in RFC 5905 [RFC5905], and as the number of Extension Fields grows there is an increasing chance of ambiguity when deciding if the "next" set of data is an Extension Field or a MAC. This proposal defines a new Extension Field which is used to signifiy that it is the last Extension Field in the packet. If present, any subsequent data SHOULD be considered to be a legacy MAC.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at http://datatracker.ietf.org/drafts/current/.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

This Internet-Draft will expire on September 15, 2016.

Copyright Notice

Table of Contents

1. Introduction

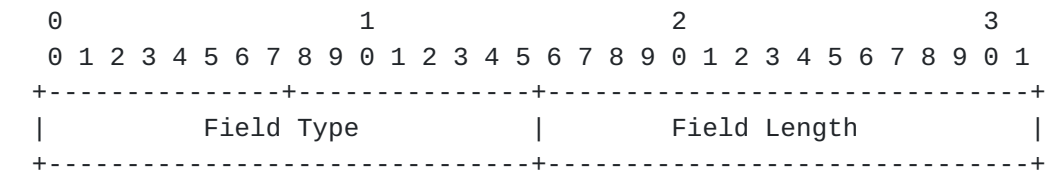
NTPv4 is defined by RFC 5905 [RFC5905], and it and earlier versions of the NTP Protocol have supported symmetric private key MAC authentication. MACs pre-date the Extension Fields introduced in RFC 5905 [RFC5905], and as the number of Extension Fields grows there is an increasing chance of ambiguity when deciding if the "next" set of data is an Extension Field or a MAC. This proposal defines a new Extension Field which is used to signifiy that it is the last Extension Field in the packet. If present, any subsequent data SHOULD be considered to be a legacy MAC.

1.1. Requirements Language

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 [RFC2119].

2. The Last Extension Field Extension Field

Now that multiple extension fields are a possibility, and the chance that additional packet data could be an Extension Field or an old-style MAC, having a means to indicate that there are no more Extension Fields in an NTP packet, and any subsequent data MUST be something else, almost certainly an old-style MAC, is a valuable facility.



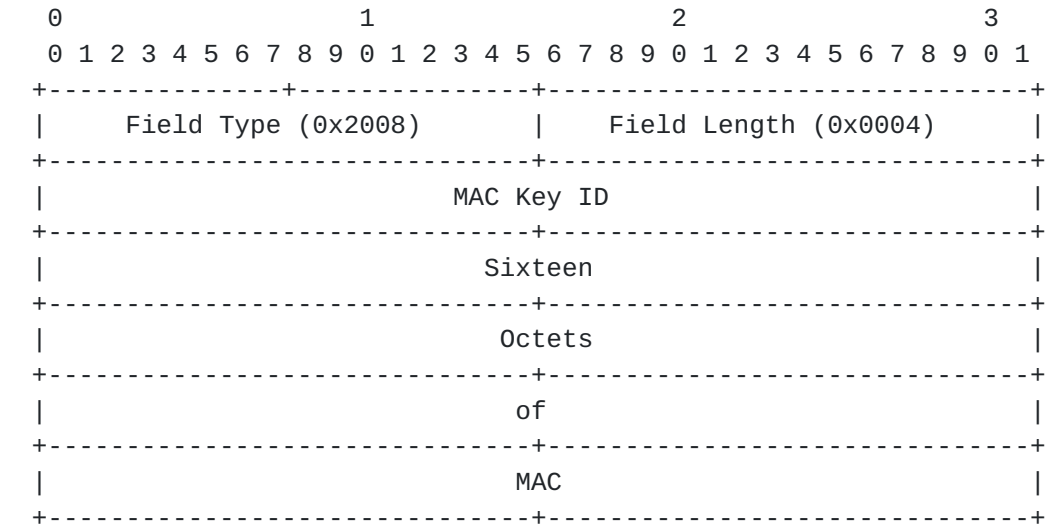
NTP Extension Field: Last Extension Field

Field Type: TBD (Recommendation for IANA: 0x2008 (Last Extension Field, MAC OPTIONAL))

Field Length: 4

Payload: None.

Example:



Example: NTP Extension Field: Last Extension Field

3. Acknowledgements

The author wishes to acknowledge the contributions of Joey Saccadonuts.

4. IANA Considerations

This memo requests IANA to allocate NTP Extension Field Types 0x0007 (I-Do), 0x2007 (I-Do, MAC OPTIONAL), 0x4007 (I-Do Response), and 0x6007 (I-Do Response, MAC OPTIONAL) for this proposal.

5. Security Considerations

Additional information TBD

6. Normative References

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, DOI 10.17487/RFC2119, March 1997, <http://www.rfc-editor.org/info/rfc2119>.

[RFC5905] Mills, D., Martin, J., Ed., Burbank, J., and W. Kasch, "Network Time Protocol Version 4: Protocol and Algorithms Specification", RFC 5905, DOI 10.17487/RFC5905, June 2010, <http://www.rfc-editor.org/info/rfc5905>.

[RFC7384] Mizrahi, T., "Security Requirements of Time Protocols in Packet Switched Networks", RFC 7384, DOI 10.17487/RFC7384, October 2014, <http://www.rfc-editor.org/info/rfc7384>.

Author's Address

Harlan Stenn
Network Time Foundation
P.O. Box 918
Talent, OR 97540
US

Email: stenn@nwtime.org