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C. Holmberg
I. Sedlacek
Ericsson

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Content-ID header field in Session Initiation Protocol (SIP) draft-ietf-sipcore-content-id-03

Abstract

This document specifies the Content-ID header field for usage in the Session Initiation Protocol (SIP). The document also updates RFC 5621, to enable a Content-ID URL to reference a complete message-body and metadata provided by some additional SIP header fields.

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

1.1. Identifying a body part

A SIP message consists of a start-line, one or more header fields, an empty line indicating the end of the header fields, and an optional message-body, as specified in [RFC3261].

The message-body can be a non-multipart message-body or a multipart message-body as specified in [RFC3261].

[RFC5621] defines generic handling of a multipart message-body in a SIP message.

A multipart message-body contains zero, one or several body parts, encoded using [RFC2045] format.

A body part in the multipart message-body is described using header fields such as Content-Disposition, Content-Encoding, and Content-Type, which provide information on the content of the body part, as specified in [RFC5621]. A body part in the multipart message-body

can also contain a Content-ID header field with an ID value uniquely identifying the body part, as specified in [RFC2045].

1.2. Referencing a body part

A SIP header field can reference a body part using a Content-ID URL, as specified in [RFC5621].

The Content-ID URL is specified in [RFC2392]. [RFC2392] specifies how to identify the body part referenced by a Content-ID URL. The Content-ID URL value is included in the Content-ID header field of the body part.

Examples of SIP header fields referencing a body part using a Content-ID URL are:

- [RFC6442] specifies how a Geolocation header field references a body part using a Content-ID URL, for providing location.
- [RFC5368] specifies how a Refer-To header field references a body part using a Content-ID URL, to provide a list of targets.

1.3. Problem statement

It is currently not specified how to uniquely identify a complete message-body of a SIP message using a Content-ID header field, and how to reference a complete message-body using a Content-ID URL.

1.4. Consequences

The examples below shows the consequences of the problem described above.

1.4.1. Example 1

If a UAC sends an INVITE request conveying location as specified in [RFC6442], if the UAC decides not to include an SDP offer, and if the location is conveyed by value, then the UAC needs to include one content only in the INVITE request. This content can be e.g. of the application/pidf+xml MIME type.

However, due to [RFC6442] requiring inclusion of a Geolocation header field referencing the body part with the location information, the UAC includes a multipart message-body with single body part in the INVITE request, and includes the location information of application/pidf+xml MIME type and an associated Content-ID header field in the body part.

1.4.2. Example 2

If a UAC sends an REFER request including a list of targets as specified in [RFC5368], then the UAC needs to include one content only in the REFER request. This content is of the application/ resource-lists+xml MIME type.

However, due to [RFC5368] requiring inclusion of a Refer-To header field referencing the body part containing the list of targets, the UAC includes a multipart message-body with single body part in the REFER request, and includes the list of targets of application/ resource-lists+xml MIME type and an associated Content-ID header field in the body part.

1.5. Solution

In order to solve the problems described above, this document:

- Specifies and registers the Content-ID header field as a SIP header field; and
- Specifies that, when used as a SIP header field, the Content-ID header field identifies the complete message-body, and metadata provided by some additional SIP header fields, of the SIP message; and
- Updates [RFC5621], to enable a Content-ID URL to reference a complete message-body and metadata provided by some additional SIP header fields.

NOTE: In [RFC5621], the Content-ID URL references a specific body part only.

2. Conventions

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 [RFC2119].

3. Content-ID header field

3.1. Introduction

This section defines the usage of the Content-ID header field for SIP.

3.2. Syntax

The ABNF for the Content-ID header fields is:

```
Content-ID = "Content-ID" HCOLON msg-id

msg-id     = "<" id-left "@" id-right ">"
```

NOTE: id-left and id-right are specified in [RFC5322].

NOTE: When used in a SIP header field, the msg-id syntax has been simplified compared to the syntax in [RFC5322].

3.3. Semantics

The Content-ID header field included in the header fields of a SIP message identifies the message-body of the SIP message, and the metadata provided by:

- a MIME-Version header field, if included in the header fields of the SIP message; and
- any 'Content-' prefixed header fields (including the Content-ID header field itself) included in the header fields of the SIP message.

The Content-ID header field can be included in any SIP message which is allowed to contain a message-body.

3.4. Procedures

3.4.1. UA procedures

A UA MAY include a Content-ID header field in any SIP message which is allowed to contain a message-body.

A UA MUST NOT include a Content-ID header field in any SIP message which is not allowed to contain a message-body.

The UA MUST set the value of the Content-ID header field to a globally unique value.

3.4.2. Proxy procedures

A proxy MUST NOT add a Content-ID header field in a SIP message.

A proxy MUST NOT modify a Content-ID header field included in a SIP message.

A proxy MUST NOT delete a Content-ID header field from a SIP message.

4. Update to RFC 5621

This section updates section 9.1 of [RFC5621], by allowing a Content-ID URL to reference a message-body and the related metadata (Section 3.3), in addition to allowing a reference to a body part.

OLD TEXT:

> Content-ID URLs allow creating references to body parts. A given Content-ID URL [RFC2392], which can appear in a header field or within a body part (e.g., in an SDP attribute), points to a particular body part.

NEW TEXT:

> Content-ID URLs allow creating references to body parts or message-bodies (and the header fields describing the message-bodies). A given Content-ID URL [RFC2392], which can appear in a header field or within a body part (e.g., in an SDP attribute), points to a particular body part or the message-body (and the header fields describing the message-body).

5. Security considerations

The Content-ID header field value MUST NOT reveal sensitive user information.

If the message-body associated with the Content-ID header field is an encrypted body, it MUST NOT be possible to derive a key that can be used to decrypt the body from the Content-ID header field value.

6. IANA considerations

This specification registers a new SIP header field according to the procedures in [RFC3261].

6.1. Header field

[RFC EDITOR NOTE: Please replace XXXX with the RFC number of this document when publishing]

RFC Number: RFC XXXX

Header Field Name: Content-ID

Compact Form: none

7. Change log

[RFC EDITOR NOTE: Please remove this section when publishing]

Changes from draft-ietf-sipcore-content-id-02

- Editorial changes based on comments from Paul Kyzivat.

Changes from draft-ietf-sipcore-content-id-01

- Update to RFC 5621 added.
- Editorial changes.

8. Normative references

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[RFC2392] Levinson, E., "Content-ID and Message-ID Uniform Resource Locators", RFC 2392, DOI 10.17487/RFC2392, August 1998, <http://www.rfc-editor.org/info/rfc2392>.

[RFC5322] Resnick, P., Ed., "Internet Message Format", RFC 5322, DOI 10.17487/RFC5322, October 2008, <http://www.rfc-editor.org/info/rfc5322>.

[RFC3261] Rosenberg, J., Schulzrinne, H., Camarillo, G., Johnston, A., Peterson, J., Sparks, R., Handley, M., and E. Schooler, "SIP: Session Initiation Protocol", RFC 3261, DOI 10.17487/RFC3261, June 2002, <http://www.rfc-editor.org/info/rfc3261>.

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Authors' Addresses

Christer Holmberg
Ericsson
Hirsalantie 11
Jorvas 02420
Finland

Email: christer.holmberg@ericsson.com

Ivo Sedlacek
Ericsson
Sokolovska 79
Praha 18600
Czech Republic

Email: ivo.sedlacek@ericsson.com