

A Control Framework for the Session Initiation Protocol

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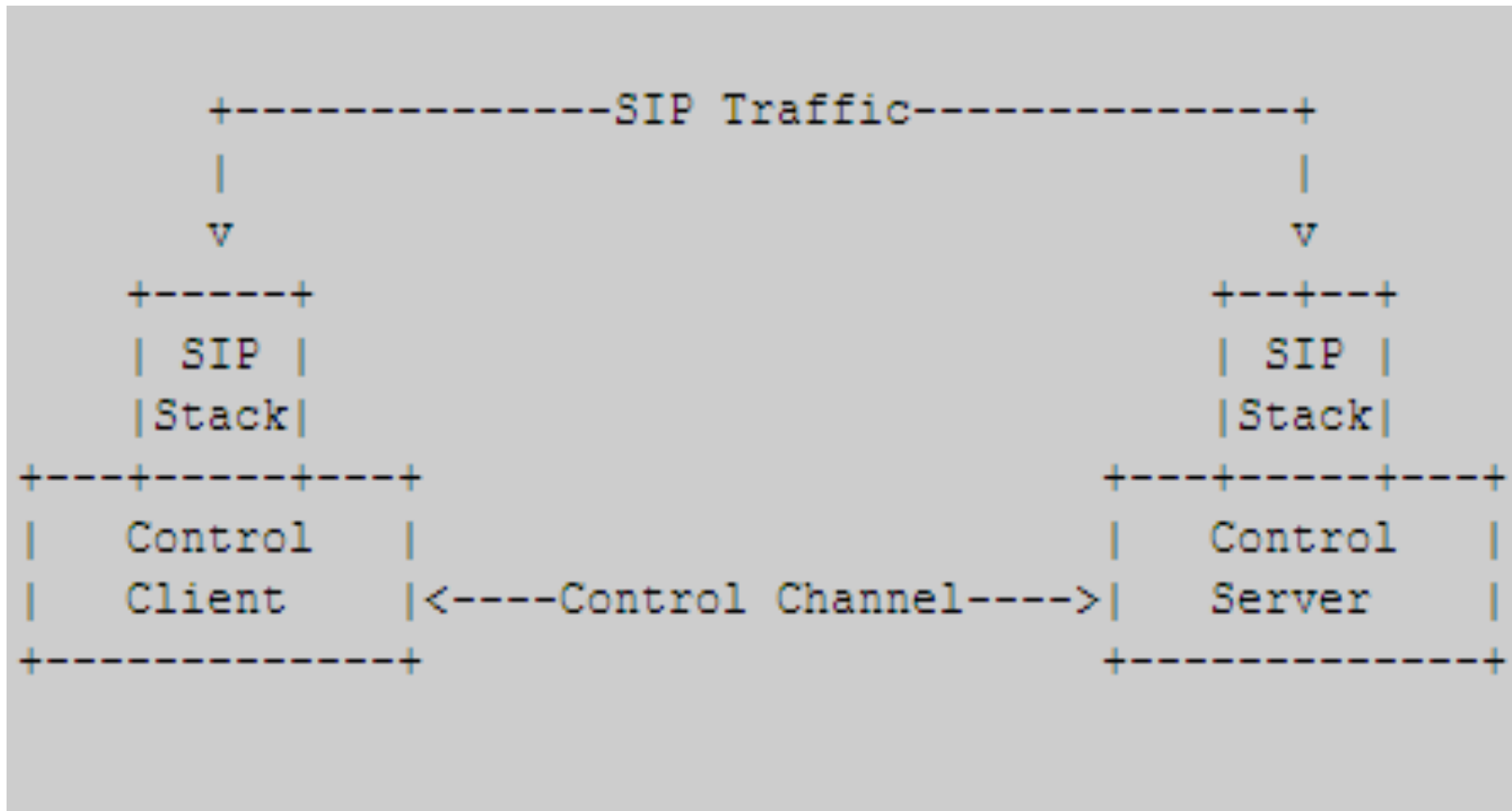
<http://www.ietf.org/internet-drafts/draft-boulton-sip-control-framework-05.txt>

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SIP Control Framework

- First version released in December 2005 – now on version 05
 - Discussed on MediaCtrl mailing list
- Provides generic framework using SIP to establish a reliable connection between two entities
 - Uses SIP for session initiation and management
 - Uses SDP and COMEDIA for connection negotiation and establishment
 - Defines primitives exchanged over connection
 - Defines Control Package extension mechanism for specific use of the Control Framework (similar to RFC 3265)

