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CSCI 4140 – Tutorial 7

Assignment 2 Overview (Server Side)

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SHB 118

Office Hour: Tuesday, 3-5 pm

2015.03.05

Outline

- Work flow
- Server side
 - Routing
 - Message forwarding
 - Retrieving video title

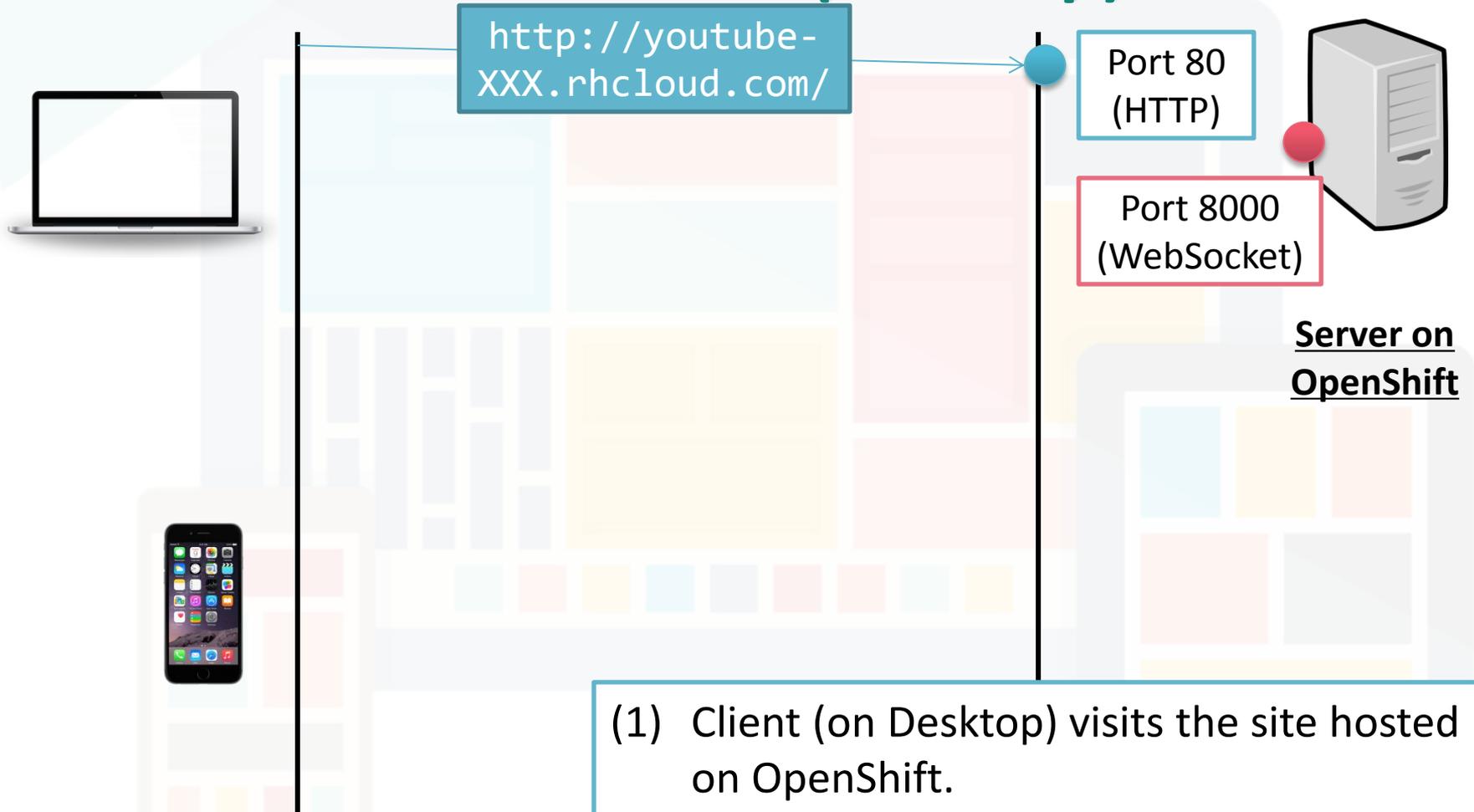




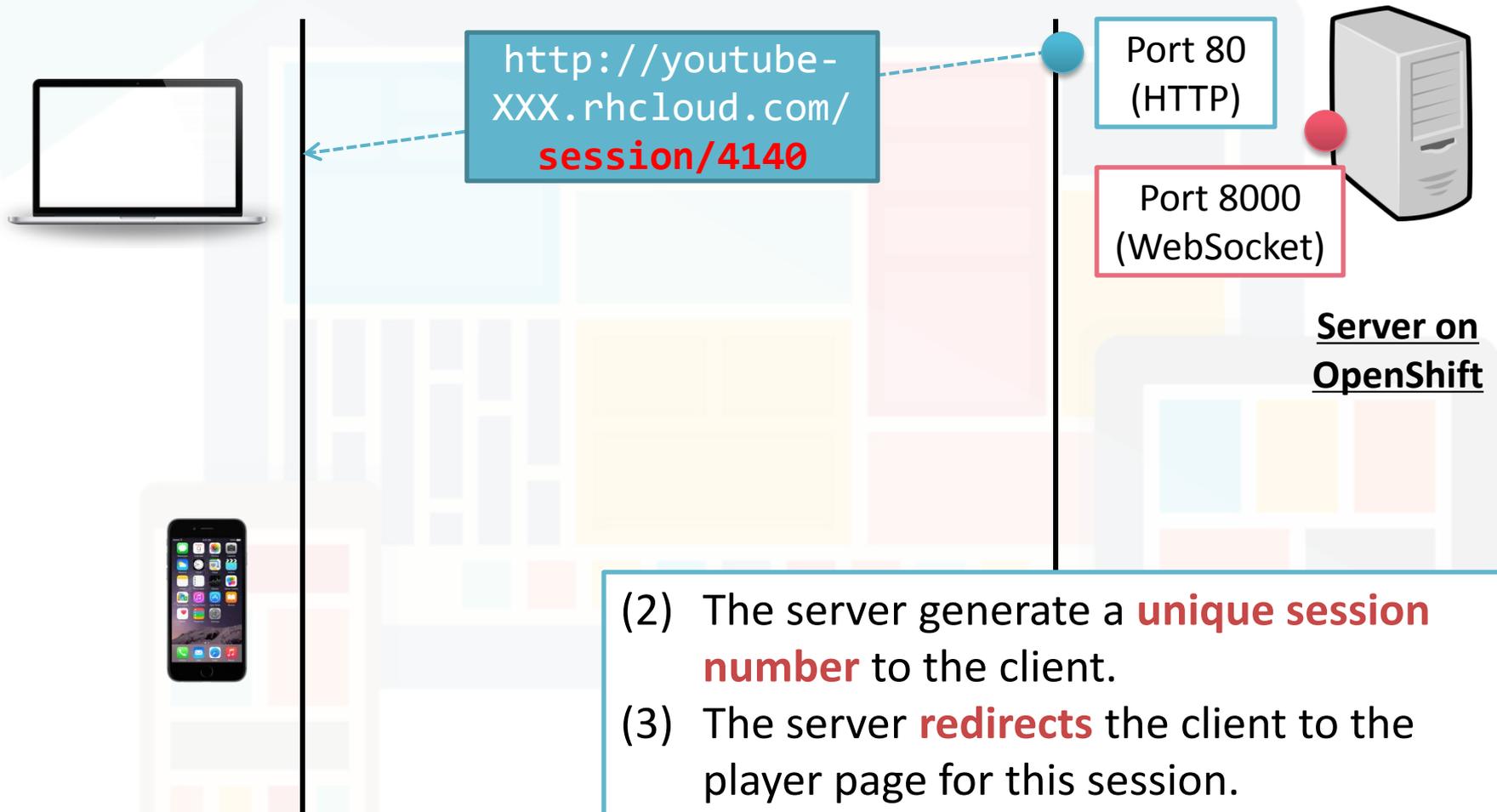
Work flow

Let's define what will happen between the clients and server...

