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CLOUD AND SERVERLESS COMPUTING PROJECT

SERVERLESS VIDEO CHANELLING ON AWS

Aim:

Building a Server-less Media Orchestration stream using Amazon S3 bucket and CloudFront

Description:

Creating a Server-less Video Channeling Stream with Amazon S3 bucket and CloudFront begins by storing video content in an S3 bucket and configuring it for static website hosting. CloudFront is then established with the S3 bucket as the origin, facilitating global distribution with minimal latency through edge locations. Permissions on the S3 bucket are fine-tuned for precise access control, while SSL/TLS encryption is activated to ensure secure communication. Tailoring CloudFront settings, including cache behavior and TTL, guarantees peak performance. By seamlessly embedding the CloudFront URL into a video player, viewers can enjoy uninterrupted streaming.

Services Used:

1) Amazon S3 Bucket:
   - To store video content, create an S3 bucket.
   - Adjust bucket permissions to manage access.
   - Make the bucket available for hosting static websites.
   - Transfer videos to the S3 bucket.
   - Configure an S3 bucket as the origin for the CloudFront distribution.
   - Adjust CloudFront's parameters for best results.
   - Integrate the video player with the CloudFront URL.
   - Use CloudFront to scale automatically and monitor performance.

2) CloudFront:
   - Configure CloudFront for worldwide video content delivery.
   - Set up the S3 bucket as the origin for the CloudFront distribution.
   - Tailor TTL settings and cache behavior for optimal performance.
   - To ensure safe communication, enable SSL/TLS.
   - Deliver content with little latency by utilizing edge locations.
   - For seamless streaming, incorporate the CloudFront URL into the video player.
   - Keep an eye on performance using CloudWatch logs and analytics.
   - Adapt automatically to meet rising demand.

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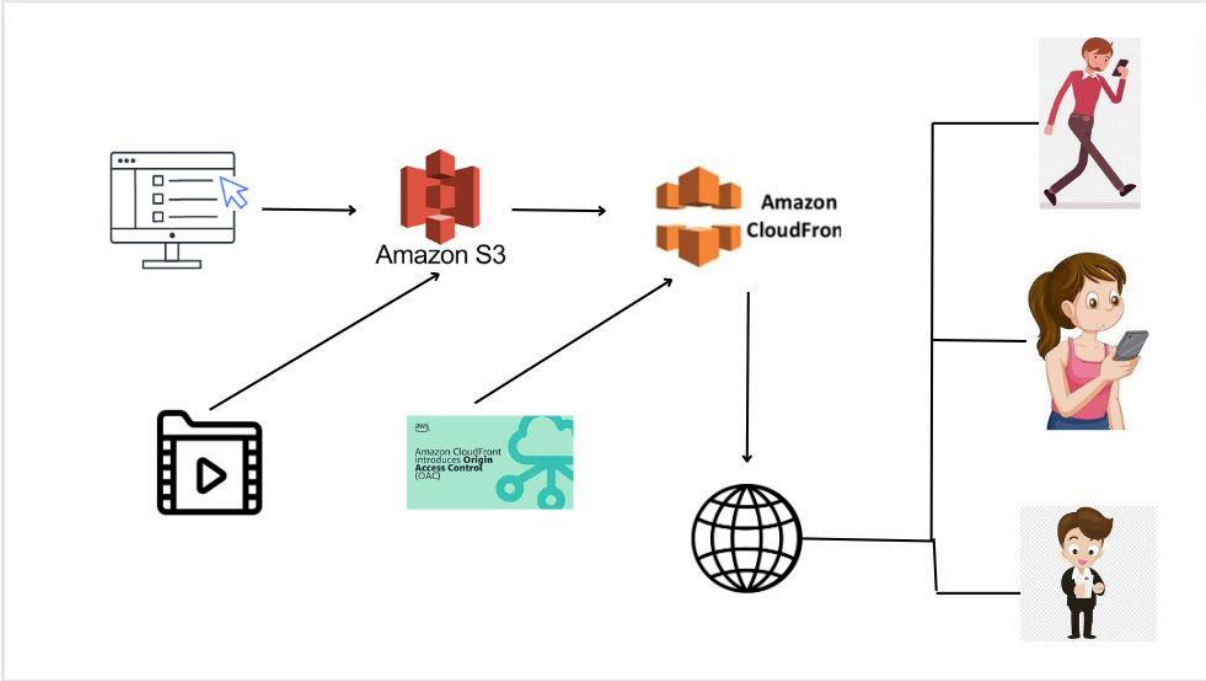
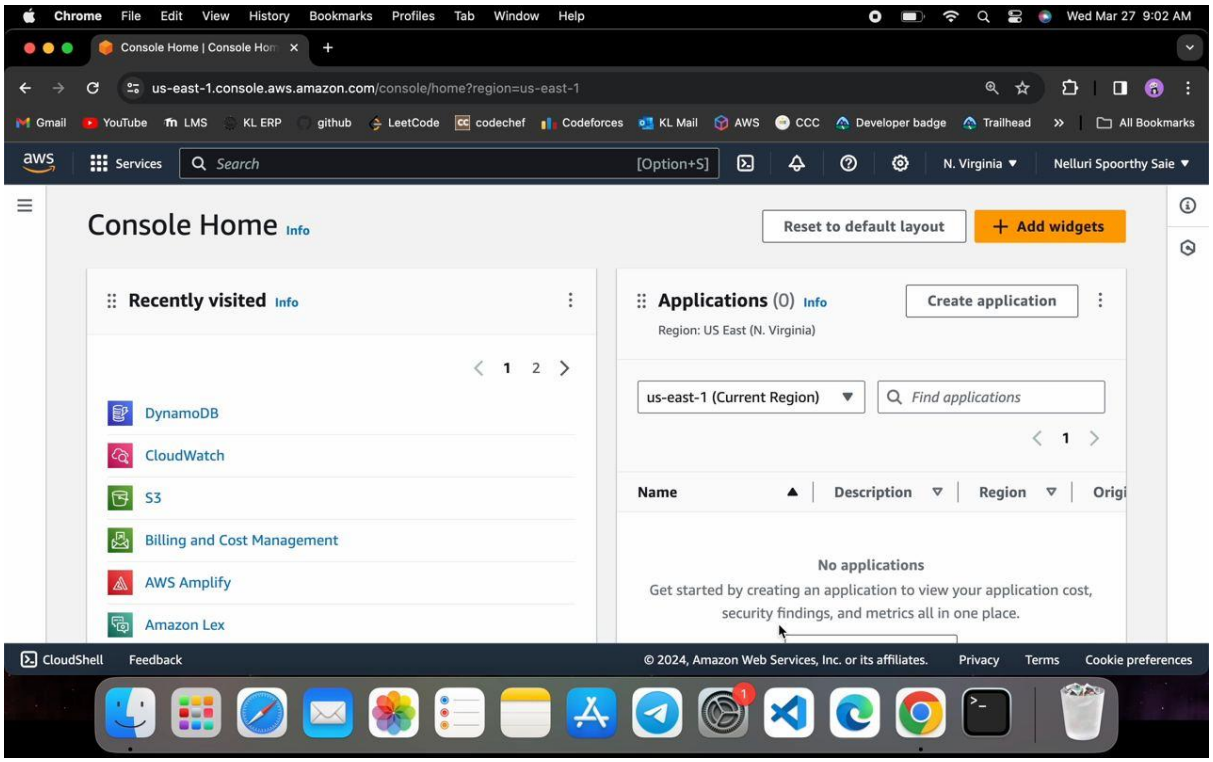
Architecture:

