



# Experiments with the Streamlit Components API

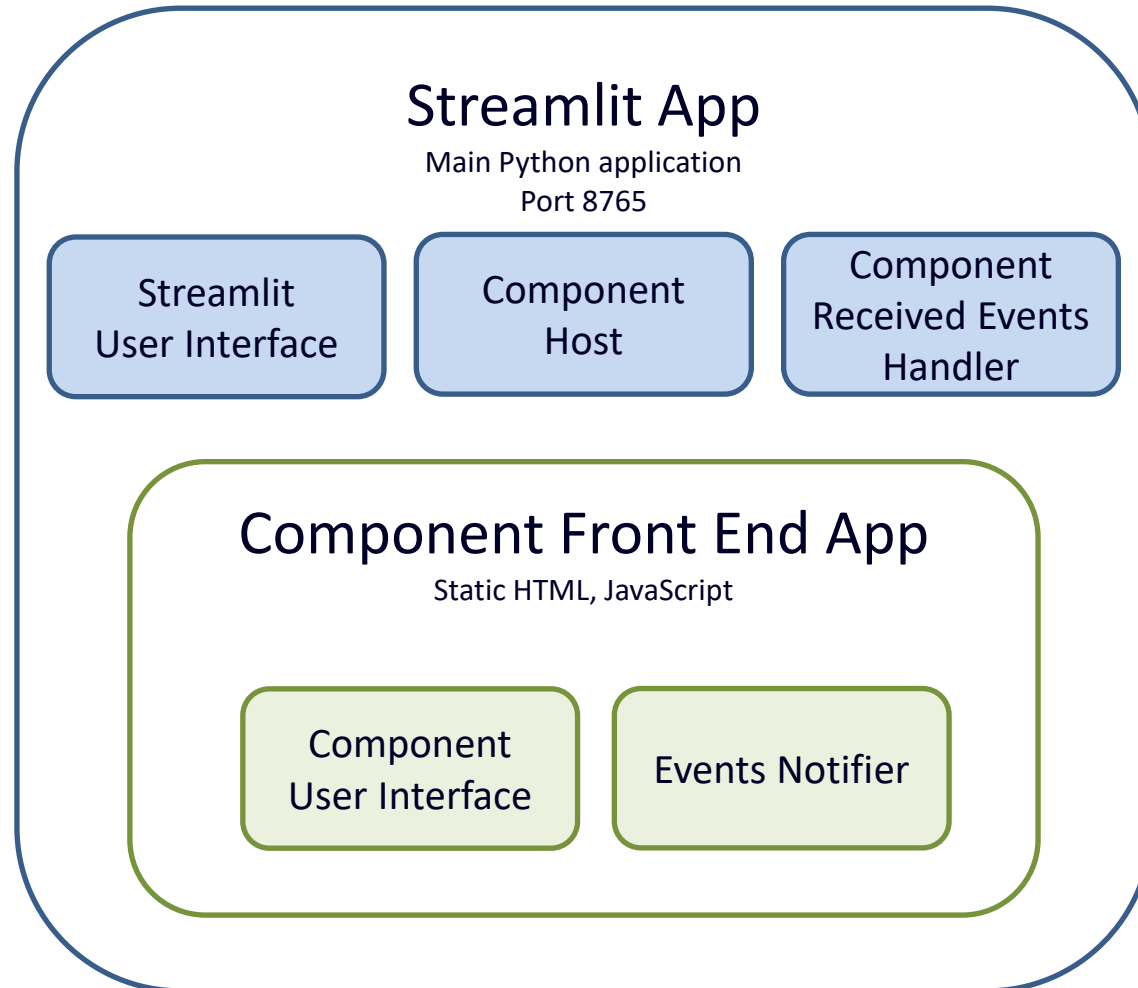
[vin@thesehmis.com](mailto:vin@thesehmis.com)

