



VideoCloud

Edgar Passos & Gustav Janer

Networked Multimedia Systems - TUM SS 19



Problem statement

Traditional video streaming platforms:

- Video playback
 - Video frame and comment feed are separated
- While a user can choose to add a timestamp to a comment (e.g. YouTube), the comment cannot be read while watching the video



VideoCloud

- Web-based video streaming platform
 - Youtube x Soundcloud crossover
- Timestamped comments
- Variable video quality
- Allow export of videos and comments

Timestamped Comments

Inspired by SoundCloud

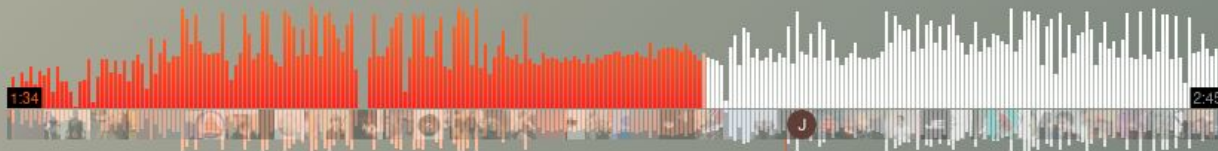


chuck sutton

sidewalk (chuck's theme)

1 year ago

whatdidchuckdo



DAMN CHUCK Jakub Witczowski



Quality: 720p ▾

Export Video



Steven Spielberg said:

Nice video man!

Quentin Tarantino: Not enough
blood.....



Implemented features

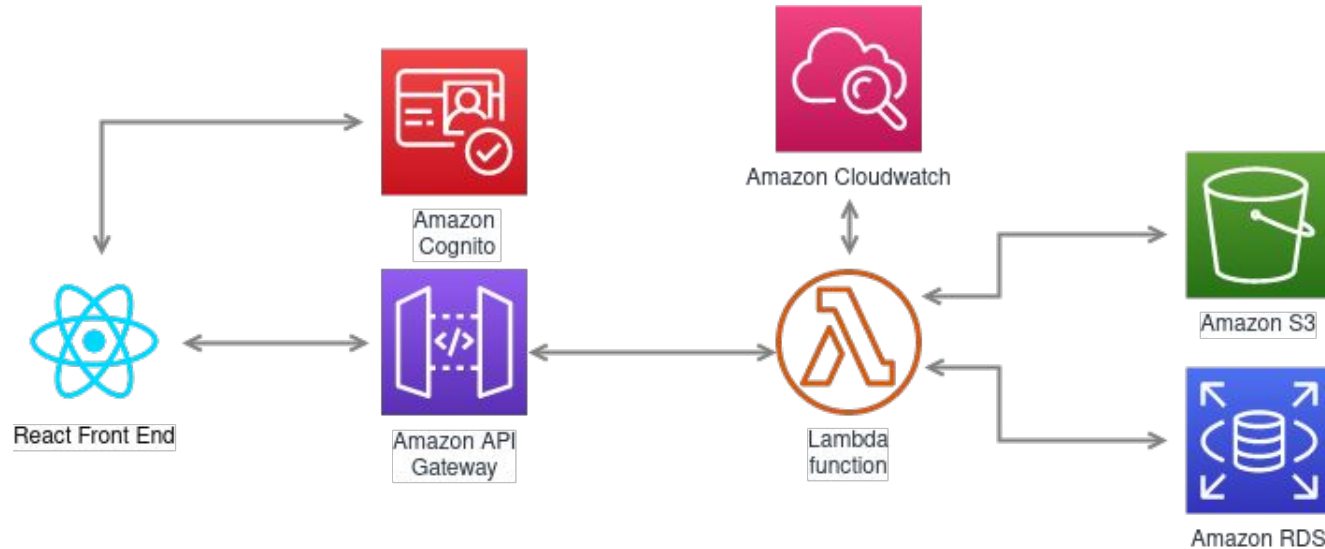
- Registration and Authentication
 - Register and log in to the website using an email and a password
- Video Upload
 - Authenticated users can upload videos to the website that are publicly viewable for other users
- Video Playback
 - All users can watch the videos that have been uploaded to the platform
 - Select the video playback quality
- Video Export
 - All users can download the video in the desired quality together with its comments as a subtitle file
- Video Commenting
 - Authenticated users can comment on videos, and like or unlike comments made by other users
 - Timestamp comments are displayed in the below the video frame during playback