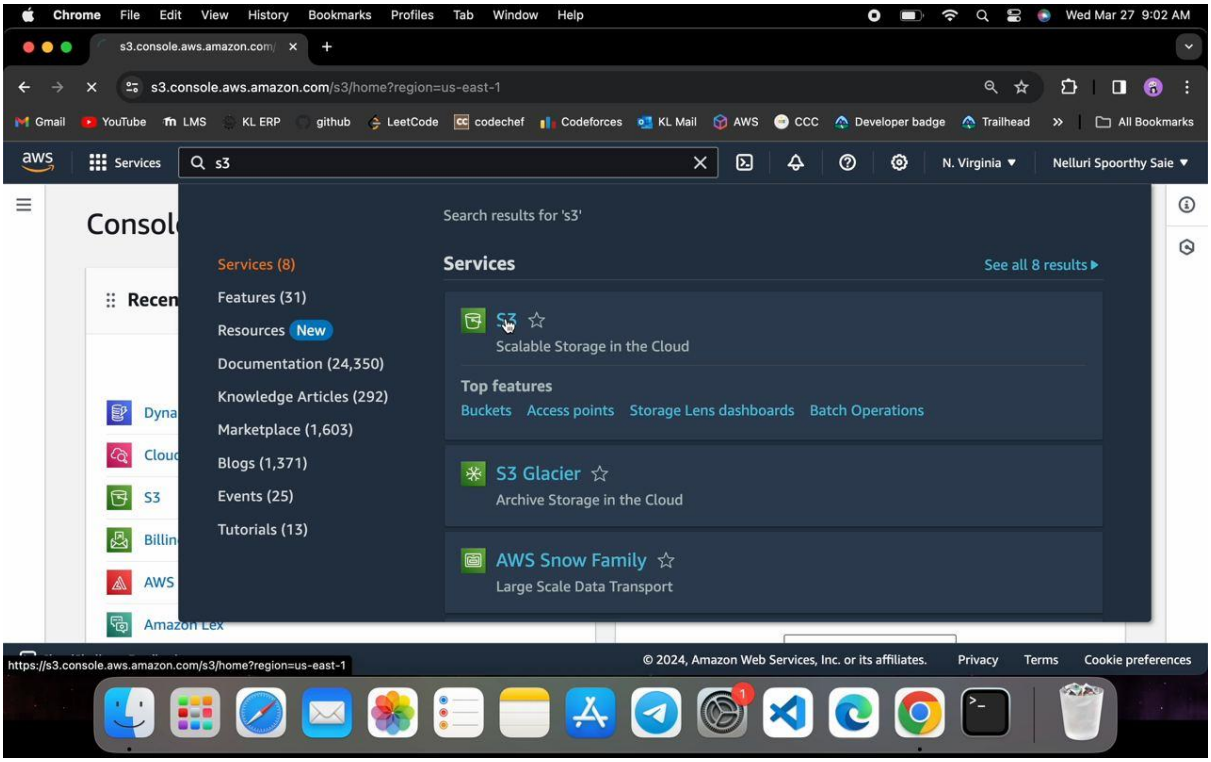


Step-By-Step Procedure:

