

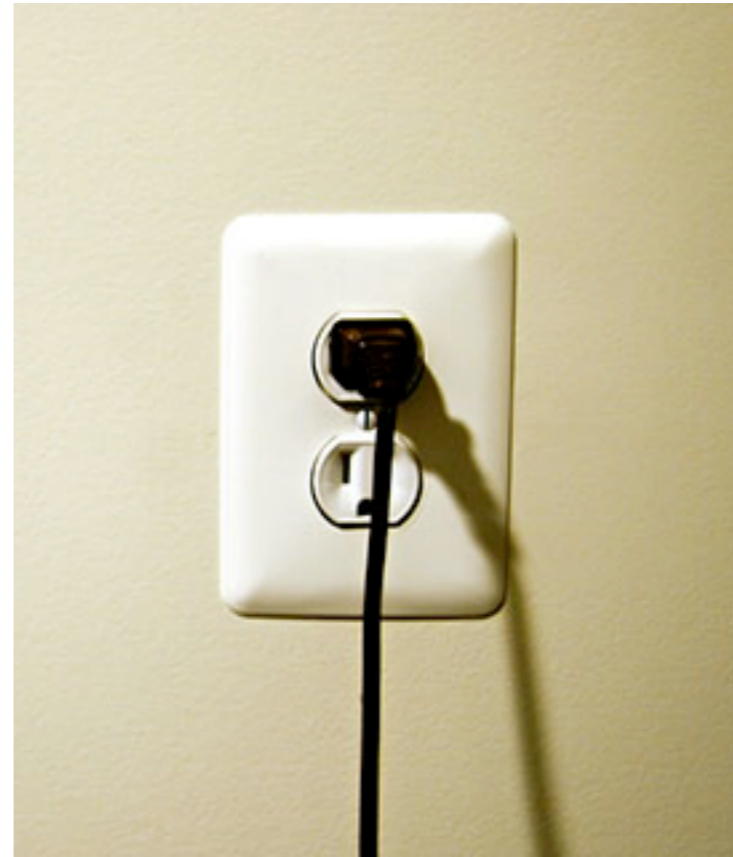
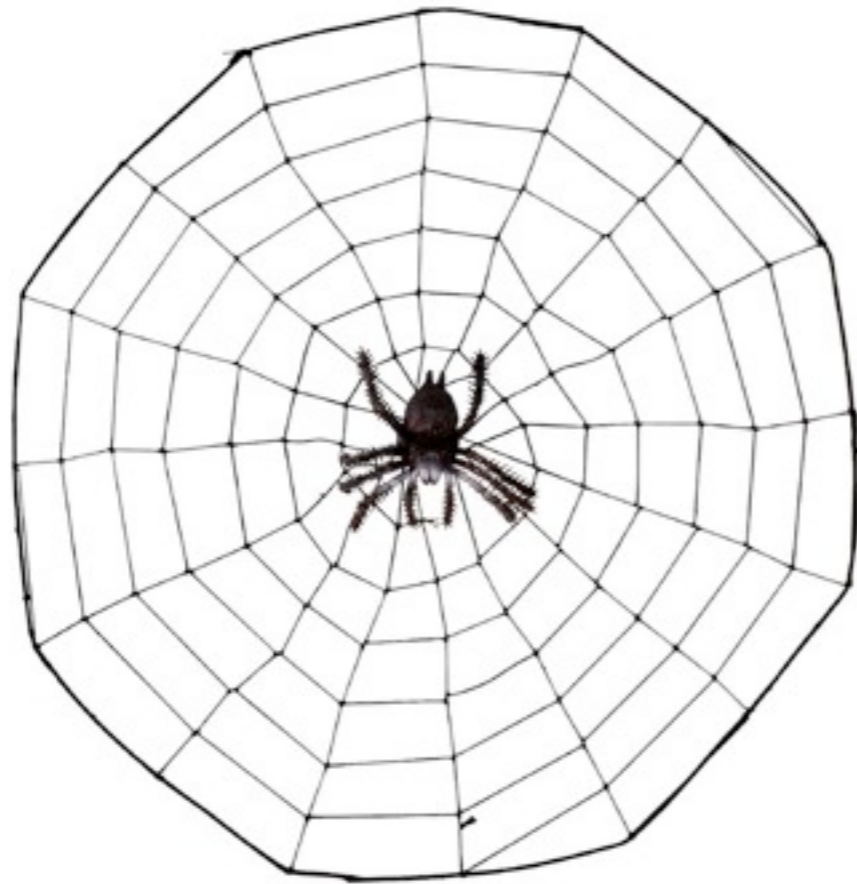
Realtime web: Not there yet!

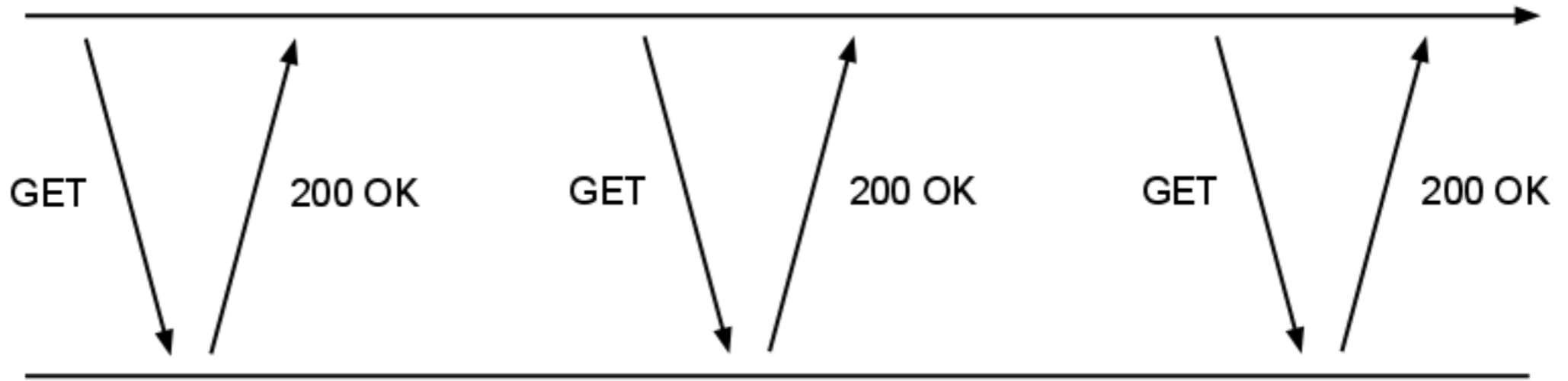


Marek Majkowski

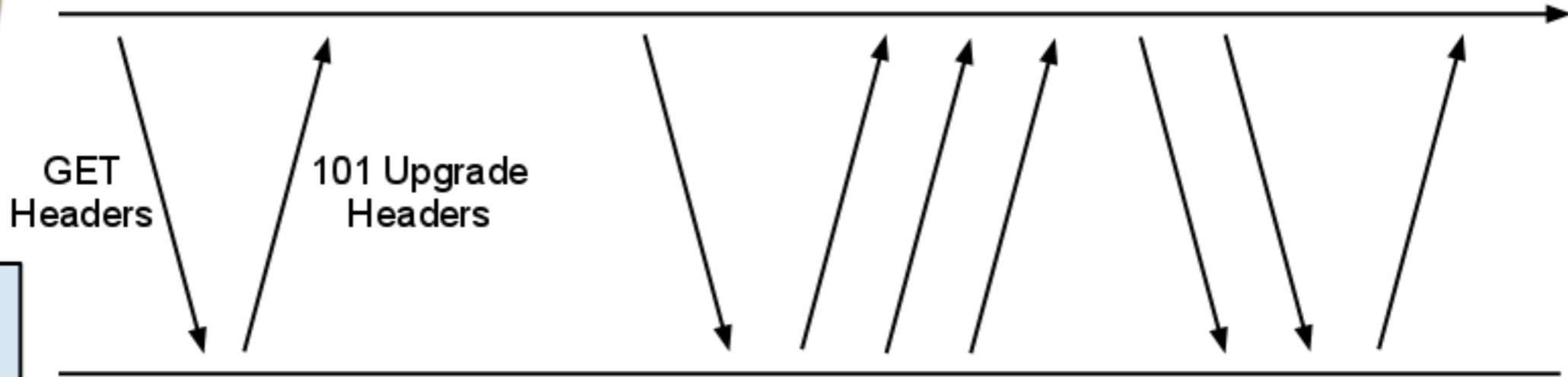
marek@rabbitmq.com







Web Server



WebSocket Server

[\[Docs\]](#) [\[txt|pdf\]](#) [\[Tracker\]](#) [\[Email\]](#) [\[Nits\]](#)

Versions: [00](#) [01](#) [02](#) [03](#) [05](#) [06](#) [07](#) [10](#) [11](#) [12](#) [13](#) [15](#)
[16](#) [17](#) [18](#) [19](#) [20](#) [21](#) [22](#) [23](#) [24](#) [25](#) [26](#) [27](#)
[28](#) [29](#) [30](#) [31](#) [32](#) [33](#) [34](#) [35](#) [36](#) [39](#) [40](#) [41](#)
[42](#) [43](#) [44](#) [45](#) [46](#) [47](#) [48](#) [49](#) [50](#) [51](#) [52](#) [53](#)
[54](#) [55](#) [56](#) [57](#) [58](#) [59](#) [60](#) [61](#) [62](#) [63](#) [64](#) [65](#)
[66](#) [67](#) [68](#) [69](#) [70](#) [71](#) [72](#) [73](#) [74](#) [75](#) [76](#) [draft-ietf-hybi-thewebsocketpr](#)

Network Working Group
Internet-Draft
Expires: July 13, 2009

I. Hickson
Google, Inc.
January 9, 2009

The Web Socket protocol
draft-hixie-thewebsocketprotocol-00

[[Docs](#)] [[txt](#)|[pdf](#)] [[Tracker](#)] [[WG](#)] [[Email](#)] [[Diff1](#)] [[Diff2](#)] [[Nits](#)]

Versions: ([draft-hixie-thewebsocketprotocol](#))
[00](#) [01](#) [02](#) [03](#) [04](#) [05](#) [06](#) [07](#) [08](#) [09](#) [10](#) [11](#)
[12](#) [13](#) [14](#) [15](#)

HyBi Working Group
Internet-Draft
Intended status: Standards Track
Expires: March 20, 2012

I. Fette
Google, Inc.
A. Melnikov
Isode Ltd
September 17, 2011

The WebSocket protocol
draft-ietf-hybi-thewebsocketprotocol-15



WebSockets



					
hixie-75		4	5.0.0		
hixie-76	4 (disabled)	6	5.0.1	11 (disabled)	
hybi-07	6				
hybi-10	7	14			10-dev

Spot the difference!

```
$ nc localhost 8080
GET /broadcast/765/321/websocket HTTP/1.1
Origin: http://172.16.173.128:8080
Host: 172.16.173.128:8080
Connection: Upgrade
Upgrade: WebSocket
Sec-WebSocket-Key2: `1]2037 7 GX 'f<Vb1*5$64
Sec-WebSocket-Key1: 2Uf ?<,4C28E1K7J4+208
Cookie2: $Version=1
Cookie: JSESSIONID=a
```

```
aaaaaaaaaaaaaaaa
HTTP/1.1 101 WebSocket Protocol Handshake
Upgrade: websocket
Connection: Upgrade
Sec-WebSocket-Location: ws://[...]
Sec-WebSocket-Origin: http://[...]
```

```
m"7]SDgo0
^C
```

```
$ nc localhost 12345
GET /echo HTTP/1.1
Origin: http://172.16.173.128:12345
Host: 172.16.173.128:12345
Connection: Upgrade
Upgrade: WebSocket
Sec-WebSocket-Key2: `1]2037 7 GX 'f<Vb1*5$64
Sec-WebSocket-Key1: 2Uf ?<,4C28E1K7J4+208
Cookie2: $Version=1
Cookie: JSESSIONID=a
```

```
aaaaaaaaaaaaaaaa
HTTP/1.1 101 WebSocket Protocol Handshake
Upgrade: WebSocket
Connection: Upgrade
Sec-WebSocket-Location: ws://[...]
Sec-WebSocket-Origin: http://[...]
```

```
m"7]SDgo0
^C
```

The RFC says

-> If the entry's name is "upgrade"
If the value is not exactly equal to the string "WebSocket",
then fail the WebSocket connection and abort these steps.

[...]

|Upgrade|

The value must be the string "WebSocket".

[...]

|Upgrade|

Invariant part of the handshake. Will always have a value
that is an ASCII case-insensitive match for the string
"WebSocket".

Proxies

```
GET /echo/070/lm6wwjpr/websocket HTTP/1.1
Host: sockjs1.popcnt.org
User-Agent: [...] Gecko/20100101 Firefox/6.0.2
Accept: text/html,application/xhtml+xml [...]
Accept-Language: en-us,en;q=0.5
Accept-Encoding: gzip, deflate
Accept-Charset: ISO-8859-1,utf-8;q=0.7,*;q=0.7
Sec-WebSocket-Version: 7
Sec-WebSocket-Origin: http://sockjs.popcnt.org
Sec-WebSocket-Key: bzG4fOYXabSiy42uFj6vjA==
Pragma: no-cache
Cache-Control: no-cache
Upgrade: websocket
Connection: Upgrade
```

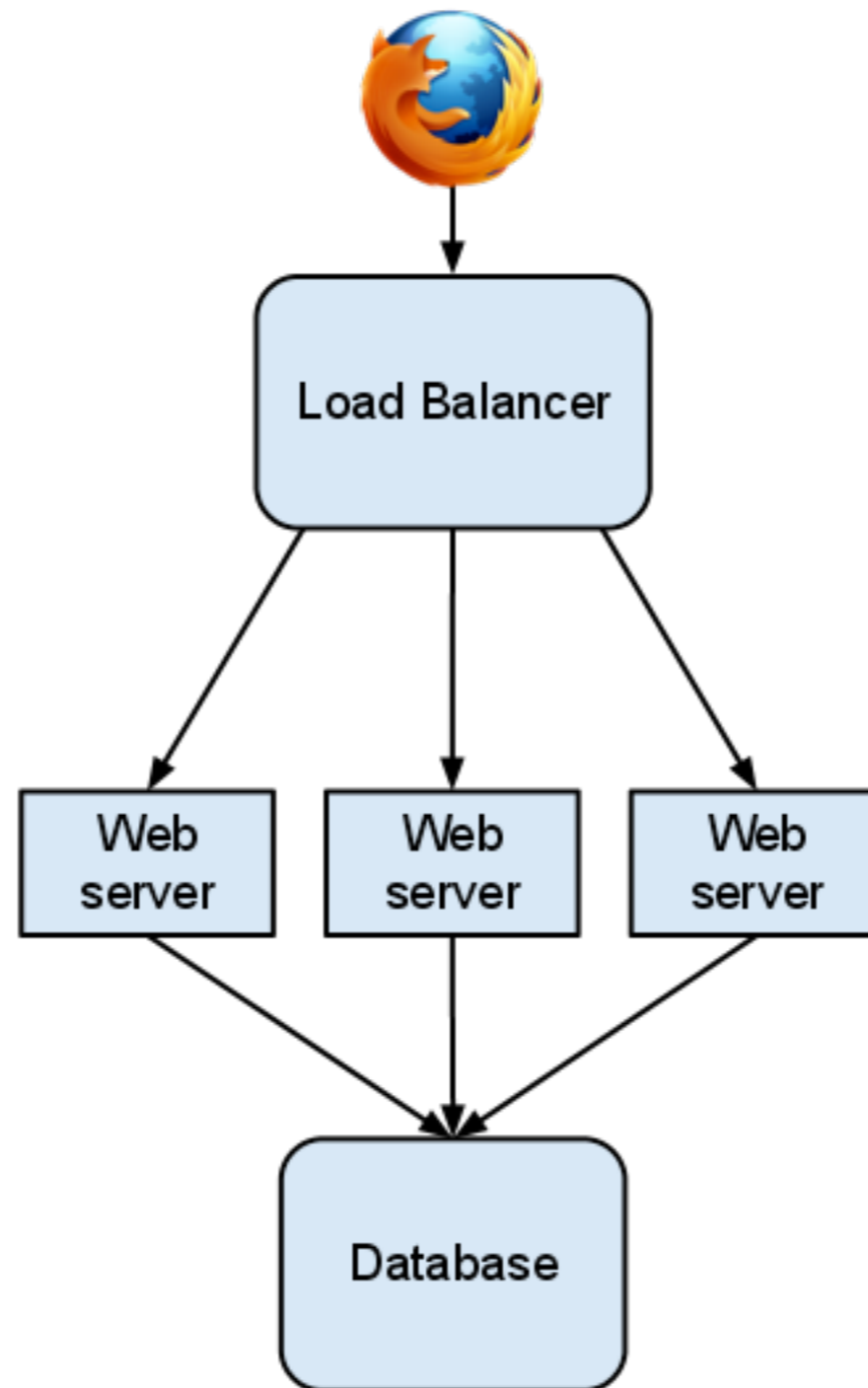
```
HTTP/1.0 400 Bad Request
Server: squid/2.7.STABLE9
Date: Wed, 21 Sep 2011 06:16:10 GMT
Content-Type: text/html
Content-Length: 1943
X-Squid-Error: ERR_INVALID_REQ 0
X-Cache: MISS from mrstu
X-Cache-Lookup: NONE from mrstu:3128
Via: 1.0 mrstu:3128 (squid/2.7.STABLE9)
Connection: close
```

```
CONNECT sockjs1.popcnt.org:80 HTTP/1.1
Host: sockjs1.popcnt.org
Proxy-Connection: keep-alive
```