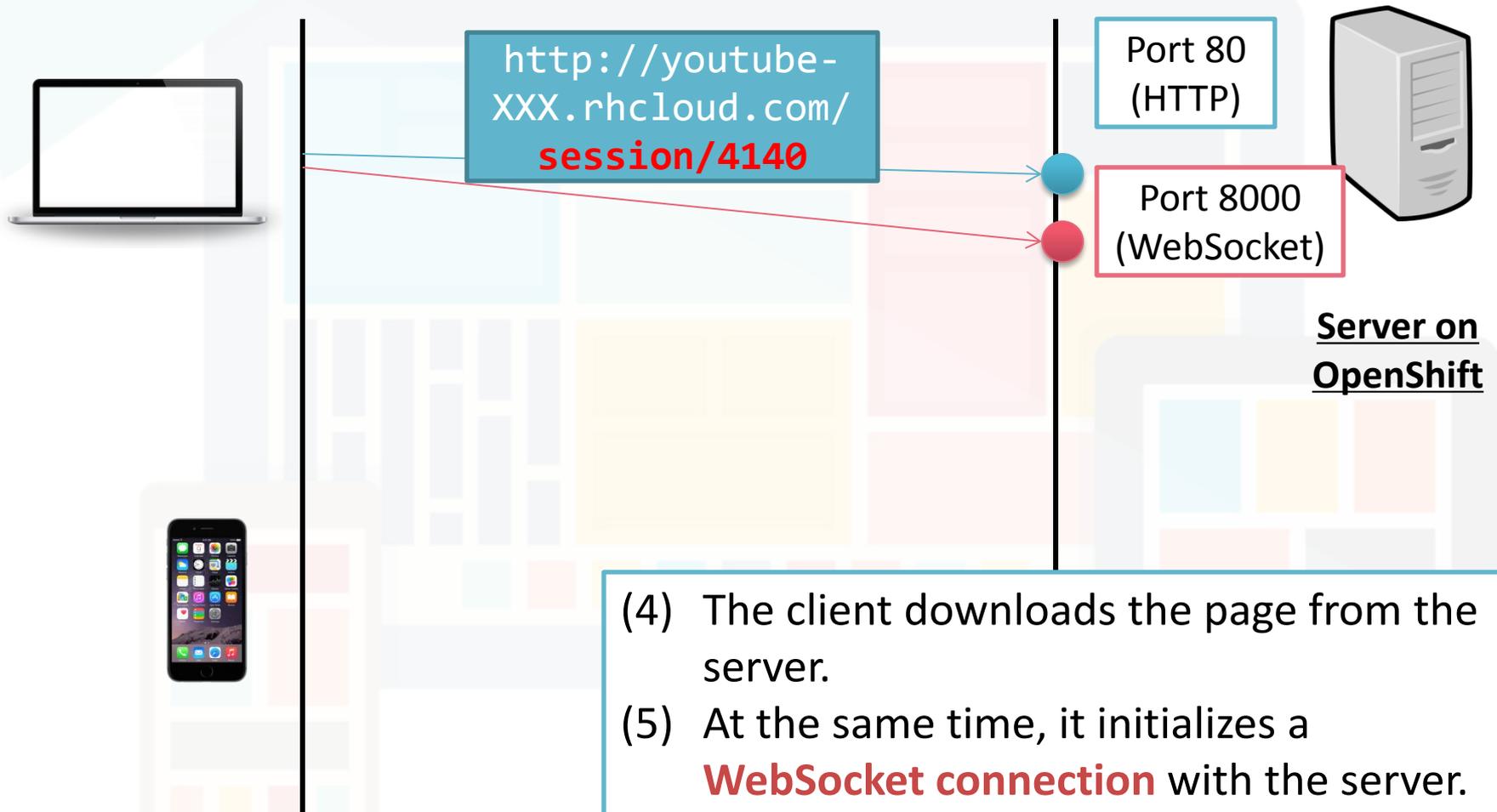
Work flow: Initialization (Desktop)



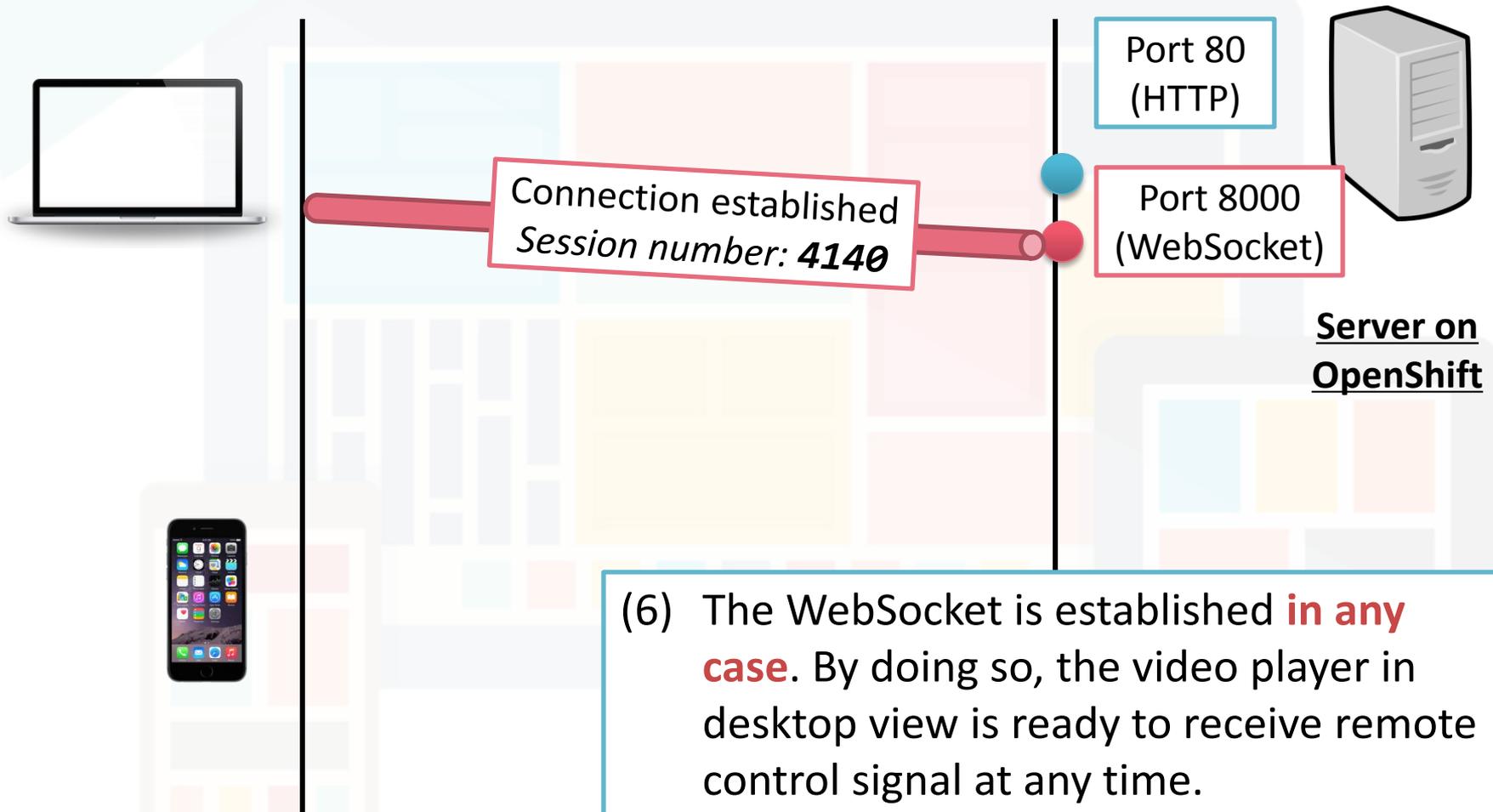
Work flow: Initialization (Desktop)



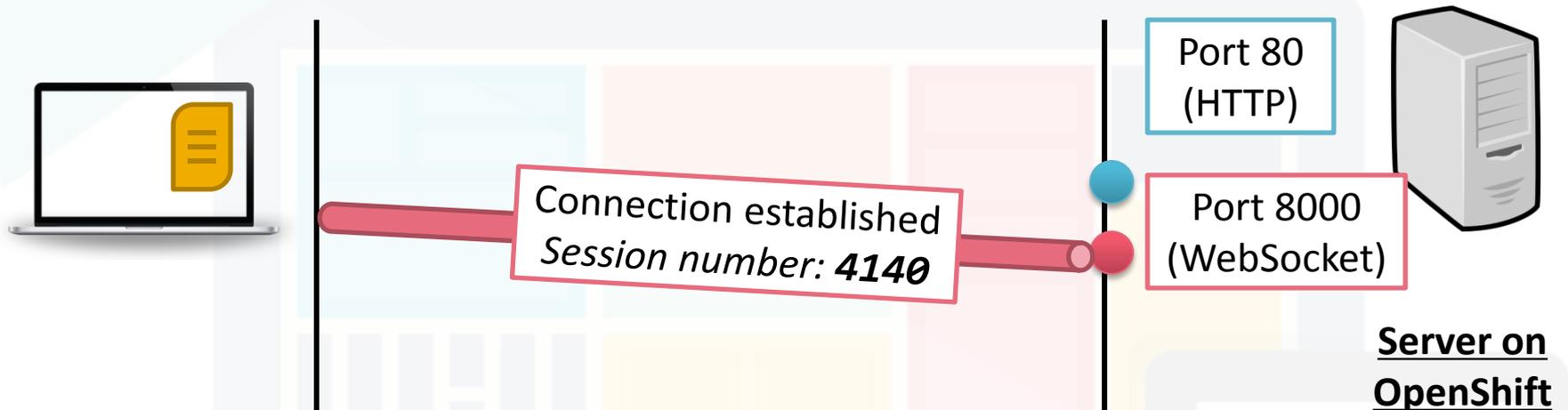
Work flow: Initialization (Desktop)



