

Network Working Group
Internet-Draft
Intended status: Informational
Expires: January 16, 2014

W. Mills
Yahoo! Inc.
M. Kucherawy
Facebook, Inc.
July 15, 2013

The Require-Recipient-Valid-Since Header Field
draft-wmills-rrvs-header-field-00

Abstract

This document defines an email header field, Require-Recipient-Valid-Since, to provide a method for senders to indicate to receivers the time when the sender last confirmed the ownership of the target mailbox. This can be used to detect changes of mailbox ownership, and thus prevent mail from being delivered to the wrong party.

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 January 16, 2014.

Copyright Notice

Copyright (c) 2013 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to [BCP 78](#) and the IETF Trust's Legal Provisions Relating to IETF Documents (<http://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must include Simplified BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as

described in the Simplified BSD License.

Table of Contents

1.	Introduction	3
2.	Definitions	3
3.	Description	3
4.	Discussion	4
5.	Example	5
6.	Privacy Considerations	5
7.	Security Considerations	6
8.	IANA Considerations	6
9.	References	6
9.1.	Normative References	6
9.2.	Informative References	6
Appendix A.	Acknowledgements	7

1. Introduction

Mailbox Service Providers (MSPs) are public, often free, services that provide email sending and receiving capabilities to users. Some of them have policies that allow for expiration of account names when they have been unused for a protracted period. If an expired account name can be reclaimed, there is a risk of delivery of mail to the wrong party if some message author is unaware of this change of ownership.

This document defines a header field called Require-Recipient-Valid-Since. The content of this header field is a timestamp indicating at what point in time the message author believed the address to be under confirmed ownership of a specific party. If the receiving system observes this field and can determine that the intended recipient mailbox has changed ownership since the provided timestamp, it can decline delivery, preventing possible misdelivery of mail.

2. Definitions

For a description of the email architecture, consult [[EMAIL-ARCH](#)].

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 [[KEYWORDS](#)].

3. Description

The Require-Recipient-Valid-Since header field includes the original intended recipient coupled with a timestamp indicating the most recent date and time when the message author believed the destination mailbox to be under the continuous ownership of a specific party. Presumably there has been some confirmation process applied to establish this ownership; however, the methods of making such determinations is a local matter and outside the scope of this document.

The general constraints on syntax and placement of header fields in a message are defined in Internet Message Format [[MAIL](#)].

Using Augmented Backus-Naur Form [[ABNF](#)], the syntax for the field is:

```
rrvs = "Require-Recipient-Valid-Since:" mailbox; date-time CRLF
```

"CFWS" is defined in [Section 3.2.2](#), "date-time" is defined in [Section 3.3](#), and "mailbox" is defined in [Section 3.4](#), of [[MAIL](#)].

A receiving system that implements this specification determines

whether the named mailbox is based at that receiving system, and has been under continuous ownership since the specified date. If that address is found to be foreign, the header field is ignored. Otherwise, if continuous ownership since the indicated time can be established, the message is delivered normally; if not, the message is rejected. It is preferred that the rejection be enacted as an error response to the Simple Mail Transfer Protocol [[SMTP](#)] "DATA" command verb, but this is not strictly necessary.

When enacting the "DATA" rejection, servers use an SMTP error code (and Enhanced Mail System Status Code [[ESC](#)], if supported) that indicates the intended recipient cannot receive mail for policy reasons. This is done because the mailbox identified in the header field does exist, but there is doubt about the identity of the owner of that mailbox. By contrast, "no such user" errors are more commonly returned in reply to the "RCPT" command verb.

Implementation is expected to be transparent to non participants, since they would typically ignore this header field.

This header field SHOULD NOT be added to a message that is addressed to multiple recipients. It is presumed that an author making use of this field is seeking to protect transactional or otherwise sensitive data intended for a single recipient.

