

SIP Action Referral

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Background

- Some applications need a mechanism to remotely ask a UA to perform certain tasks.
- The REFER method is typically used for that, but the method is limited as it does not support the following:
 - It cannot be used to request a UA to respond to a request, e.g. answer a call, reject a call.
 - It cannot be used to request a UA to mute a call
 - It cannot be used to request a UA to transfer a file

Extending REFER

- The SIP Action Referral extends the REFER method:
 - Allows the request of an **Action** on a UA, by explicitly allowing the Refer-To header field to contain a URN
 - The REFER recipient is not required to contact a third party to complete the action

What is an Action?

- An **action** is an external event that triggers an event or a series of events that modify different states of a UA
 - e.g. SIP state, UI, etc.
- An action can be triggered either in the context of an existing dialog or outside the context of any existing dialog.
- An action does not necessarily result on sending a SIP request.

URN Structure

- This document defines the **sip-action** namespace.
- The Action URN includes the action name, and may be followed by a semi-colon and additional action-specific parameters.
- The action name might consist of a number of categories.
 - Example URN: **urn:sip-action:call:answer**
- This document defines the following categories:
 - **call**: to allow access to call actions available on a SIP UA.
 - **conference**: to allow access to conference actions available on a SIP UA.

Use Cases

- **Third-Party/Proxy Applications**
 - SIP Action Referral is useful for a wide range of third party or proxy applications that need to remotely control or influence a User Agent
- **Loosely Coupled UAs**
 - SIP Action Referral is useful for collections of loosely coupled User Agents which would like to present a coordinated user experience.
 - We believe that the SIP Action Referral mechanism can help in most, if not all, the use cases described in the **Disaggregated Media** draft (See backup slides)

What's Next?

- Adoption
 - We are asking the SPLICES WG to adopt this work, because we believe that this is the most appropriate WG for this work, and that the mechanism defined by this draft is a key tool for most uses cases in this WG
- De-coupling
 - We want this draft to be de-coupled from the other SPLICES drafts to allow it to progress quickly, to later allow other drafts to define new actions for other applications.
- Open Issue
 - REFER v.s. New SIP method

Backup Slides

Open Issue

- The REFER method seems to be already overloaded with various capabilities. The following draft describes **The Five Meanings of the REFER Method**
 - <http://tools.ietf.org/html/draft-worley-sip-many-refers-00>
- The REFER method has other limitations that prevents it from being the ideal method for application level interaction. The following are some of these limitations:
 - The body of the NOTIFY is always message/sipfrag and any application data will be delivered in the body of the sipfrag message.
 - The referral progress indication is inside the body of the NOTIFY method, instead of headers in the NOTIFY method.
 - The referral progress indications for non-SIP resources are not clearly defined and use SIP progress indications.
 - Implicit subscription is used, but explicit subscription is not allowed.
 - There is no way for the REFER-Issuer to ask the REFER-Recipient to keep the dialog alive after the referral completion.
- **Should a new SIP method be defined to address these limitations?**

Showing a Pre-recorded Video During a Conversation

```
[Phone A          IPTV]          Phone B
-----
<=====> audio
```

```
REFER Refer-To: urn:sip-action:file:video:play
           ;file=filename ;target-dialog=dialog1
```

```
----->
```

```
202
```

```
<-----
```

Use whatever protocol to establish a video session with party B. In this case, SIP is used to establish the session.

```
INVITE SDP sendonly video
```

```
Target-Dialog: dialog1
```

```
----->
```

```
OK
```

```
<-----
```

```
ACK
```

```
----->
```

```
=====> video
```

```
NOTIFY
```

```
<-----
```

```
200 OK
```

```
----->
```

Sending a File from a PC During a Conversation

[Phone A PC] Phone B

<=====> audio

```
REFER Refer-To: urn:sip-action:file:transfer
           ;file=filename ;target-dialog=dialog1
```

----->

202

<-----

The PC transfers the file using whatever protocol

```
NOTIFY [200 OK]
```

<-----

200 OK

----->

Including Live Video in a Conversation

```
[Phone A          PC]          Phone B
-----
<=====> audio

REFER Refer-To: urn:sip-action:video:play
      ;target-dialog=dialog1
      ;direction=sendrecv|sendonly|recvonly
----->
202
<-----
          INVITE
          ----->
          OK
          <-----
          ACK
          ----->
          =====> video

NOTIFY
<-----
200 OK
----->
```