



About SIP

SIP

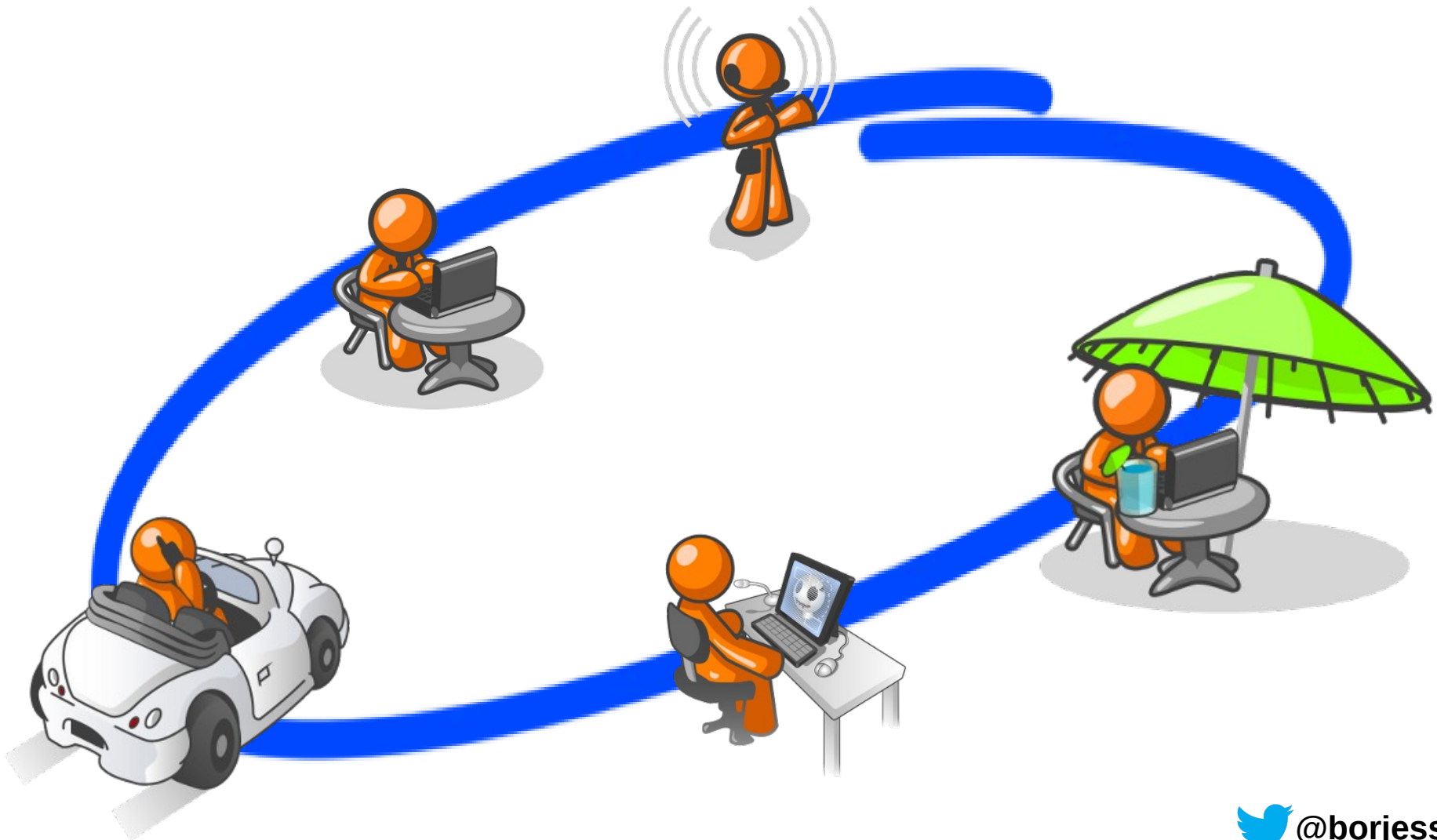
The Basics

Jonas Borjesson

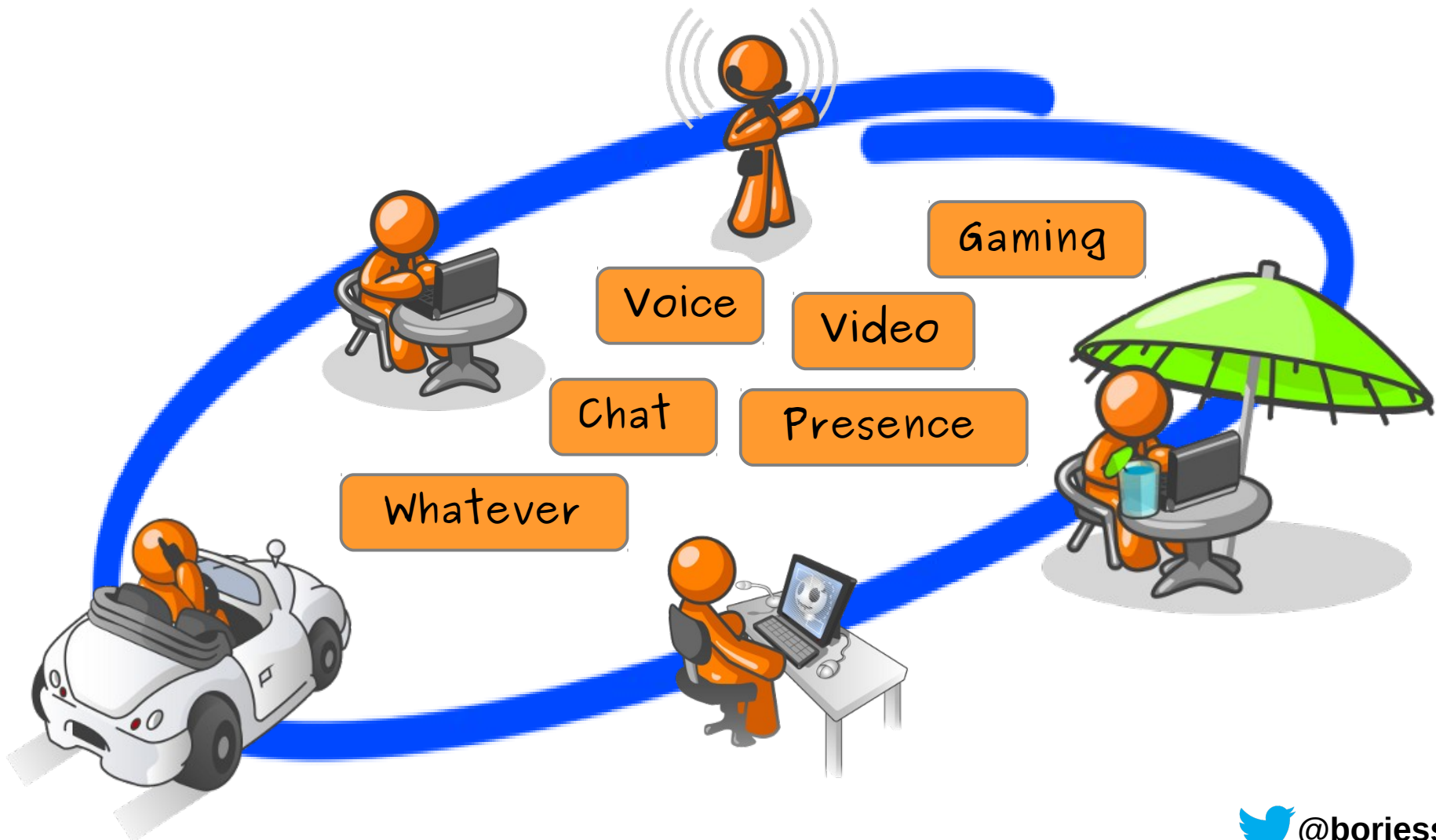
NOTE

- This version has been adapted to be viewed without transitions.
- Go to aboutsip.com to download the original version.
- Also be sure to check out vimeo.com/aboutsip for any recorded presentations.

This is SIP!



SIP is about communication!



