

Internet Engineering Task Force
Internet-Draft
Updates: [5321](#) (if approved)
Intended status: Standards Track
Expires: 10 January 2021

E. Sam
9 July 2020

Forced Redirects in SMTP
draft-sam-smtp-redirects-00

Abstract

This document specifies two new response codes in the SMTP protocol that relate to the redirection of emails meant for one email address to another mail server/email address.

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 <https://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 10 January 2021.

Copyright Notice

Copyright (c) 2020 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 (<https://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	2
1.1.	Terminology	3
2.	Problems with using 551 response code	3
3.	The 557 and 558 response codes	3
3.1.	The 557/X.2.7 Response Code	4
3.2.	The 558/X.2.8 Response Code	5
4.	Security Considerations	5
5.	IANA Considerations	5
6.	References	5
6.1.	Normative References	5
6.2.	Informative References	5
	Author's Address	6

[1.](#) Introduction

In today's digital world, email is the primary way of communication for almost all Internet users. On the internet, there are many services and accounts that require the use of an email address for password recovery, etc. Changing an email address while "letting go" of the old one can be very difficult. For the most part there already is a solution: People trying to switch from one provider to another have to "forward" email from their old mailbox to their new one.

This system presents some problems. First off, the forwarded emails are still going through the original mail server. While some may like the system of silent forwarding (for example; having a support email that goes to a random employee in the support department), some may want to directly give their new address to people sending them mail. If someone switched their email address to prevent their emails from being processed or "seen" by the original mail server, forwarding would be insufficient. In addition, mail server admins may not want to deal with the extra bandwidth/CPU time required to forward/relay emails to another server. The 2nd problem is that the new email address doesn't automatically get updated with all of the accounts or internet services the owner of the email address may have, meaning that many entities wouldn't have any record of the new email and would continue to send emails to the old email. Changing the email address for each service a person has signed up with is nearly impossible, and there are bound to be some that a person would forget to change. To remedy this some opt to send an automated reply

email with their new email address to anyone that emails them; but this system is not standardized and most automated systems fail to recognize a email like this. This document aims to fix these problems by introducing two new reply codes to be used in SMTP sessions.

Sam

Expires 10 January 2021

[Page 2]

Internet-Draft

Forced Redirects in SMTP

July 2020

[1.1.](#) Terminology

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](#).

A email is known as "hard-linked" if the mail server is using the 557/558 reply codes to redirect mail to another email address.

The term "sending MTA" or "sending mail server" means any networked device that tries to send mail to an email address/server, while the term "receiving MTA" or "receiving mail server" is any networked device that is receiving mail from a sending MTA.

A "email address" is a valid forward-path as defined in [[RFC5321](#)].

A email is known as "hard-linked" if the mail server is using the 557/558 reply codes to redirect mail to another email address.

The email given in the 557/558 response code is defined as the "new" email address.

[2.](#) Problems with using 551 response code

The problem with "reclaiming" the 551 response code is that it is now being used for anything from incorrect authentication issues to a response given to when the server is requested to act as an open relay. This document mandates that any sending MTA that understands the 557/558 response codes MUST make an attempt to resend the email to the address given in the 557/558 response. In addition, any response with a 557/558 code MUST include an additional email address. Whether or not the forward-path is required to be included in the 551 response code is unclear in previous RFCs.

[3.](#) The 557 and 558 response codes

The 557 and 558 codes are newly created response codes that are used to "hard-link" email addresses. They both work by responding to a SMTP request with the new email address.

Think of these response codes as a "forced" 551 response; on receiving the 557 or 558 response, the sending mail server **MUST** try to attempt delivery to the new address. This is what makes it different from the 551 response code; most mail clients today just regard 551 as a "failed send". When a email address is "hard-linked" to a new one, the original email should be treated as if it was a invalid/inactive/undeliverable email. However, Clients are still not obligated to update any records as a result of a 557/558.

Sam

Expires 10 January 2021

[Page 3]

Internet-Draft

Forced Redirects in SMTP

July 2020

Servers now have multiple options when it comes to forwarding mail: acknowledge forwarding with the 251 response code, forward silently with the 250 code (what most servers do today), mark message as undeliverable with 550/551, or use the 557/558 response codes. Like with response code 551, receiving MTAs returning a 557/558 **MUST NOT** assume that the client/sending MTA will update any records; but they can assume that they will deliver it to the email specified in the response.

[3.1.](#) The 557/X.2.7 Response Code

This code should be used when a mailbox has permanently moved to a different email address. The function of this code is similar to the HTTP 301 response code. This code is used to indicate that the owner of the mailbox in question has permanently changed their email address to one specified in the error response. When a sending mail client receives this error code, they should send the intended email to the email address specified in the response if they want the email to be delivered. Since this is a permanent change, if the sending MTA (mail transfer agent) is part of a larger system that keeps tracks of emails (for example: a website/app that keeps emails for password recovery), then the record **SHOULD** be updated (but is never obligated to) hold the new email instead of the old email. If a user emails another person and the receiving mail server returns a 557 code, then the server **SHOULD** notify the user about the new email address.

Here is a sample session between two mail servers to showcase the 557 response code.

```
S: 220 smtp.example.com smtp service ready
C: HELO mail.example.net
S: 250 mail.example.net, I'm happy that you came around today
C: MAIL FROM: <postmaster@example.net>
S: 250 ok
C: RCPT TO:<http@example.com>
S: 250 ok
C: RCPT TO:<gopher@example.com>
S: 557 mailbox has moved to <mccahill@example.org> (X.2.7)
```

Client then connects to mail.example.org.

The server MUST include the new email address for mail to be redirected to in the 557 response. It MUST NOT include any other email addresses in the response.

[3.2.](#) The 558/X.2.8 Response Code

This code should be used when a mailbox has TEMPORARILY moved to a different email address, which is similar to the 307 response code in HTTP. This code should be used to indicate that the owner of the mailbox has temporarily moved to a new email address. The reaction to this code is similar to the 557 response code; MTAs should attempt delivery to the new address. However, this code implies that the owner of the email address will remove the "hard-link" at some point, so any services keeping track of emails SHOULD NOT update the old email in their records.

Like the 557 reply code, the response MUST include the new email address in the response and MUST NOT include any other email address, and the sending MTA MUST NOT make any attempt to send the email through the old email server.

[4.](#) Security Considerations

A man in the middle/DNS hijack of a email server could return the 557 return code when an attempt is made to send mail to any email address on the hijacked server. Thus, mail clients should be sure that they

are connecting to the right server. (a DNS/Man in the middle attack would still allow emails to be "intercepted" if the servers are using plain text and forwarding is in place)

5. IANA Considerations

IANA should add the following to the "SMTP Enhanced Status Code" registry:

- * Add 557/X.2.7 "Permanently Moved" response code
- * Add 558/X.2.8 "Temporarily Moved" response code

6. References

6.1. Normative References

[RFC5321] Klensin, J., "Simple Mail Transfer Protocol", [RFC 5321](#), October 2008, <<https://www.rfc-editor.org/info/rfc5321>>.

6.2. Informative References

[RFC3463] Vaudreuil, G., "Enhanced Mail System Status Codes", January 2003, <<https://www.rfc-editor.org/info/rfc3463>>.

Sam	Expires 10 January 2021	[Page 5]
-----	-------------------------	----------

Internet-Draft	Forced Redirects in SMTP	July 2020
----------------	--------------------------	-----------

Author's Address

Ekow Sam

Email: winshell64@gmail.com