26 April, 2022

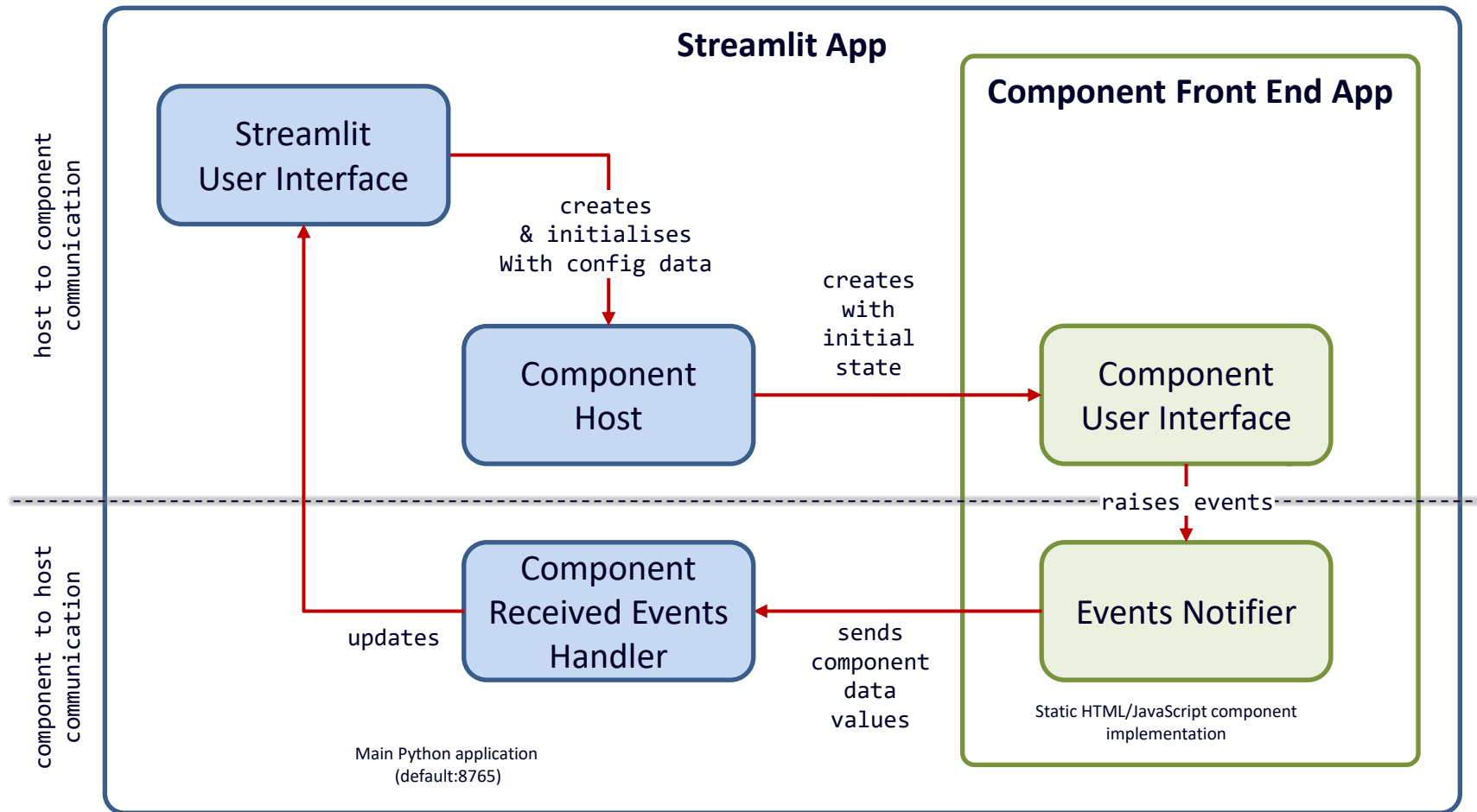
# **Systems architecture**

## Capabilities – Component Zero

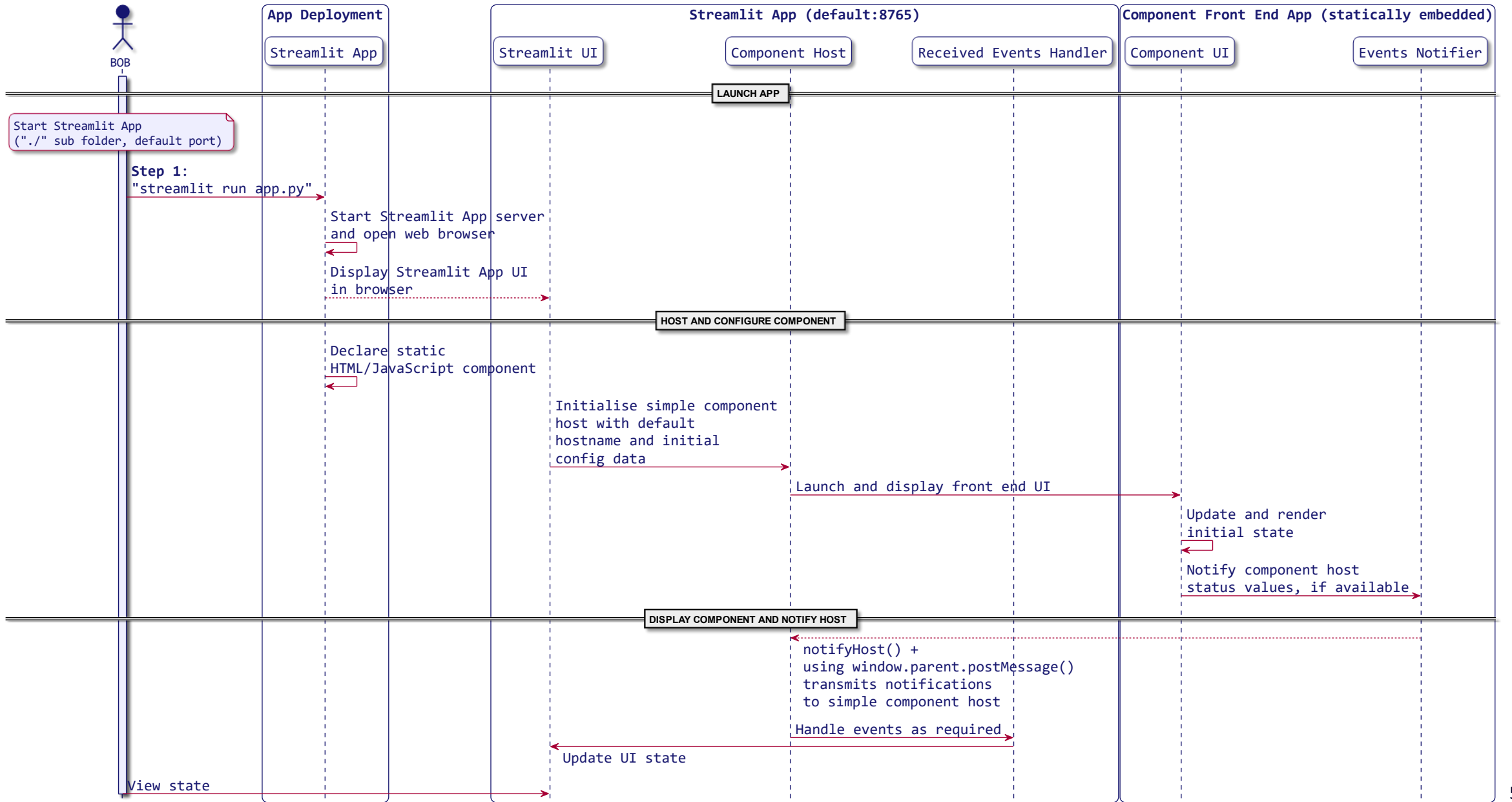
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# Structure – Component Zero