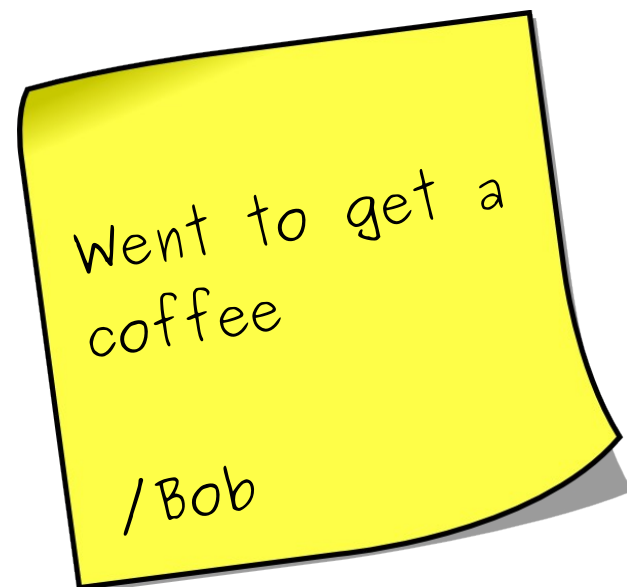
SIP is about sessions

- A session represents a p2p relationship between two SIP endpoints.
- SIP helps you:
 - Setup sessions.
 - Negotiate what you want to do with the session
 - Tear down sessions
- Session can be anything
 - Voice/video/gaming/your own whatever
 - SIP only helps you establish and manage the session, you decide what to do!

