Internet Engineering Task Force
Internet-Draft
Intended status: Informational
Expires: 2 October 2025

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31 March 2025

SMPT VERP Service Extension
draft-nurpmeso-smtp-verp-01

Abstract

This specification makes official D. J. Bernstein’s Variable Envelope Return Paths: VERP.

Status of This Memo

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

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1. Introduction

Since at least 1997 many mailing-list managers (and possibly other email configurations) make use of D. J. Bernstein's Variable Envelope Return Paths, or short, VERP. As he rightfully wrote, on 1997-02-01: _Every application of RFC 1891's ORCPT and ENVID can be handled with VERPs --- easily, reliably, and right now_. (This is DSNs[RFC3461] at the time of this writing.) This specification defines an according SMTP VERP Service Extension. With it, undeliverable mail will reveal the recipient address simply through the return path address.

2. Variable Envelope Return Path service extension

If a SMTP[RFC5321] server announces VERP in the list of EHLO keywords (4.1.1.1, Extended HELLO (EHLO)), then VERP is supported.

3. Additional parameter for MAIL command

If VERP is supported, the extended MAIL command (SMTP[RFC5321], 4.1.1.2, MAIL) takes an additional VERP parameter.

4. Operational behaviour

When a server supports VERP, and the client requested its usage for a particular mail transaction, then it guarantees that each message recipient (SMTP[RFC5321], 4.1.1.2, RECIPIENT (RCPT)) will get a copy of the message with a variable envelope return path.

The VERP is constructed by encapsulating the address of the recipient, separated with a plus sign (U+002B, +), and the commercial at (U+0040, @) being replaced with an equals sign (U+003D, =), in the MAIL sender address, after the senders local-part, before the senders domain.

| For example, a recipient _abc@def_ will be encapsulated in the
| sender address _zyx@wvu_ as _zyx+abc=def@wvu_.

| _Informative remark:_ A sender may include additional variable
| constructs in its address, which must be taken into account when
| constructing the VERP. For example, a recipient _abc@def_ will be
| encapsulated in the sender address _zyx+bounces-1234@wvu_ as
| _zyx+bounces-1234-abc=def@wvu_.

The construction of the VERP happens when either a MTA is encountered along the hops that does not support the VERP service extension, or right before final delivery of an email message to a recipient, whichever comes first.

| _Informative remark:_ This means that a SMTP server which supports
| VERP must take into account the need, and therefore be capable, to
| splice a single message with potentially many recipients into many
| messages with a single recipient and a dedicated VERP.

5. IANA Considerations

This document includes no request to IANA.

6. Security Considerations

Today, as by IETF means, SMTP trace headers etc need to be traversed, or non-standardized, MTA-specific bounce message content has to be parsed in order to find out (the) envelope recipient(s). Furthermore more and more SMTP trace headers are seen which completely hide the according information. With VERP as a standardized extension, bounce processing can be made a reliable task.

7. References

7.1. Normative References

[RFC5321] Klensin, J., "Simple Mail Transfer Protocol", RFC 5321, DOI 10.17487/RFC5321, October 2008, <https://www.rfc-editor.org/info/rfc5321>.

7.2. Informative References

[RFC3461] Moore, K., "Simple Mail Transfer Protocol (SMTP) Service Extension for Delivery Status Notifications (DSNs)", RFC 3461, DOI 10.17487/RFC3461, January 2003, <https://www.rfc-editor.org/info/rfc3461>.

Appendix A. Rationale

This document only specifies VERP for senders. It could also be specified for recipients, to cover more aspects of the referenced DSNs[RFC3461].

This method of creating variable envelope return paths is in active use on the internet for over the quarter of a century. The use of the plus sign and the equals sign as delimiters seem to have not been the cause of problems in real life.

Appendix B. Acknowledgements

Thanks to Wietse Venema of the postfix MTA, for adding VERP support in version 1.1 (released 20020117). The Exim MTA seems to have implemented it pre-Y2K. D. J. Bernstein for documenting VERP, and implementing it in his qmail MTA, back in 1997. (This, however, used different delimiters: it used hyphen-minus and the equals sign, which is a bad choice for other software as list names etc, they often regulary contain hyphen-minus.)

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