# ZERO APP START-UP SEQUENCE



## Capabilities – Component Hero

### Streamlit App

Main Python application  
Port 4010

Streamlit  
User Interface

Component  
Host Wrapper

Session State

Component  
Received Events  
Handler

### Component Front End App

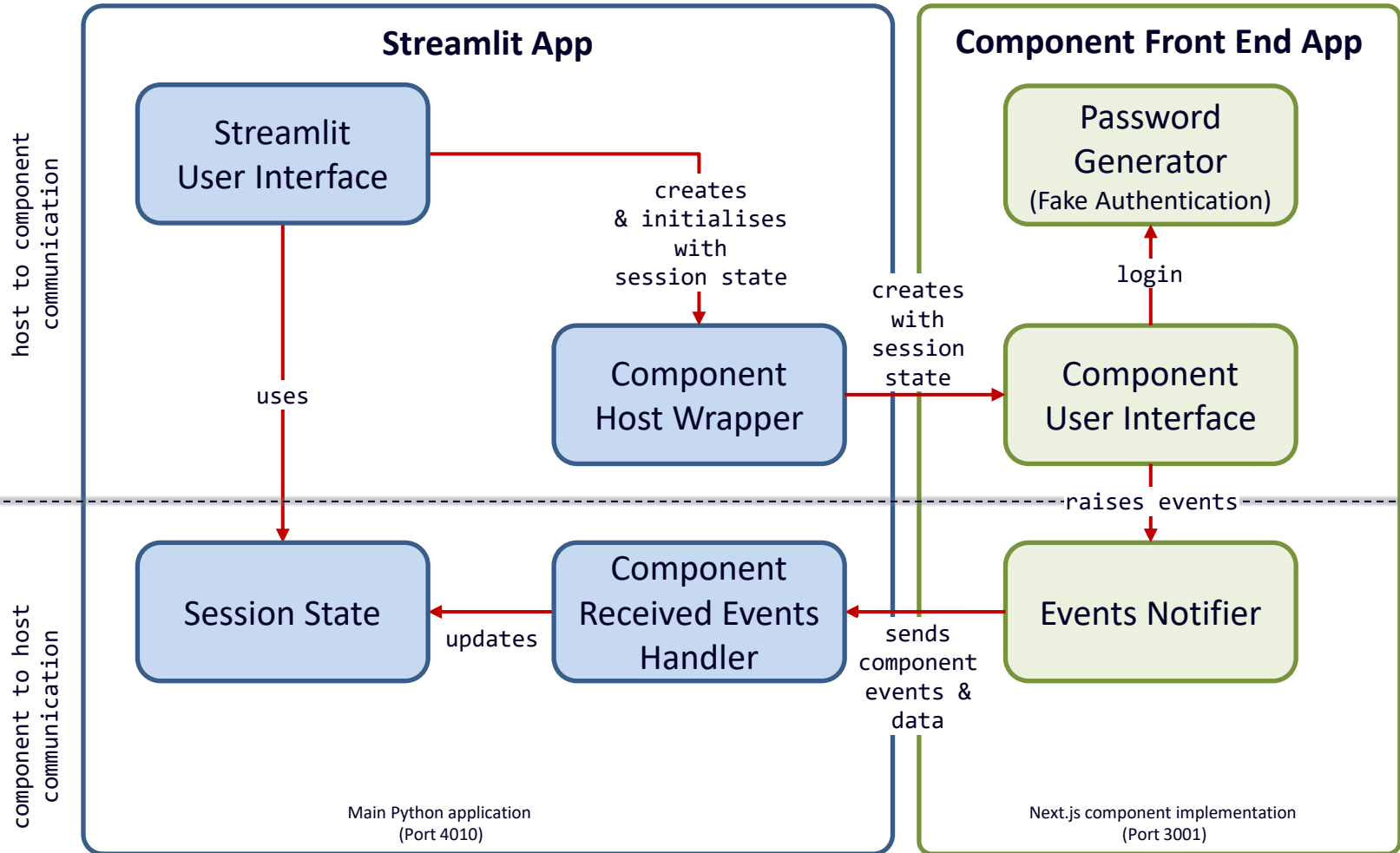
Next.js component implementation  
Port 3001