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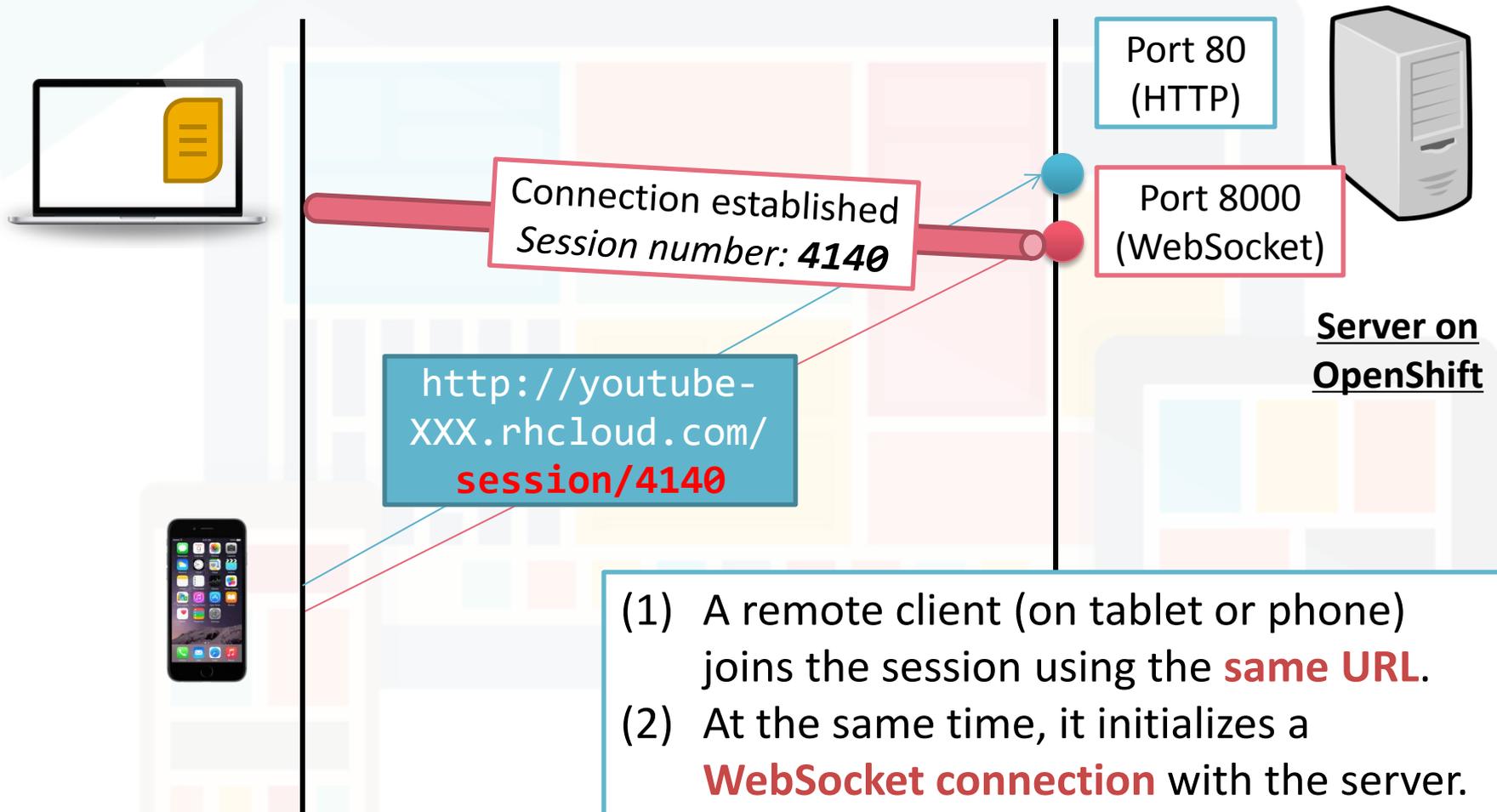
Work flow: Initialization (Desktop)



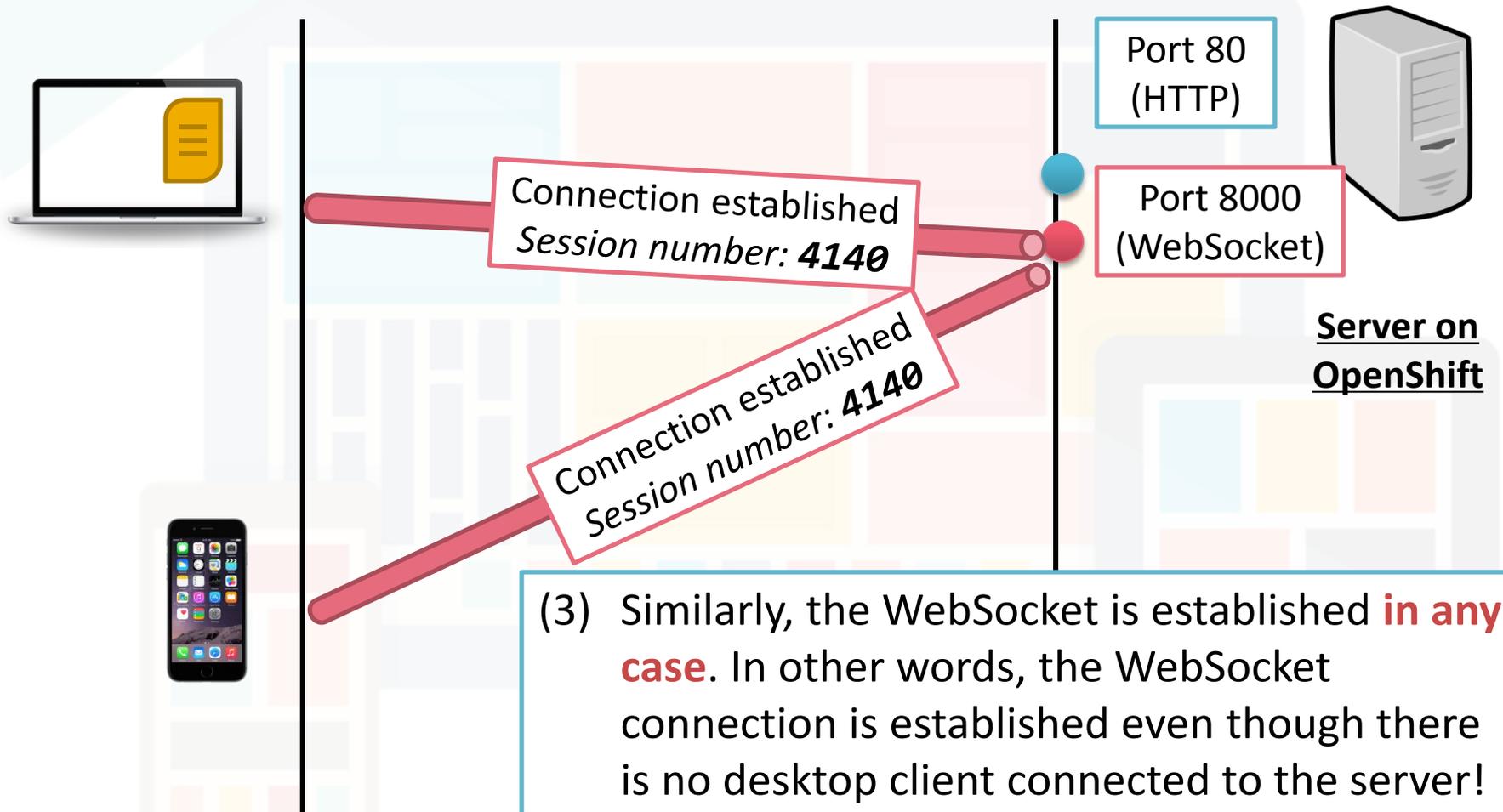
(7) The desktop client retrieves the playlist in the following order:

- **Synchronize** the playlist with the other client in the **same session**;
- If there are no existing clients, it reads the playlist stored in the **local storage**, provided that the desktop client has used the application before (not necessarily with the same session number);
- If there are nothing stored in the local storage, generate an **empty playlist**.