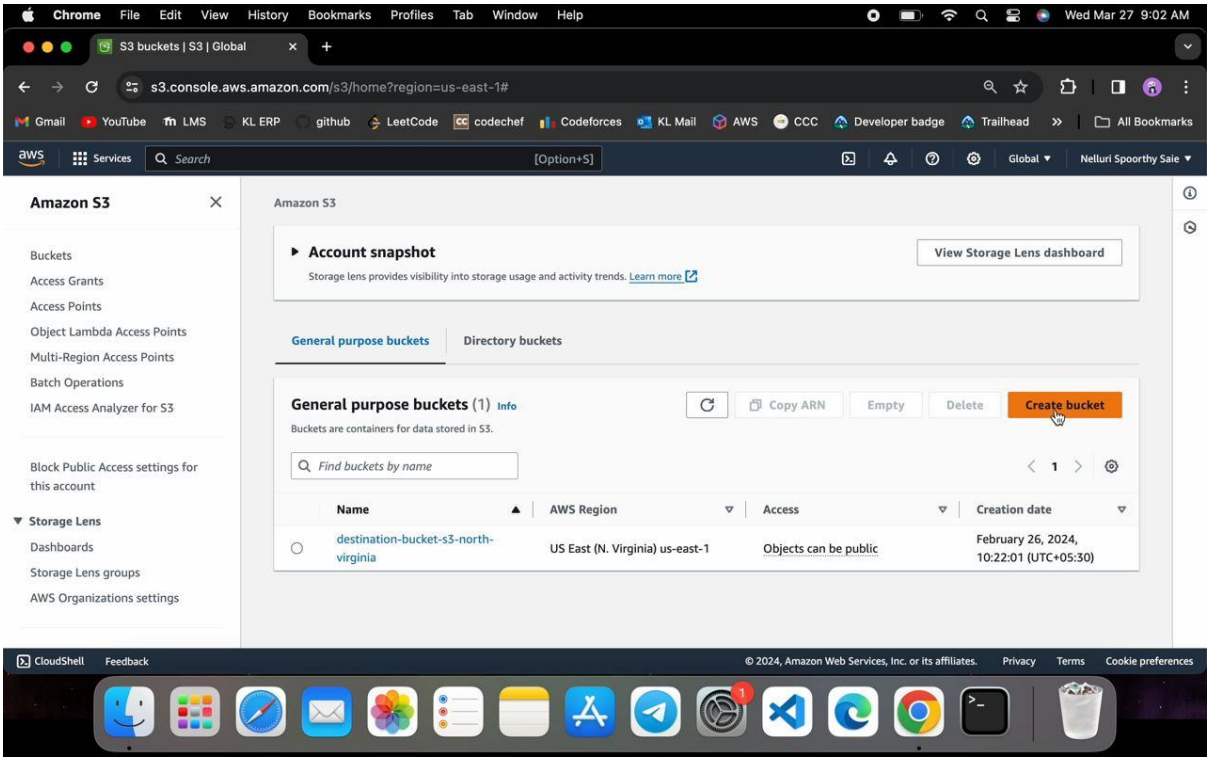
1) Sign in to AWS console



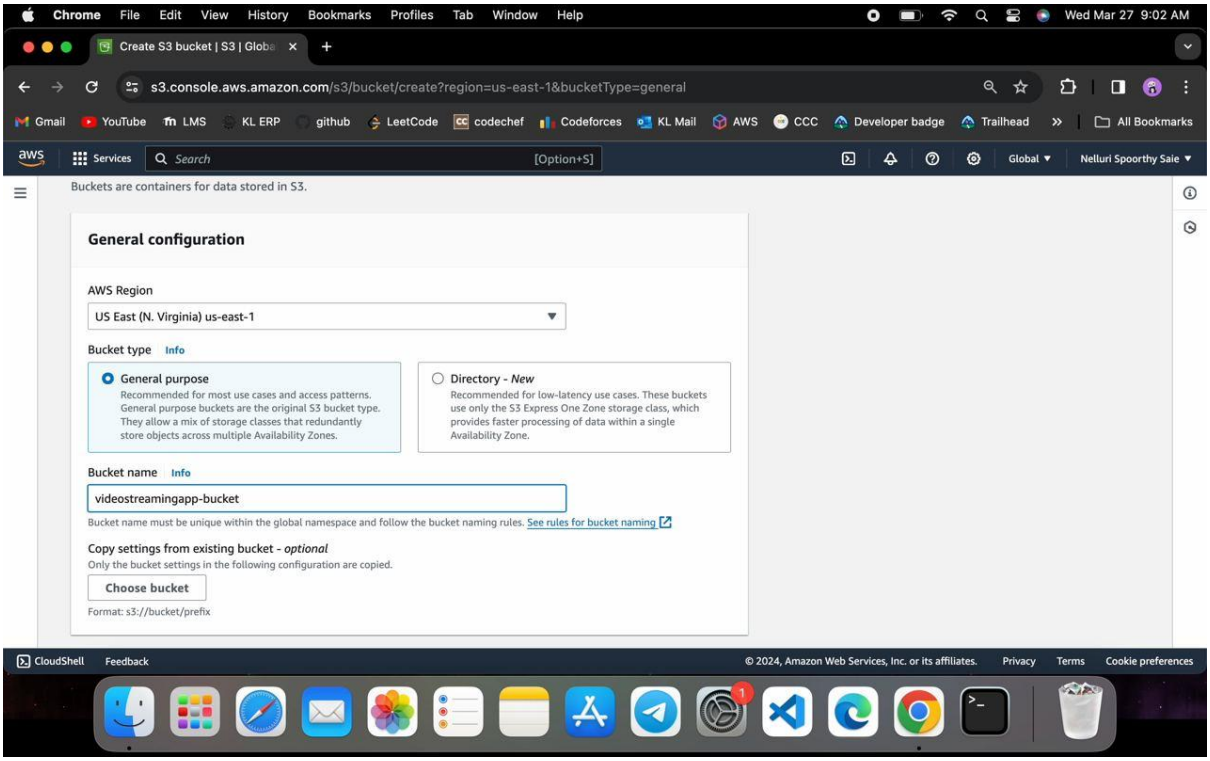
2) Navigate to S3 console