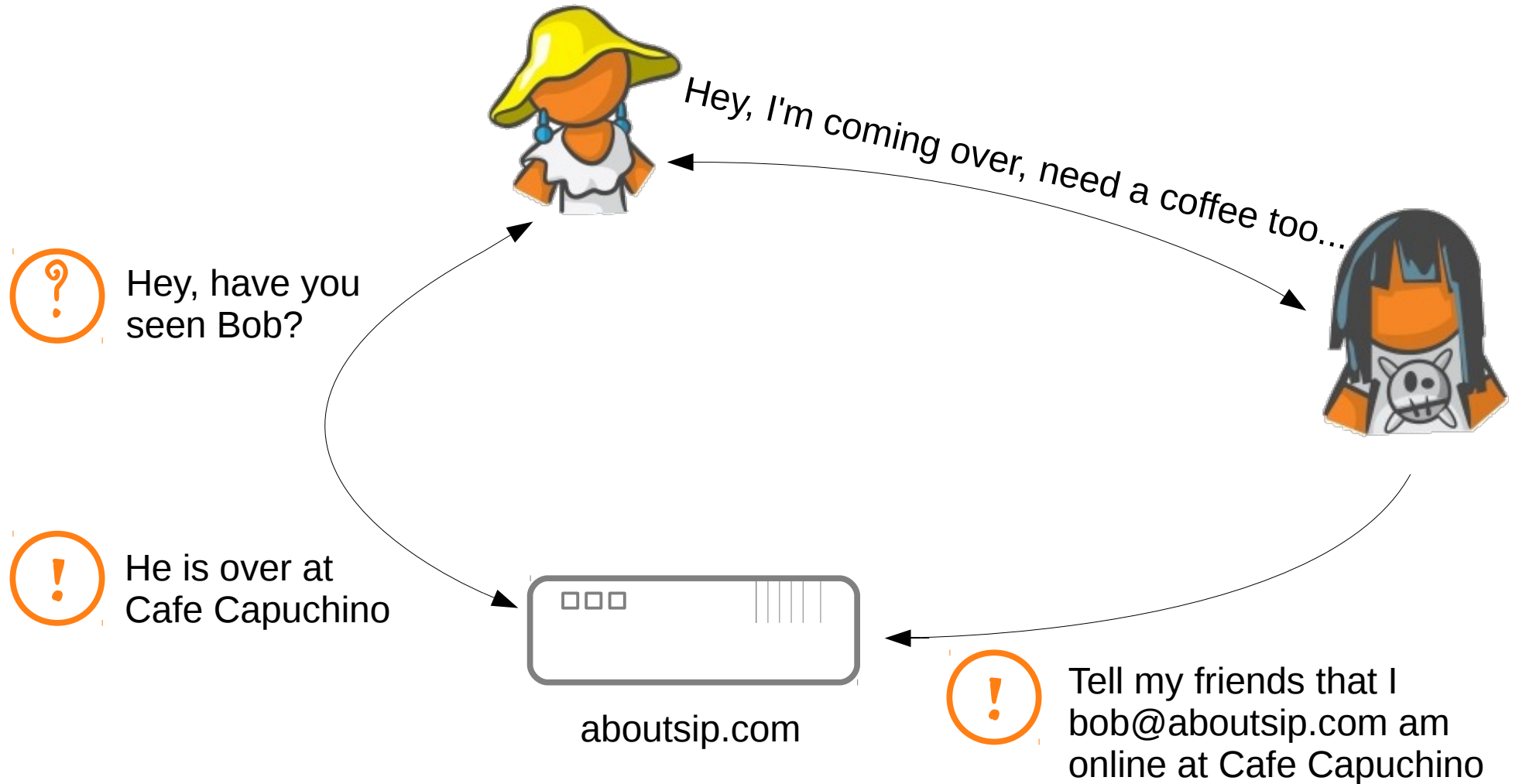
SIP is about finding your friends



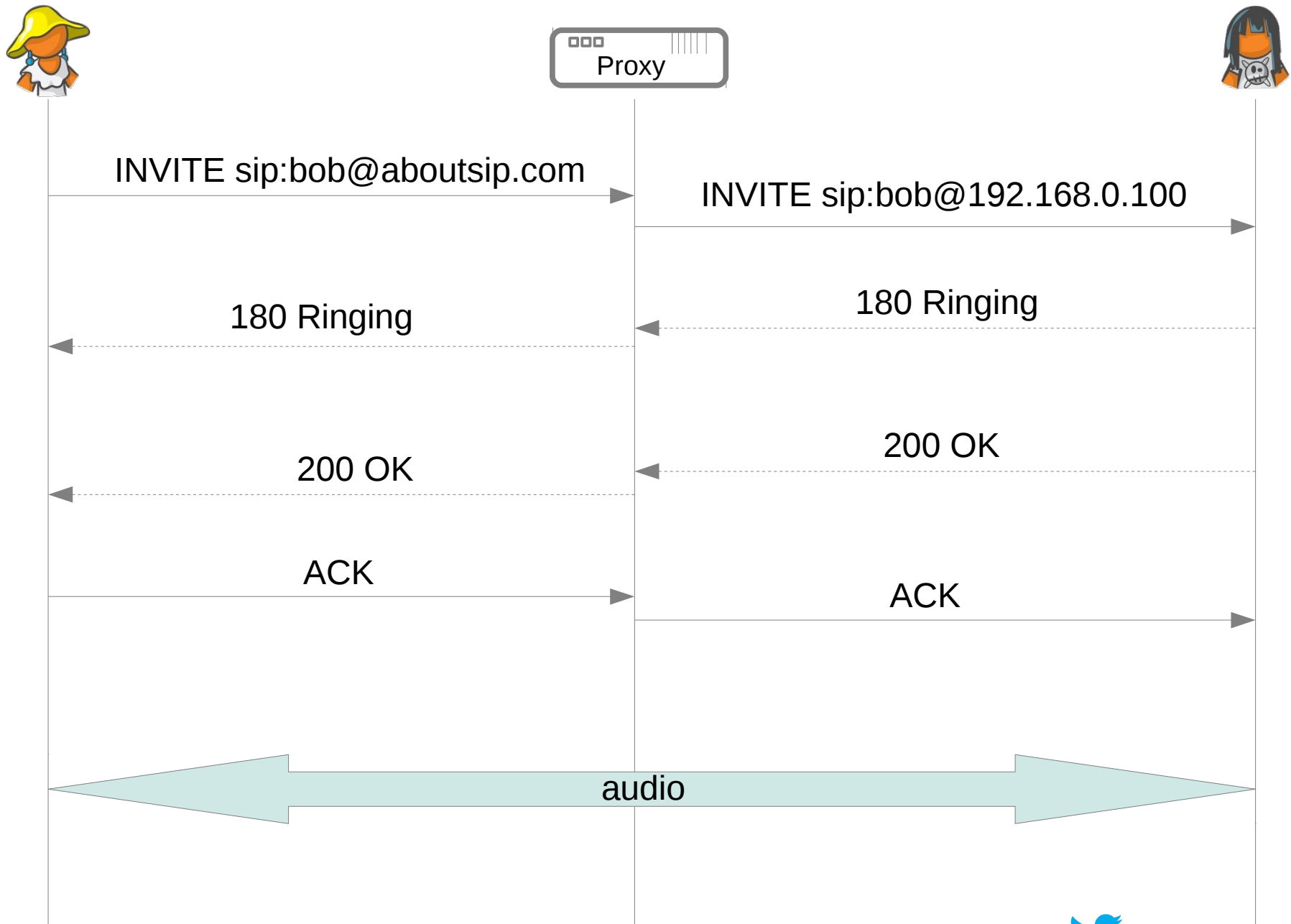
- Before you can “call” your friends (establish a session), you must find them!
- No magic though... you need to tell someone where you are...