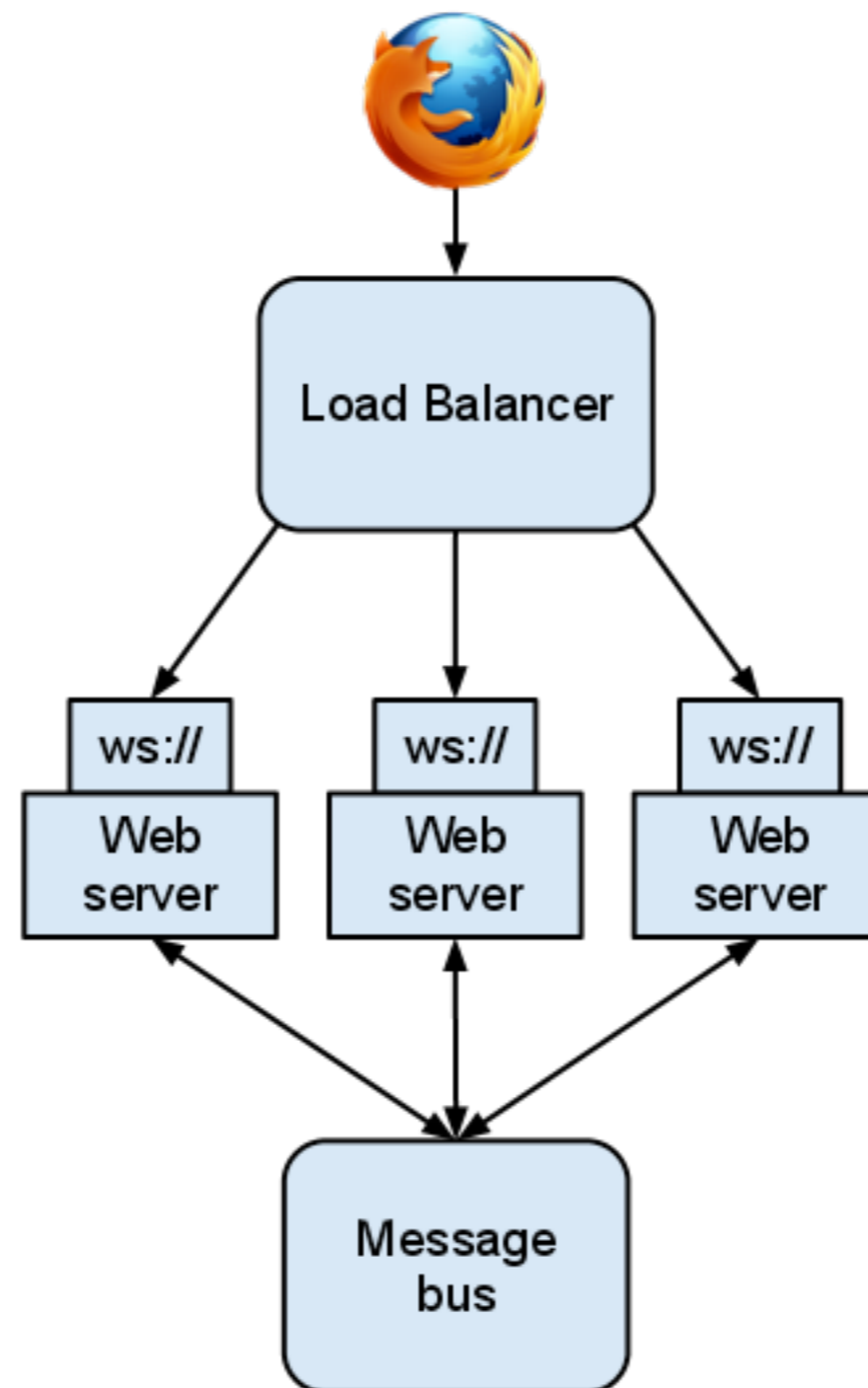
```
GET /echo/855/duzzy2p1/websocket HTTP/1.1
Upgrade: WebSocket
Connection: Upgrade
Host: sockjs1.popcnt.org
Origin: http://sockjs.popcnt.org
Sec-WebSocket-Key1: 22p/ D"47900%n7 r90.
Sec-WebSocket-Key2: m49" 5 f 24772 Ra
```