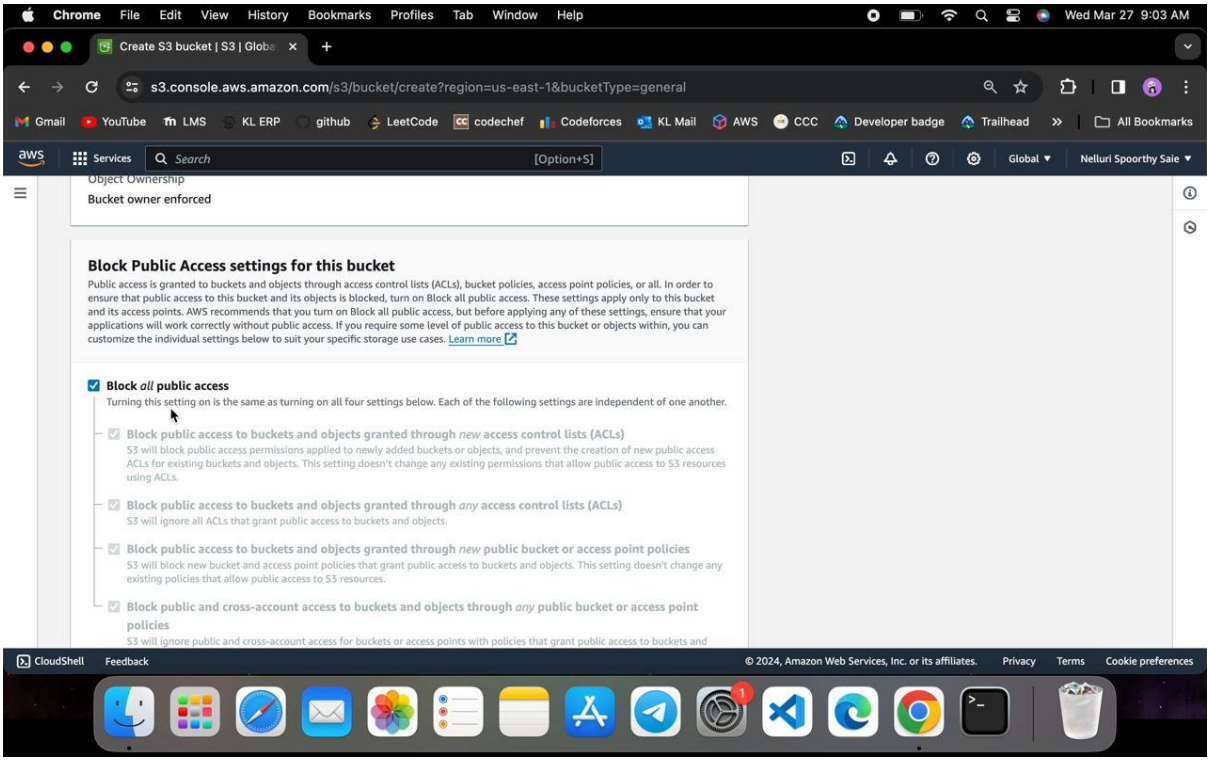
3) Click on create Bucket



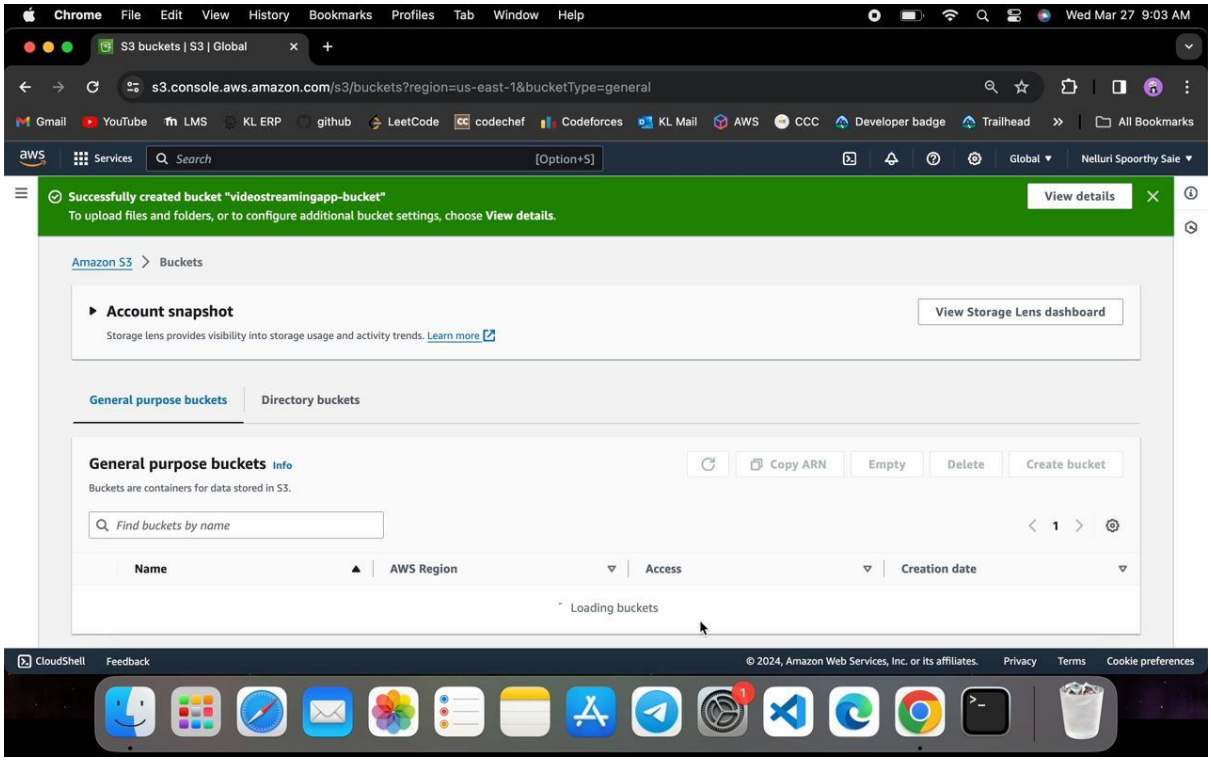
4) Give a bucket name which is unique “videostreamingapp-bucket”