Component  
User Interface

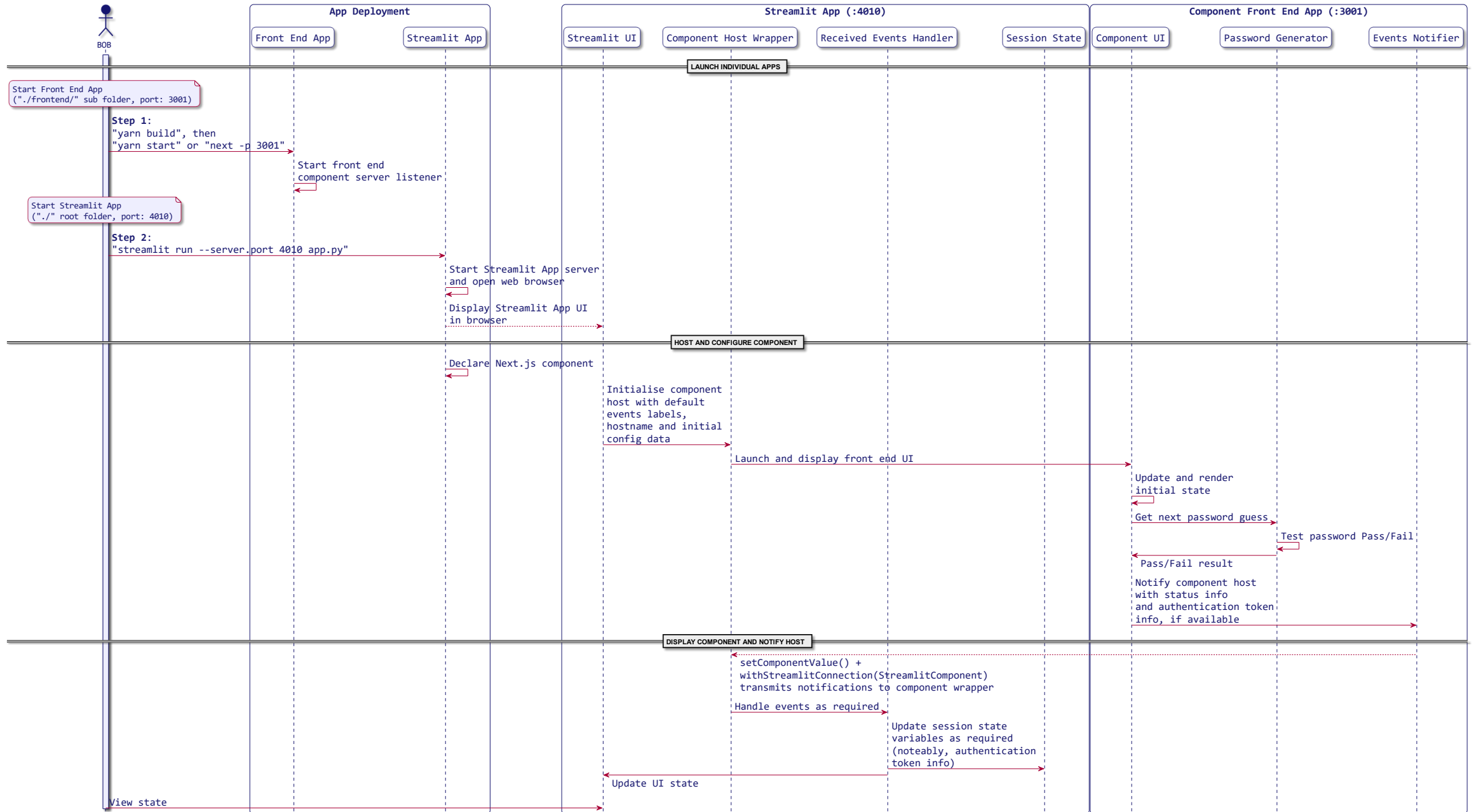
Events Notifier

Password  
Generator  
(Fake Authentication)