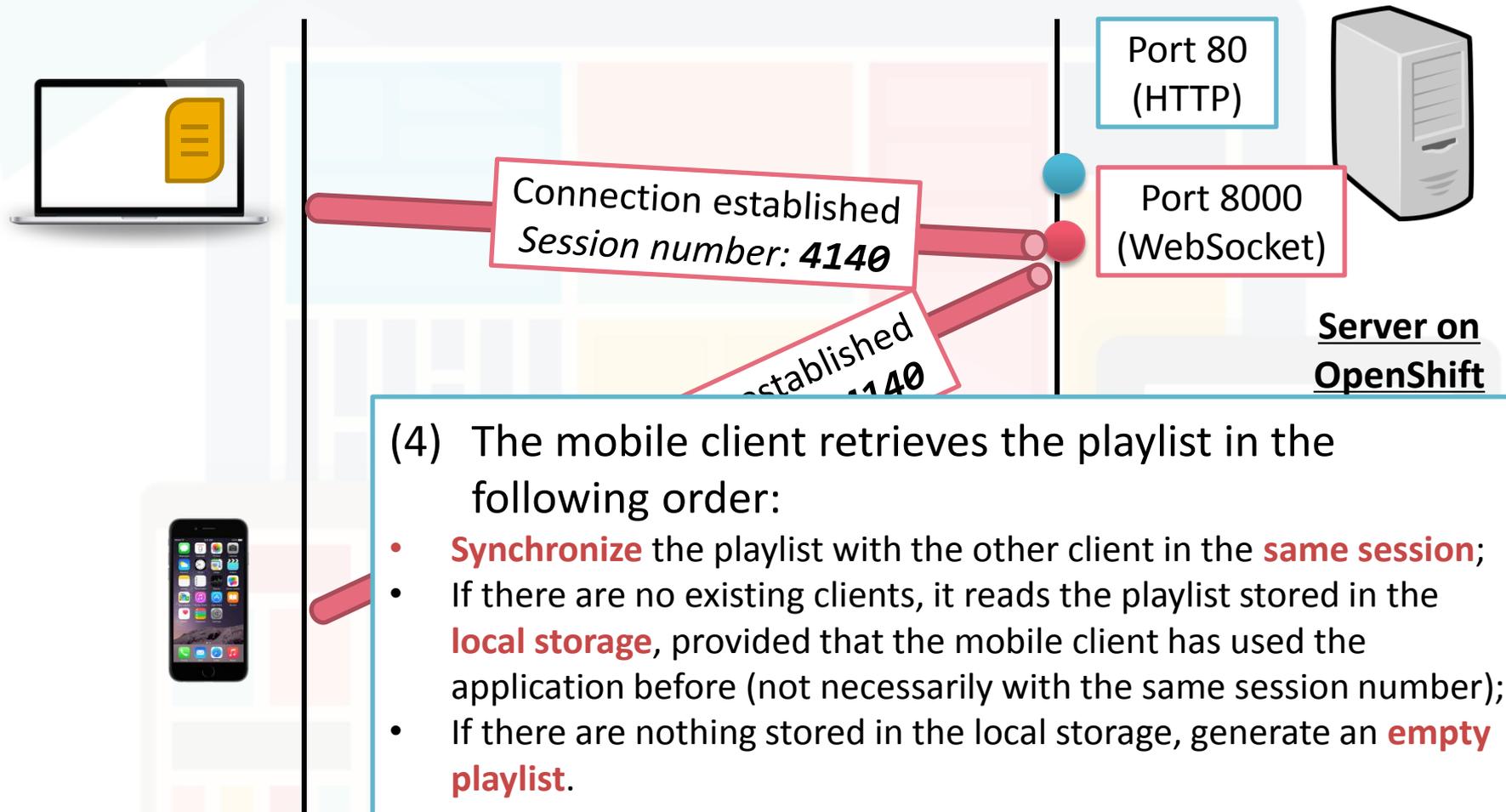
Work flow: Initialization (Tablet or phone)



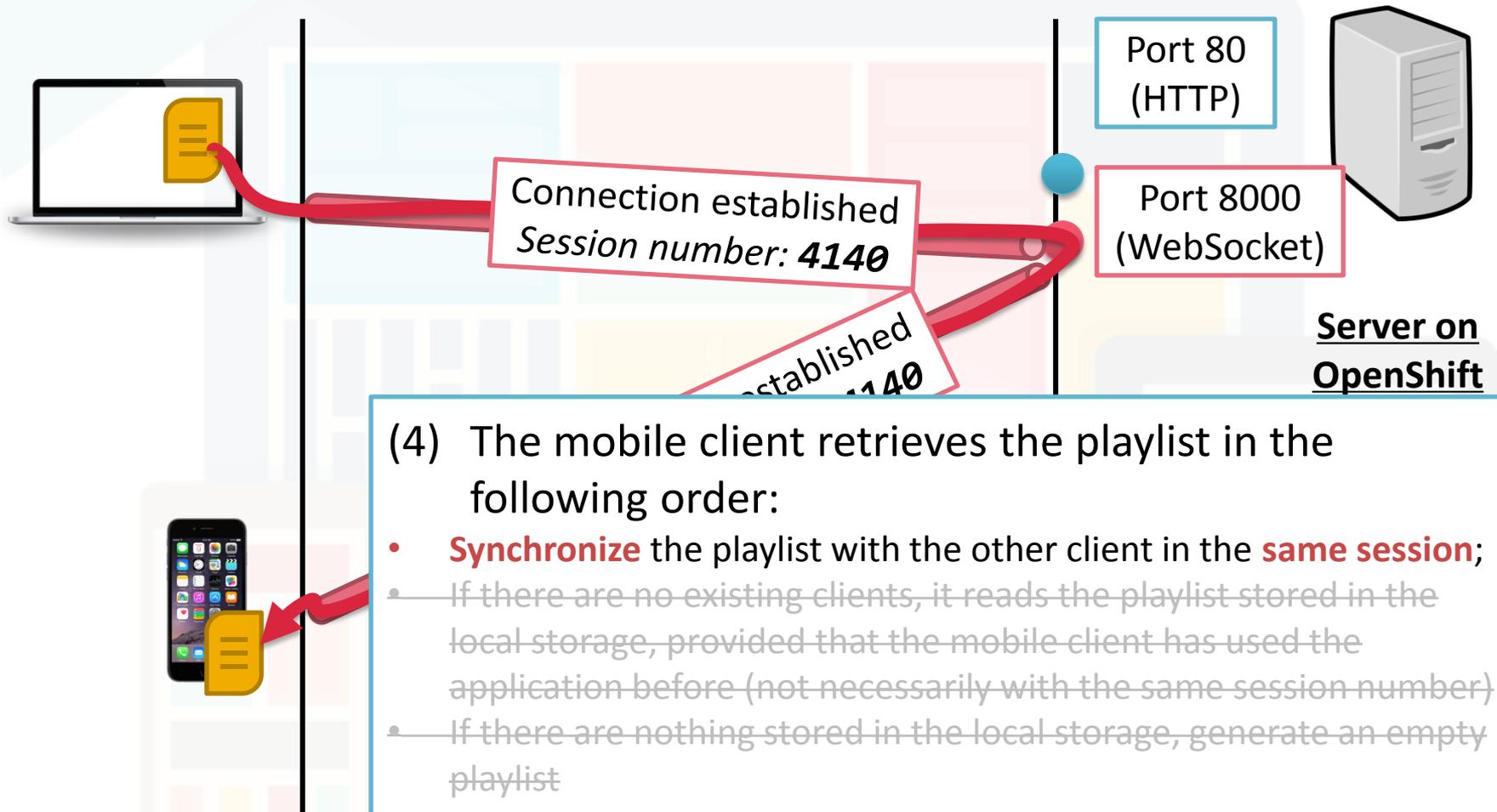
Work flow: Initialization (Tablet or phone)