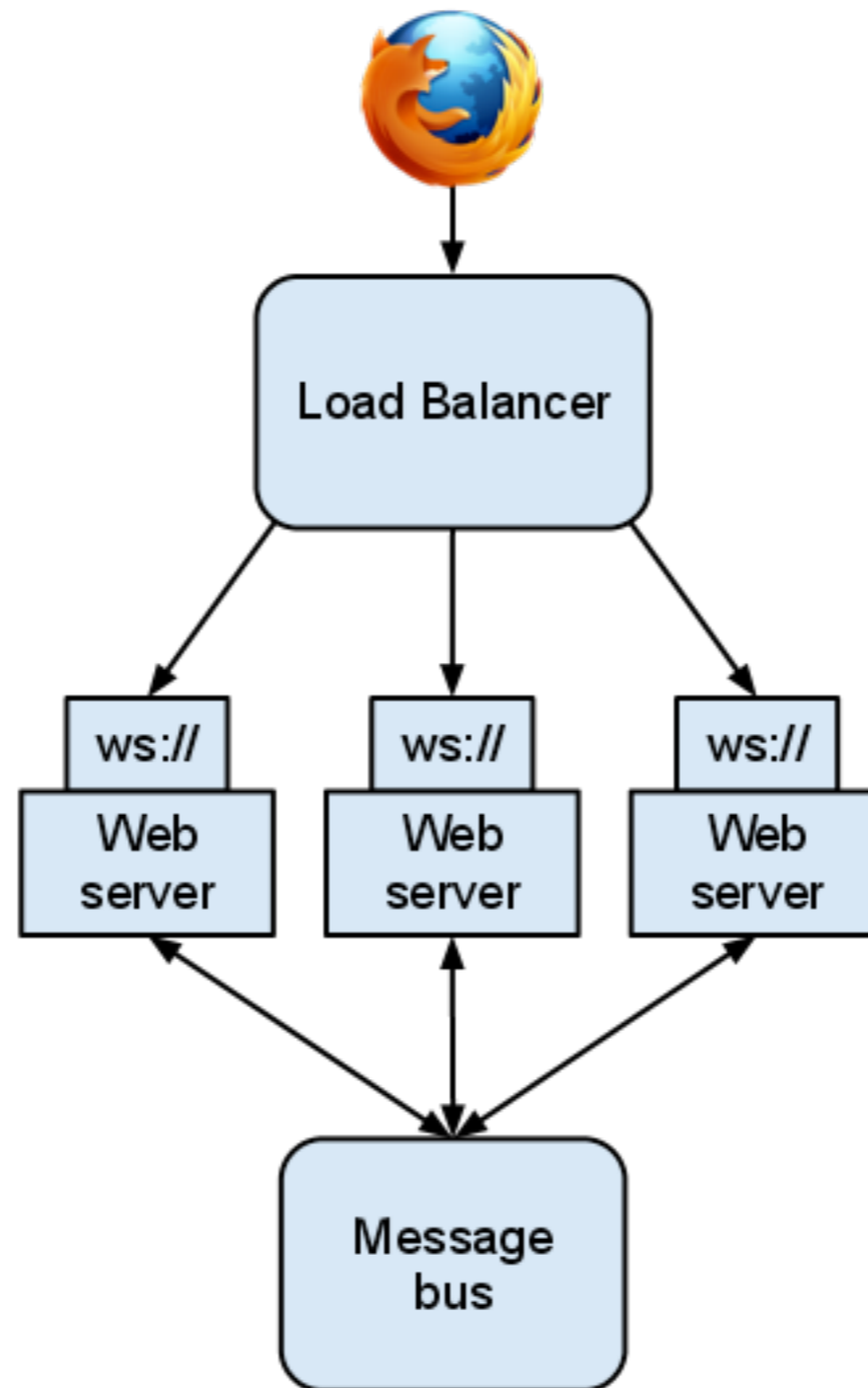
Shared nothing + database



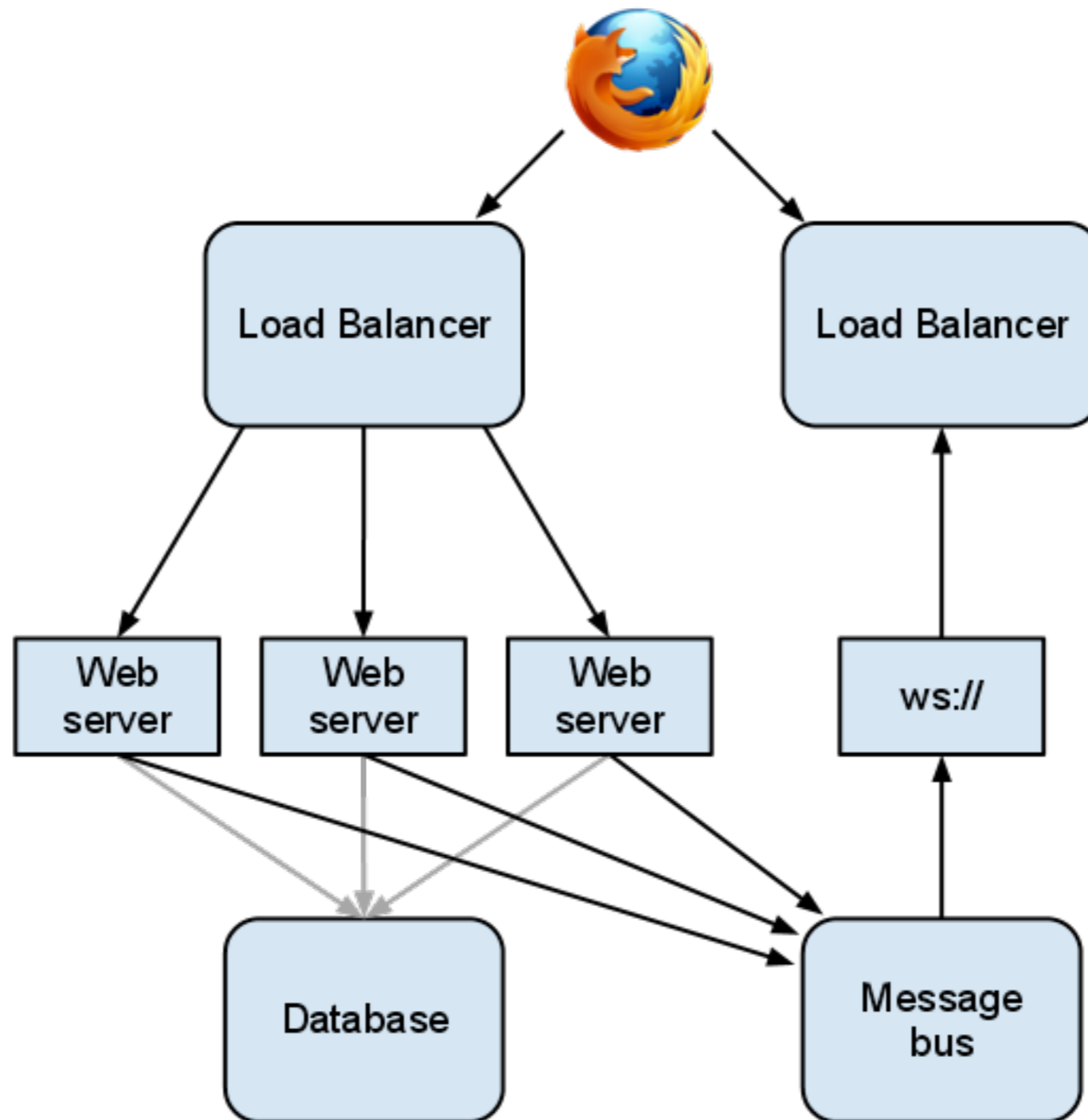
Shared nothing + message bus



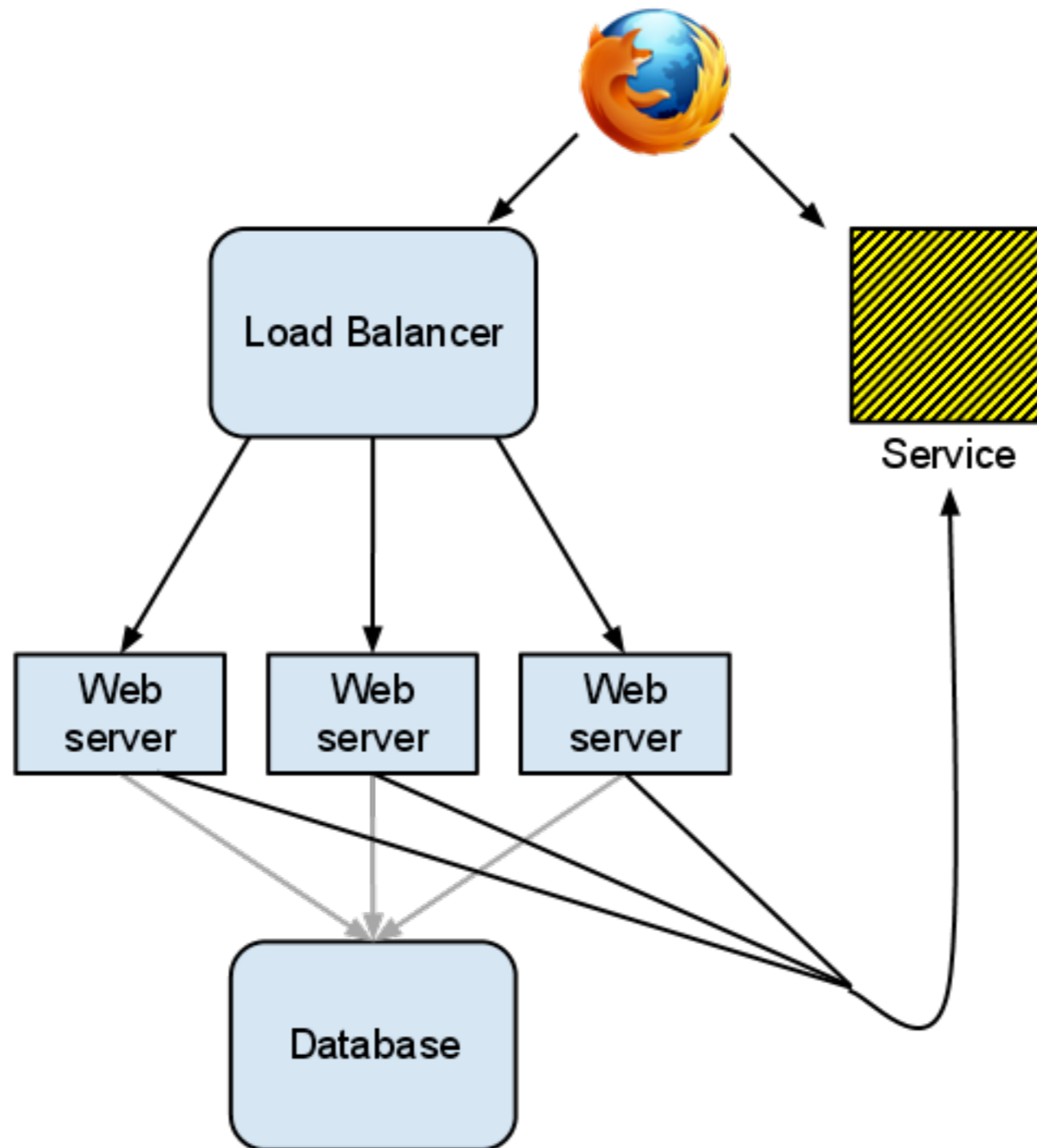
Node.js + Socket.io



Sync + Async



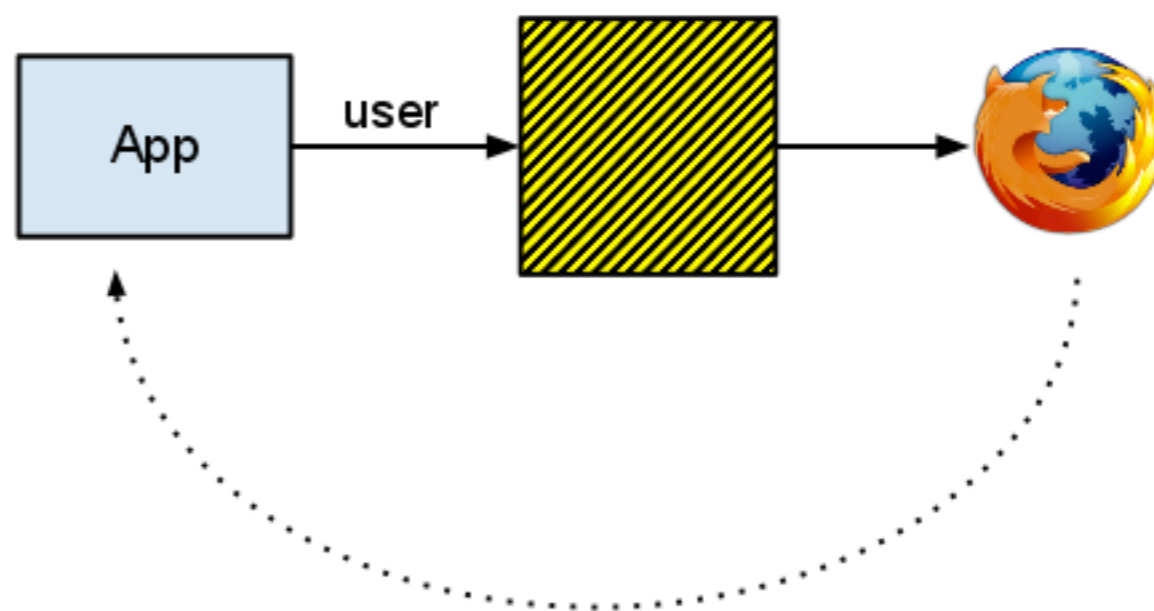
Sync + Service







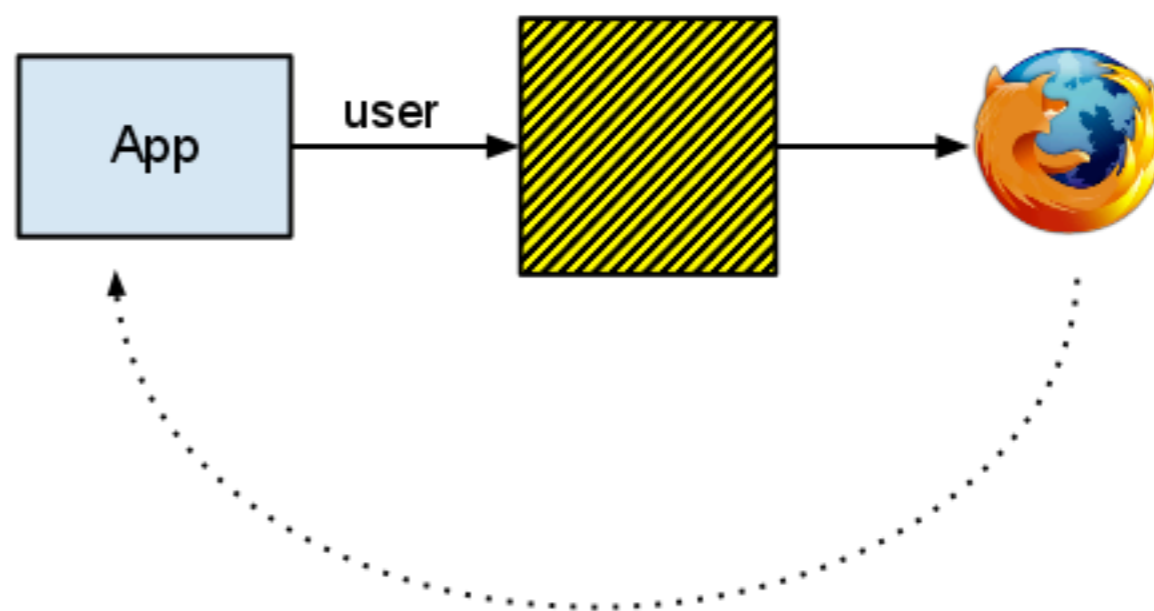
Google App Engine





Google App Engine

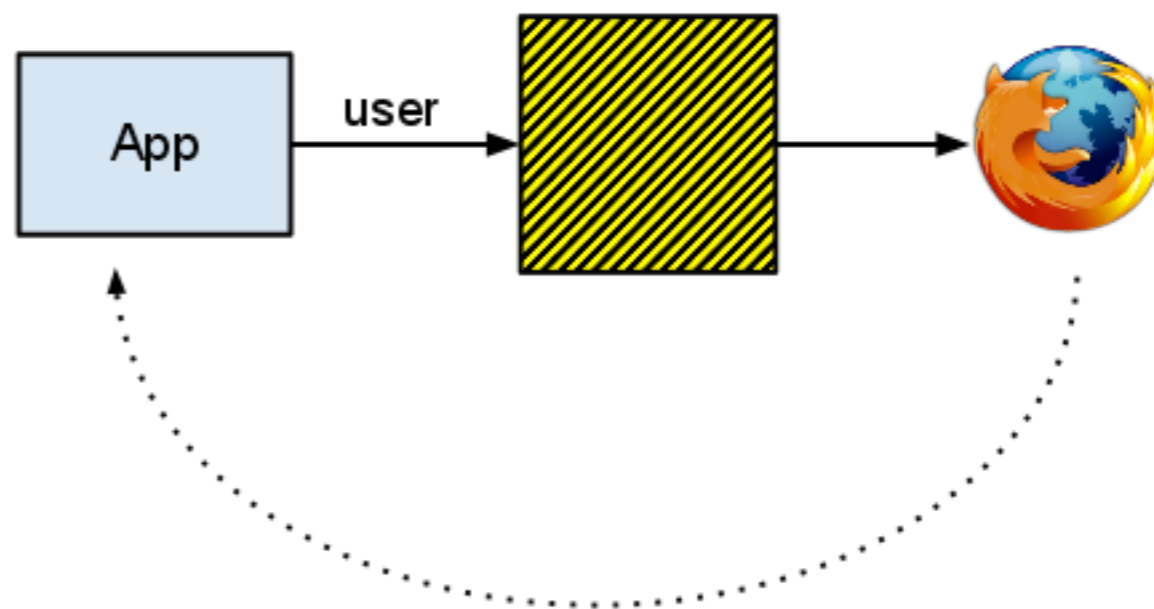
- Simplex





Google App Engine

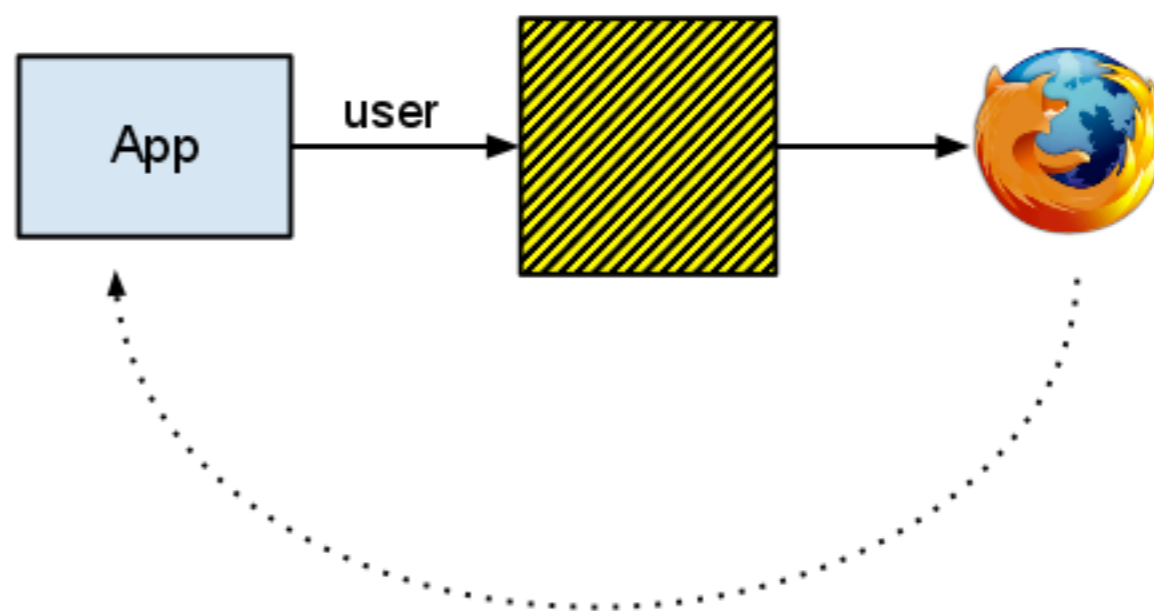
