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REFER extensions
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Abstract

The REFER extensions presented in this draft are usage of Feature parameters with REFER and the ability to suppress an implicit subscription with REFER. The extensions have been discussed in SIPPING WG and are targeted to become SIP WG items.

Table of Contents

1. Terminology 3
2. Introduction 4
3. Using Feature Parameters with REFER 5
3.1 Introduction 5
3.2 Definition 5
3.3 Examples 5
3.3.1 isfocus Usage 5
3.3.2 Media Type Usage 5
4. Suppressing the REFER Implicit Subscription 6
4.1 Introduction 6
4.2 Motivation 6
4.3 Definition 6
4.4 Preventing Forking of REFER Requests 7
4.5 Example 7
5. IANA Considerations 8
6. Security Considerations 9
7. Acknowledgements 10
8. References 10
Authors' Addresses 10
Intellectual Property and Copyright Statements 12

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 [1].

To simplify discussions of the REFER method and its extensions, three new terms are being used throughout the document:

- REFER-Issuer: the UA issuing the REFER request
- REFER-Recipient: the UA receiving the REFER request
- REFER-Target: the UA designated in the Refer-To URI

2. Introduction

The REFER extensions presented in this draft are usage of Feature parameters with REFER and the ability to suppress an implicit subscription with REFER. The extensions have been discussed in SIPPING WG and are targeted to become SIP WG items.

3. Using Feature Parameters with REFER

3.1 Introduction

This document extends REFER method defined in RFC-3515 [3] to be used with feature parameters defined in [5].

3.2 Definition

The Refer-To BNF from RFC-3515:

Refer-To = ("Refer-To" / "r") HCOLON (name-addr / addr-spec) * (SEMI gener

is extended to:

Refer-To = ("Refer-To" / "r") HCOLON (name-addr / addr-spec) * (SEMI refer
refer-param = generic-param / feature-param

where feature-param is defined in Section 9 of [5].

3.3 Examples

3.3.1 isfocus Usage

The syntax below shows how the "isfocus" feature parameter can be used by REFER-Issuer to tell the REFER-Recipient that the REFER-Target is a conference focus and, consequently, sending an INVITE will bring the REFER-Recipient into the conference:

Refer-To: sip:conf44@example.com;isfocus

3.3.2 Media Type Usage

The syntax below shows how a REFER-Issuer can tell the

REFER-Recipient that the REFER-Target supports audio and video and, consequently, that a video and audio session can be established by sending an INVITE to the REFER-Target:

Refer-To: sip:videophone@example.com;audio;video

4. Suppressing the REFER Implicit Subscription

4.1 Introduction

The REFER specification specifies that every REFER creates an implicit subscription between the REFER-Issuer and the REFER-Recipient. This document defines a new option tag, "norefersub", which specifies that an implicit subscription for event package refer should not be created as a result of accepting this REFER request.

4.2 Motivation

The REFER specification mandates that every REFER creates an implicit subscription between the REFER-Issuer and the REFER-Recipient. This subscription results in at least one NOTIFY being sent from the REFER-Recipient to the REFER-Issuer. The REFER-Recipient may choose to cancel the implicit subscription with this NOTIFY. The REFER-Issuer may choose to cancel this implicit subscription with an explicit SUBSCRIBE (Expires: 0) after receipt of the initial NOTIFY

or by sending a 481 response to this initial NOTIFY request.

One purpose of requiring the implicit subscription and initial NOTIFY is to allow for the situation where the REFER request gets forked and the REFER-Issuer needs a way to see the multiple dialogs that may be established as a result of the forked REFER. This is the same approach used to handle forking of SUBSCRIBE [4] requests. Where the REFER-Issuer explicitly specifies that forking not occur, the requirement that an implicit subscription be established is unnecessary.

Another purpose of the NOTIFY is to inform the REFER-Issuer of the progress of the SIP transaction that results from the REFER at the REFER-Recipient. In the case where the REFER-Issuer is already aware of the progress of the requested operation, such as when the REFER-Issuer has an explicit subscription to the dialog event package at the REFER-Recipient, the implicit subscription and resultant NOTIFY traffic related to the REFER can create an unnecessary network overhead.

4.3 Definition

This document defines a new option tag, "norefersub", which specifies that an implicit subscription for event package refer should not be created as a result of accepting this REFER request.

The "norefersub" option tag MUST be used by the REFER-Issuer only when the REFER-Issuer can be certain that the REFER request will not

be forked.

The REFER-Issuer can place the "norefersub" option tag either in the Require header or in the Supported header of the REFER request, subject to application requirements.

If the REFER-Issuer inserts the option tag in the Supported header but the REFER-Recipient doesn't grant the suggestion, an implicit subscription is created as in default case.

If the REFER-Issuer inserts the option tag in the Require header but the REFER-Recipient is not willing to grant the request, the REFER request is rejected.

If the REFER-Recipient is willing to grant the "norefersub" behavior for the issued REFER request, it MUST insert a Supported: norefersub header in the 2xx response to the REFER-Issuer. In this case no dialog is created.

4.4 Preventing Forking of REFER Requests

The REFER specification allows for the possibility of forking a REFER request which is sent outside of an existing dialog. The REFER-Issuer can ensure that REFER doesn't get forked by sending REFER to a REFER-Recipient which has GRUU properties according to definitions of [7].

4.5 Example

An example of REFER which suppresses the implicit subscription is shown below:

```
REFER sip:pc-b@tradewind.com SIP/2.0
Via: SIP/2.0/TCP issuer.tradewind.com;branch=z9hG4bK-a-1
From: <sip:a@tradewind.com>;tag=1a
To: <sip:pc-b@tradewind.com>
Call-ID: 1@issuer.tradewind.com
CSeq: 234234 REFER
Max-Forwards: 70
Refer-To: <sip:c@tradewind.com;method=INVITE>
Require: norefersub
Accept-Contact: *;audio;require
Contact: sip:a@issuer.tradewind.com
Content-Type: message/sipfrag
Content-Id: <1239103912039@issuer.tradewind.com>
Content-Length: ...
```

5. IANA Considerations

This document defines a new option tag, "norefersub", which specifies that an implicit subscription for event package refer should not be created as a result of accepting this REFER request. This option tag is only meaningful for the REFER request defined in RFC3515.

6. Security Considerations

This extension doesn't introduce new security threads beyond those identified and addressed in the core SIP specifications.

7. Acknowledgements

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8 References

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