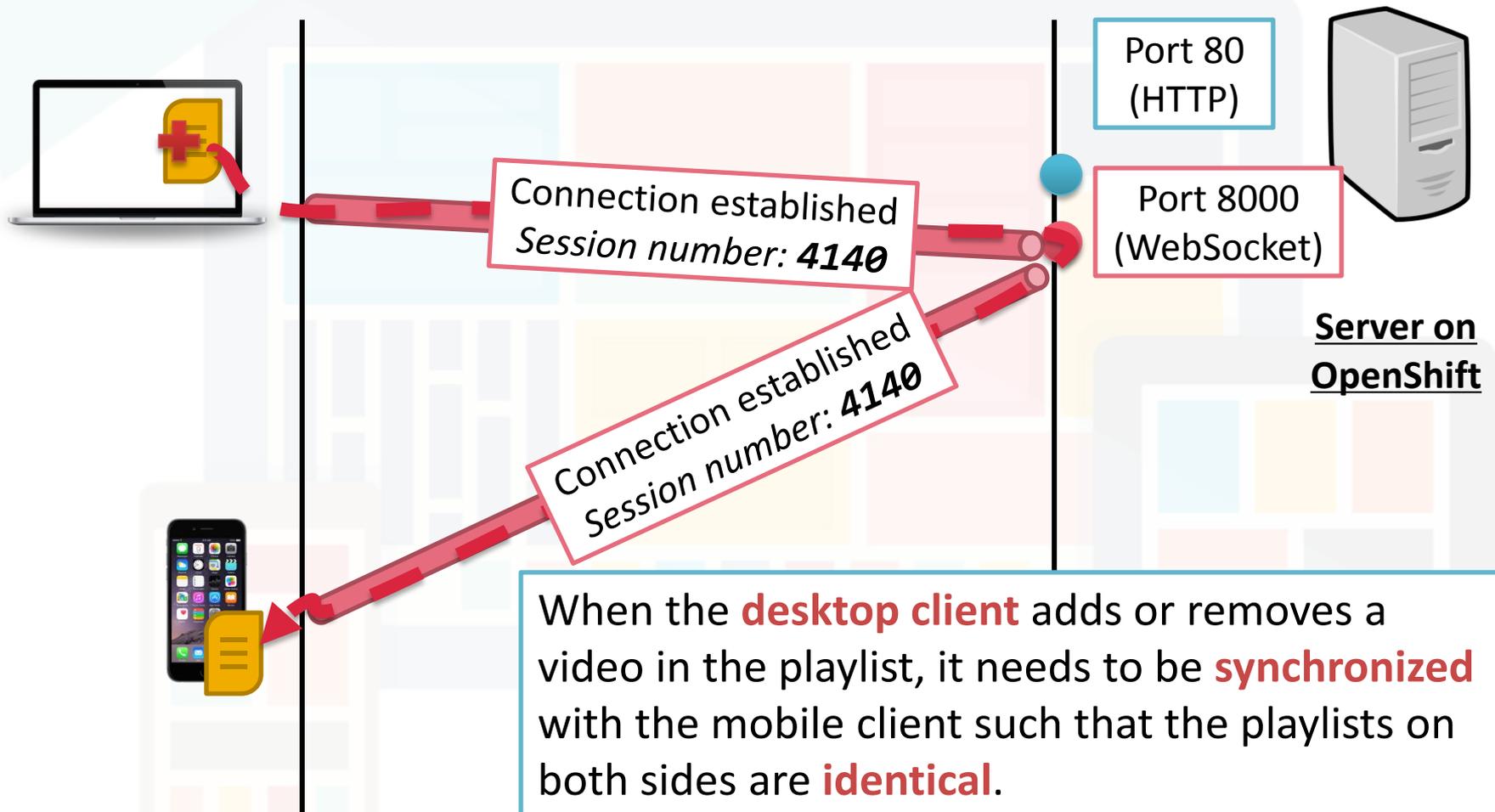
Work flow: Initialization (Tablet or phone)



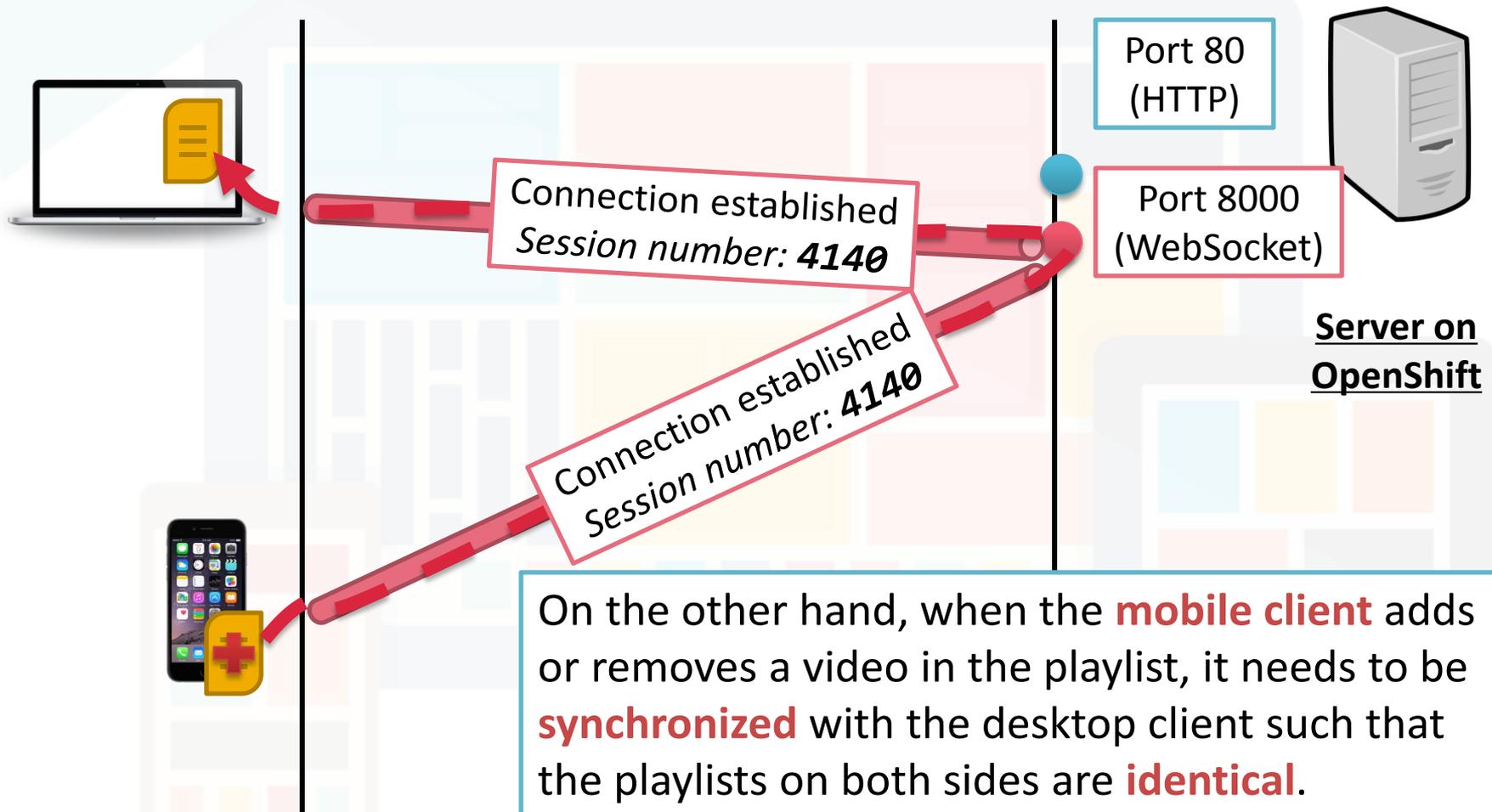
Work flow: Initialization (Tablet or phone)