No Magic

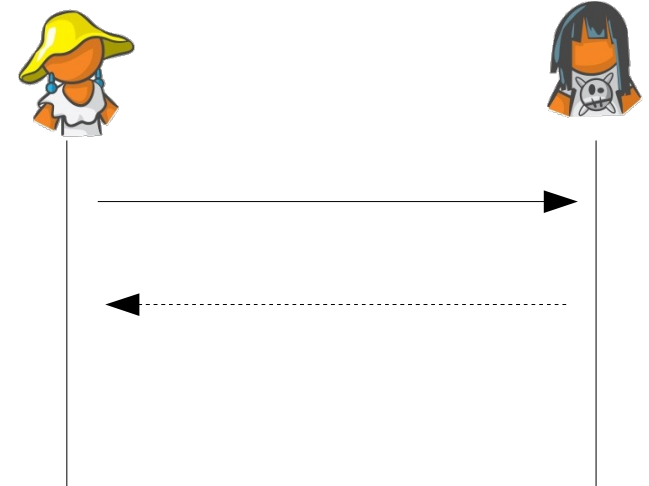


Basic User Scenario



SIP Components

- User Agents (UA)
 - User Agent Client (UAC)
 - User Agent Server (UAS)
- Servers
 - Proxy – forwards the request to the next hop
 - Registrar – accepts registrar requests
 - Redirect Server – finds alternative locations
 - Location Service – stores bindings.



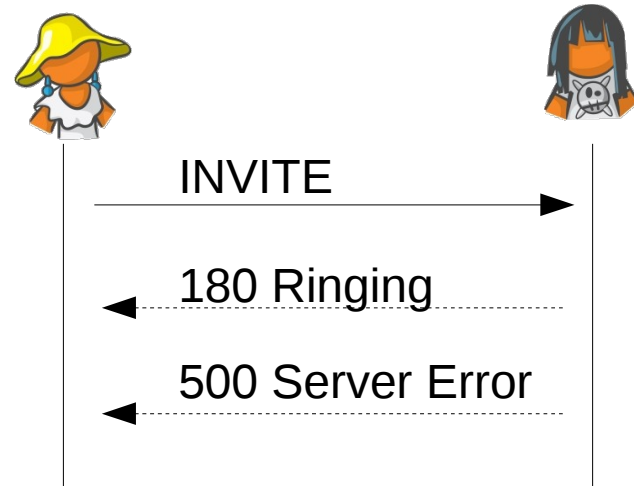
(note, all SIP components are logical components and a such one server can act as all of the roles)

SIP Messages

- Request/Response model
 - UAC sends the request, UAS responds
- Requests starts with a request line
 - INVITE sip:alice@example.com SIP/2.0
- Methods
 - INVITE, ACK, BYE, CANCEL, REGISTER, OPTIONS
 - And many more...

SIP Messages

- SIP responses starts with a status line
 - SIP/2.0 200 OK
- Response Codes:
 - 1xx – Provisional.
 - 2xx – Success.
 - 3xx – Redirection.
 - 4xx – Client Error.
 - 5xx – Server Error.
 - 6xx - Global Failures.



INVITE Request

```
INVITE sip:bob@aboutsip.com SIP/2.0
To: <sip:bob@aboutsip.com>
From: <sip:alice@aboutsip.com>;tag=987lkajsdf89au
Call-ID: lkjasdf90989lkj
CSeq: 1 INVITE
Content-Type: application/sdp
Content-Length: 450
Record-Route: <sip:192.168.1.52:5060;transport=tcp;lr>
Via: SIP/2.0/TCP 192.168.0.122:5060;branch=xxx;rport
...
Contact: <sip:192.168.0.122:3156;transport=TCP>
```

200 OK Response

SIP/2.0 200 OK

To: <sip:bob@aboutsip.com>;tag=89uasdkfjoiu

From: <sip:alice@aboutsip.com>;tag=987lkajsdf89au

Call-ID: lkjasdf90989lkj

CSeq: 1 INVITE

Via: SIP/2.0/TCP 192.168.0.122:5060;branch=xxx;rport

...

Contact: <sip:192.168.0.22:3156;transport=TCP>

Record-Route: <sip:192.168.1.52:5060;transport=tcp;lr>

Content-Type: application/sdp

Content-Length: 451

SIP Headers

- Headers carries important information about e.g. routing or request and responses.
- Similar in syntax and meaning to HTTP
- The more important headers:
 - To & From
 - Via
 - Contact
 - Call-ID
 - Route & Record-Route
 - CSeq

Addressing

- SIP-address is used to locate and communicate with other users.
 - sip:alice@example.com
 - sips:alice@example.com
- Each user typically have an Address of Record (AOR) through which that user can be contacted.

What about the actual Audio

- SIP doesn't care about audio
- SIP only cares about managing sessions*
- Allows any type of sessions to be established, such as an audio session.

- SDP + RTP = gets audio going
 - SDP – describes e.g. an audio session
 - RTP carries the actual audio

Summary

- SIP != VoIP
- SIP can do VoIP but is so much more
- SIP actually doesn't care about audio at all
- SIP helps you route messages through the network.
- SIP helps to locate your friends.



More presentations and material
at aboutsip.com

Thanks!