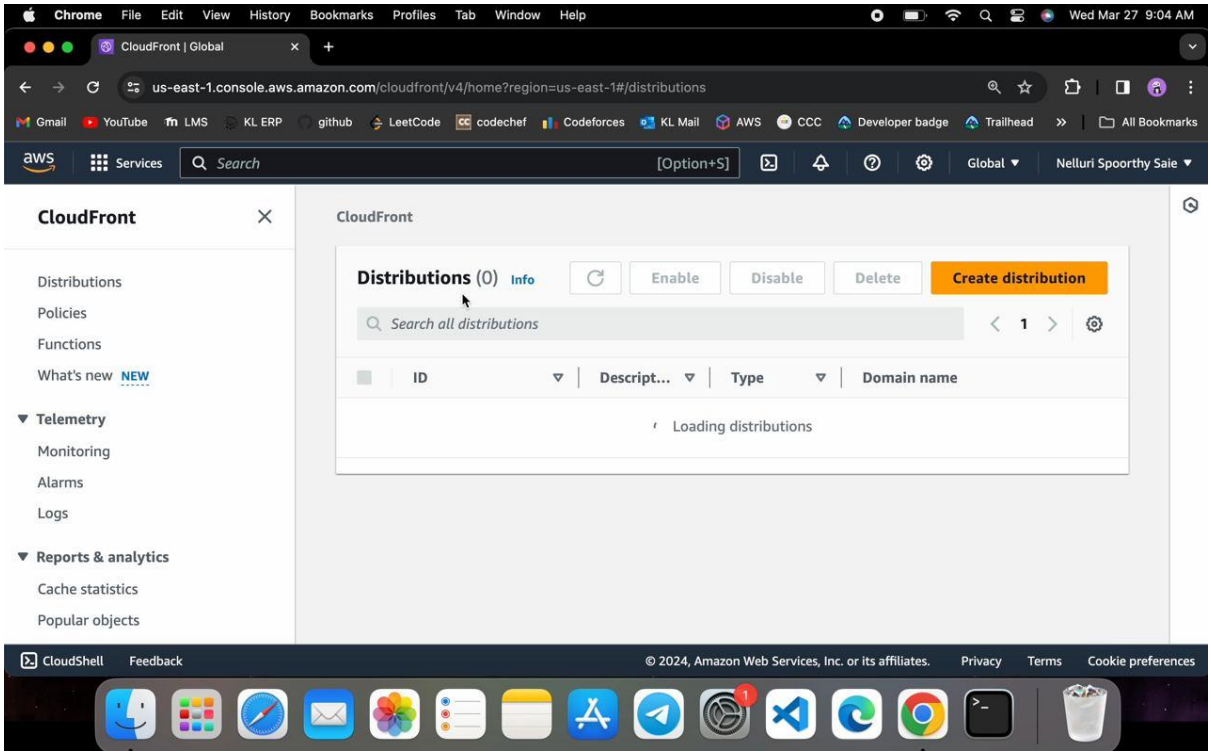
5) Check on block all public access and enable bucket versioning