- Simplex
- No broadcast





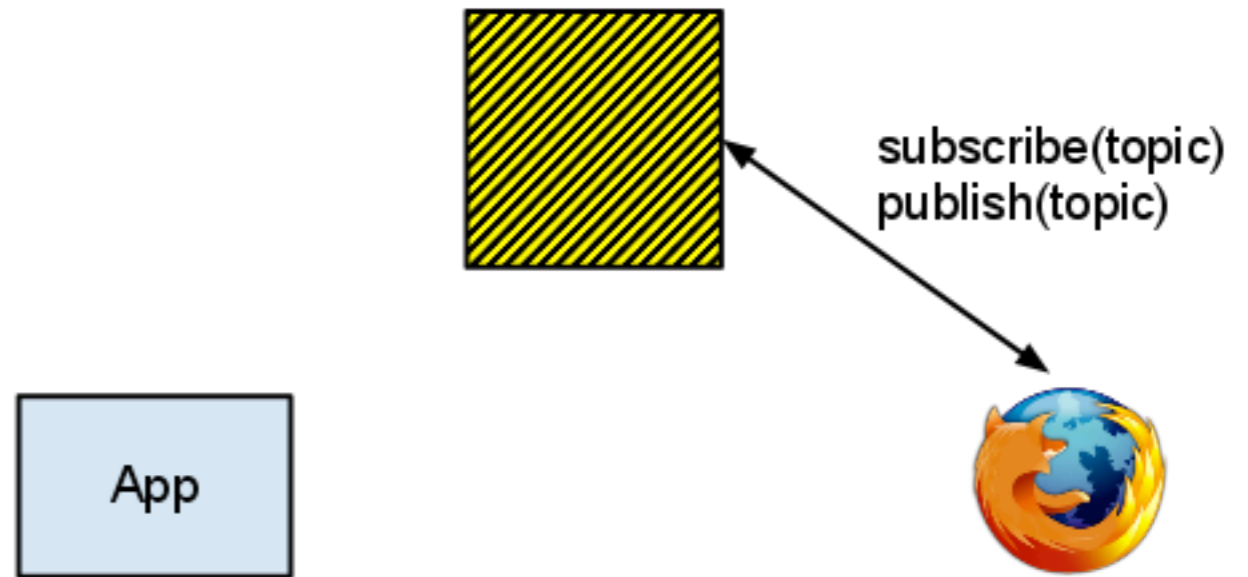
Google App Engine

- Simplex
- No broadcast
- No presence





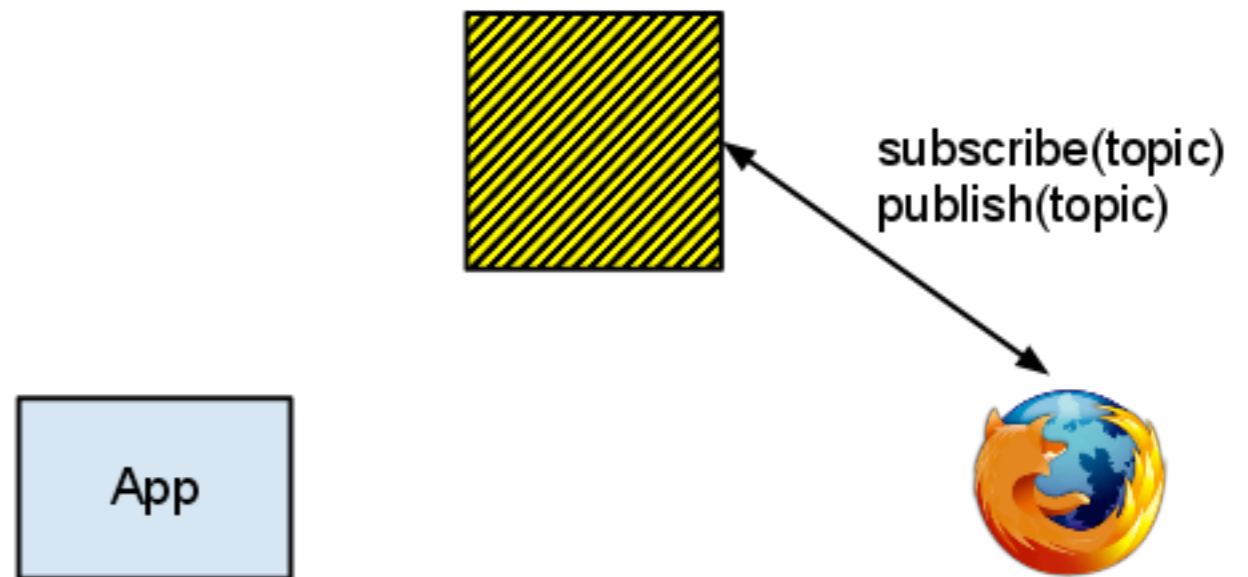
PubNub





PubNub

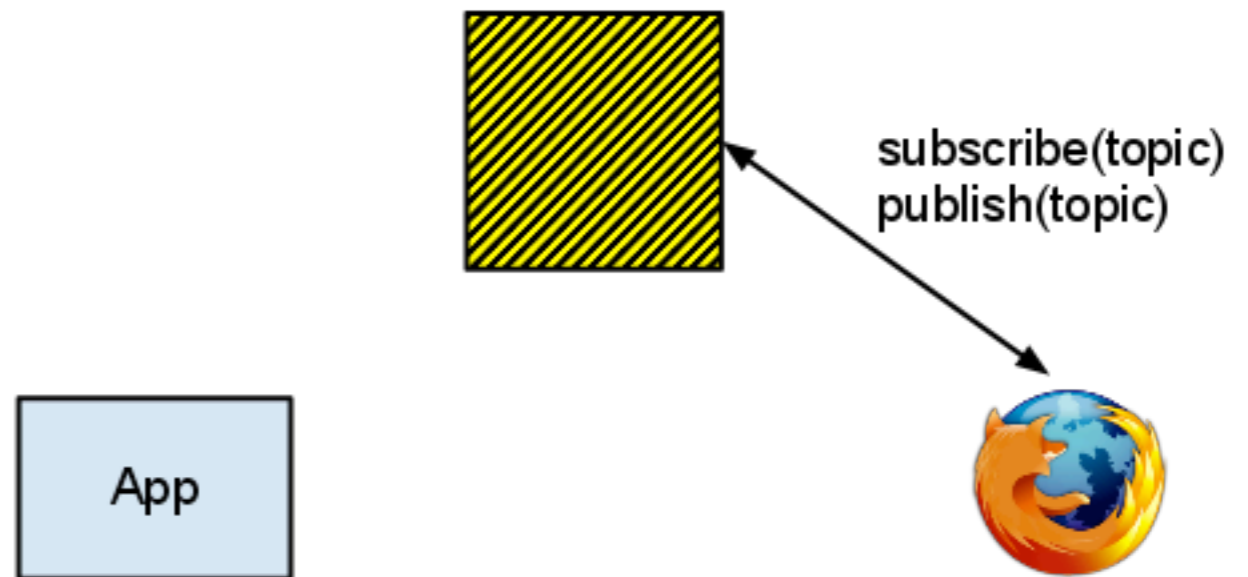
- Duplex





PubNub

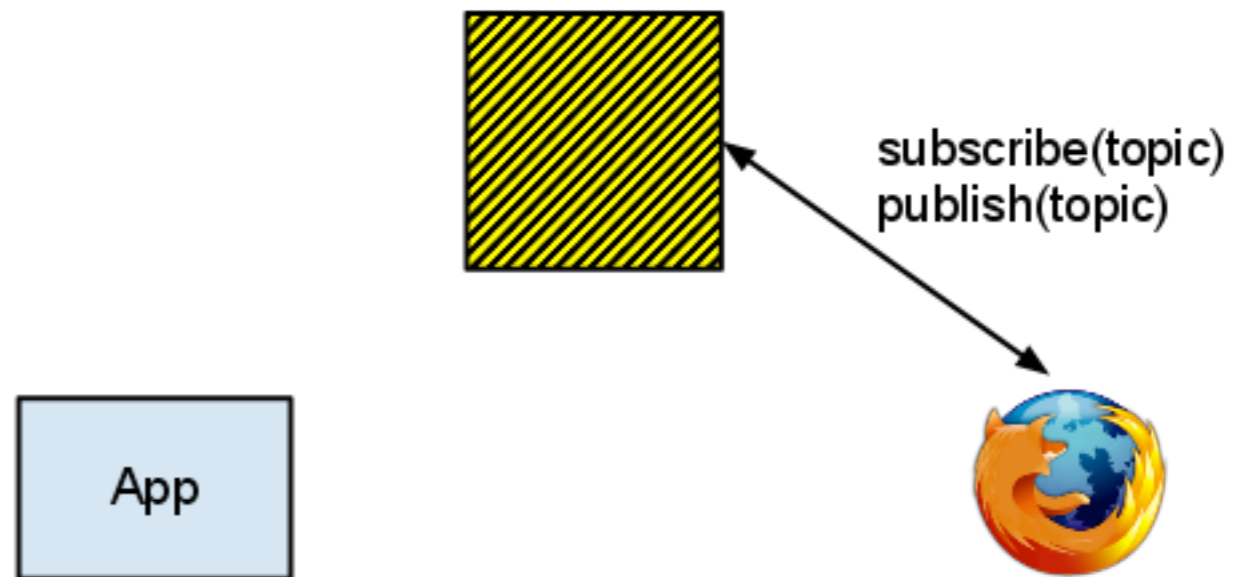
- Duplex
- Broadcast





PubNub

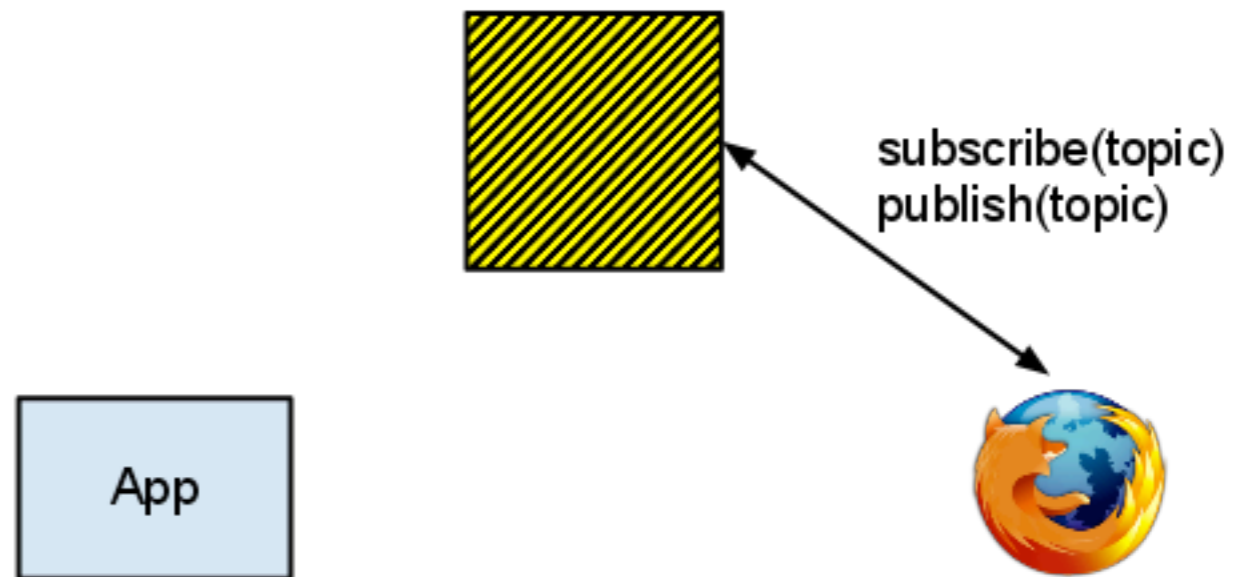
- Duplex
- Broadcast
- No access rights





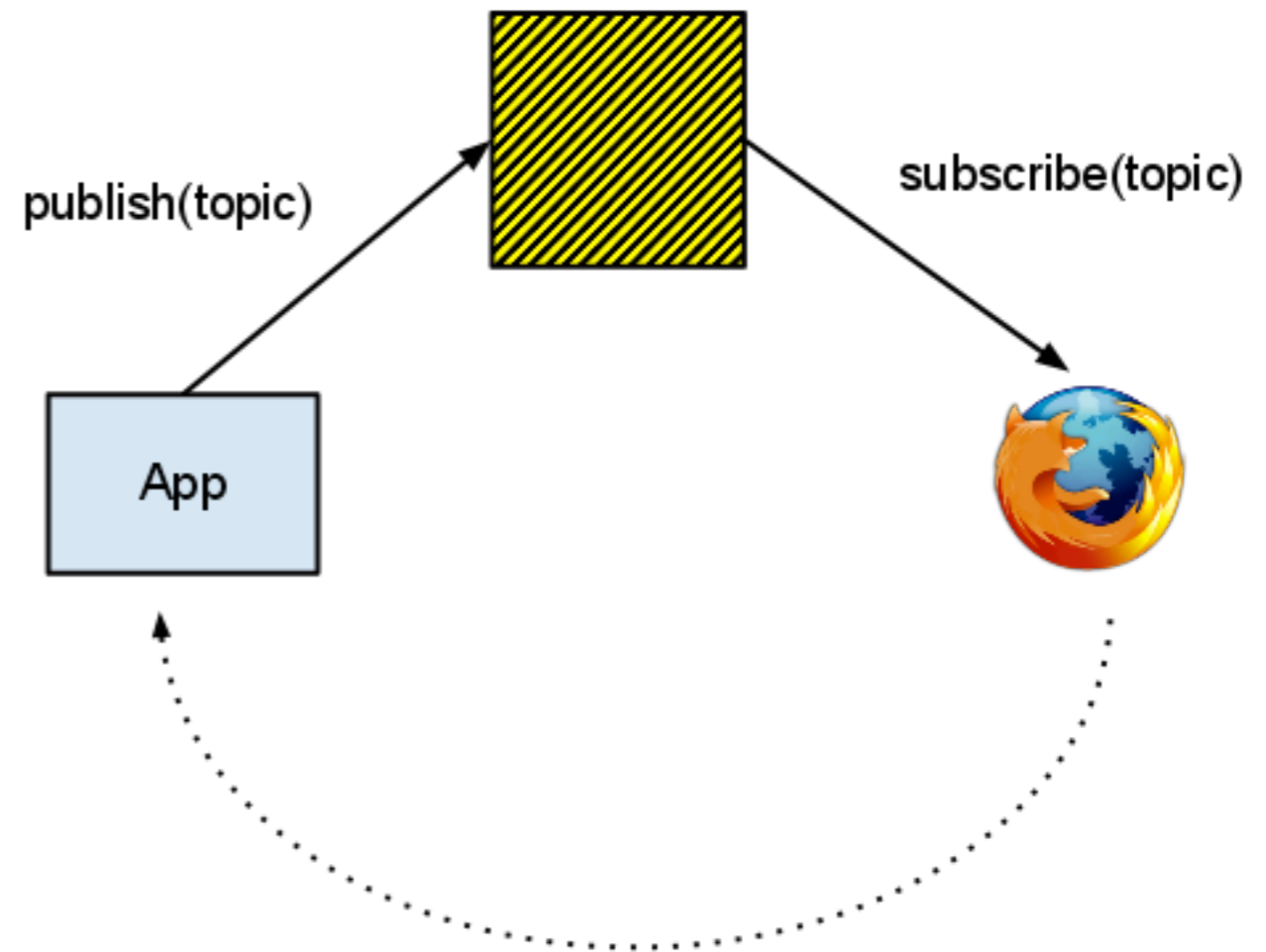