# Structure – Component Hero

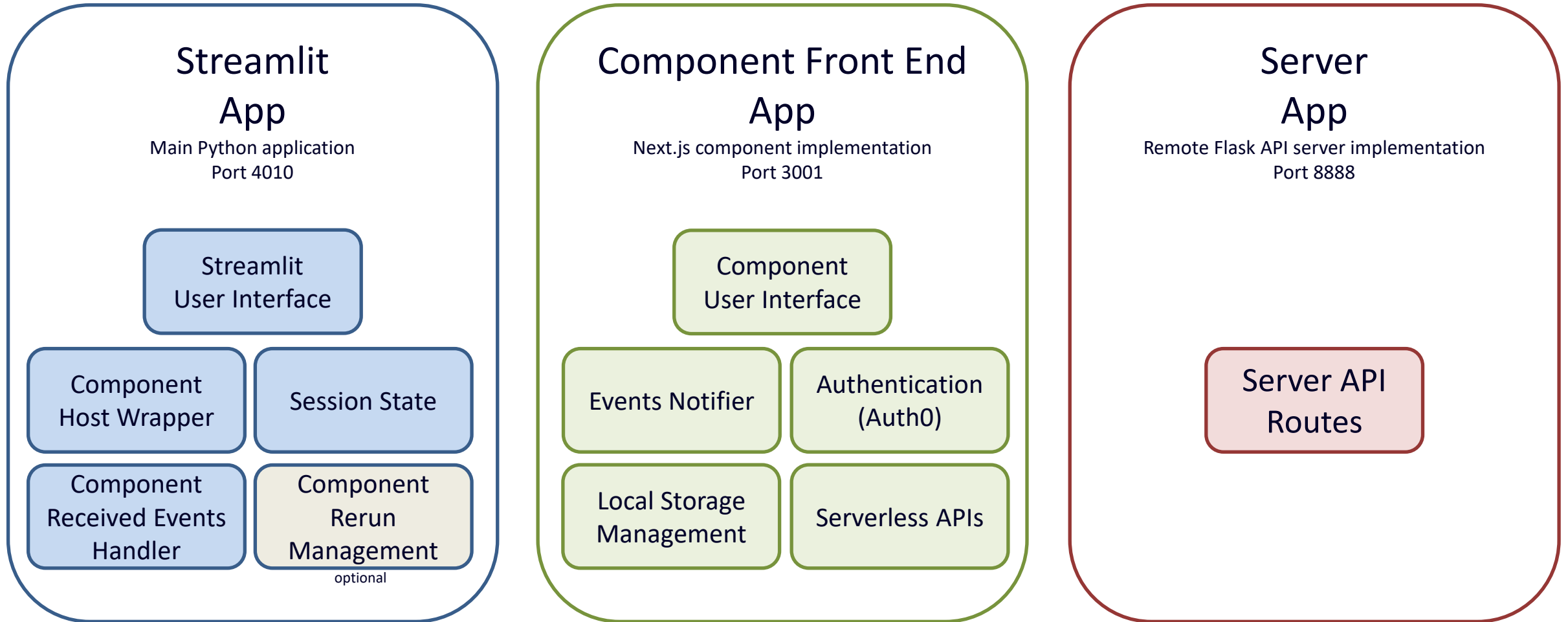


# HERO APP START-UP SEQUENCE



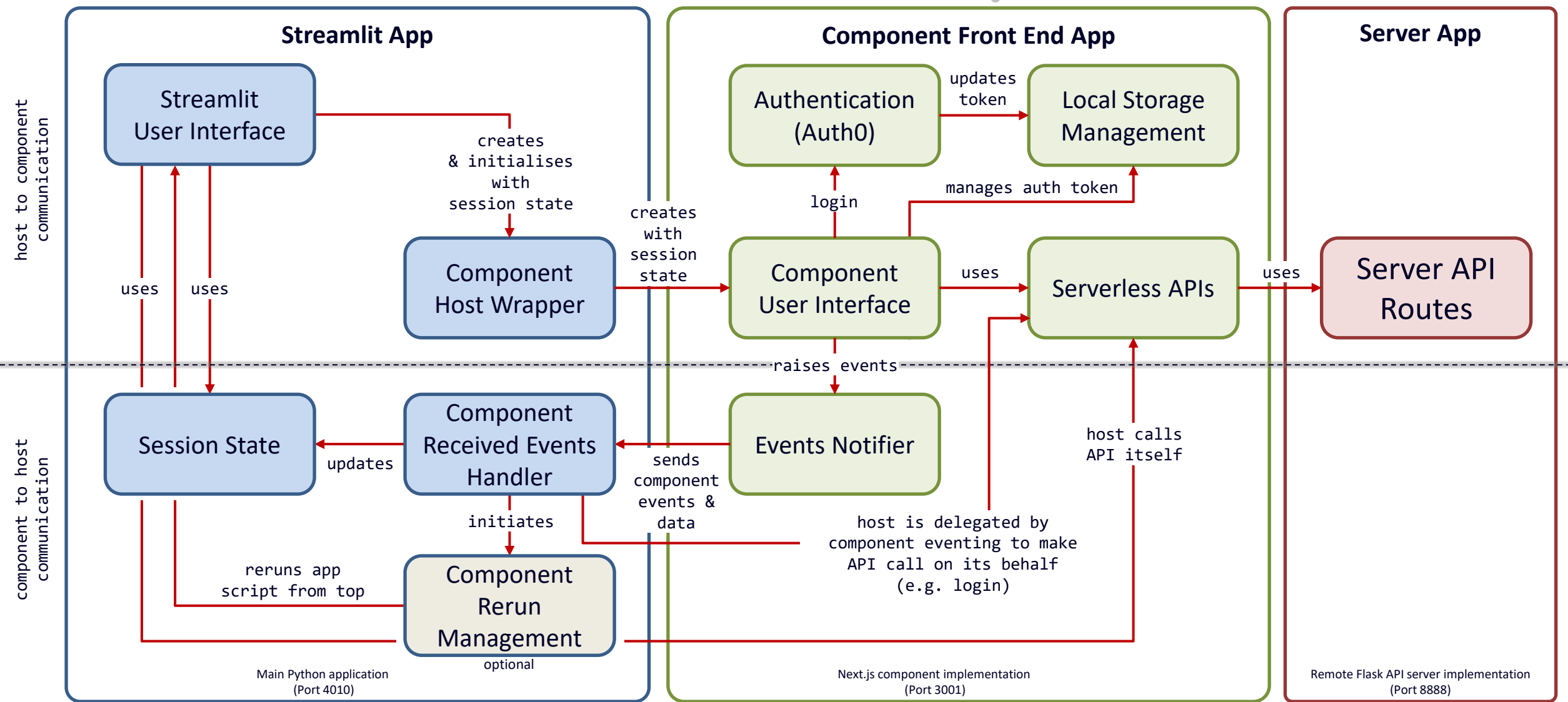


## Capabilities – Component Auth0



<https://github.com/asehmi/Data-Science-Meetup-Oxford/tree/master/StreamlitComponent>