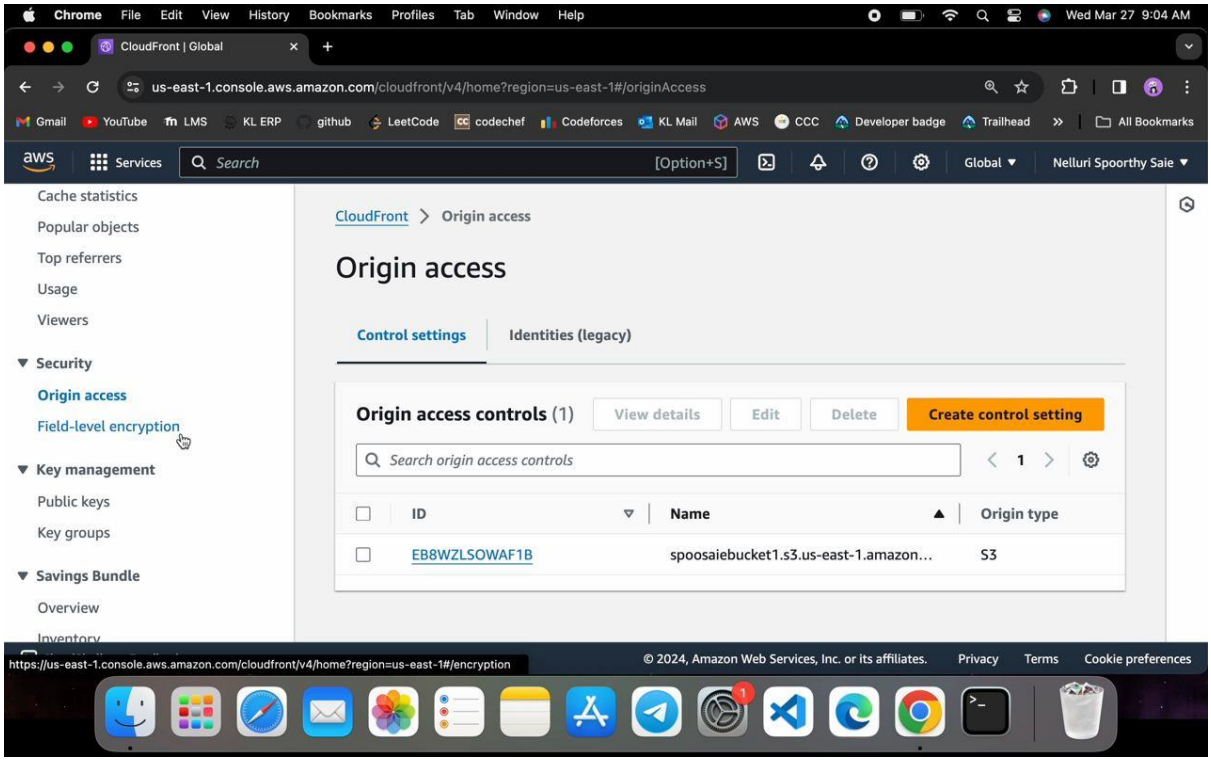
6) Click on create bucket



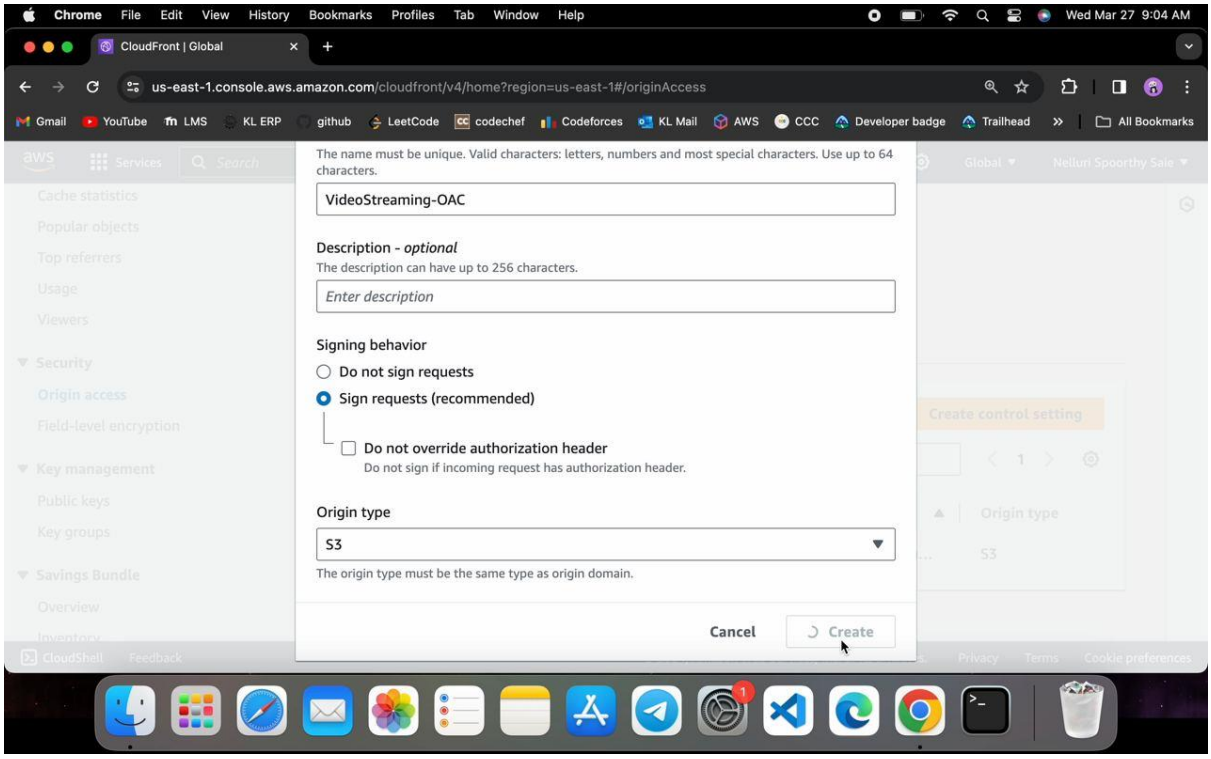
7) Now navigate to Cloud Front



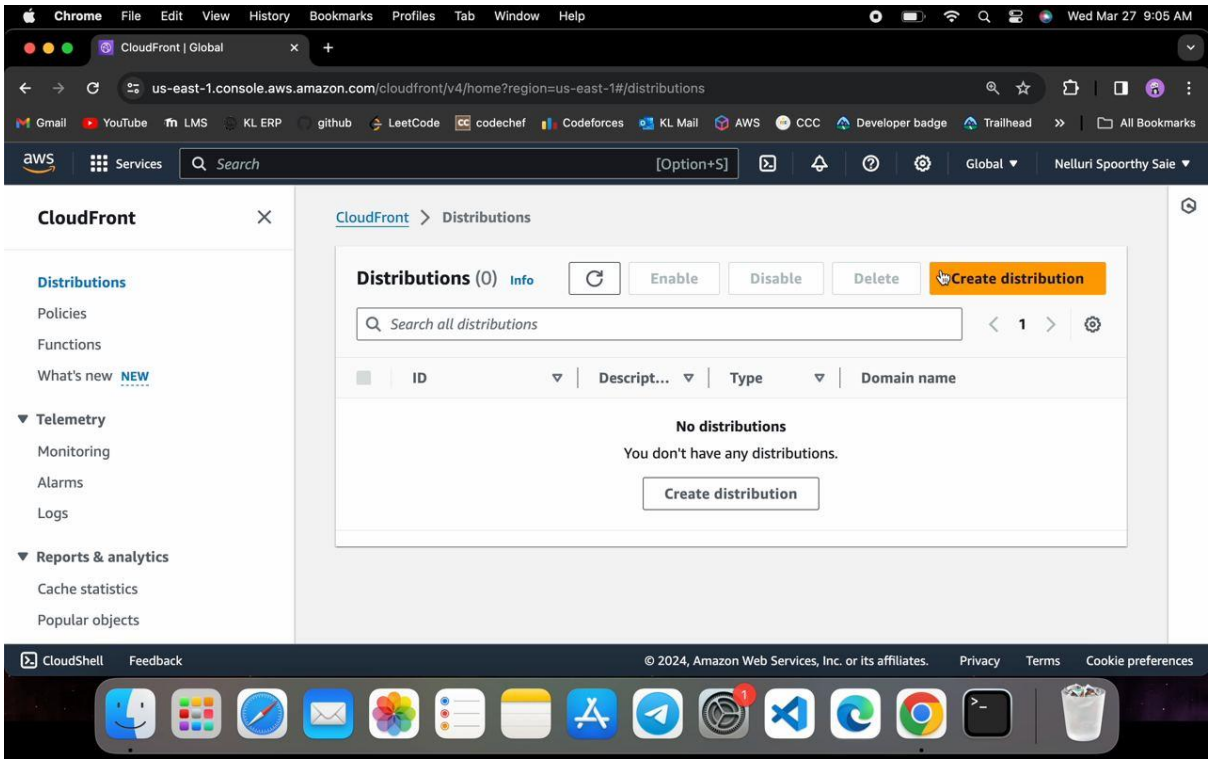