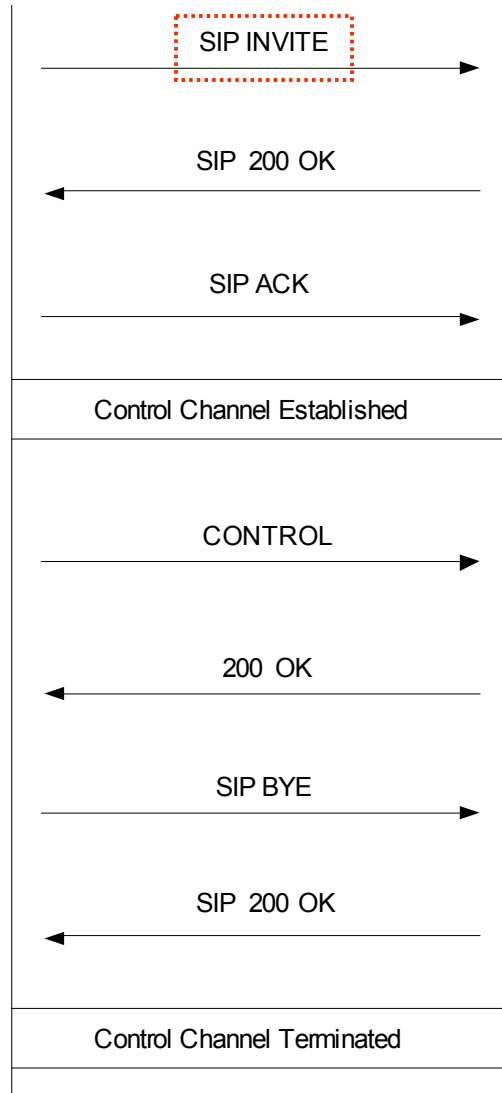
Basic Architecture (single channel)



SIP Message Flow 1/2

Control Client

Control Server



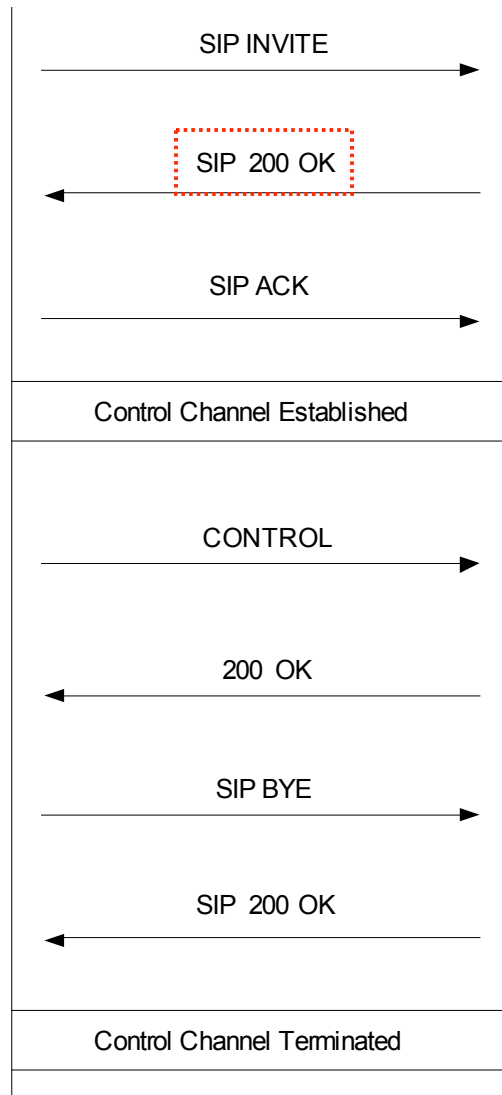
```
INVITE sip:External-Server@example.com SIP/2.0
To: <sip:External-Server@example.com>
From: <sip:Client@example.com>;tag=64823746
Require: escs
Control-Packages: <example-package>
Call-ID: 7823987HJHG6
Content-Type: application/sdp

v=0
o=originator 2890844526 2890842808 IN IP4 controller.example.com
s=-
c=IN IP4 controller.example.com
m=application 7575 TCP/ESCS
a=setup:active
a=connection:new
```

SIP Message Flow 2/2

Control Client

Control Server



```
SIP/2.0 200 OK
To: <sip:External-Server@example.com>;tag=28943879
From: <sip:Client@example.com>;tag=64823746
Call-ID: 7823987HJHG6
Content-Type: application/sdp

v=0
o=originator 2890844526 2890842808 IN IP4 controller.example.com
s=-
c=IN IP4 mserver.example.com
m=application 7563 TCP/ESCS
a=setup:passive
a=connection:new
```

Control Package Extension Mechanism

- Control packages must follow Section 10 of Framework Document:
 - Control package name (with version)
 - Define message usage with framework primitives
 - CONTROL messages
 - REPORT messages (including event messages)
 - Common XML: indicate whether “conf-id” and/or “connection-id” attribute support is required