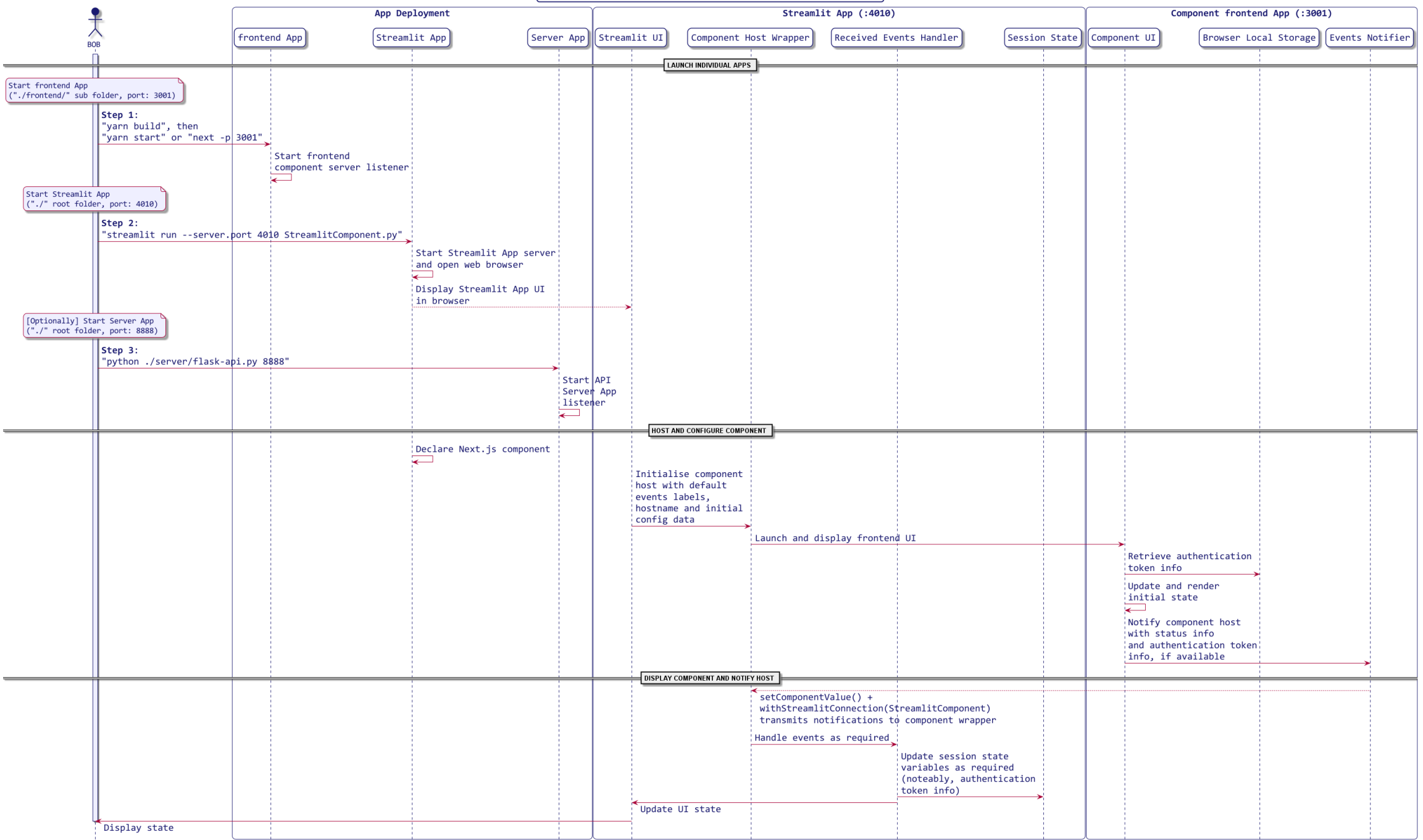
# Structure – Component Auth0



# Running the sub-systems

Streamlit, Component and Server apps

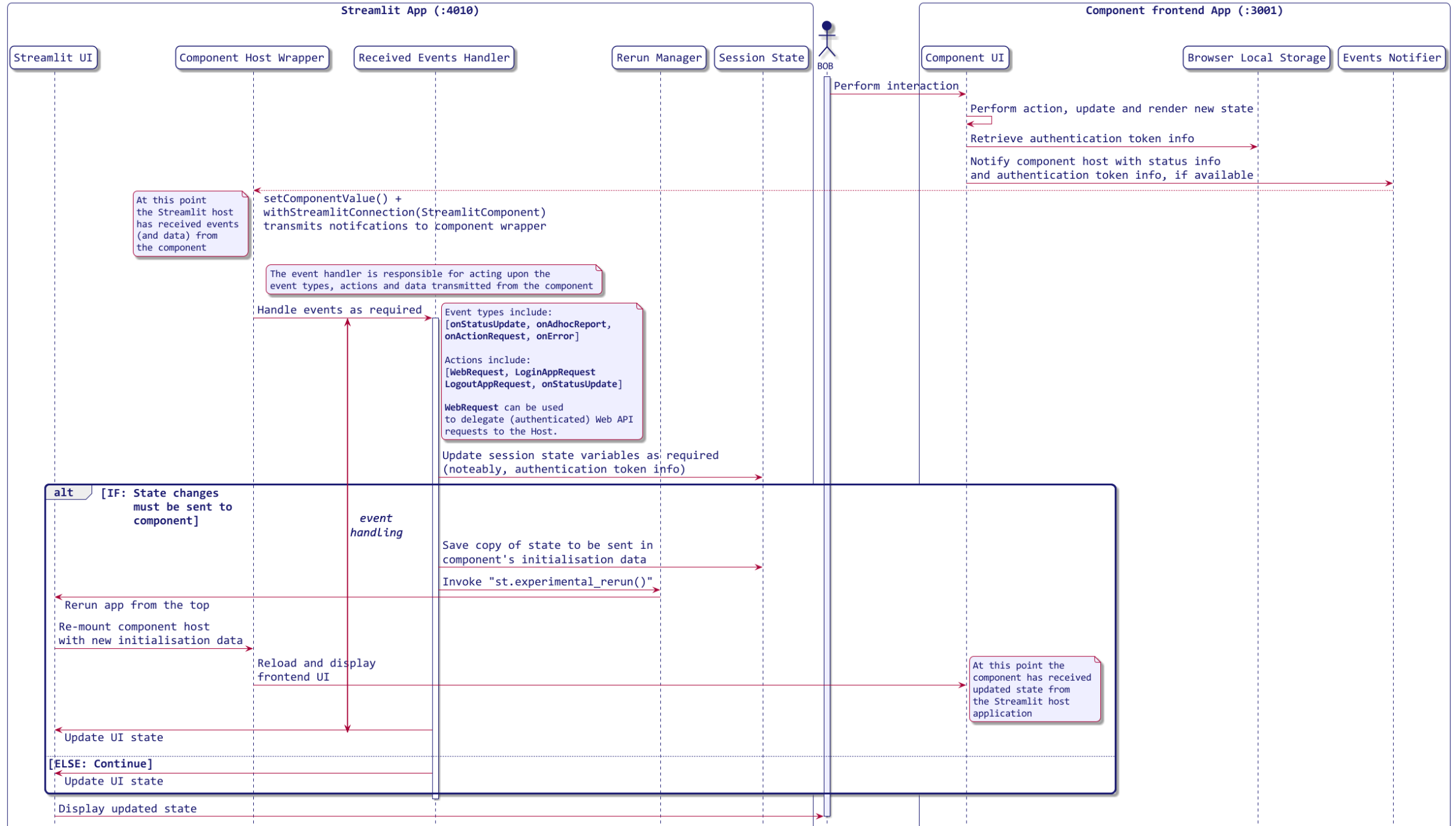
# APP START-UP SEQUENCE



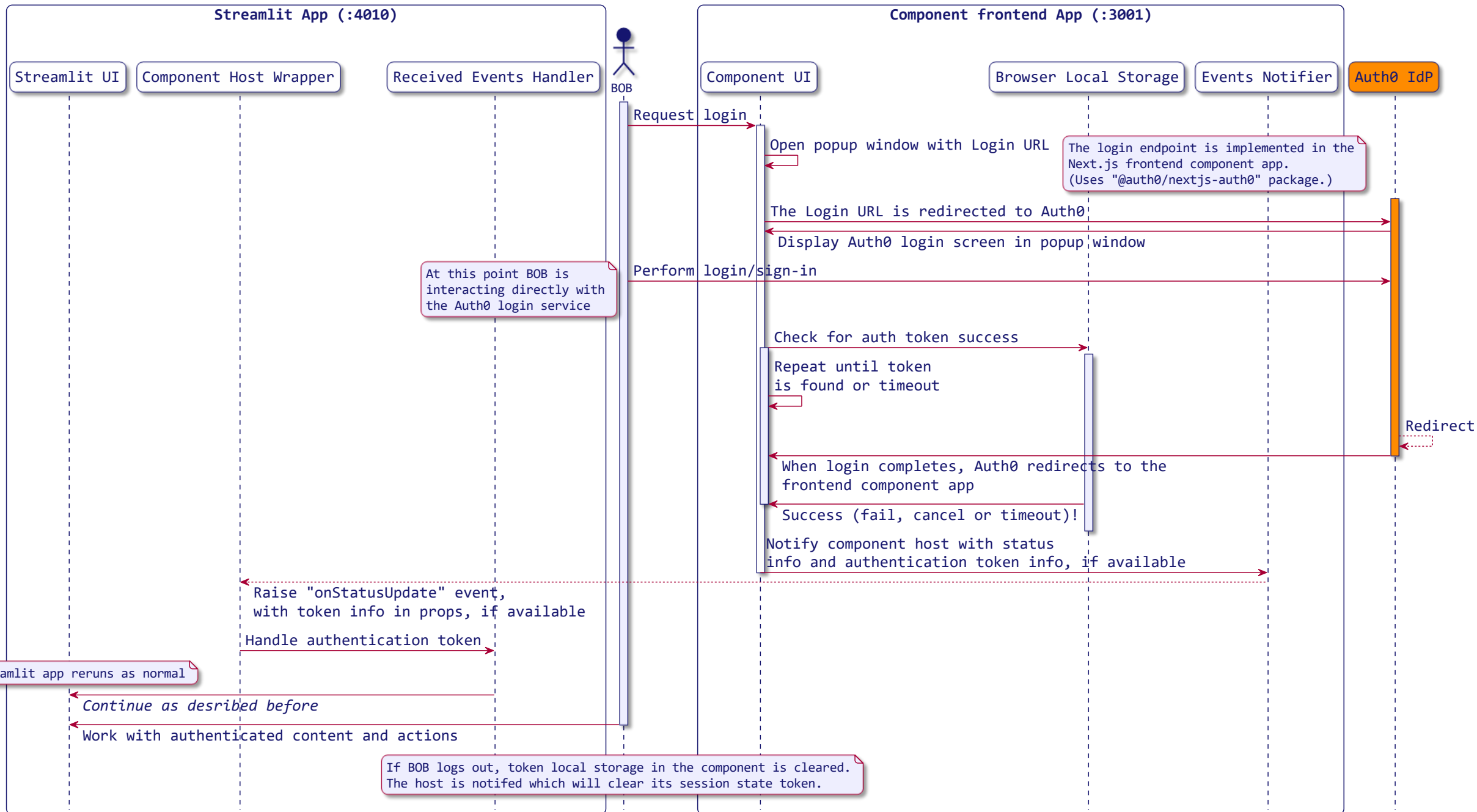
