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M. Garcia-Martin
A. Niemi
Nokia

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Requirements for Private Messaging in Centralized Conference Environments
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Abstract

The Message Session Relay Protocol (MSRP) defines a mechanism for sending session-based instant messages. The session is negotiated using the Session Initiation Protocol (SIP) and the Session Description Protocol (SDP). MSRP can be used in a centralized conference just as any other media type. This document provides requirements in support for MSRP in centralized conferences, including requirements to provide private instant messages within a

conference.

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1. Introduction

The Message Session Relay Protocol (MSRP) [I-D.ietf-simple-message-sessions] defines a mechanism for sending a series of instant messages within a session. The Session Initiation Protocol (SIP) [RFC3261] allows for two peers to set up such a session.

In another application of SIP, a user agent can join in a multi-party session or centralized conference that is hosted by a specialized user agent called a conference focus [I-D.ietf-sipping-conferencing-framework]. Such a conference can naturally involve MSRP as well as other media types. The conference focus is responsible for relaying session-based instant messages received from one participant to all the other participants.

A session-based instant messages conference is sometimes also referred to as a chat room, and the conference focus is sometimes referred to as the chat room server. Several of these types of systems already exist in the Internet. Participants in a chat room can use a rich set of features, such as the ability of sending private instant messages to one or more participants, or to establish sub-conferences within the existing conference.

The aim of this document is provide requirements in support for conferences of session-based instant messages, private messaging, and sidebars. The aim of this document is to trigger the discussion and create solutions according to these requirements.

2. 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 [RFC2119] and indicate requirement levels for compliant implementations.

This memo deals with a particular case of tightly coupled SIP conferences where the media exchanged consist of session-based instant messages. Unless otherwise noted, we use the terminology defined in the Framework for Conferencing with SIP [I-D.ietf-sipping-conferencing-framework] applied to the scope of this document. In addition to that terminology, we introduce some new terms:

Nickname: a descriptive name associated to a participant. A nickname is non-routable pseudonym that the participant chooses for the purpose of additional identification towards the rest of the participants.

Session-based instant messages conference: a particular case of a tightly coupled conference (as defined by the Framework for Conferencing with SIP [I-D.ietf-sipping-conferencing-framework]) where the media exchanged between the participants consist of session based instant messages transported with MSRP [I-D.ietf-simple-message-sessions]. Typically a session based message conference is referred to as a chat room.

Chat room: a synonym of a session-based instant messages conference.

Creator or message creator: the user that originally created a message and sent it to the chat room for further distribution. The creator can be identified by a SIP URI or a nickname.

MSRP switch: an MSRP endpoint that receives MSRP messages and redistributes them to each conference participant as appropriate. An MSRP switch has a similar role as a mixer (as defined by RFC 3550 [RFC3550], however an MSRP switch does not combine different input media streams; it merely distributes incoming MSRP messages to the conference participants. The media mixer function defined by the Framework and Data Model for Centralized Conferencing [I-D.ietf-xcon-framework] is slightly different from the one define in RFC 3550 [RFC3550], in the sense that it does not necessarily allow combination of media, therefore, allowing an MSRP switch to be considered a logical subfunction of such media mixer. For clarity this document defines the term MSRP switch to refer to that logical subfunction within the media mixer.

Private instant message: a session based instant message whose intended list of destinations is explicitly signaled and is a subset of the conference participants, rather than all the participants of the conference.

3. Motivation

Although conference frameworks describing many types of conferencing applications already exist, such as the Framework and Data Model for Centralized Conferencing [I-D.ietf-xcon-framework] and the Framework for Conferencing with SIP [I-D.ietf-sipping-conferencing-framework], conferences of session-based messages do not seem to be covered in detail. It seems beneficial to provide a set of requirements that can lead to the creation of features that enhance conferences for session-based messages in order to compete in functionality with existing session-based instant messages conference systems.

4. Requirements

These requirements assume a centralized conference architecture, such as the one defined by the Framework and Data Model for Centralized Conferencing [I-D.ietf-xcon-framework] or the Framework for Conferencing with SIP [I-D.ietf-sipping-conferencing-framework]. We assumed the existence of a focus and an MSRP switch. Assuming so, we define the following requirements:

4.1 General Requirements

REQ-GEN-1: There must be a general mechanism where by a participant of a conference sends session based instant messages to the rest of the participants of the conference.