8) Now go to origin access and click on create control access



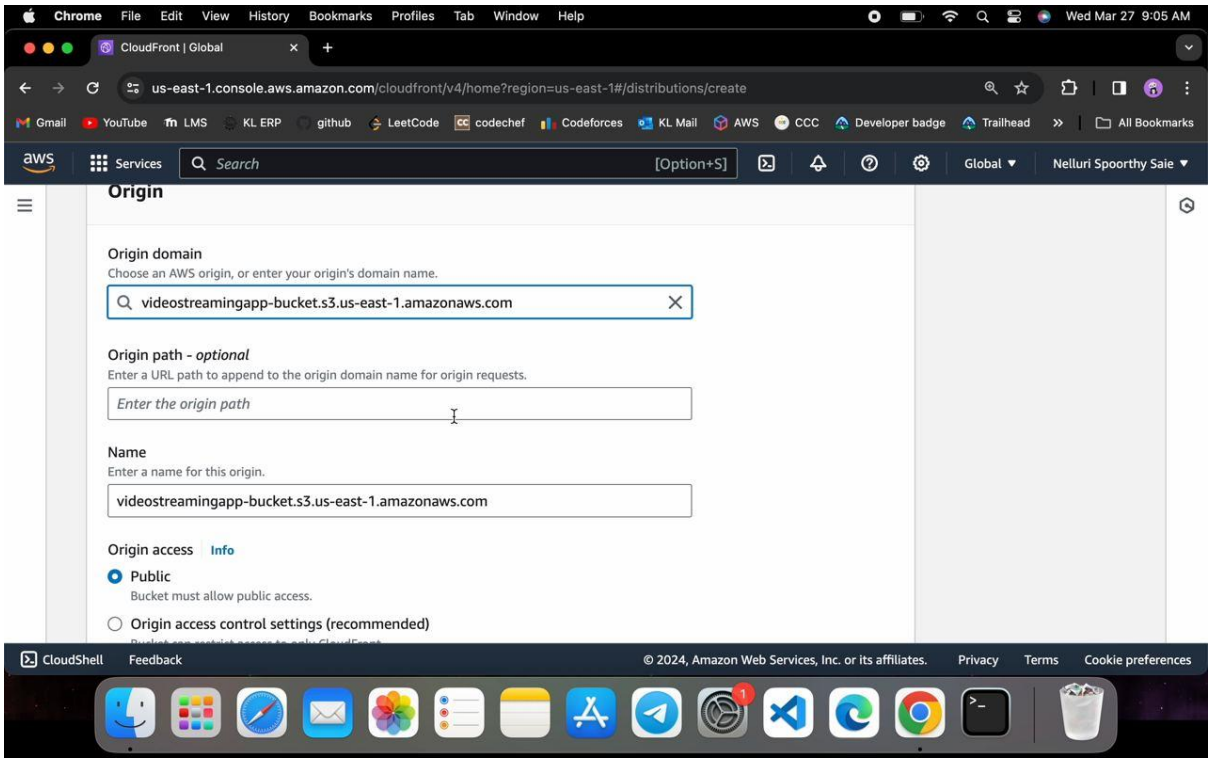
9) Name the control access “VideoStreaming-OAC” and click on create