PubNub

- Duplex
- Broadcast
- No access rights
- No identity





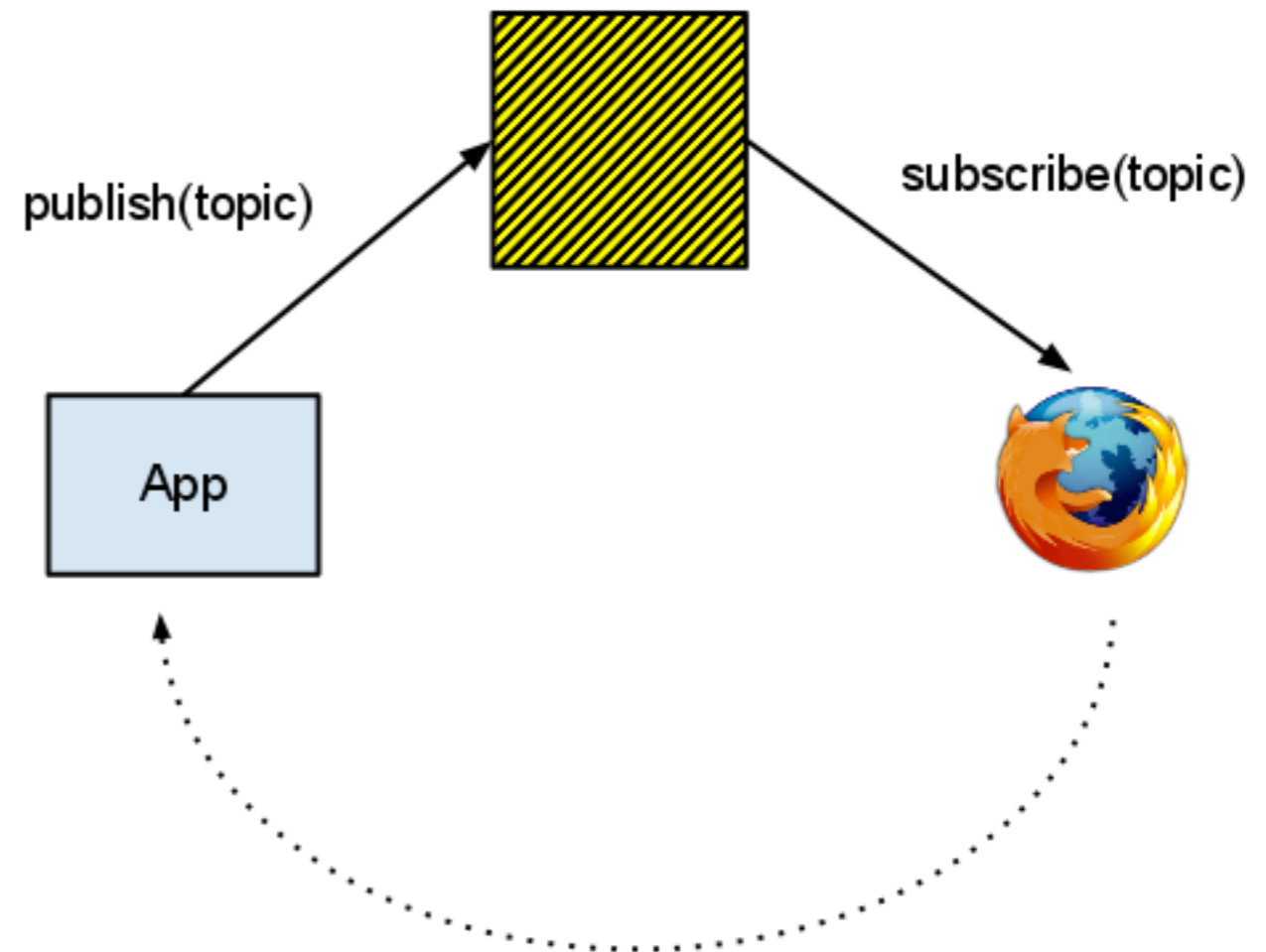
Pusher





Pusher

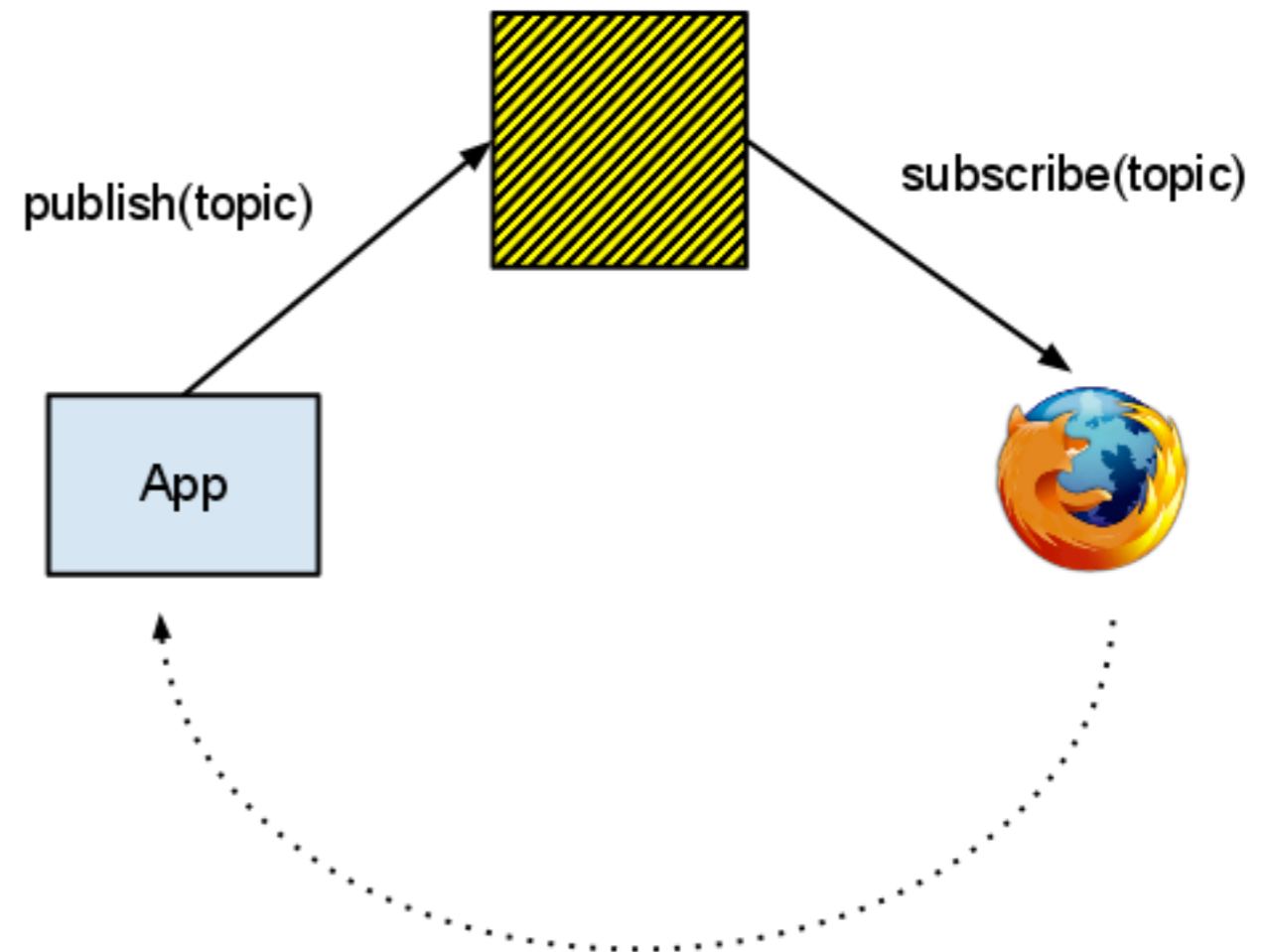
- Simplex





Pusher

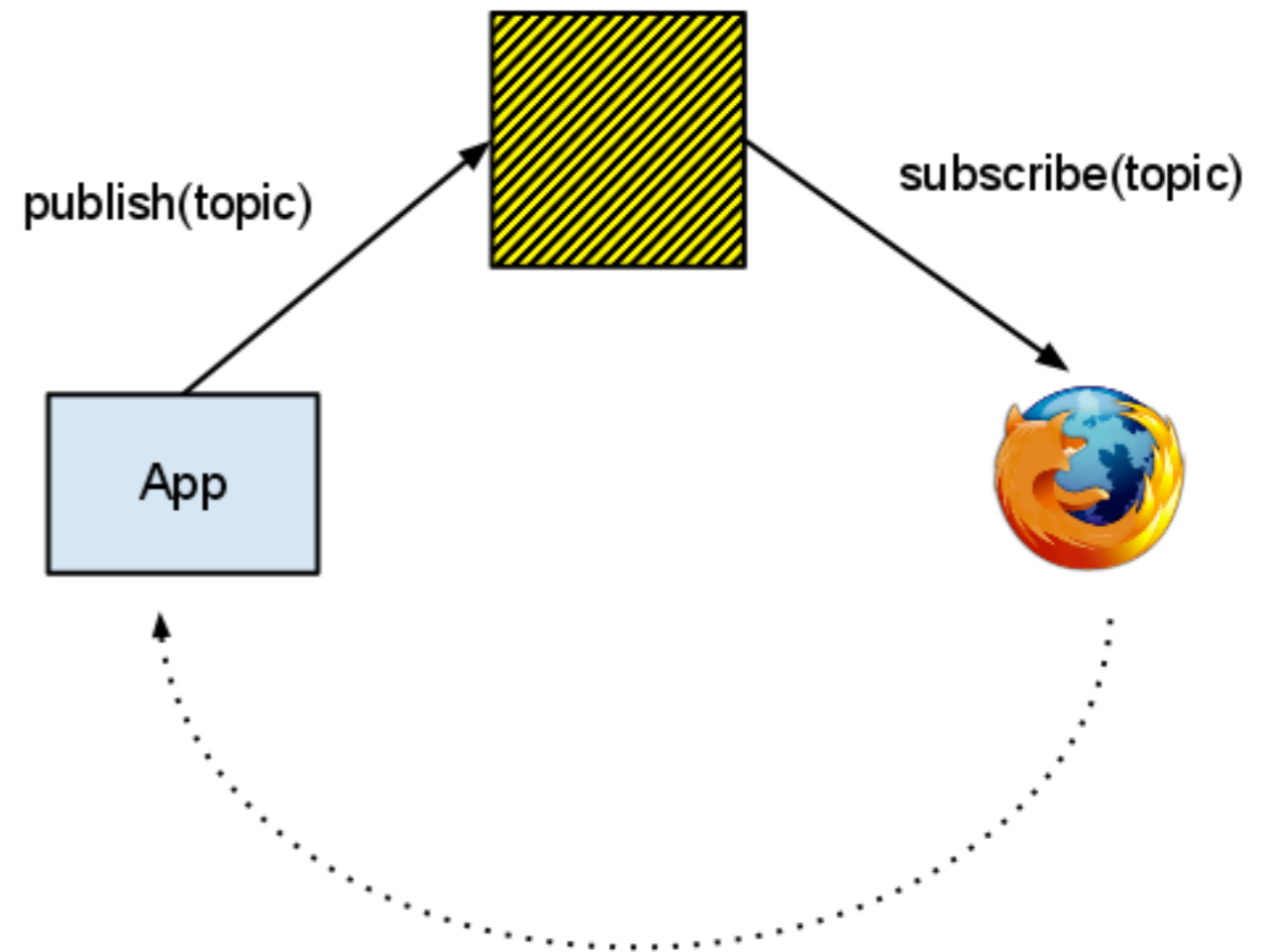
- Simplex
- Broadcast





Pusher

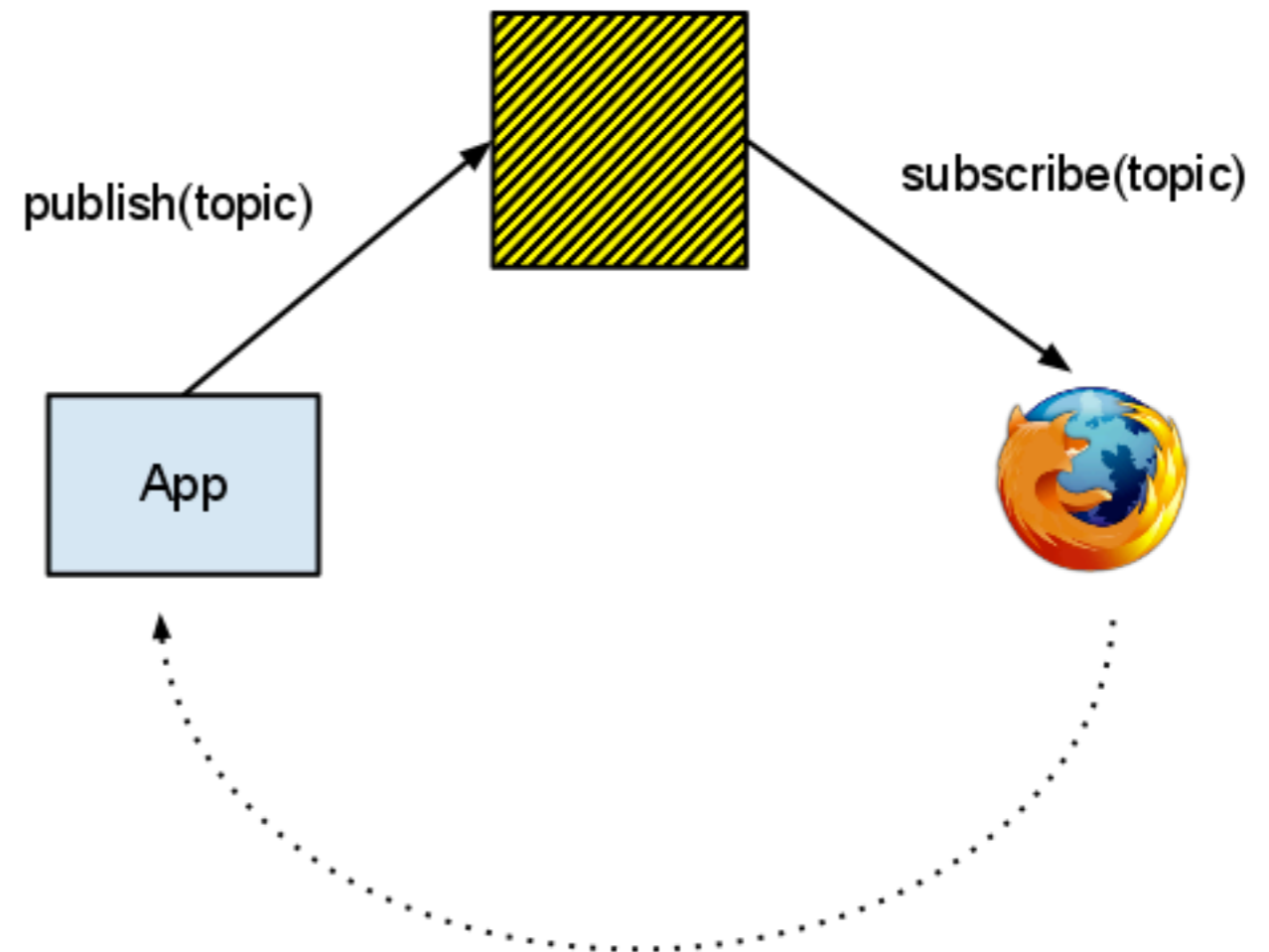
- Simplex
- Broadcast
- Access rights *





Pusher

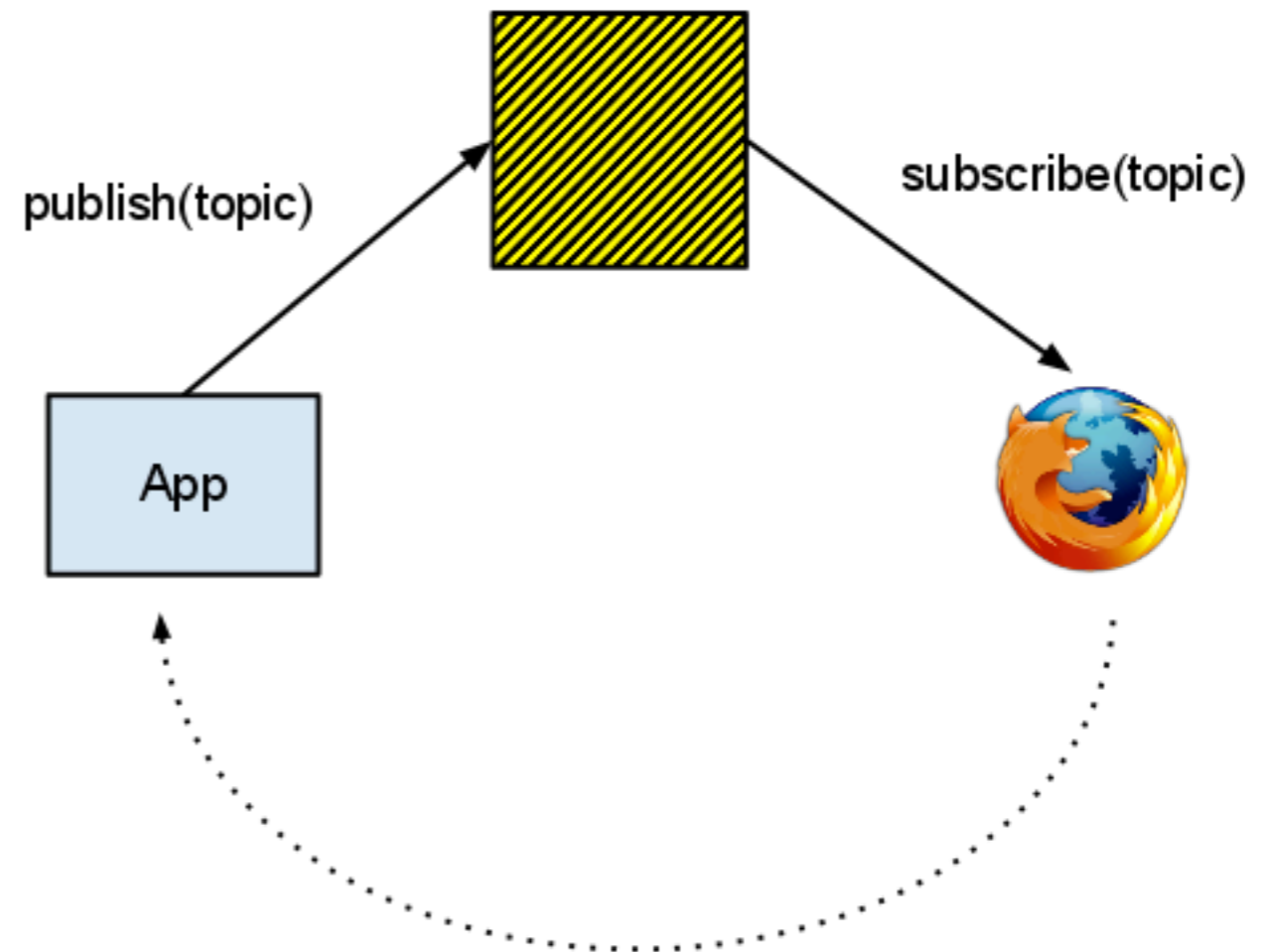
- Simplex
- Broadcast
- Access rights *
- Identity *