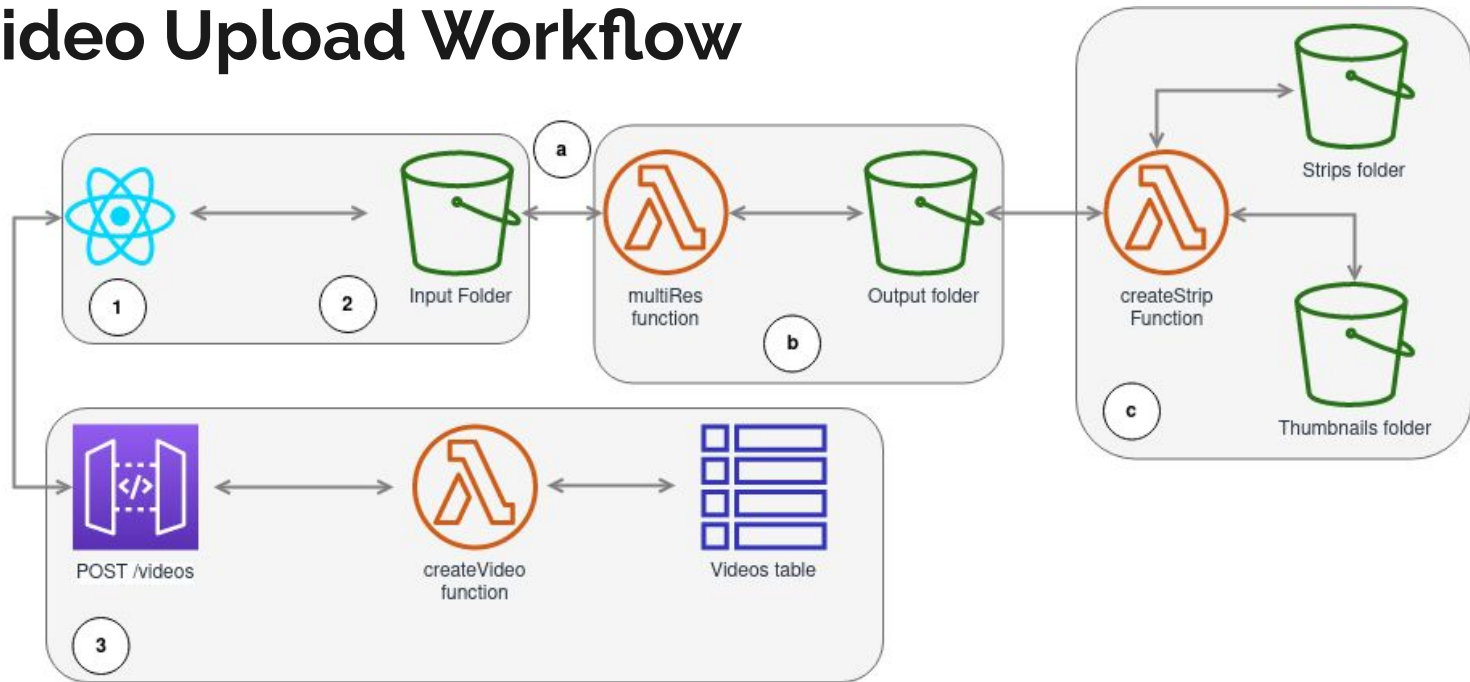
Technologies used

- Front end
 - React JS framework
 - React Bootstrap library
- Back end
 - Amazon Web Services - AWS
 - API Gateway
 - Cognito
 - Lambda (running NodeJS v10)
 - Cloudwatch
 - S3 - Simple Storage Service
 - RDS - PostgreSQL DB