# Communication patterns

Bi-directional messaging, Web APIs and Authentication

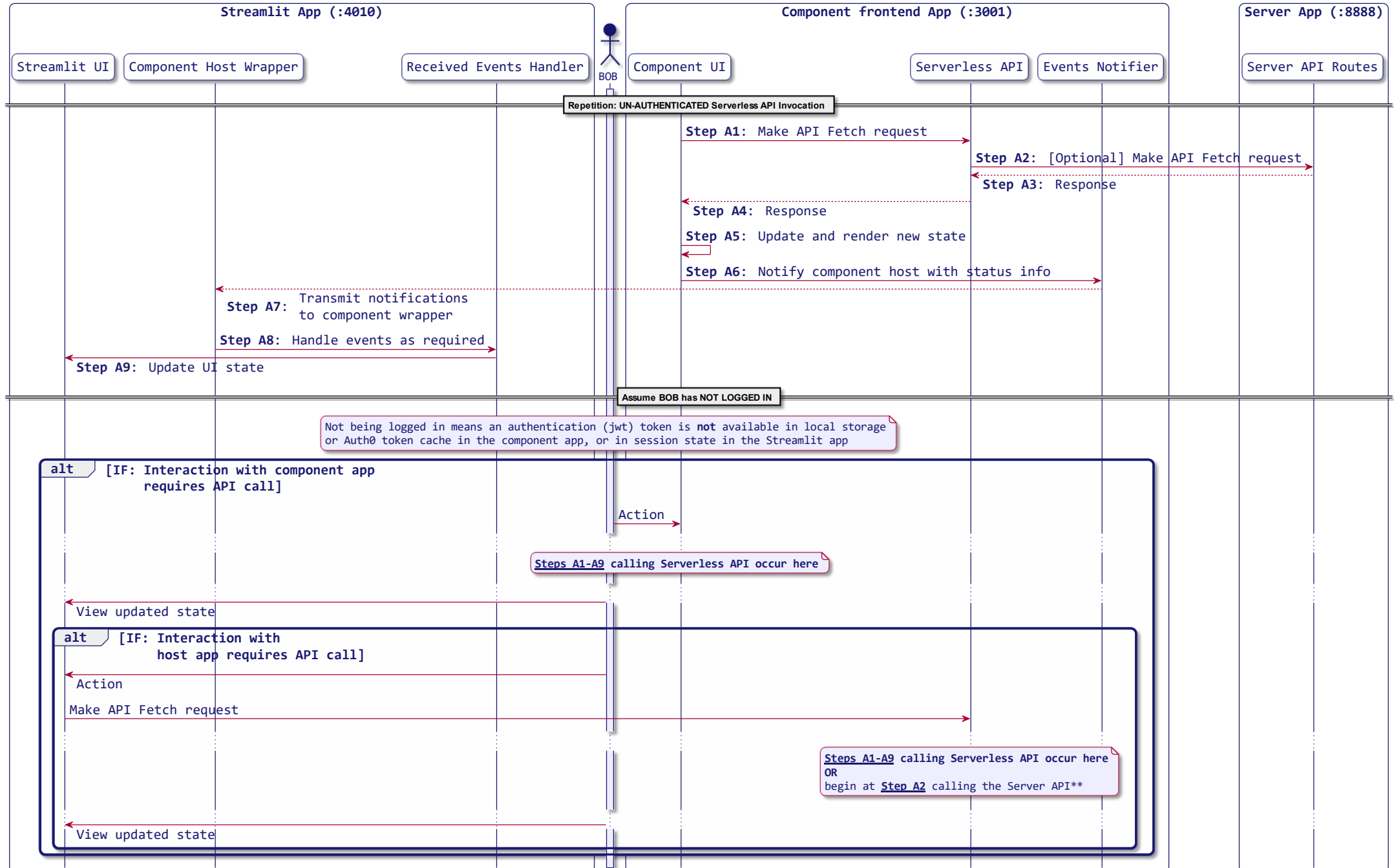
# BI-DIRECTIONAL STREAMLIT TO COMPONENT MESSAGE PASSING



# AUTHENTICATION WITH AUTH0 IDENTITY