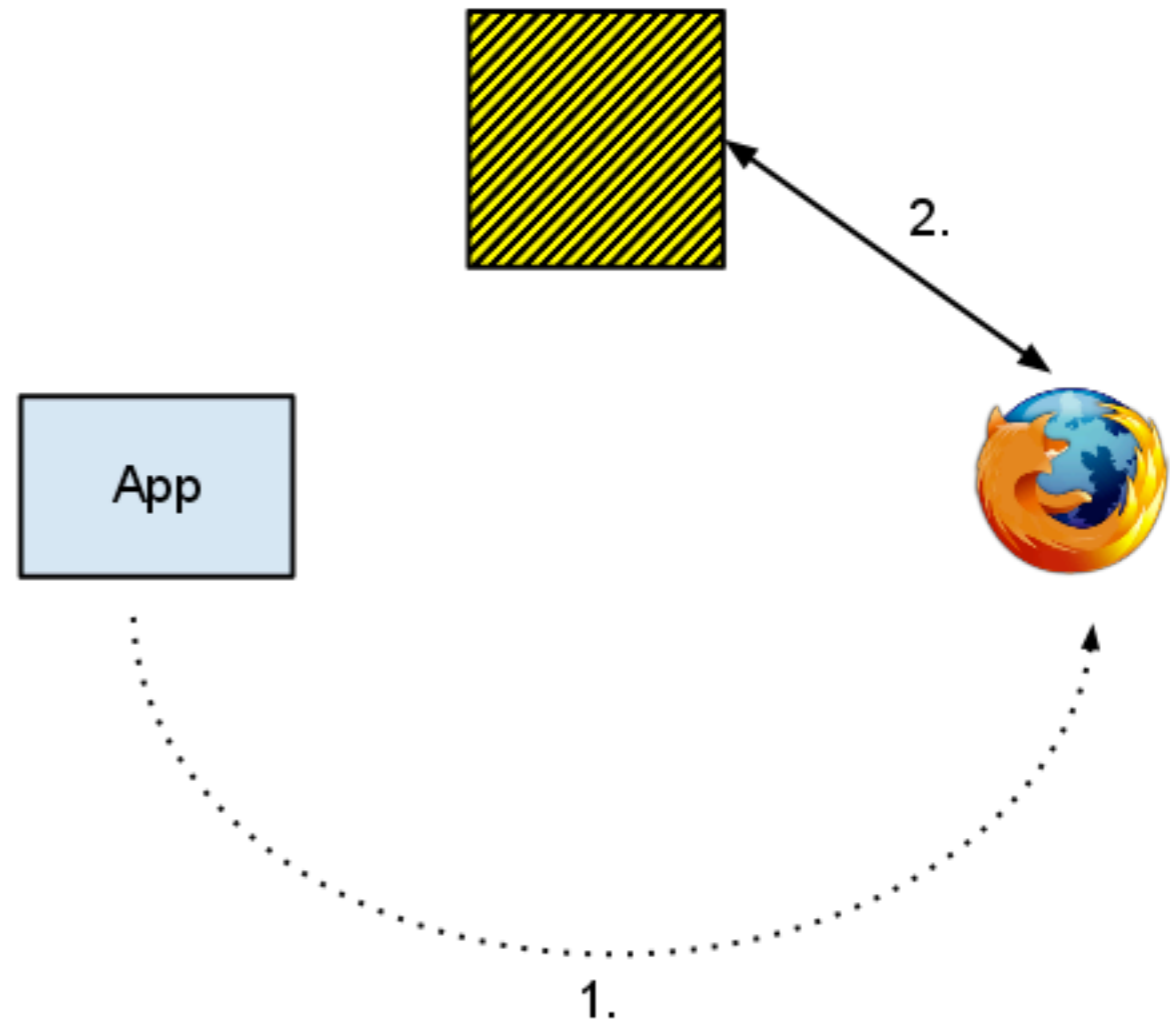
Pusher

- Simplex
- Broadcast
- Access rights *
- Identity *
- Presence *





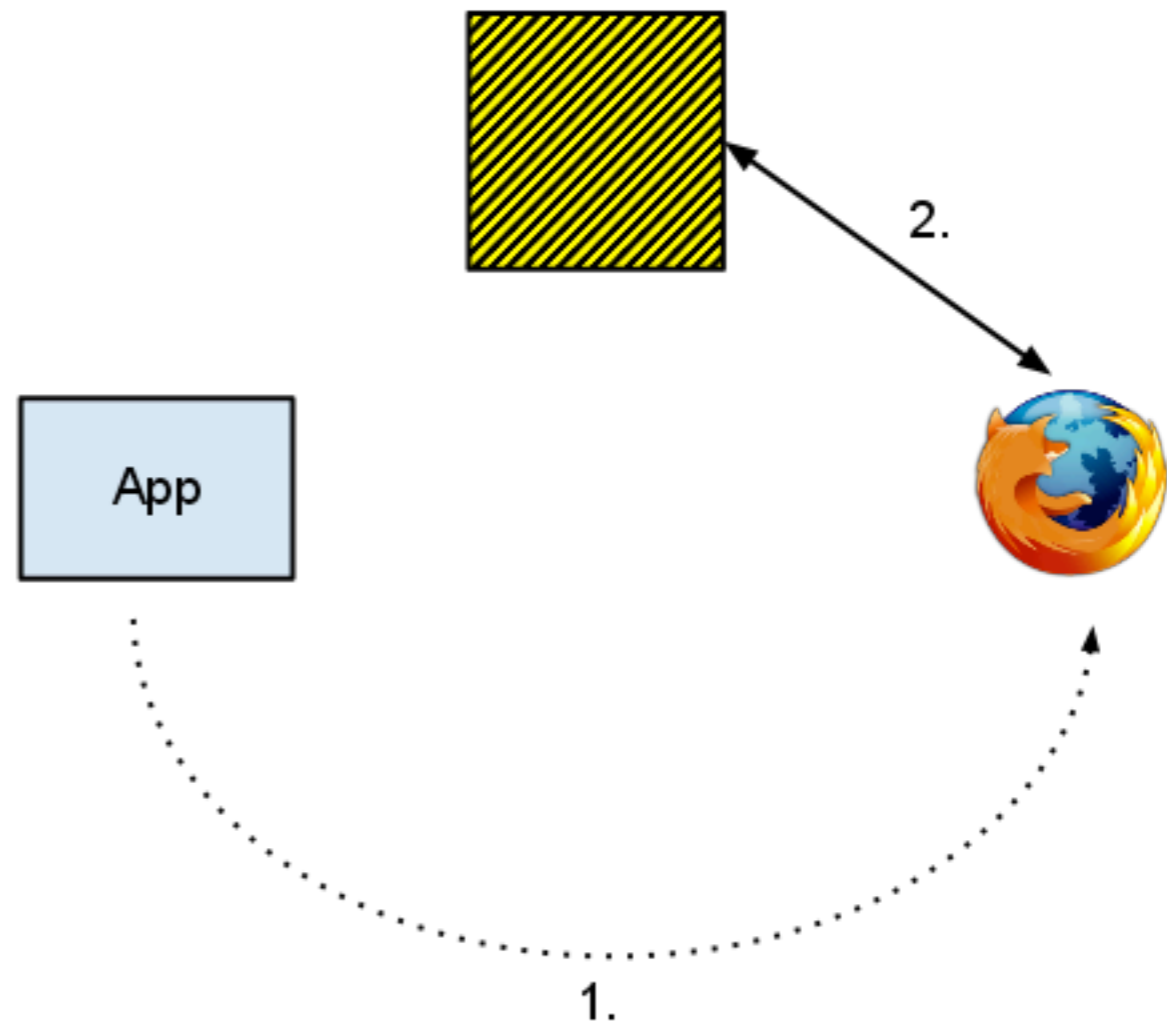
We can do better





We can do better

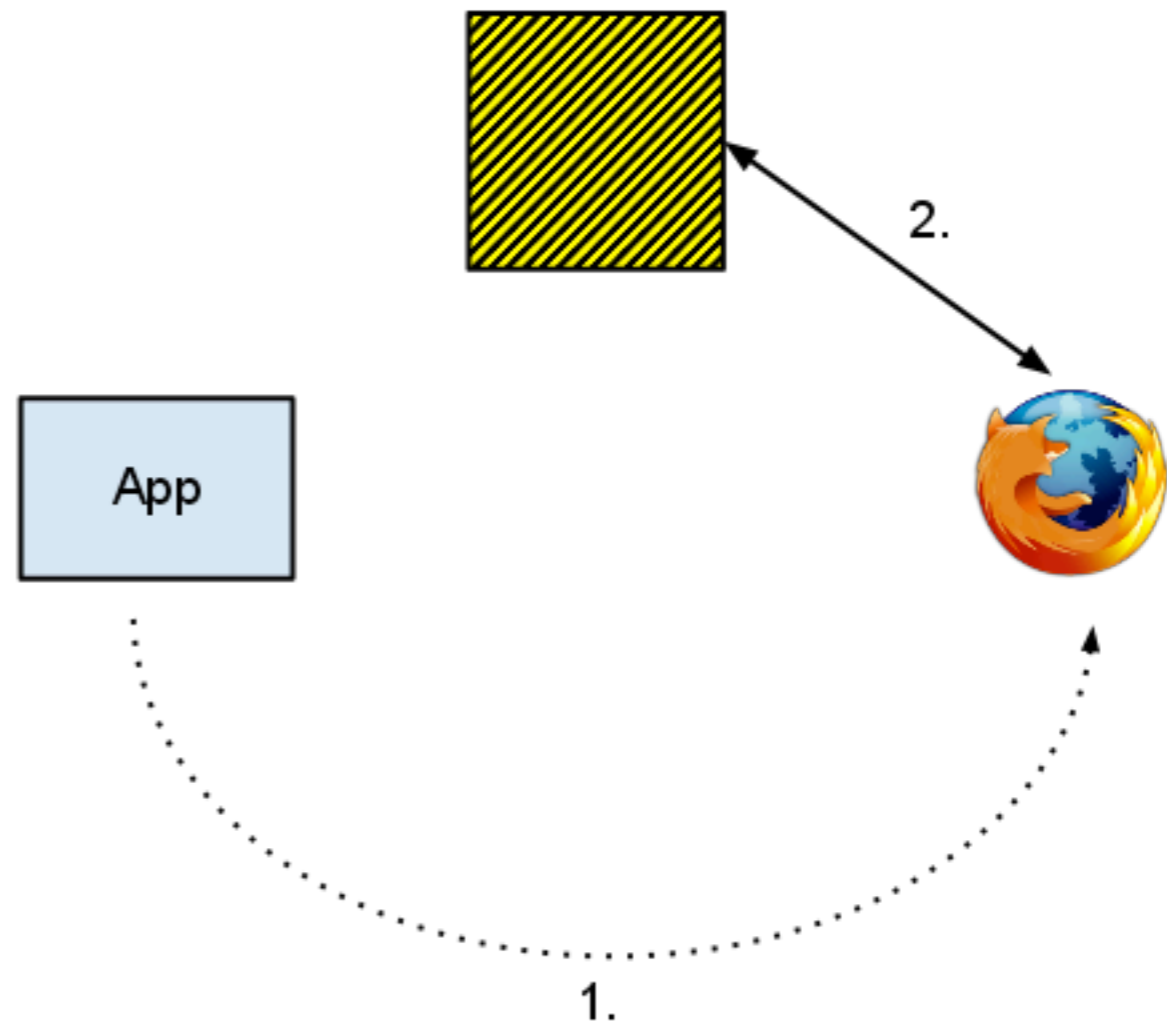
- Duplex





We can do better

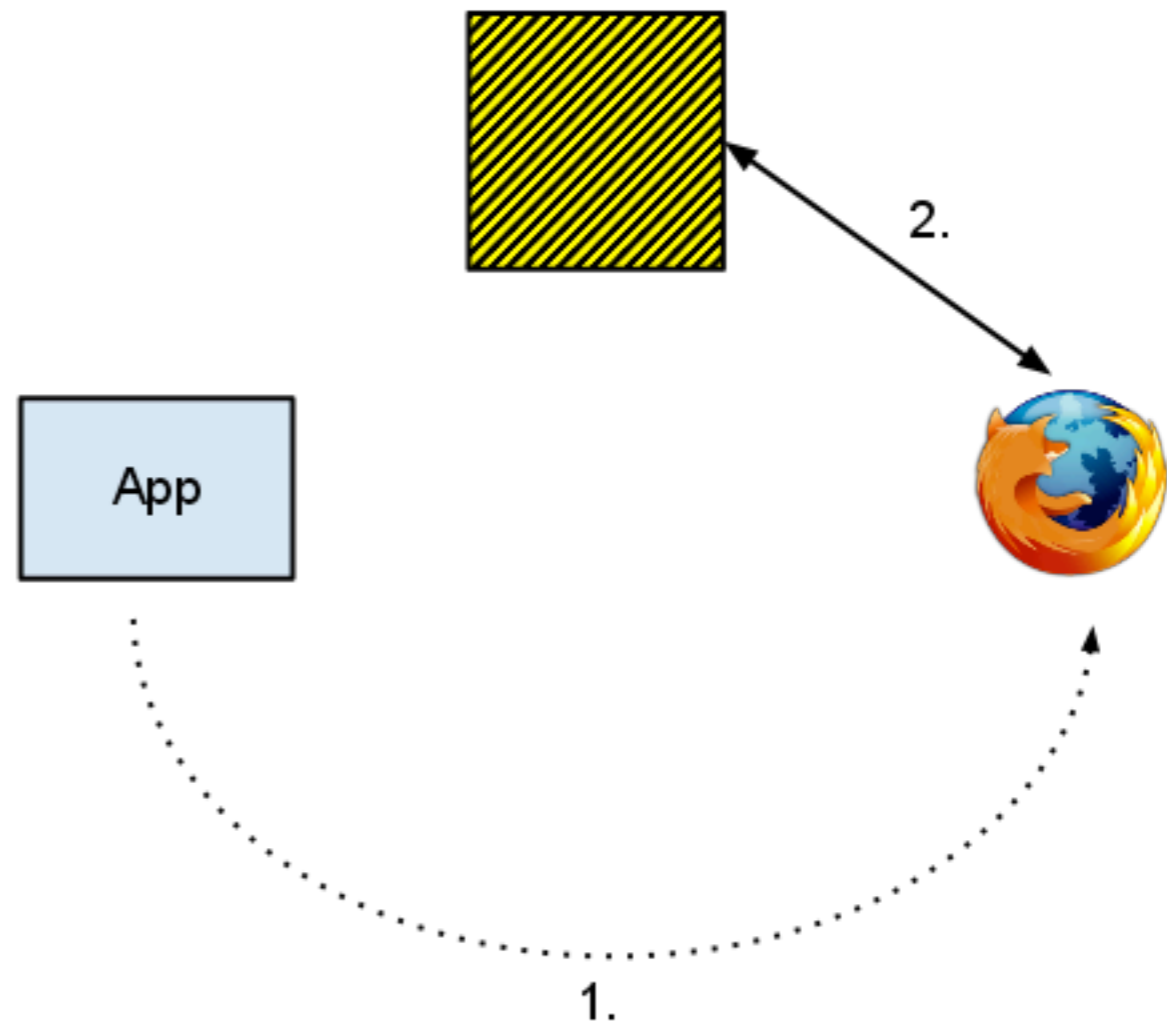
- Duplex
- Broadcast





We can do better

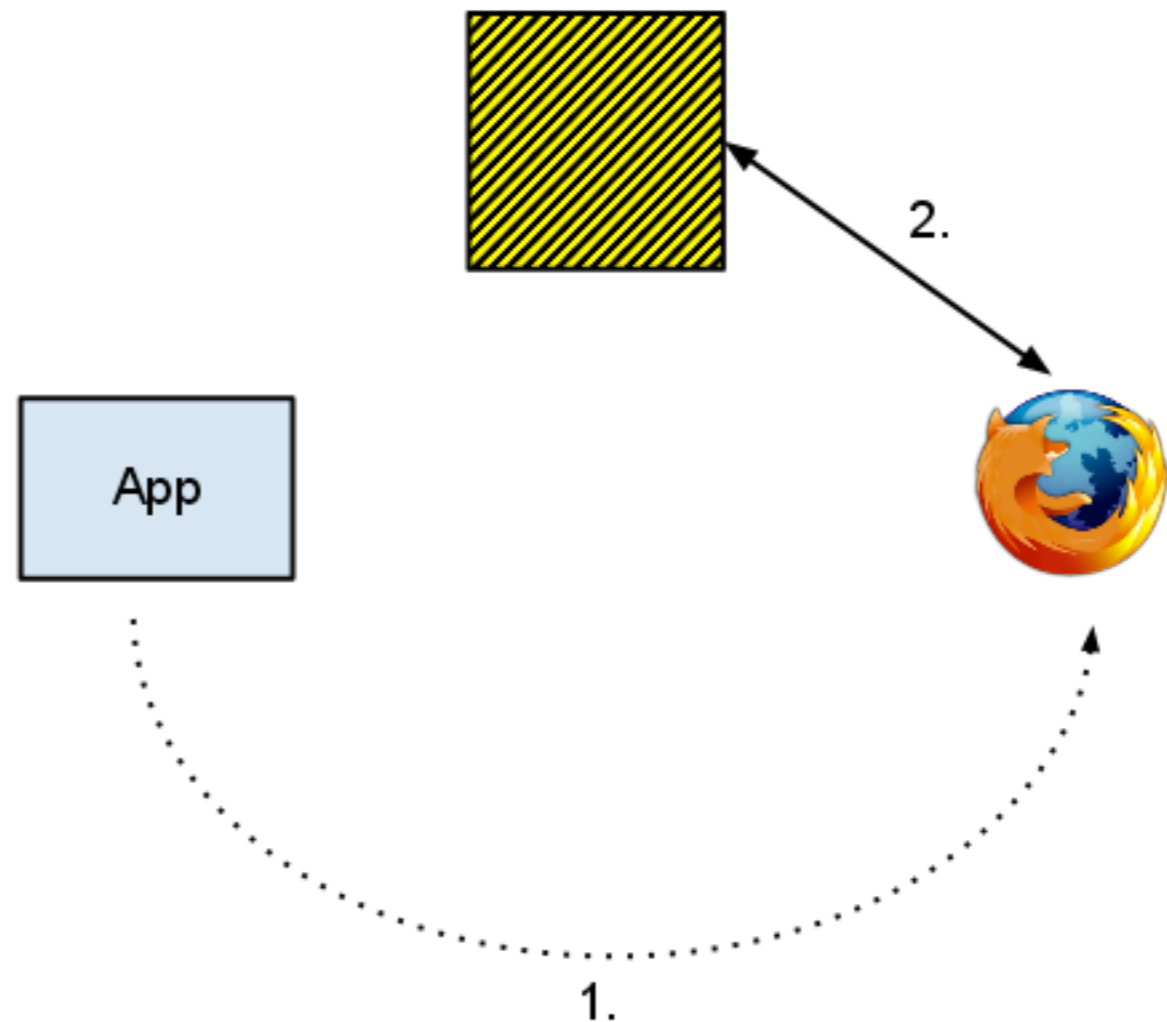
- Duplex
- Broadcast
- Access rights





We can do better

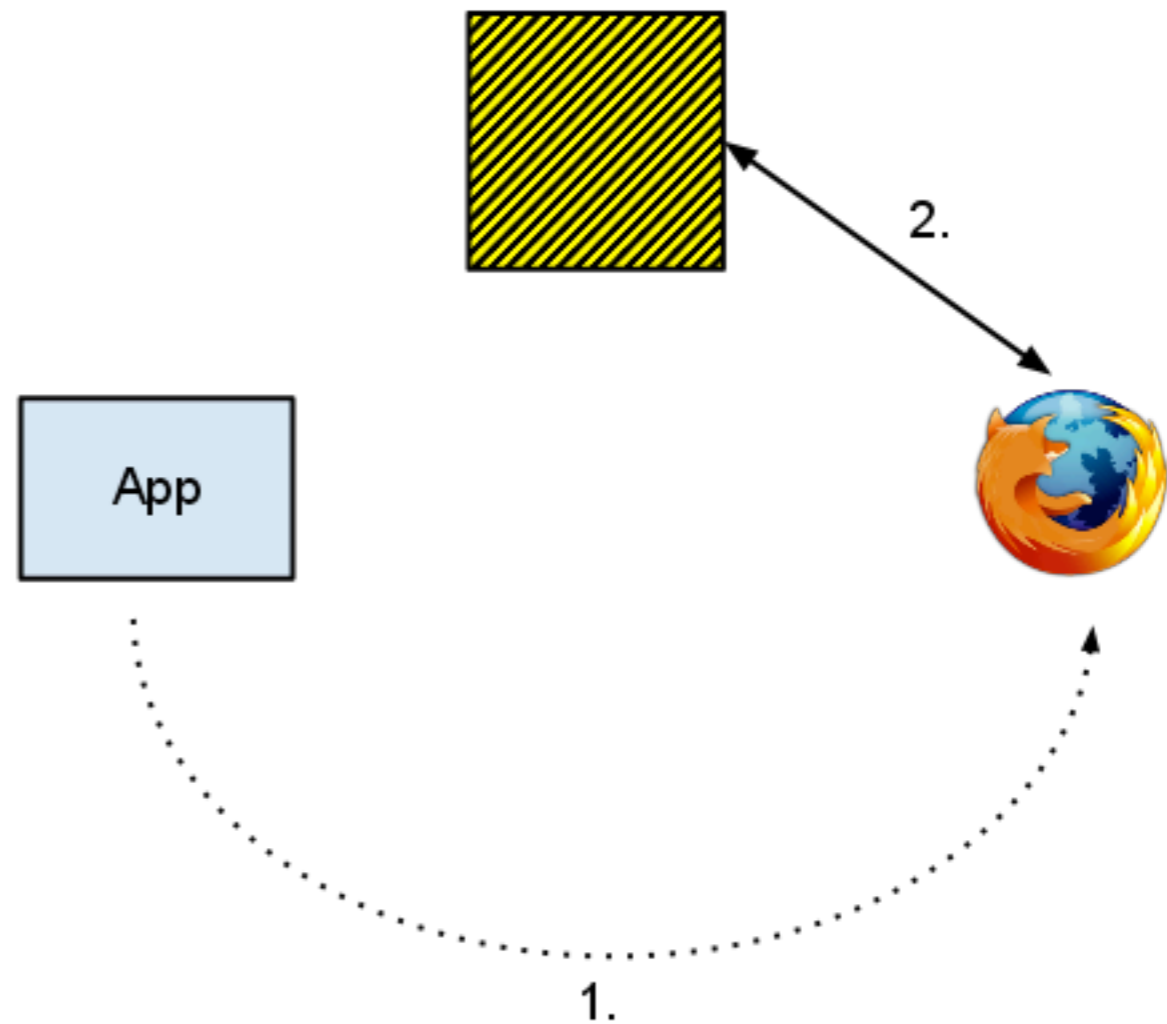
- Duplex
- Broadcast
- Access rights
- Identity