If the agent generating the message uses any kind of message authentication technology, the authentication SHOULD cover this header field if possible. An agent receiving a message bearing this header field that is covered by some kind of authentication SHOULD NOT process it as described above if the authentication does not succeed.

If the receiving system detects that the named mailbox is foreign, it is free to remove the header field prior to relaying it toward its destination.

4. Discussion

The presence of the intended mailbox supports the case where a message bearing this header field is forwarded. The specific use case is as follows:

1. A user subscribes to a service "S" on data "D" and confirms an email address at the user's current location, "A";
2. At some later date, the user intends to leave the current location, and thus creates a new mailbox elsewhere, at "B";

3. The user replaces mailbox "A" with forwarding to "B";
4. "S" constructs a message to "A" claiming that address was valid at date "D" and sends it to "A", which forwards to "B";
5. The receiving MTA at "B" asserts that "B" has not been under constant ownership since "D" and rejects the message.

Some services generate messages with an [RFC5322](#).To field that does not contain a valid address, in order to obscure the intended recipient. For this reason, the original intended recipient is included in this header field.

5. Example

In the following example, "C:" indicates data sent by an SMTP client, and "S:" indicates responses by the SMTP server. Message content is CRLF terminated, though these are omitted here for ease of reading.

```
C: [connection established]
S: 220 server.example.com ESMTP ready
C: HELO client.example.net
S: 250 server.example.com
C: MAIL FROM:<sender@example.net>
S: 250 OK
C: RCPT TO:<receiver@example.com>
S: 250 OK
C: DATA
S: 354 Ready for message content
C: From: Mister Sender <sender@example.net>
  To: Miss Receiver <receiver@example.com>
  Subject: Are you still there?
  Date: Fri, 28 Jun 2013 18:01:01 +0200
  Require-Recipient-Valid-Since: receiver@example.com;
    Sat, 1 Jun 2013 09:23:01 -0700

  Are you still there?
  .
S: 550 5.1.6 receiver@example.com is no longer valid
C: QUIT
S: 221 So long!
```

6. Privacy Considerations

This document proposes a solution to an issue that could cause mail to be unintentionally delivered to the wrong party.

7. Security Considerations

The response of a server implementing this protocol can reveal information about the age of existing email accounts.

8. IANA Considerations

IANA is requested to add the following entry to the Permanent Message Header Field registry, as per the procedure found in [[IANA-HEADERS](#)]:

Header field name: Require-Recipient-Valid-Since
Applicable protocol: mail ([[MAIL](#)])
Status: Standard
Author/Change controller: IETF
Specification document(s): [this document]
Related information:
 Requesting review of any proposed changes and additions to
 this field is recommended.

9. References

9.1. Normative References

- [ABNF] Crocker, D., Ed. and P. Overell, "Augmented BNF for Syntax Specifications: ABNF", [RFC 5234](#), January 2008.
- [IANA-HEADERS] Klyne, G., Nottingham, M., and J. Mogul, "Registration Procedures for Message Header Fields", [BCP 90](#), [RFC 3864](#), September 2004.
- [KEYWORDS] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [MAIL] Resnick, P., "Internet Message Format", [RFC 5322](#), October 2008.
- [SMTP] Klensin, J., "Simple Mail Transfer Protocol", [RFC 5321](#), October 2008.

9.2. Informative References

- [EMAIL-ARCH] Crocker, D., "Internet Mail Architecture", [RFC 5598](#), July 2009.
- [ESC] Vaudreuil, G., "Enhanced Mail System Status Codes", [RFC 3463](#), January 2003.

[Appendix A](#). Acknowledgements

Erling Ellingsen proposed the idea.

Reviews and comments were provided by Gregg Stefancik, Ed Zayas,
(others)

Authors' Addresses

William J. Mills
Yahoo! Inc.

EMail: wmills_92105@yahoo.com

Murray S. Kucherawy
Facebook, Inc.
1 Hacker Way
Menlo Park, CA 94025
USA

EMail: msk@fb.com

