Requirements for Session Initiation Protocol (SIP) Exploder Invocation
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Abstract

This document describes the need for SIP exploders and provides requirements for their invocation.
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1. Introduction

Some applications require that, at a given moment, a SIP UA performs a similar transaction with a number of remote UAs. For example, an instant messaging application that needs to send a particular message (e.g., "Hello folks") to n receivers needs to send n MESSAGE requests; one to each receiver.

When the transaction that needs to be repeated consists of a large request and/or the number of recipients is high, the access network of the UA needs to carry a considerable amount of traffic. Completing all the transactions on a low-bandwidth access would require a long time. This is unacceptable for some applications.

A solution to this problem consists of introducing exploders in the network. The task of an exploder is to receive a request from a UA and send a number of similar requests to a number of destinations. Once the requests are sent, the exploder needs to inform the UA about their status. Effectively, the exploder behaves as a B2BUA.

Note that resource lists, as described in [2], already use SIP exploders for SUBSCRIBE transactions. However, the set of destinations needs to be preconfigured using out-of-band mechanisms (e.g., XCAP).

The Advanced Instant Messaging Requirements for SIP [3] also mentions the need for exploders for MESSAGE transactions:

"REQ-GROUP-3: It MUST be possible for a user to send to an ad-hoc group, where the identities of the recipients are carried in the message itself."

The remainder of this document provides requirements for a potential mechanism that would allow UAs to invoke exploders in an efficient manner.

2. Terminology

In this document, the key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" are to be interpreted as described in BCP 14, RFC 2119 [1] and indicate requirement levels for compliant implementations.

3. Requirements

1. The invocation mechanism MUST NOT be request specific.
2. The invocation mechanism SHOULD NOT require more than one RTT.

3. The exploder MUST be able to inform the invoking UA about the status of the transactions initiated by the exploder.

4. The UA MUST be able to provide credentials to the exploder so that the exploder can use them to prove to the destinations that it is sending requests on behalf of the UA.

5. The set of destinations provided to the exploder MAY consist of a single destination or multiple ones.

6. When handling requests that establish sessions (e.g., INVITE), the exploder MAY get involved in the session (e.g., perform media manipulations) acting as a B2BUA.

4. Security Considerations

Requirements related to security are considered in Section 3.

5. Acknowledges

Duncan Mills and Miguel A. Garcia-Martin supported the idea of 1 to n MESSAGEs.

Normative References


Informational References


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