REQ-GEN-2: The session based instant message media in a conference must not interfere with other potential media in the same conference: the conference can host other medias than session based instant messages.

REQ-GEN-3: The mechanisms developed to support these requirements should make use of the mechanisms developed within the context of the Framework and Data Model for Centralized Conferencing [I-D.ietf-xcon-framework].

REQ-GEN-4: New mechanisms that may be required to support these requirements should be developed in consideration of applicability to other media types, as appropriate.

REQ-GEN-5: It must be possible that participants join or leave a particular session-based instant messages conference.

REQ-GEN-6: It must be possible to inform the creator of a session based instant messages conference about the acceptance of the message for distribution. Note that there is no requirement to inform the creator that the message has been delivered to each participant.

REQ-GEN-7: It must be possible to get the time-stamp at which the MSRP switch dispatched a message.

REQ-GEN-8: It must be possible that a participant uses the conference service in conjunction with an anonymizing function, in particular, it must be possible that the sender hides their permanent identity (e.g., SIP AOR) or routing towards their identity to the rest of the conference participants but still be able to receive private messages from other participants.

REQ-GEN-9: On sending a session based message to the conference it must be possible that a message creator discloses one of their non-routable identities (such as a nickname) to the MSRP switch.

REQ-GEN-10: On sending a session based message to the conference it must be possible that a message creator indicates the MSRP switch whether to disclose or not their non-routable identity (such as a nickname) to the rest of the participants.

REQ-GEN-11: Providing that the creator of a message is willing to disclose their permanent routable identity, the MSRP mixer must deliver the creator's permanent routable identity to each recipient.

REQ-GEN-12: Providing that the creator of a message is willing to disclose their nickname, the MSRP mixer must deliver the creator's nickname to each recipient.

REQ-GEN-13: It must be possible to set up a sidebar conference with one or more participants of the conference.

REQ-GEN-14: Mechanisms should optimize the efficiency of the MSRP switch when it manipulates a session based instant message.

4.2 Private Messaging Requirements

REQ-PRIV-1: It must be possible that the creator of a message sends a message to one or more conference participants (a subset of the conference roster), as opposed to the whole conference roster (a.k.a. a private instant message).

REQ-PRIV-2: In order to preserve the "instant" experience of the user, the mechanism developed to send private instant messages should not impose an more than the following delay in the delivery of the messages, in comparison with messages addressed to the whole conference roster:

* the first private message to a particular recipient should, on average, take no more than 500 milliseconds longer than a message to the conference as a whole.
* subsequent private messages to a particular recipient should, on the average, take no more than 50 milliseconds longer than a message to the conference as a whole.

REQ-PRIV-3: A conference participant must be able to determine the target of the received message. For instance, a conference participant that receives a session based message must be able to determine whether the message was addressed to the whole conference roster, a sidebar conference or just a subset of the roaster (private messages).

REQ-PRIV-4: On sending private messages, it must be possible that the creator sends private messages to participants who have only revealed their nickname, but not their permanent routable identity.

REQ-PRIV-5: It must be possible that the MSRP switch is a contributor that sends messages to the participants (e.g., message of the day, welcome message, server is shutting down, etc.)

REQ-PRIV-6: A session based instant messages conference or sidebar conference can be characterized with a topic whose purpose is to identify the subject of conversation.

REQ-PRIV-7: A user with the appropriate privileges must be able to set and modify the topic of the conference or sidebar conference.

5. Acknowledgements

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6. Normative References

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Authors' Addresses

Miguel A. Garcia-Martin
Nokia
P.O. Box 407
NOKIA GROUP, FIN 00045
Finland

Phone: +358 50 480 4586
Email: miguel.an.garcia@nokia.com

Aki Niemi
Nokia
P.O. Box 407
NOKIA GROUP, FIN 00045
Finland

Phone: +358 50 389 1644
Email: aki.niemi@nokia.com

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