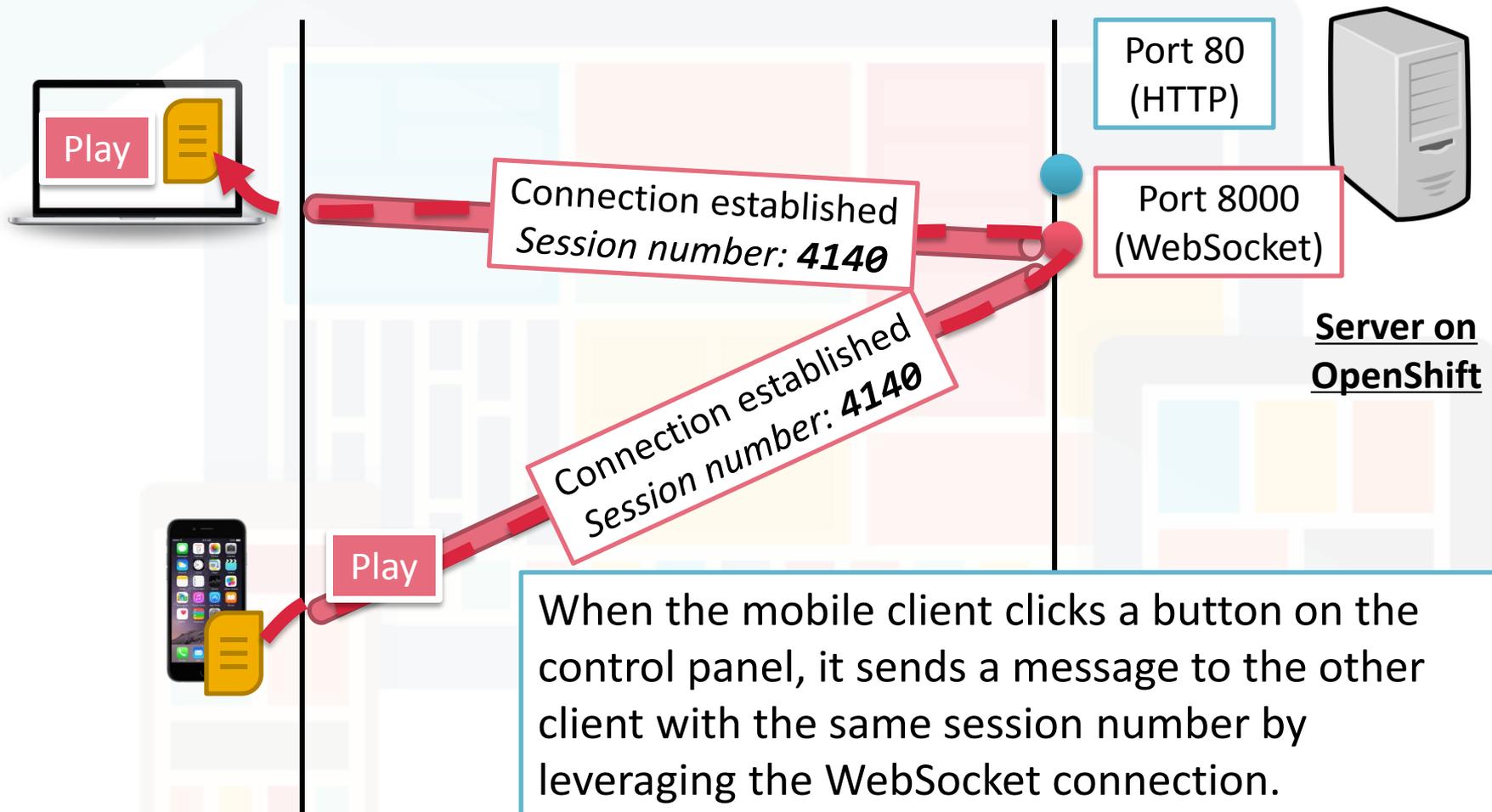
Work flow: Playlist synchronization



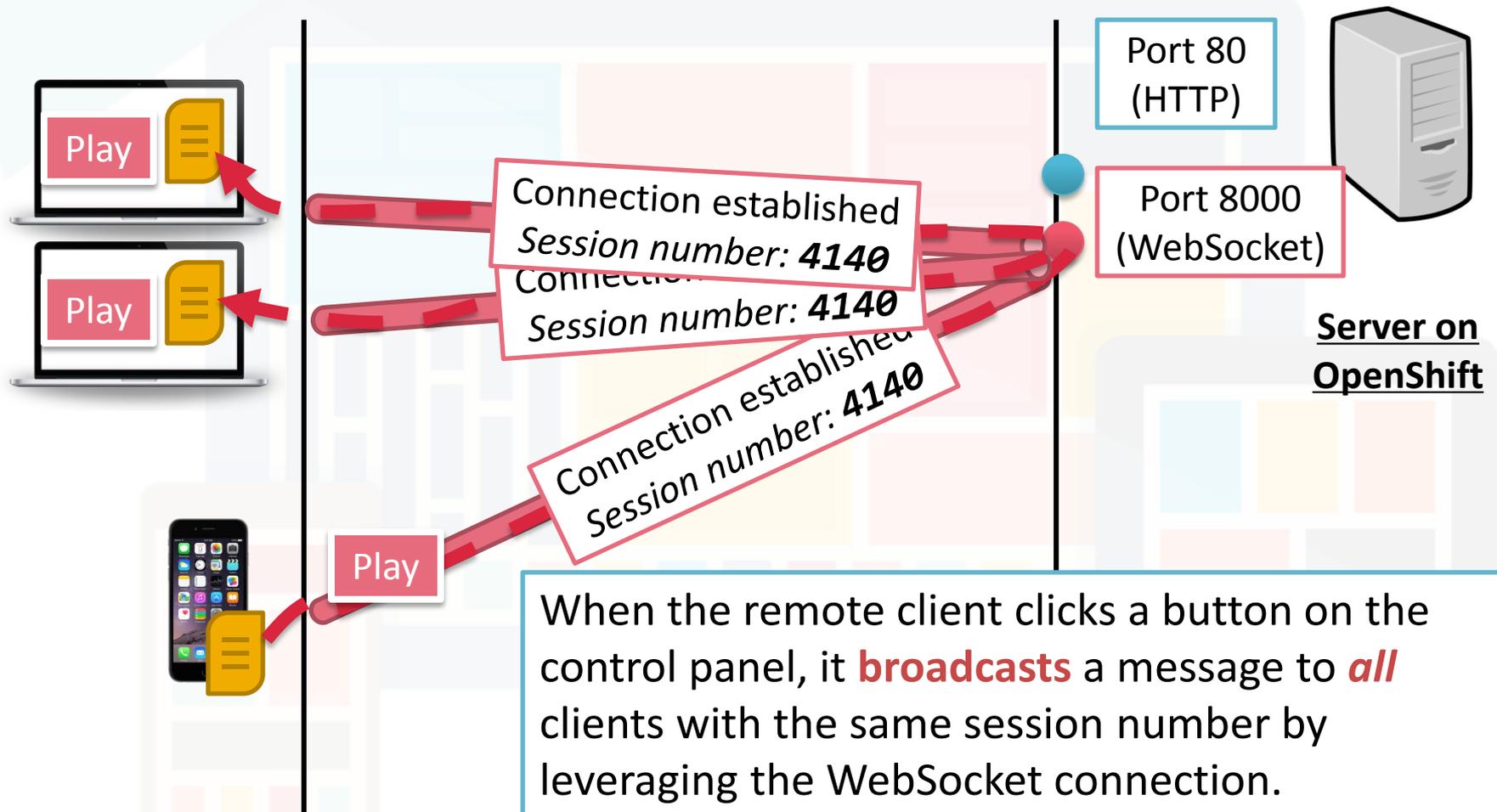
Work flow: Playlist synchronization



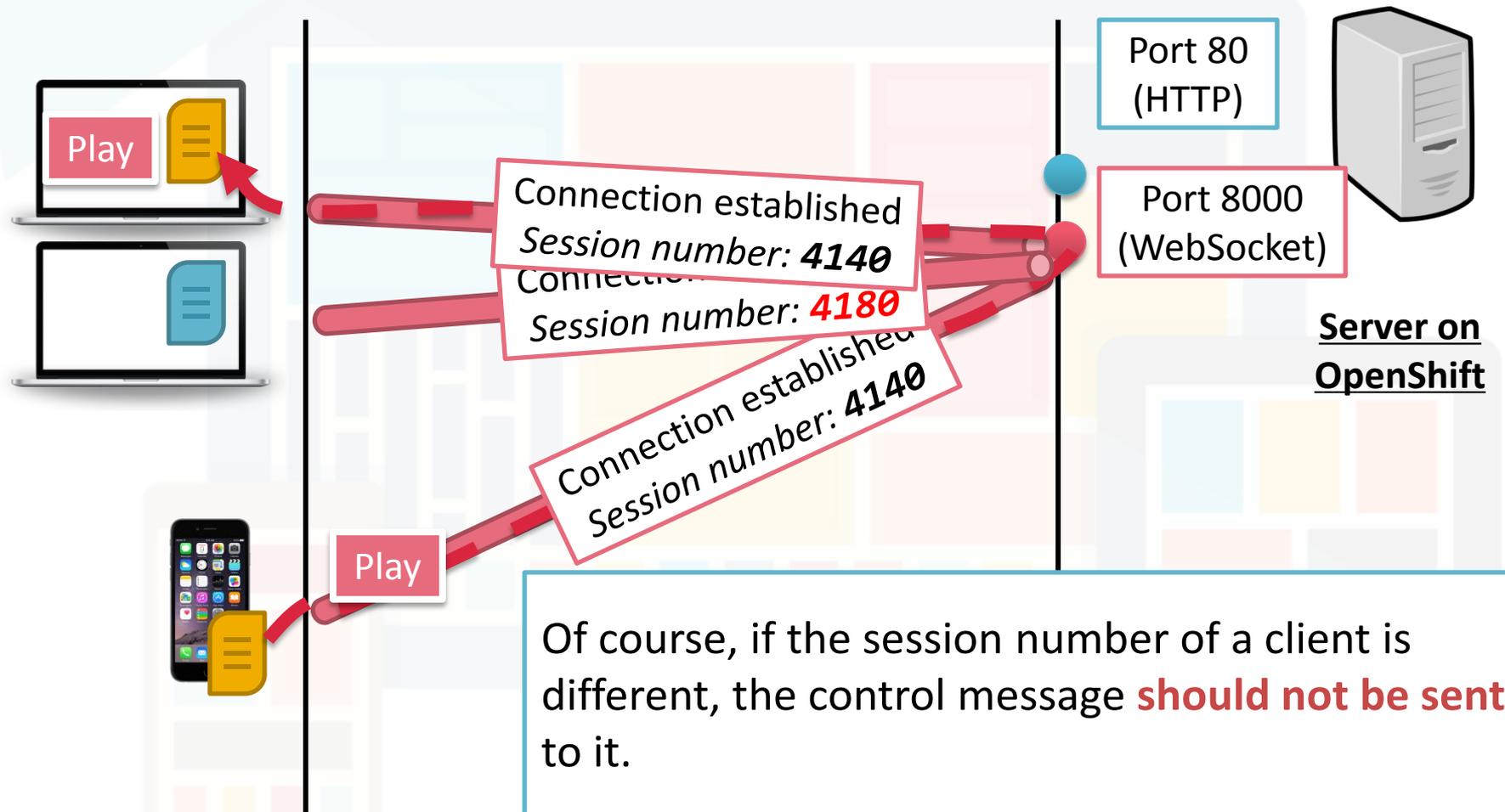
Work flow: Remote control



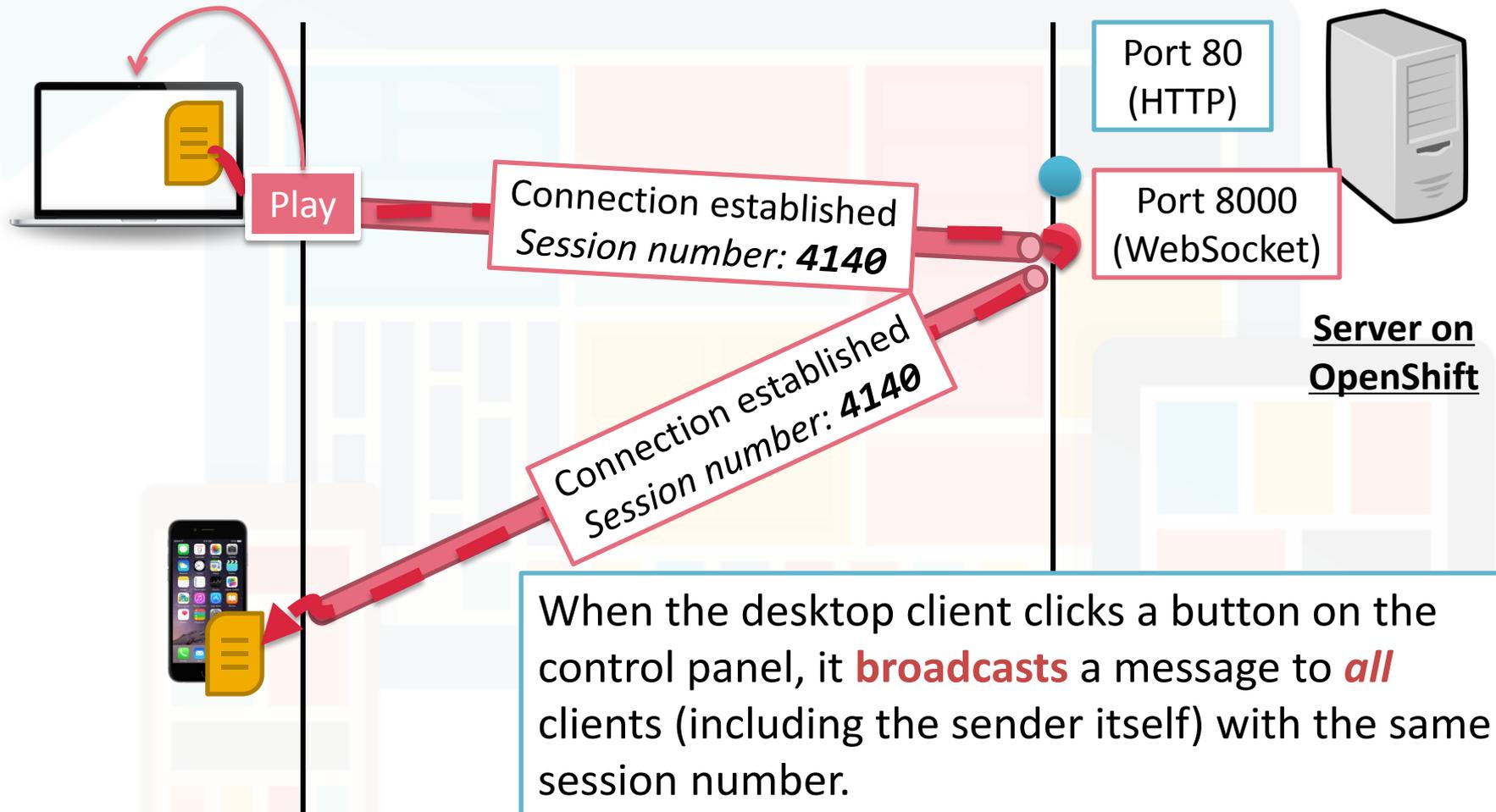
Work flow: Remote control



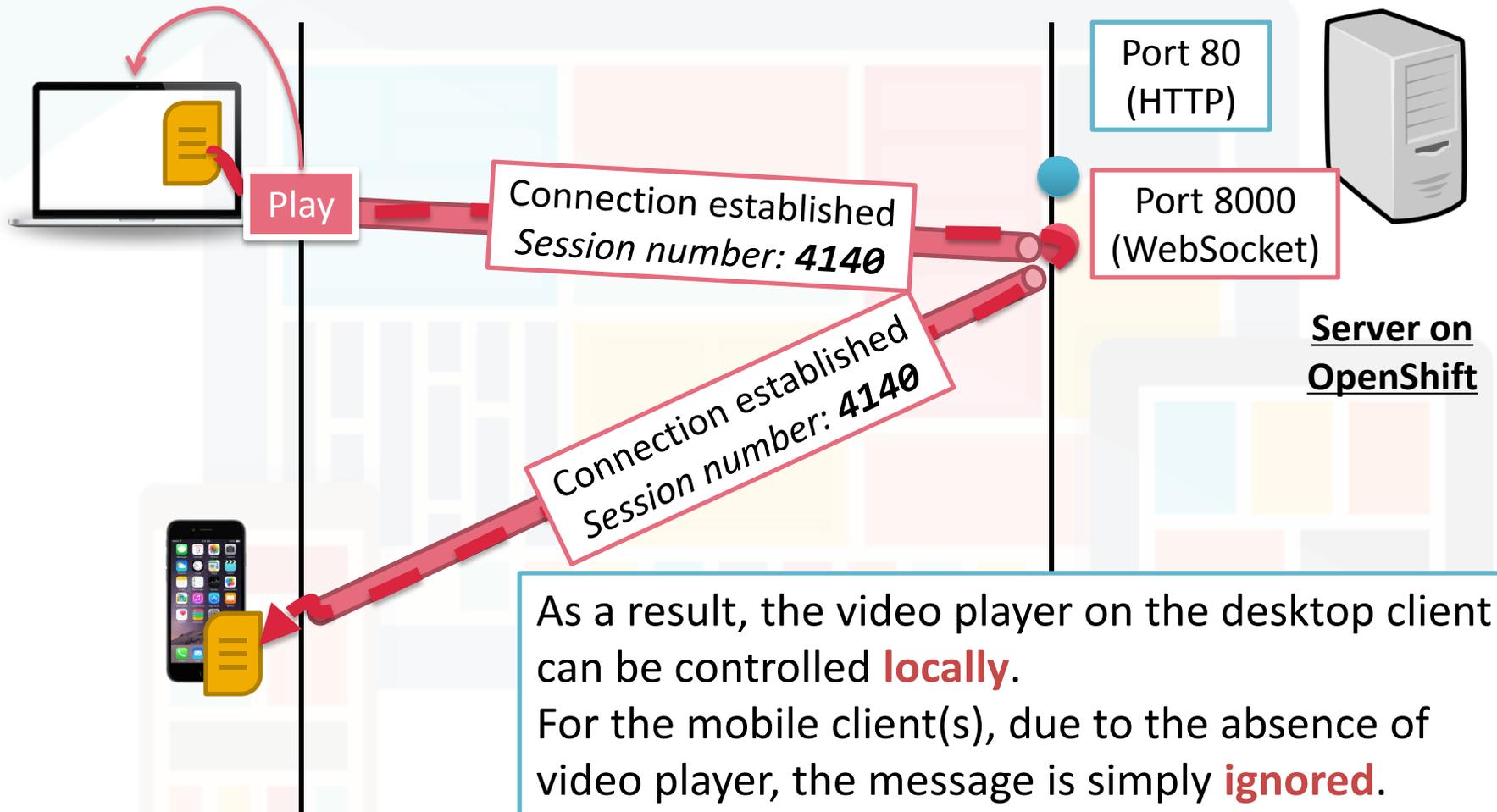
Work flow: Remote control



Work flow: Remote control



Work flow: Remote control





Server side

Routing, message forwarding & retrieving video title

Server side: Routing

Client enters the page without session number
(e.g., <http://youtube-XXX.rhcloud.com/>)

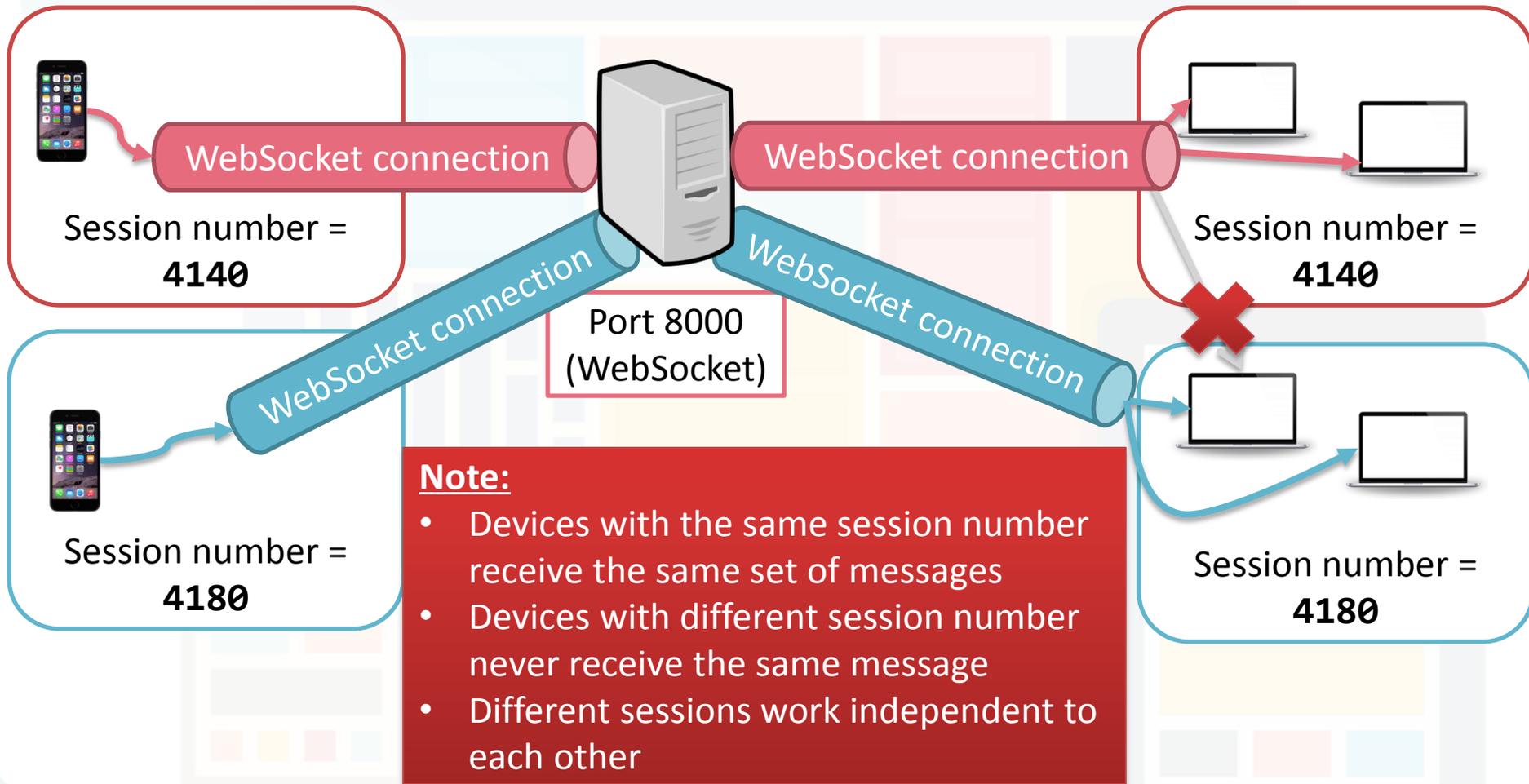


Server generates a unique session number