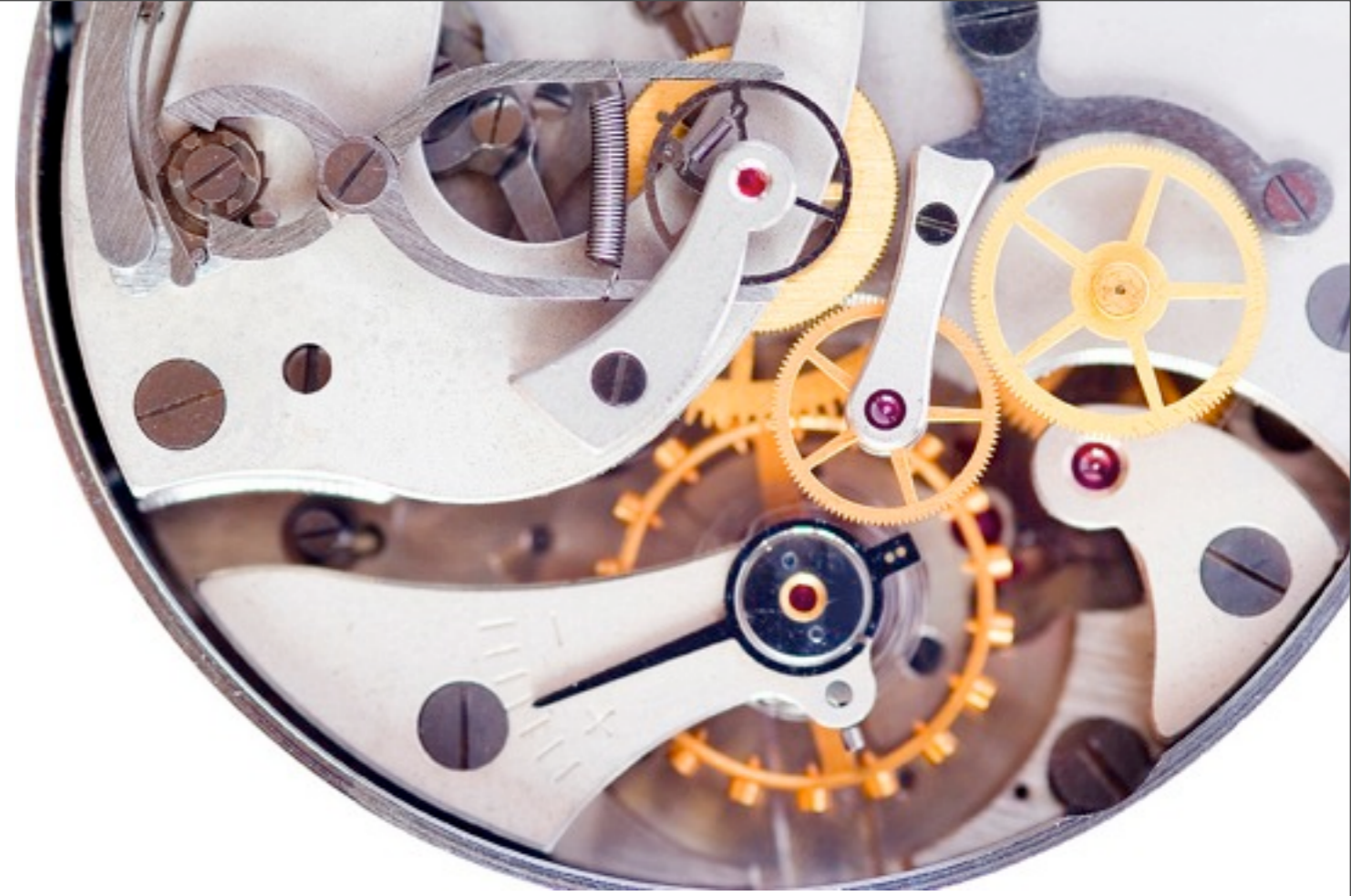




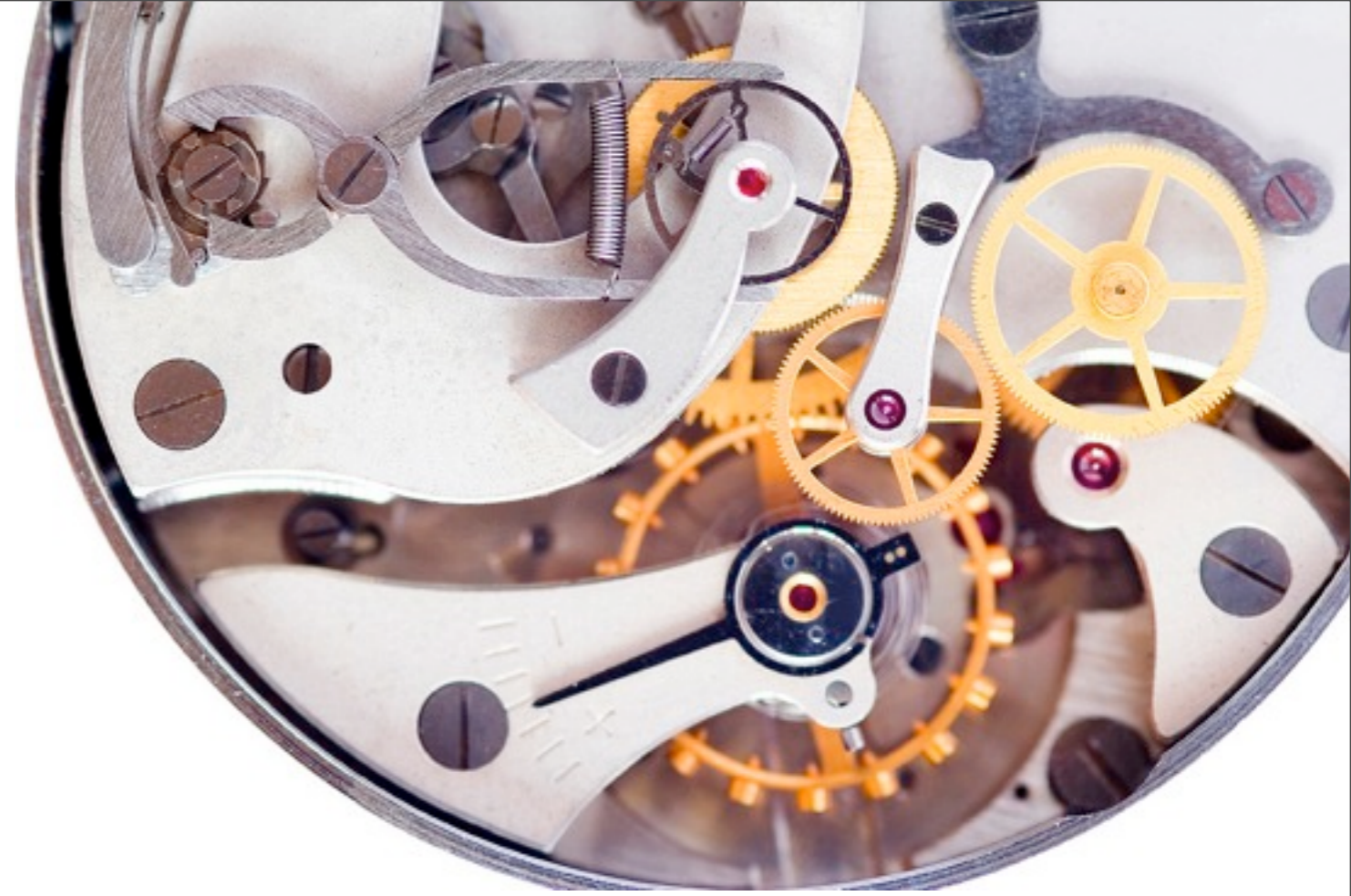
We can do better

- Duplex
- Broadcast
- Access rights
- Identity
- Presence





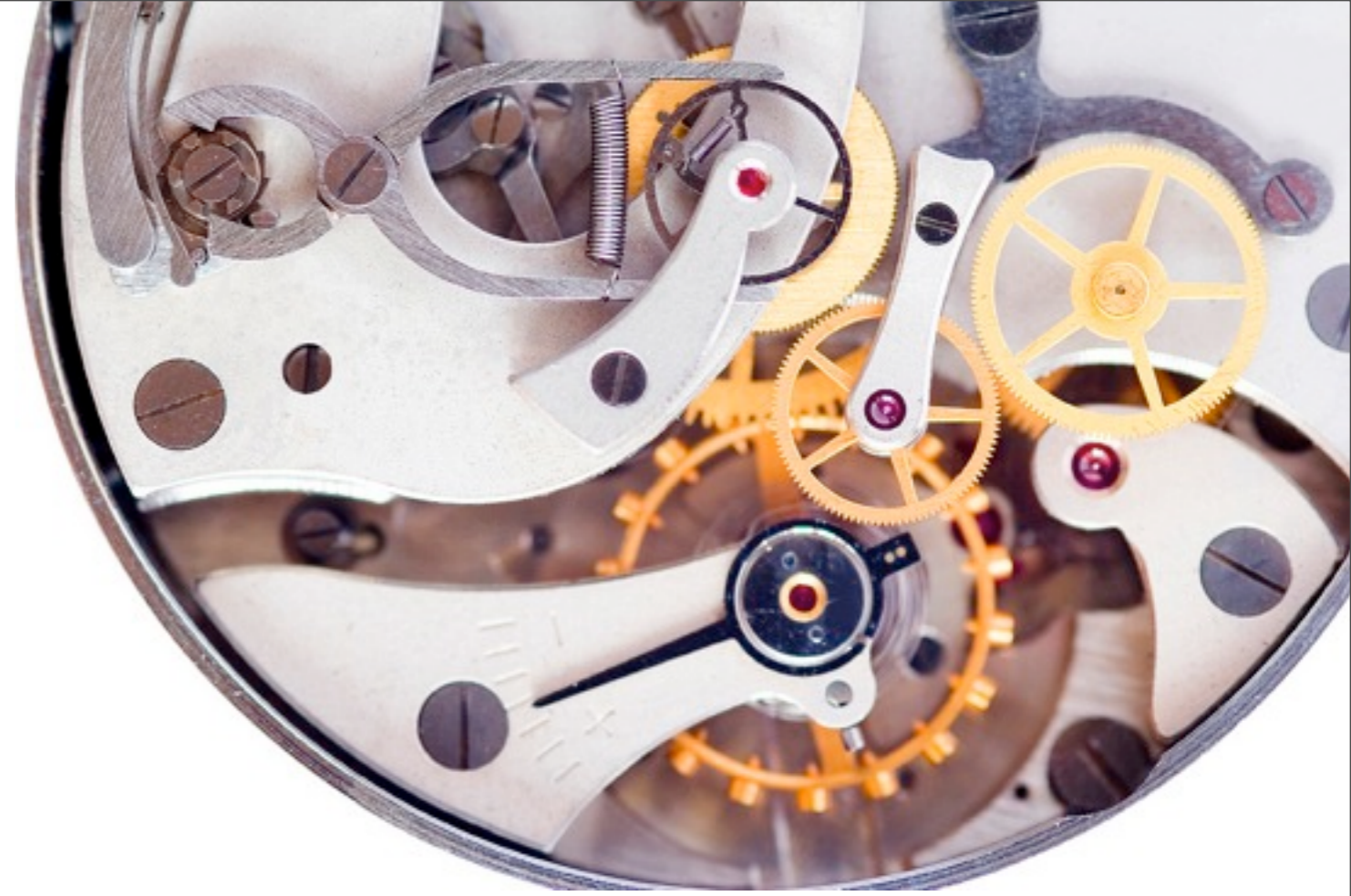
- **Authorisation**



- **Authorisation**
- **Identity**

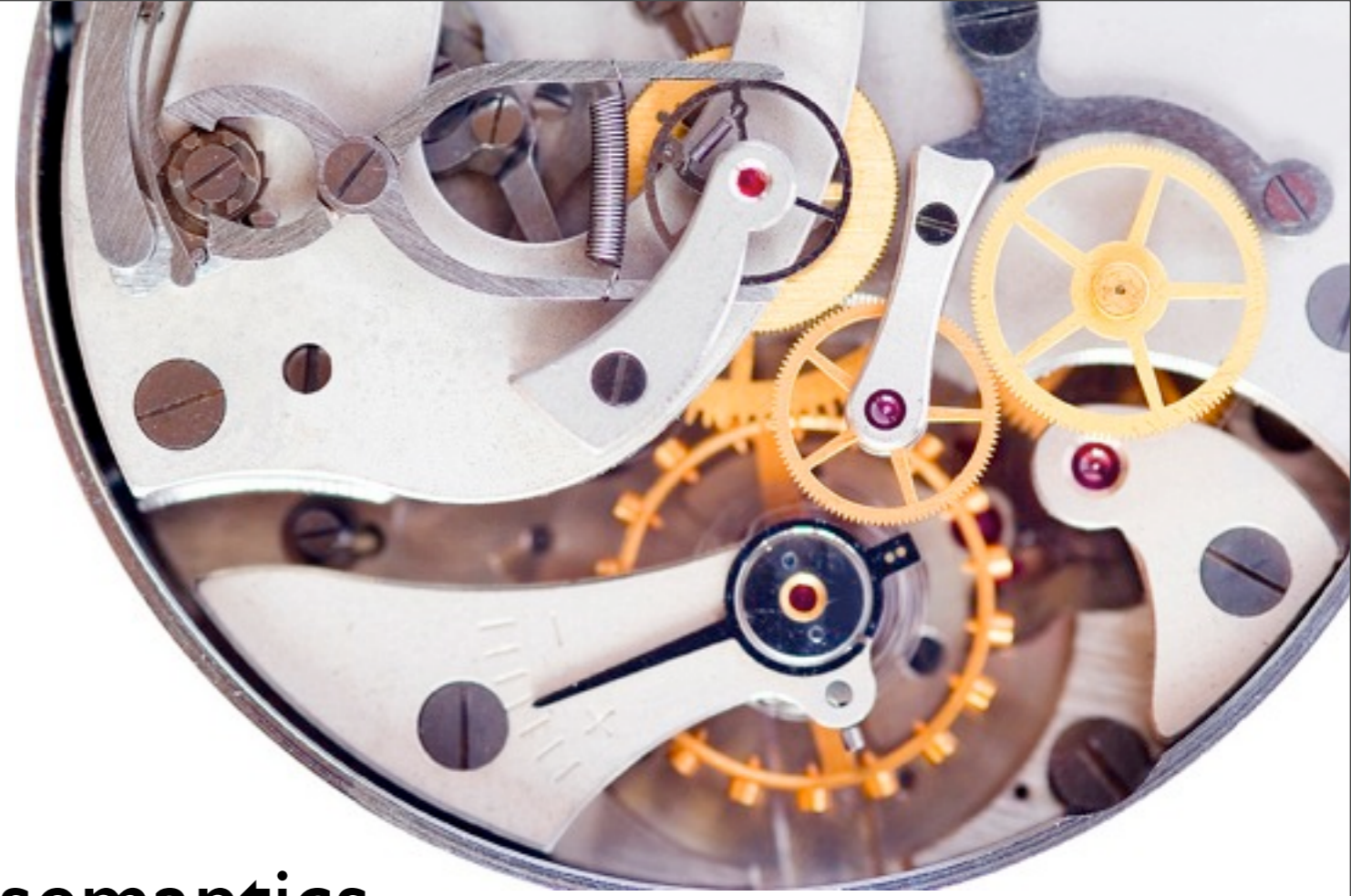


- **Authorisation**
- **Identity**
- **Permissions**

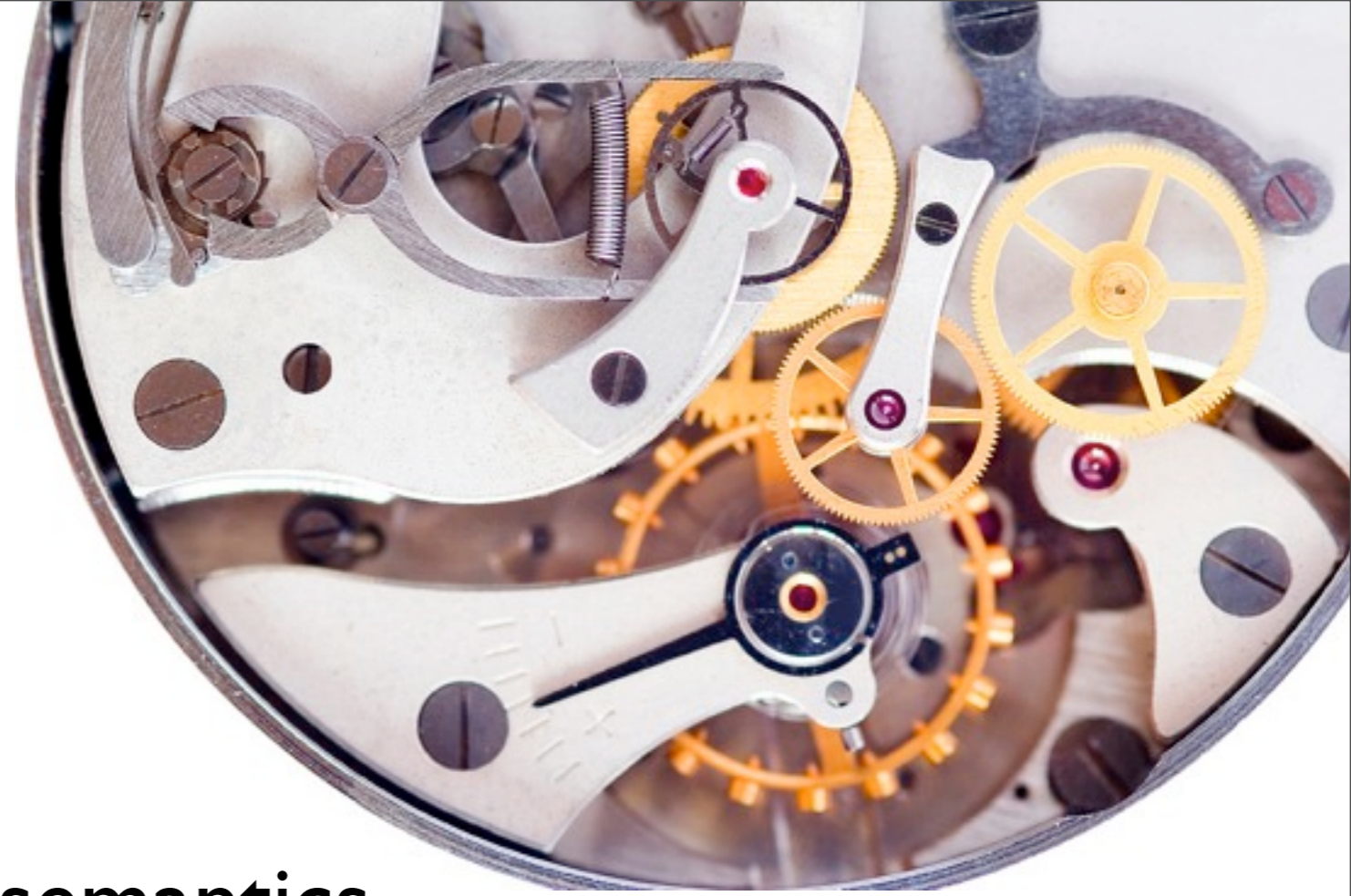




- Authorisation
- Identity
- Permissions
- Resource definitions + semantics

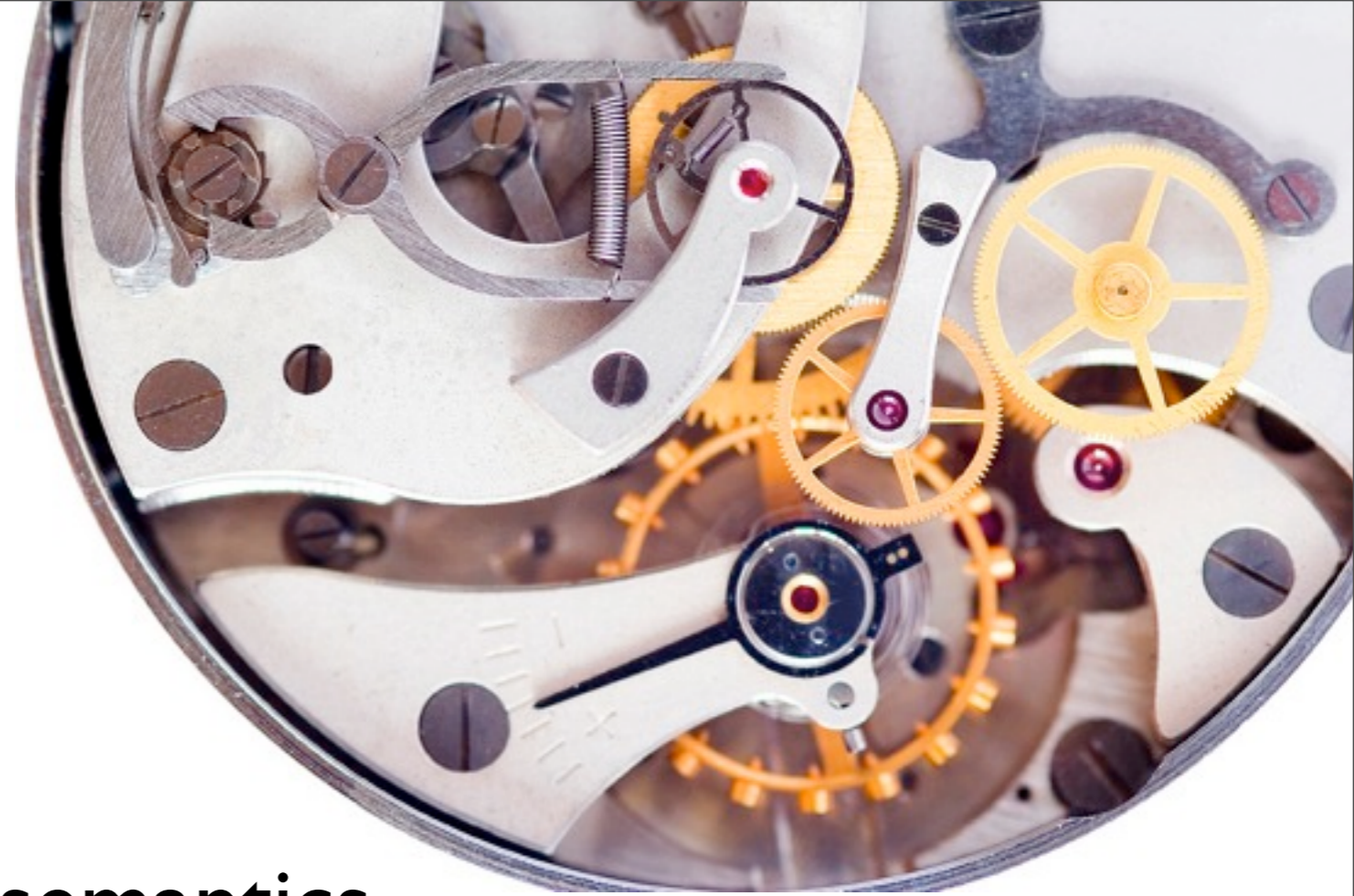


- Authorisation
- Identity
- Permissions
- Resource definitions + semantics
- Value + updates?



- Authorisation
- Identity
- Permissions
- Resource definitions + semantics
- Value + updates?
- Messages back to App (WebHooks)

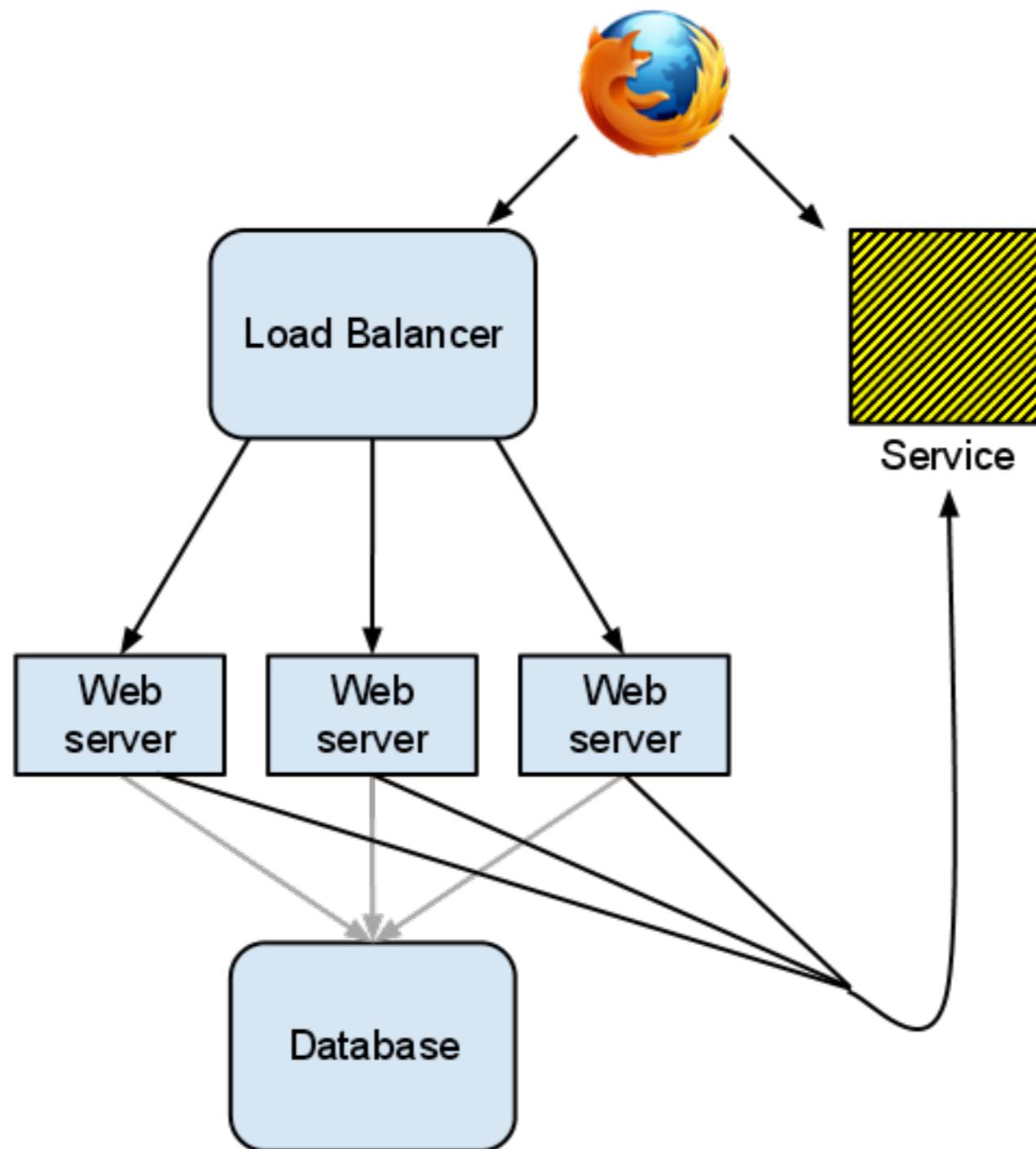
- Authorisation
- Identity
- Permissions
- Resource definitions + semantics
- Value + updates?
- Messages back to App (WebHooks)
- Presence



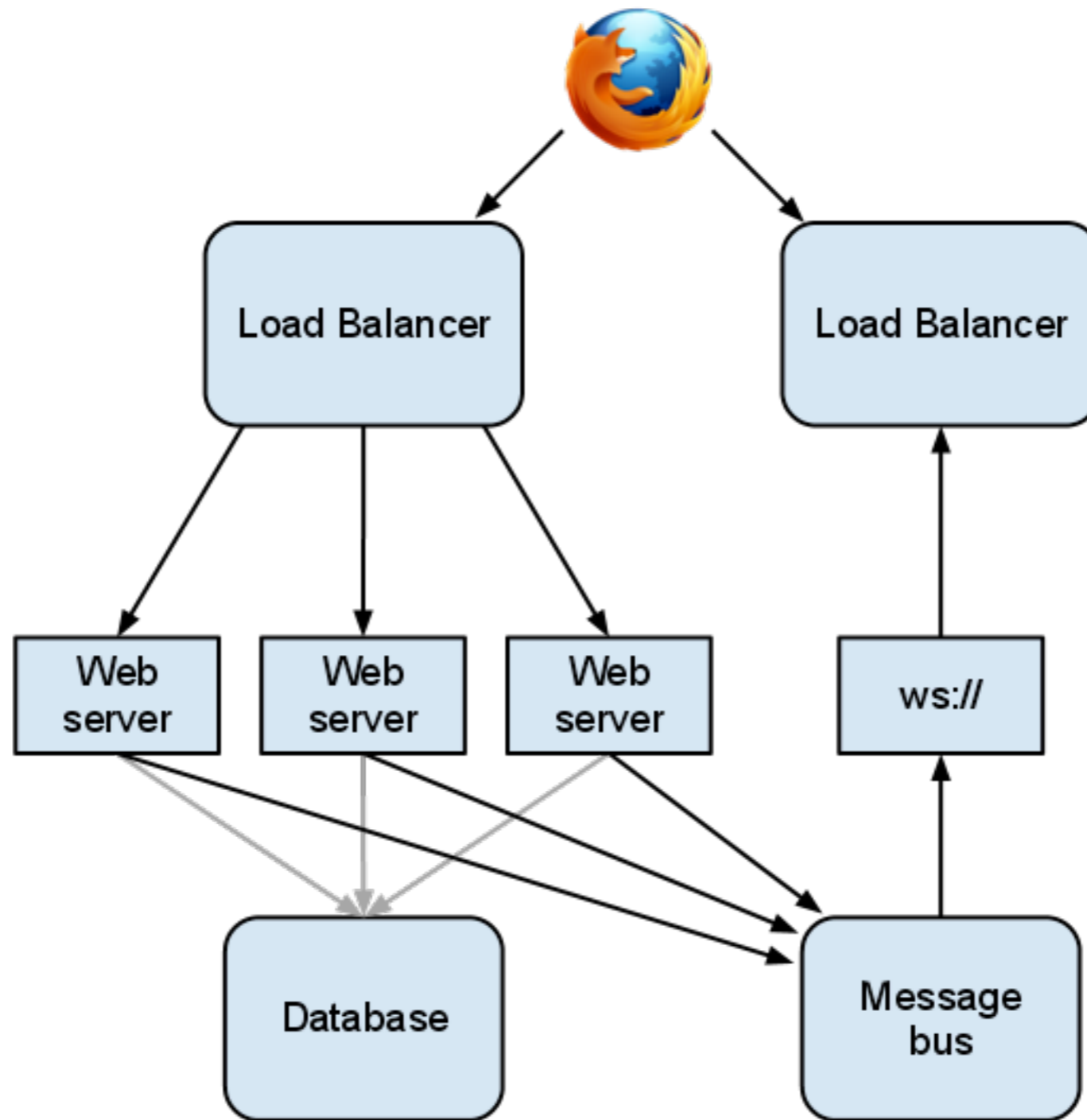


- Authorisation
- Identity
- Permissions
- Resource definitions + semantics
- Value + updates?
- Messages back to App (WebHooks)
- Presence
- Good luck writing documentation!