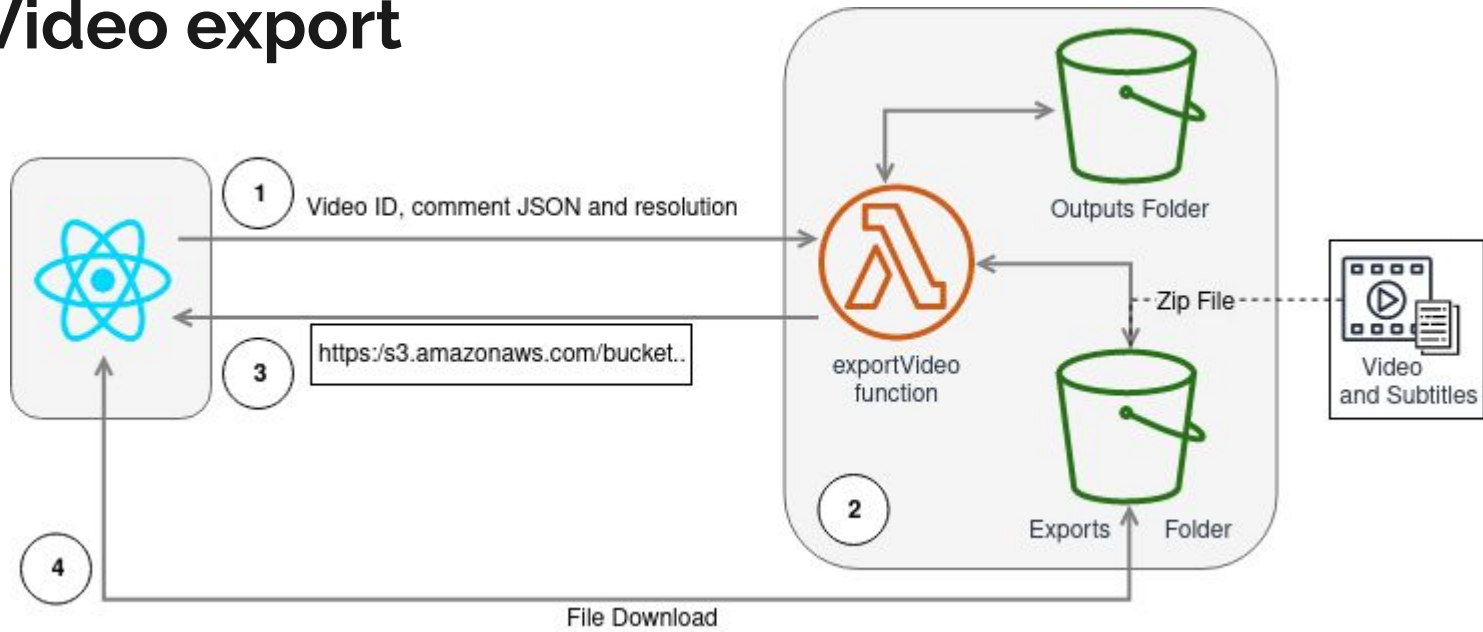
High level architecture



Video Upload Workflow



Video export





Performance

Always dependent on **Lambda cold starts**

For a **20MB MP4 video** (around 1 minute long, 1920x1080 resolution):

Upload:

- After upload, the video is first available after around 2 minutes (360p and 144p resolutions)
- All resolutions are available after around 5 minutes

Export:

- Less than one minute to have the download ready



Future work

- Features
 - Account
 - Change password and other account settings
 - Video
 - Edit details of uploaded video
 - Implement Adaptive Streaming
 - Use another language for better performance (or maybe not?)
- Design
 - Augment design to improve usability and style



VideoCloud

- Web-based video streaming platform
- Timestamped comments
- Variable video quality
- Allow export of videos and comments



Thank you!

Edgar Passos & Gustav Janer