PROVIDER

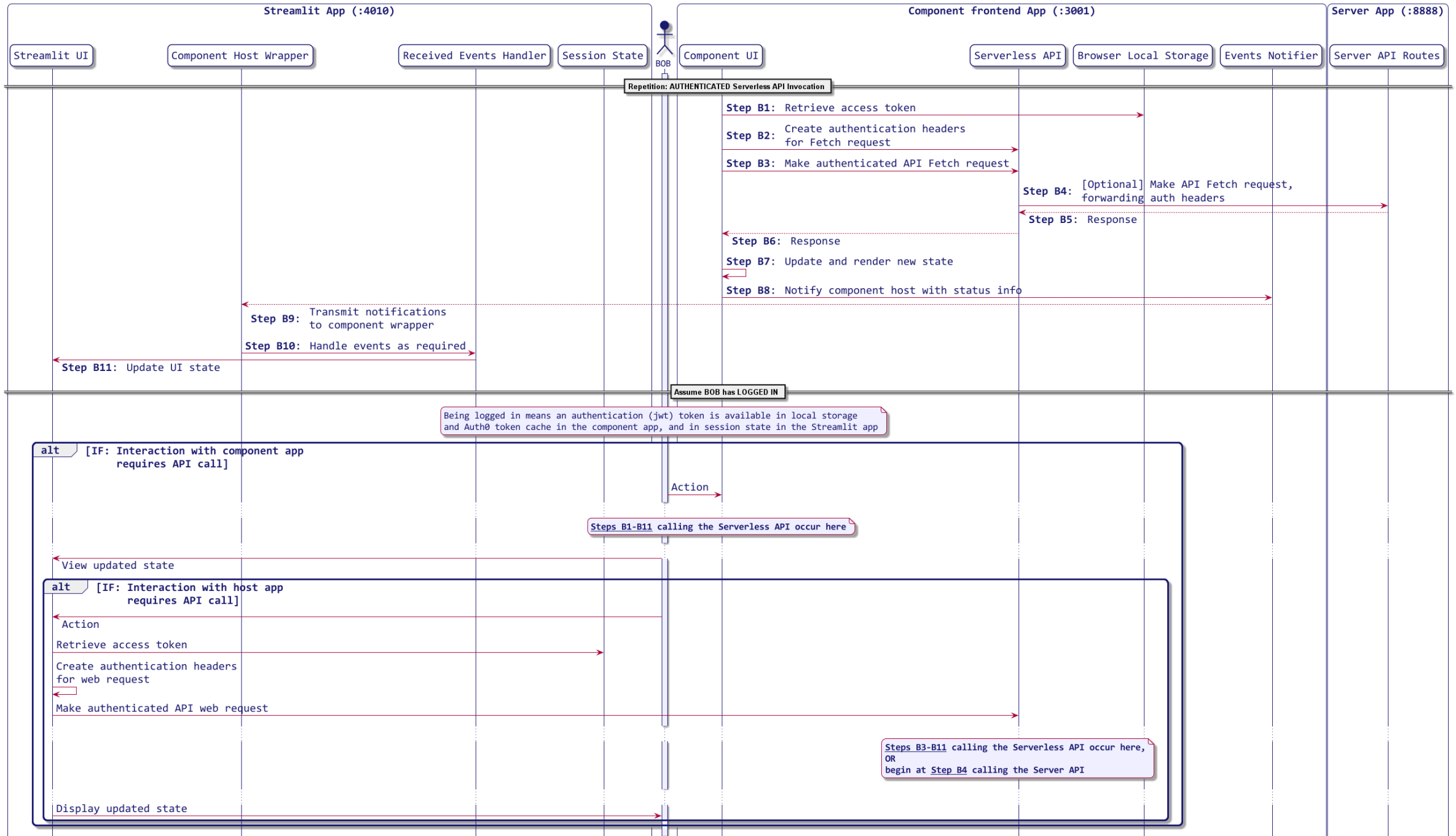


# INVOKING APIs (WITHOUT AUTHENTICATION FROM COMPONENT)





# INVOKING APIs (WITH AUTHENTICATION FROM COMPONENT)



# Thank You

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