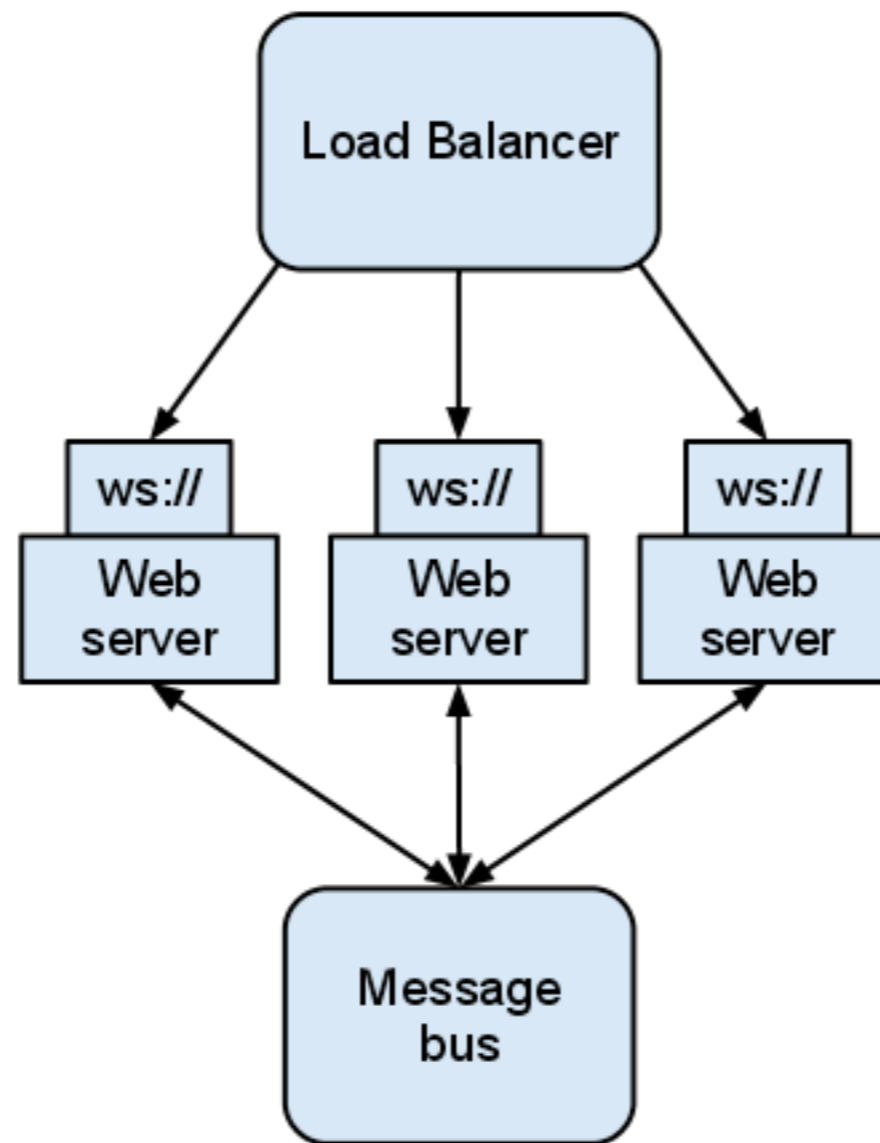
Service?



Sync + Async

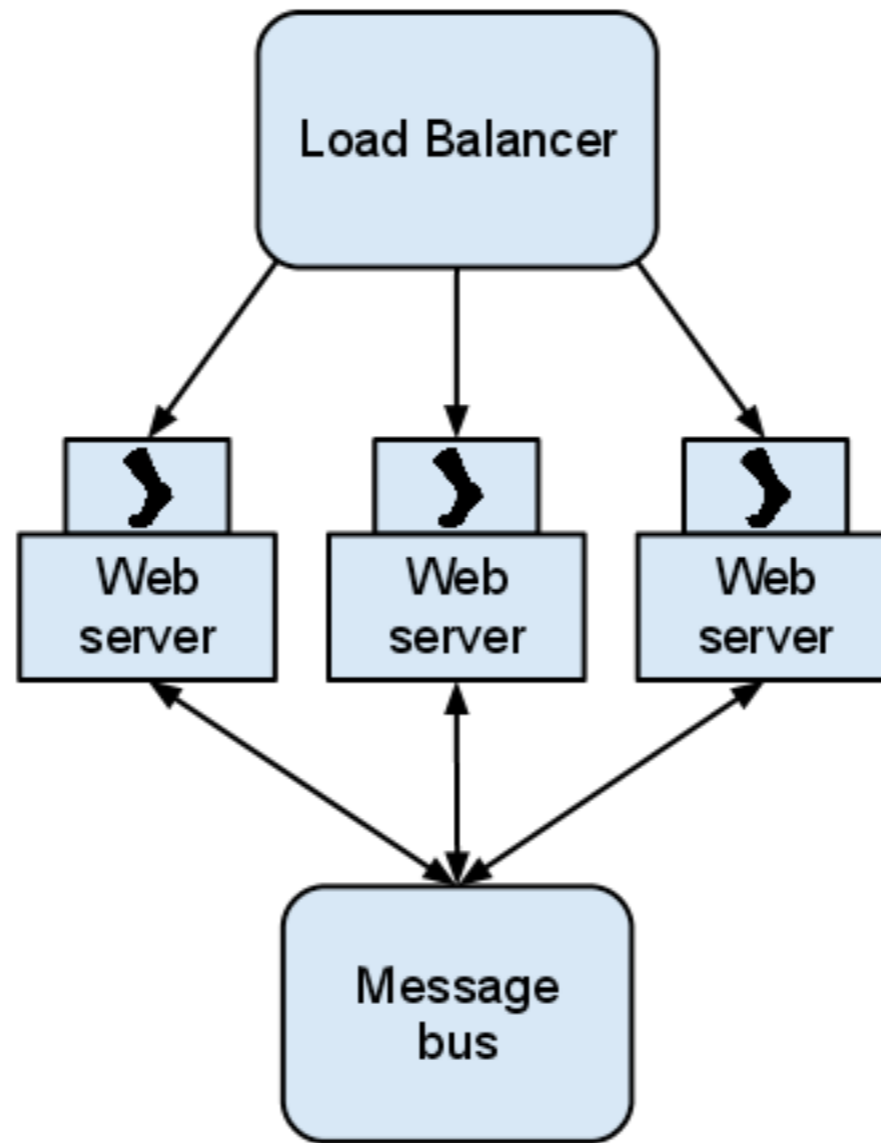


Fully async

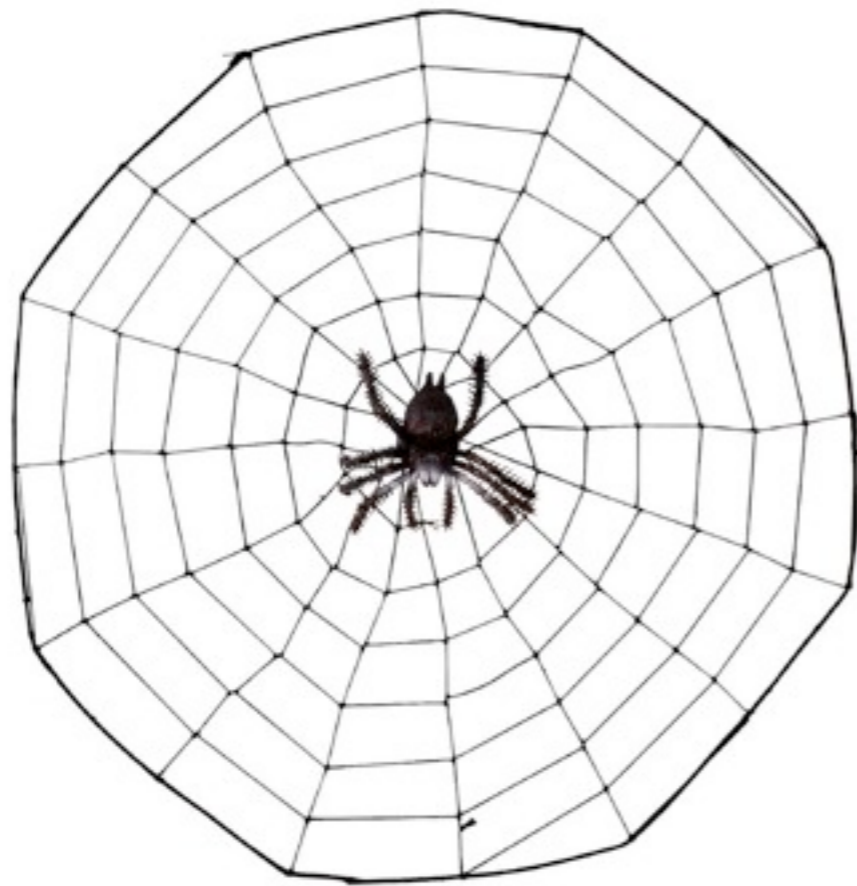




SockJS









@metabrew

Richard Jones

RabbitMQ should come with a time-machine, so I could go back a year and convince myself to use a more messaging-based architecture.

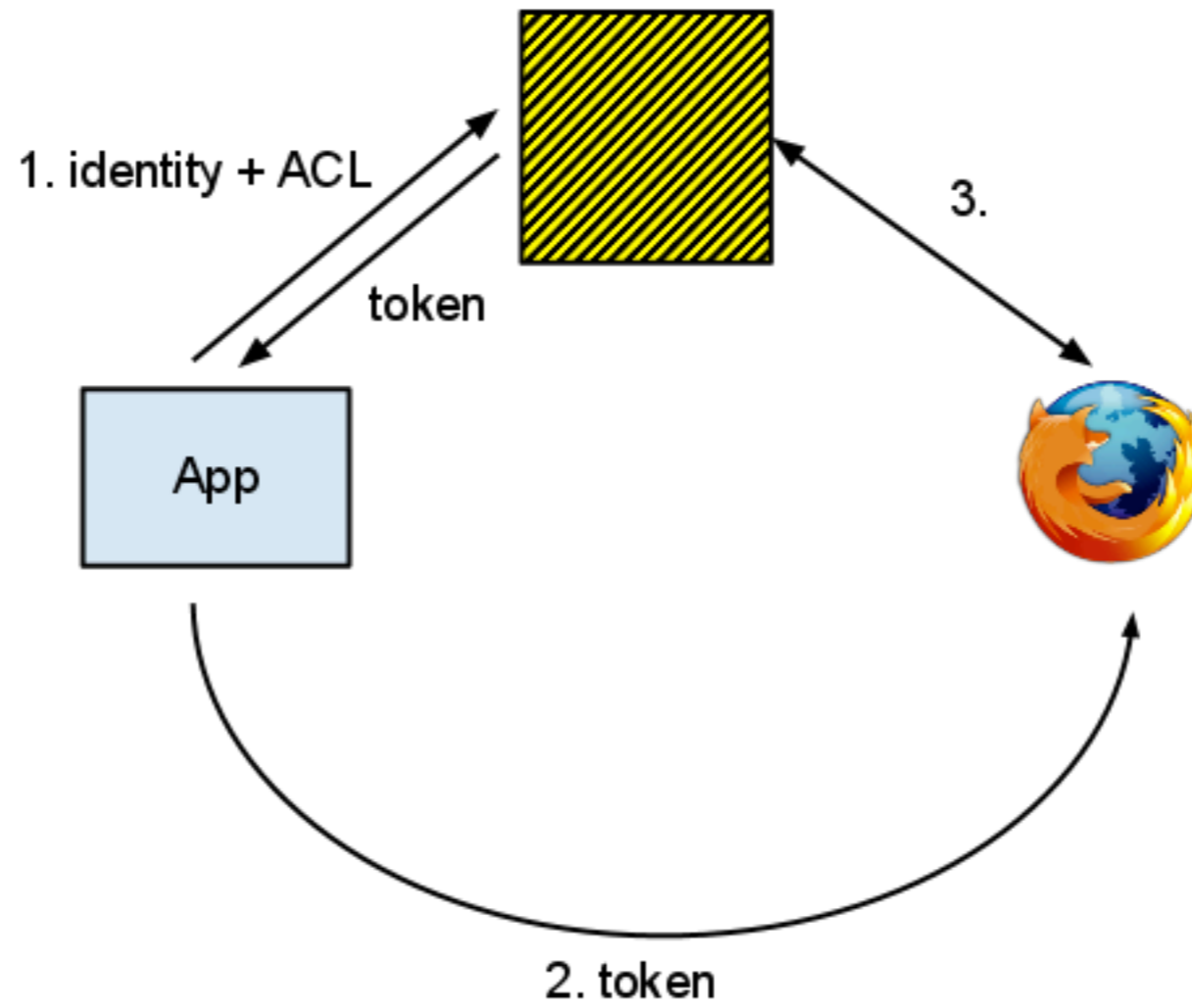
13 Sep via [TweetDeck](#)  [Favorite](#)  [Retweet](#)  [Reply](#)



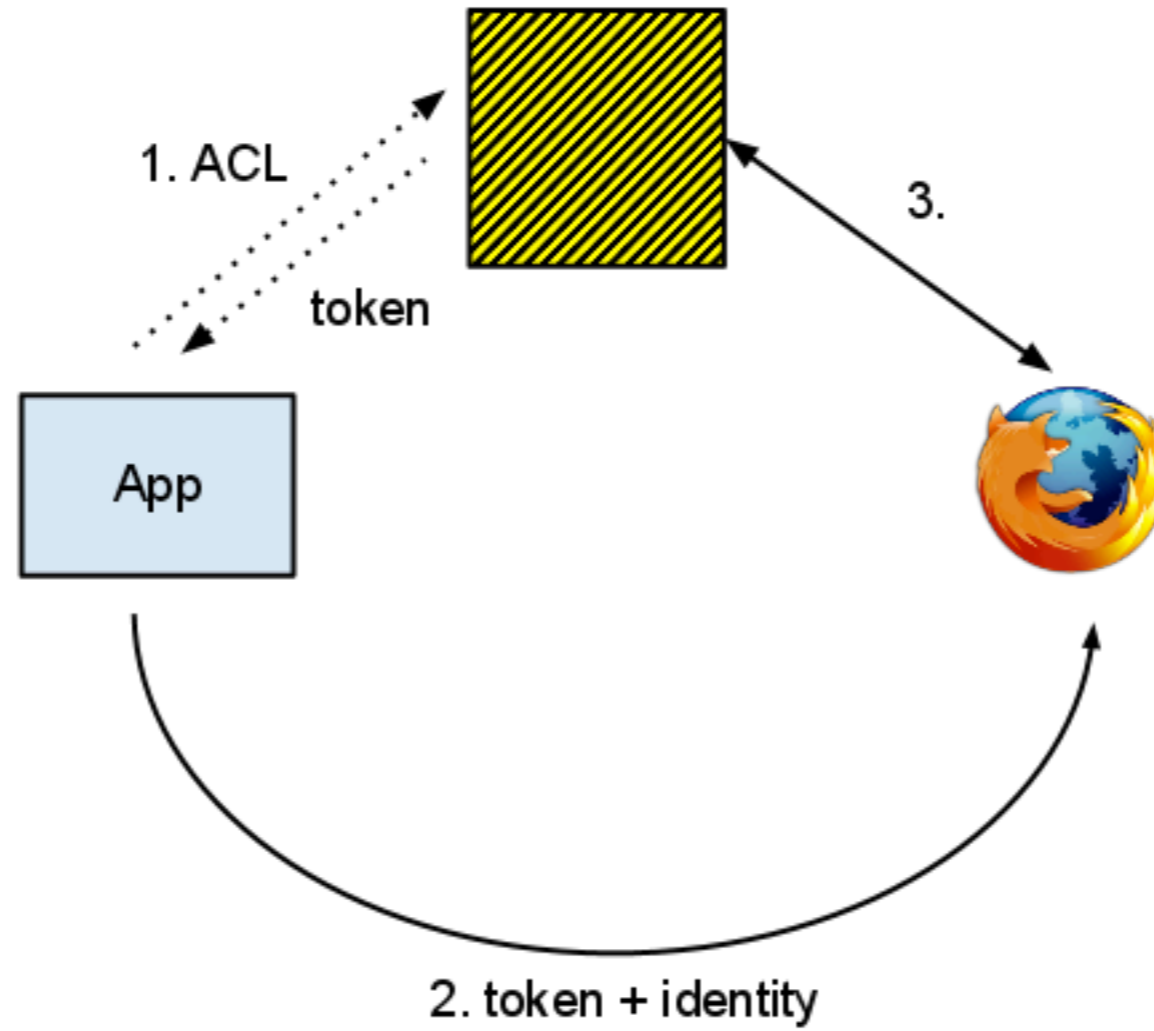
#sockjs

github.com/sockjs

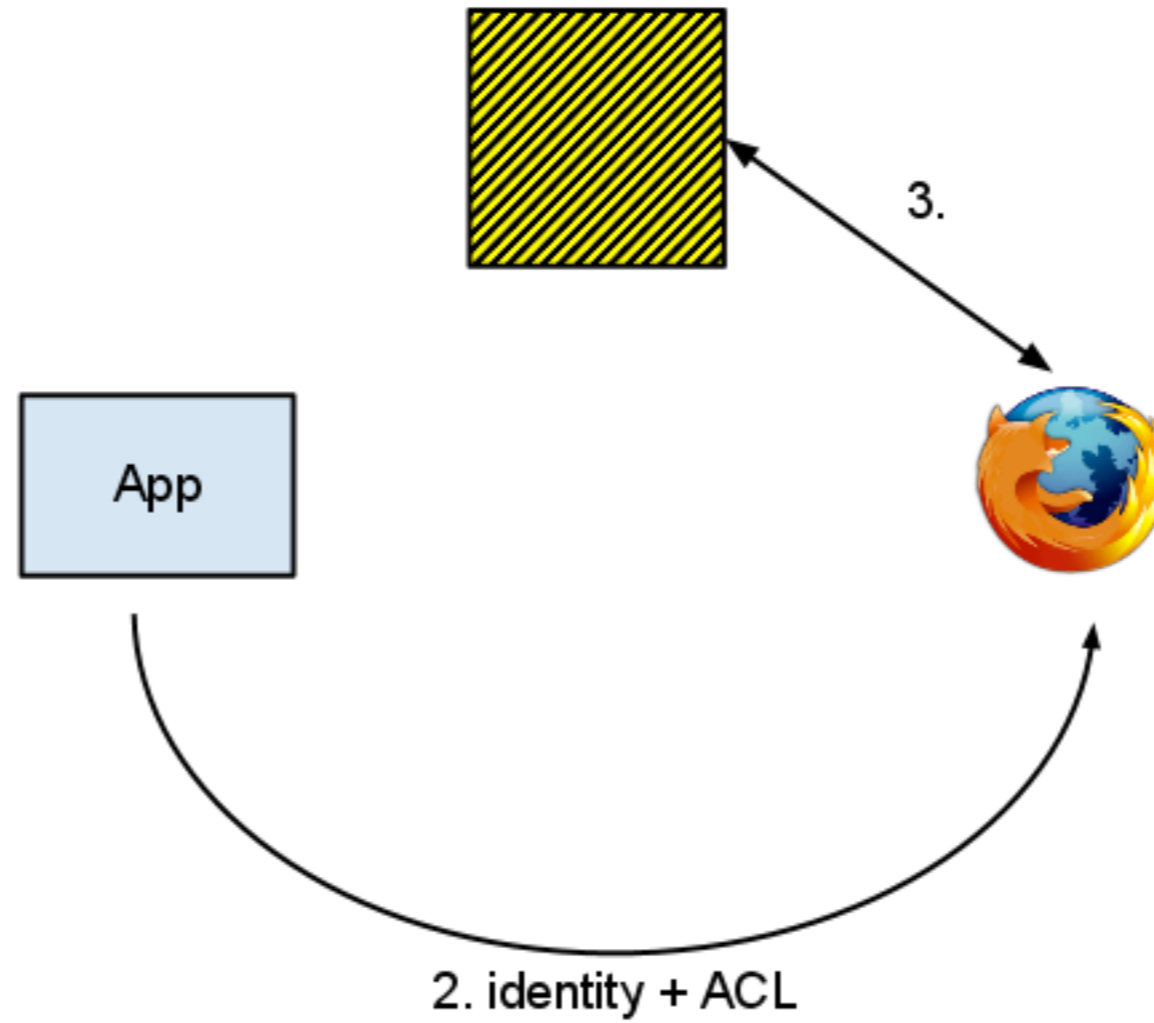
I. token



2. token



3. token



So?