Server redirects the client to the page representing this session
(e.g., <http://youtube-XXX.rhcloud.com/session/4140>)

Server side: Message forwarding



Server side: Retrieving video title

- You need to display the **video title** for each video in the playlist
- How to retrieve video title from an ID?

```
http://www.youtube.com/oembed?  
url=http://www.youtube.com/watch?v=sQANr6r4Kms
```

- The server returns a **JSON object**
 - The video title is returned inside the **“title”** field

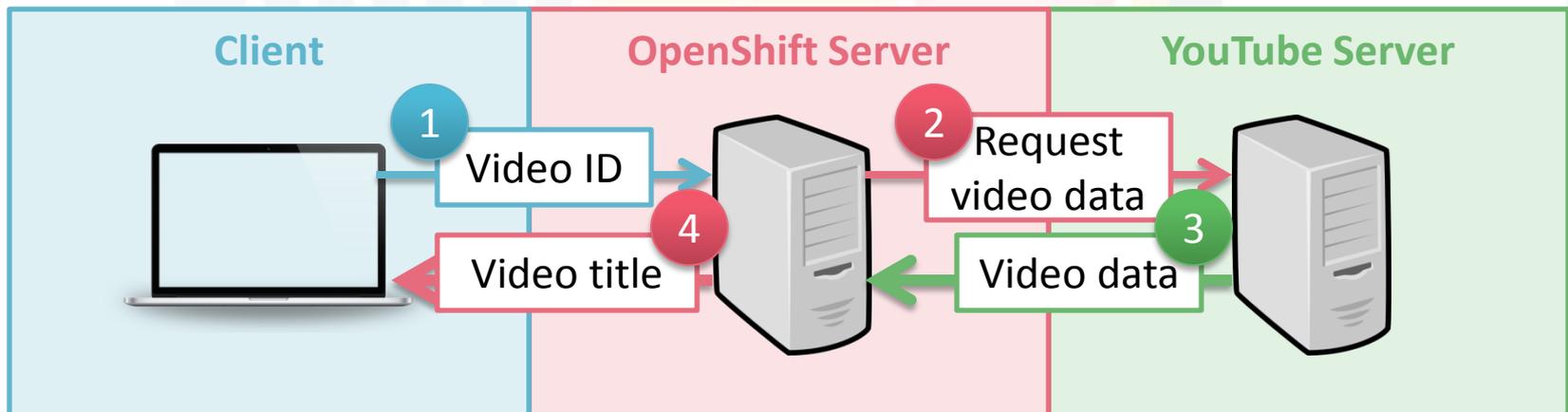
Put the video ID here

```
{"title": "CSCI4140 Ruby on Rails for Dummies",  
"height": 344, "width": 459, ...
```

- Can we use AJAX to get this JSON object directly from YouTube?
 - No because of the **same-origin policy (SOP)**
 - How to bypass this?

Server side: Retrieving video title

1. **Client** send a request with the video ID to **OpenShift server**
2. **OpenShift server** forwards the request to **YouTube server**
3. **YouTube server** responds with the video data
4. **OpenShift server** replies the client with the video title



Reminder

- You should finish the **UI design, player** and **control logic**
- You should start implementing the **server side**
 - We will cover **Node.js** in this tutorial
 - We will cover **Socket.IO** in next tutorial
 - In other words, you can complete Assignment 2 **after next tutorial**
- Remember to deploy your Node.js application on **OpenShift**

– End –