Basic IVR Control Package

- <http://www.ietf.org/internet-drafts/draft-boulton-ivr-control-package-03.txt>
- Name: msc-ivr-basic/1.0
- Message Usage:
 - CONTROL: dialog requests:
 - <dialogprepare>
 - <dialogstart>
 - <dialogterminate>
 - REPORT:
 - <response> (or in 200 response)
 - <event> notifications
- Common XML: 'connection-id' and 'conf-id' must be supported

Conference Control Package

- <http://www.ietf.org/internet-drafts/draft-boulton-conference-control-package-02.txt>
- Name: msc-conf-audio/1.0
- Message Usage:
 - CONTROL: conference requests:
 - <createconference>, <modifyconference>, <destroyconference>
 - <join>, <modifyjoin>, <unjoin>
 - REPORT:
 - <response> (or in 200 response)
 - <event> notifications
- Common XML: 'connection-id' and 'conf-id' must be supported

And Finally ...

- To do:
 - Fill in transport placeholders (TLS, SCTP)
 - Add appropriate security section
 - Review new keep-alive section
 - ...
- PLEASE REVIEW AND PROVIDE FEEDBACK
- ANY QUESTIONS?

How Framework Control Packages can work together

- Simple use case:
 1. IVR dialog to record participant name
 2. Add participant to conference
 3. IVR dialog to announce participant to conference
- Example Flow Simplifications:
 - AS-MS control channel has been established (and SYNCHed) with support for msc-ivr-basic/1.0 and msc-conf-audio/1.0
 - No timing details
 - Conference already created with conf-id 'conf1'
 - Participant connection-id 'p1' is shorthand for "7HDY839~HJKSkyHS"

IVR dialog to record participant name 1/4

AS -----> MS

SCFW transaction1 CONTROL

Control-Package: msc-ivr-basic/1.0

Content-Length: 92

```
<dialogstart src="basicivr:promptandrecord" connection-id="p1">  
  <data>  
    <item name="prompts" value="http://ex.com/sayname.wav"/>  
    <item name="dtmfterm" value="true"/>  
    <item name="maxtime" value="30s"/>  
  </data>  
</dialogstart>
```

IVR dialog to record participant name 2/4

AS <----- MS
SCFW transaction1 202

AS <----- MS
CFW transaction1 REPORT
Seq: 1
Status: pending

AS -----> MS
SCFW transaction1 200
Seq: 1

IVR dialog to record participant name 3/4

AS <----- MS

SCFW transaction1 REPORT

Seq: 2

Status: terminate

Content-Length: 22

<response status="200"/>

AS -----> MS

SCFW transaction1 200

Seq: 2

IVR dialog to record participant name 4/4

AS <----- MS

SCFW transaction1 REPORT

Status: Notify

Content-Length: 92

```
<event name="dialogexit">
```

```
<data>
```

```
<item name="status" value="1"/>
```

```
<item name="result" value="http://ex.com/recording1.wav"/>
```

```
</data>
```

```
</event>
```

AS -----> MS

SCFW transaction1 200

Add participant to conference 1/1

AS -----> MS

SCFW transaction2 CONTROL
Control-Package: msc-conf-audio/1.0
Content-Length: 42

<join id1="p1" id2="conf1"/>

AS <----- MS

SCFW transaction2 200
Content-Length: 22

<response status="200"/>

IVR dialog to announce participant to conference 1/4

AS -----> MS

SCFW transaction3 CONTROL

Control-Package: msc-ivr-basic/1.0

Content-Length: 94

```
<dialogstart src="basicivr:playannouncement" conf-id="conf1">
```

```
<data>
```

```
<item name="prompts" value="http://ex.com/recording1.wav  
http://ex.com/hasjoined.wav"/>
```

```
</data>
```

```
</dialogstart>
```


IVR dialog to announce participant to conference 2/4

AS <----- MS
SCFW transaction3 202

AS <----- MS
SCFW transaction3 REPORT
Seq: 1
Status: pending

AS -----> MS
SCFW transaction3 200
Seq: 1

IVR dialog to announce participant to conference 3/4

AS <----- MS

SCFW transaction3 REPORT

Seq: 2

Status: terminate

Content-Length: 22

<response status="200"/>

AS -----> MS

SCFW transaction3 200

Seq: 2

IVR dialog to announce participant to conference 4/4

AS <----- MS

SCFW transaction3 REPORT

Status: Notify

Content-Length: 62

<event name="dialogexit">

<data>

<item name="status" value="1"/>

</data>

</event>

AS -----> MS

SCFW transaction3 200