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Email Author Header Field

Abstract

Internet mail defines the From: header field to indicate the author of the message's content and the Sender: field to indicate who initially handled the message on the author's behalf. The Sender: field is optional if it has the same information as the From: field. This was not a problem until development of stringent protections on use of the From: field. It has prompted Mediators, such as mailing lists, to modify the From: field to circumvent mail rejection caused by those protections. In effect, the From: field has become dominated by its role as a handling identifier.

The current specification augments the altered use of the From: field by specifying the Author: field, which ensures identification of the original author of the message and is not subject to modification by Mediators. This document is published as an Experimental RFC to assess community interest, functional efficacy, and technical adequacy.

Status of This Memo

This document is not an Internet Standards Track specification; it is published for examination, experimental implementation, and evaluation.

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1. Introduction

Internet mail conducts asynchronous communication from an author to one or more recipients and is used for ongoing dialog amongst them. Email has a long history of serving a wide range of human uses and styles, within that simple framework, and the mechanisms for making email robust and safe serve that sole purpose.

Internet mail defines the content header's From: field to indicate the author of the message and the Sender: field to indicate who initially handled the message on the author's behalf [Mail-Fmt]. The Sender: field is optional if it has the same information as the From: field. That is, when the Sender: field is absent, the From: field has conflated semantics as both a handling identifier and a content creator identifier. These fields were initially defined in [RFC733], and making the redundant Sender: field optional was a small, obvious optimization in the days of slower communications, expensive storage, and less powerful computers.

The dual semantics were not a problem until development of stringent protections on use of the From: field. It has prompted Mediators, such as mailing lists, to modify the From: field to circumvent receiver mail rejection caused by those protections. This affects end-to-end usability of email between the author and the final recipients, because mail received from the same author is treated differently by the recipient's software, depending on what path the message followed.

By way of example, mail originating with:

From: Example User <user@example.com>

which is sent directly to a recipient, will show the author's display name correctly and can correctly analyze, filter, and aggregate mail from the author based on their email address. However, if the author sends through a mailing list and the mailing list conducts a common form of From: modification needed to bypass enforcement of stringent authentication policies, then the received message might instead have a From: field showing:

From: Example User via Example List <listname@list.example.org>

The change inserts an operational address, for the Mediator, into the From: field and distorts the field's display name as a means of recording the modification.

In terms of email identification semantics, this is a profound change:

* The result is that the recipient's software will see the message as being from an entirely different author and will handle it separately, such as for sorting or filtering. In effect, the recipient's software will see the same person's email as being from a different address; this includes the person's actual address and each of the mailing lists that person's mail transits.

* Mediators might create a Reply-To: field with the original From: field email address. This facilitates getting replies back to the original author, but it does nothing to aid other processing or presentation done by the recipient's Mail User Agent (MUA) based on what it believes is the author's address or original display name. This Reply-To action represents another knock-on effect (e.g., collateral damage) by distorting the meaning of that header field, as well as creating an issue if the field already exists.

In effect, the From: field has become dominated by its role as a

handling identifier. The current specification augments this altered use of the From: field by specifying the Author: field, which identifies the original author of the message and is not subject to modification by Mediators.

While it might be cleanest to move towards more reliable use of the Sender: field and then to target it as the focus of authentication concerns, enhancement of existing standards works best with incremental additions, rather than with efforts at replacement. To that end, this specification provides a means of supplying author information that is not subject to modification by processes seeking to enforce stringent authentication.

This version is published as an Experimental RFC to assess community interest, functional efficacy, and technical adequacy. See Section 7.

2. Terminology

Terminology and architectural details in this document are incorporated from [Mail-Arch].

Normative language, per [RFC8174]:

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

3. Author Header Field

Author: is a new message header field being defined. It has the same syntax as the From: header field [Mail-Fmt]. As with the original and primary intent for the From: field, the Author: field is intended to contain the email address of the author of the message content. It also can contain the displayable human name of the author.

The [ABNF] for the field's syntax is:

author = "Author:" mailbox-list CRLF

which echos the syntax for the From: header field.

This header field can be added as part of the original message creation process, or it can be added later, by a Mediator, to preserve the original author information from the From: field.

The goal of the Author: field is to reflect information about the original author. However, it is possible that the author's MUA or Mail Submission Agent (MSA) will not create it but that a Mediator might know it will be modifying the From: field and wish to preserve the author information. Hence, it needs to be allowed to create the Author: field for this if the field does not already exist.

Processing of the Author: field follows these rules:

* If an Author: field already exists, a new one MUST NOT be created, and the existing one MUST NOT be modified.

* An author's MUA or MSA MAY create an Author: field, and its value MUST be identical to the value in the From: field.

* A Mediator MAY create an Author: field if one does not already exist, and this new field's value MUST be identical to the value of the From: field at the time the Mediator received the message (and before the Mediator causes any changes to the From: field).

4. Discussion

The Author: header field, here, is intended for creation during

message generation or during mediation. It is intended for use by recipient MUAs, as they typically use the From: field. In that regard, it would be reasonable for an MUA that would normally organize, filter, or display information based on the From: field to give the Author: header field preference.

Original-From: is a similar header field referenced in [RFC5703]. It is registered with IANA, which cites [RFC5703] as the controlling source for the entry. However, that document only has a minimal definition for the field. Also, the field is solely intended for use by Mediators to preserve information from a modified From: field. The current specification can be used during either origination or mediation.

While the basic model of email header fields is highly extensible, there well might be implementation and usability considerations for carrying this field through to end users, such as via [IMAP].

Obviously, any security-related processing of a message needs to distinguish the From: field from the Author: field and treat their information accordingly.

5. Security Considerations

Any header field containing identification information is a source of security and privacy concerns, especially when the information pertains to content authorship. Generally, the handling of the Author: header field needs to receive scrutiny and care, comparable to that given to the From: header field, but preferably not in a way that defeats its utility.

Given the semantics of the Author: header field, it is easy to believe that use of this field will create a new attack vector for tricking end users. However (and perhaps surprisingly), for all of the real and serious demonstrations of users being tricked by deceptive or false content in a message, there is no evidence that problematic content in a header field, which is providing information about message's author, directly contributes to differential and problematic behavior by the end user. (The presents an obvious exercise for the reader to find credible, documented evidence.)

6. IANA Considerations

IANA has registered the Author: header field, per [RFC3864], in the "Provisional Message Header Field Names" registry:

Header field name: Author
Applicable protocol: mail
Status: Provisional
Author/Change controller: Dave Crocker <dcrocker@bbiw.net>
Specification document(s): RFC 9057

7. Experimental Goals

Given that the semantics of this field echo the long-standing From: header field, the basic mechanics of the field's creation and use are well understood. Points of concern, therefore, are with possible interactions with the existing From: field, anti-abuse systems, and MUA behavior, along with basic market acceptance. So the questions to answer while the header field has experimental status are:

* Is there demonstrated interest by MUA developers?

* If MUA developers add this capability, is it used by authors?

* Does the presence of the Author: field, in combination with the From: field, create any operational problems, especially for recipients?

* Does the presence of the Author: field demonstrate additional security issues?

* Does the presence of the Author: field engender problematic behavior by anti-abuse software, such as defeating its utility?

8. References

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