

Internet Engineering Task Force (IETF)  
Request for Comments: 9366  
Updates: 3326  
Category: Standards Track  
ISSN: 2070-1721

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March 2023

## Multiple SIP Reason Header Field Values

### Abstract

The SIP Reason header field as defined in RFC 3326 allows only one Reason value per protocol value. Experience with more recently defined protocols shows it is useful to allow multiple values with the same protocol value. This document updates RFC 3326 to allow multiple values for an indicated registered protocol when that protocol defines what the presence of multiple values means.

### Status of This Memo

This is an Internet Standards Track document.

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Information about the current status of this document, any errata, and how to provide feedback on it may be obtained at <https://www.rfc-editor.org/info/rfc9366>.

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### 1. Introduction

The SIP Reason header field as defined in RFC 3326 allows only one Reason value per protocol value. Experience with more recently defined protocols shows it is useful to allow multiple values with the same protocol value [STIRREASONS]. This document updates RFC 3326 to allow multiple values for an indicated registered protocol when that protocol defines what the presence of multiple values means. It does not change the requirement in RFC 3326 restricting the header field contents to one value per protocol for those protocols that do not define what multiple values mean.

## 2. Conventions

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. Update to RFC 3326

The last paragraph of Section 2 of [RFC3326] is replaced as follows:

OLD:

```
| A SIP message MAY contain more than one Reason value (i.e.,
| multiple Reason lines), but all of them MUST have different
| protocol values (e.g., one SIP and another Q.850). An
| implementation is free to ignore Reason values that it does not
| understand.
```

NEW:

```
| A SIP message MAY contain more than one Reason value (i.e.,
| multiple Reason lines). If the registered protocol for the Reason
| value specifies what it means for multiple values to occur in one
| message, more than one value for that protocol MAY be present.
| Otherwise, there MUST be only one value per protocol provided
| (e.g., one SIP and another Q.850). An implementation is free to
| ignore Reason values that it does not understand.
```

## 4. Security Considerations

This document adds no security considerations to the use of SIP. The security considerations in [RFC3326] and those in any registered protocols used in Reason header field values should be considered.

## 5. IANA Considerations

This document has no IANA actions.

## 6. References

### 6.1. 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, <<https://www.rfc-editor.org/info/rfc2119>>.
- [RFC3326] Schulzrinne, H., Oran, D., and G. Camarillo, "The Reason Header Field for the Session Initiation Protocol (SIP)", RFC 3326, DOI 10.17487/RFC3326, December 2002, <<https://www.rfc-editor.org/info/rfc3326>>.
- [RFC8174] Leiba, B., "Ambiguity of Uppercase vs Lowercase in RFC 2119 Key Words", BCP 14, RFC 8174, DOI 10.17487/RFC8174,

May 2017, <<https://www.rfc-editor.org/info/rfc8174>>.

## 6.2. Informative References

### [STIRREASONS]

Wendt, C., "Identity Header Errors Handling for STIR",  
Work in Progress, Internet-Draft, draft-ietf-stir-  
identity-header-errors-handling-08, 25 February 2023,  
<<https://datatracker.ietf.org/doc/html/draft-ietf-stir-identity-header-errors-handling-08>>.

## Acknowledgments

This text is based on discussions at a STIR Working Group interim meeting. Jean Mahoney and Russ Housley provided suggestions that vastly improved the first attempts at assembling these words. Christer Holmberg, Dale Worley, Brian Rosen, Chris Wendt, and Paul Kyzivat provided constructive discussion during SIPCORE Working Group adoption.

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