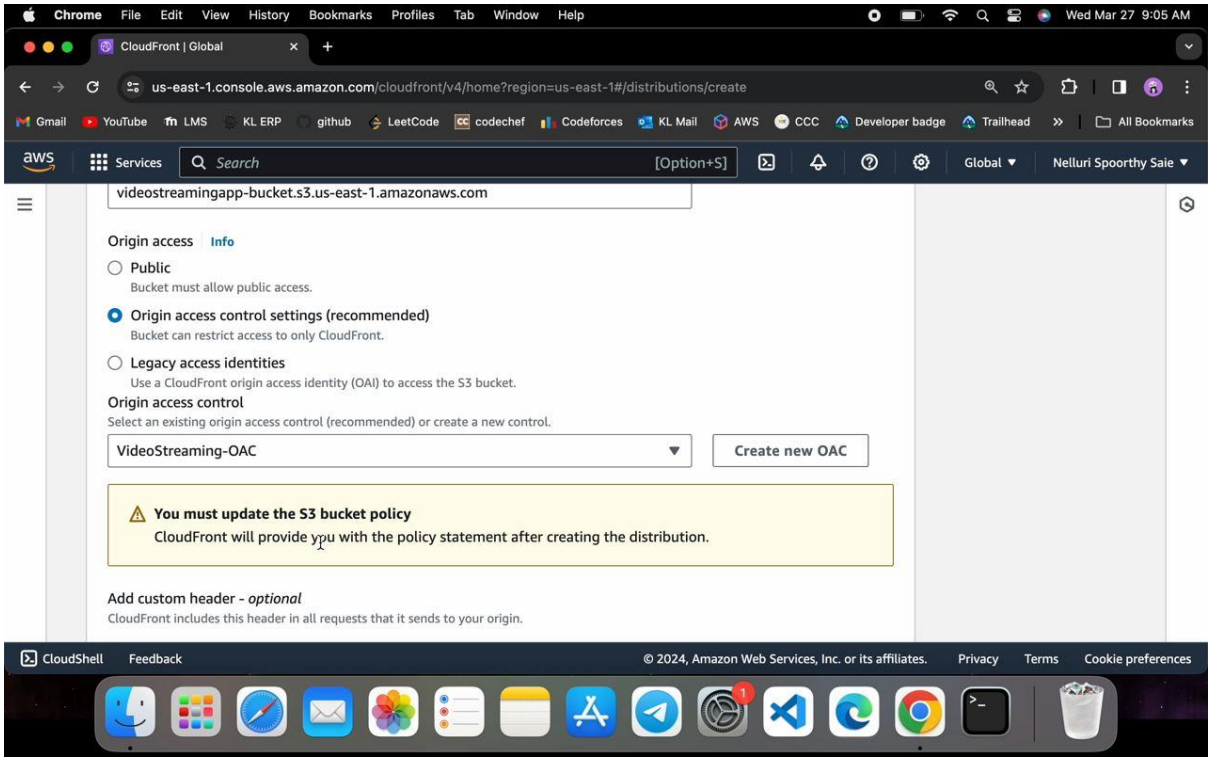
10) Now in cloud front click on create distribution



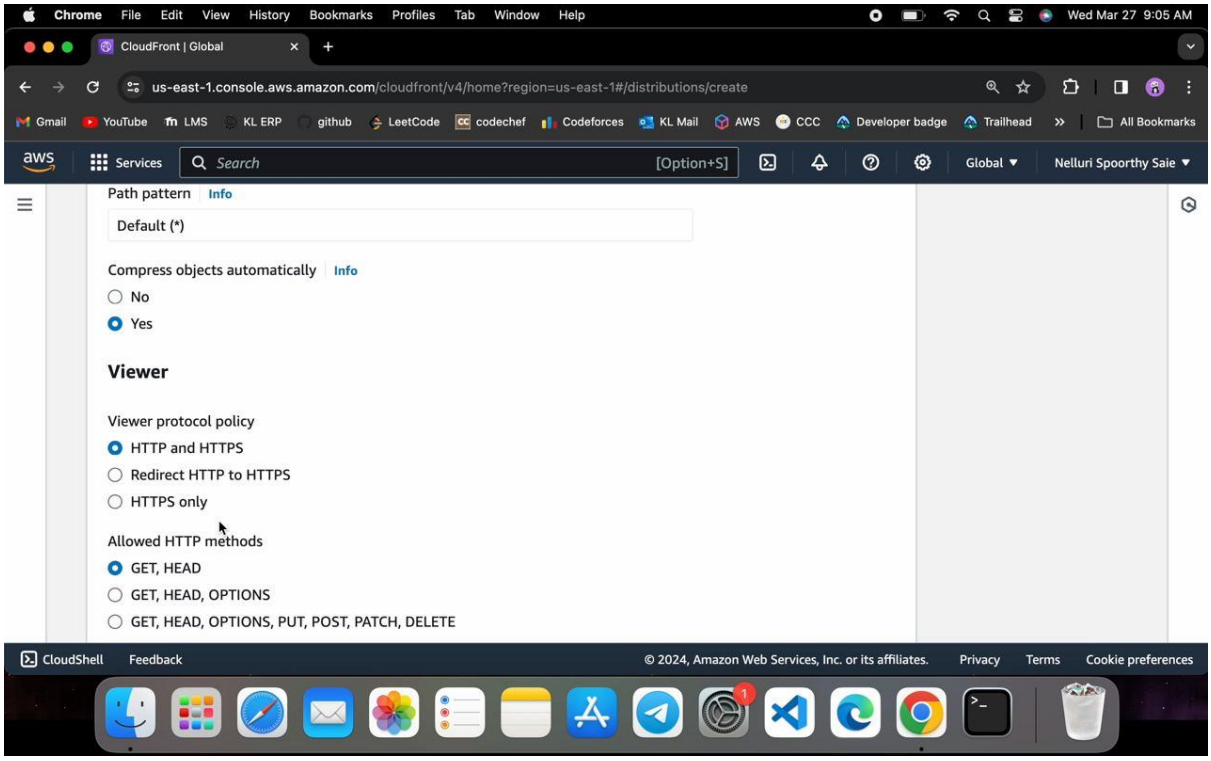
11) Select origin domain as your bucket



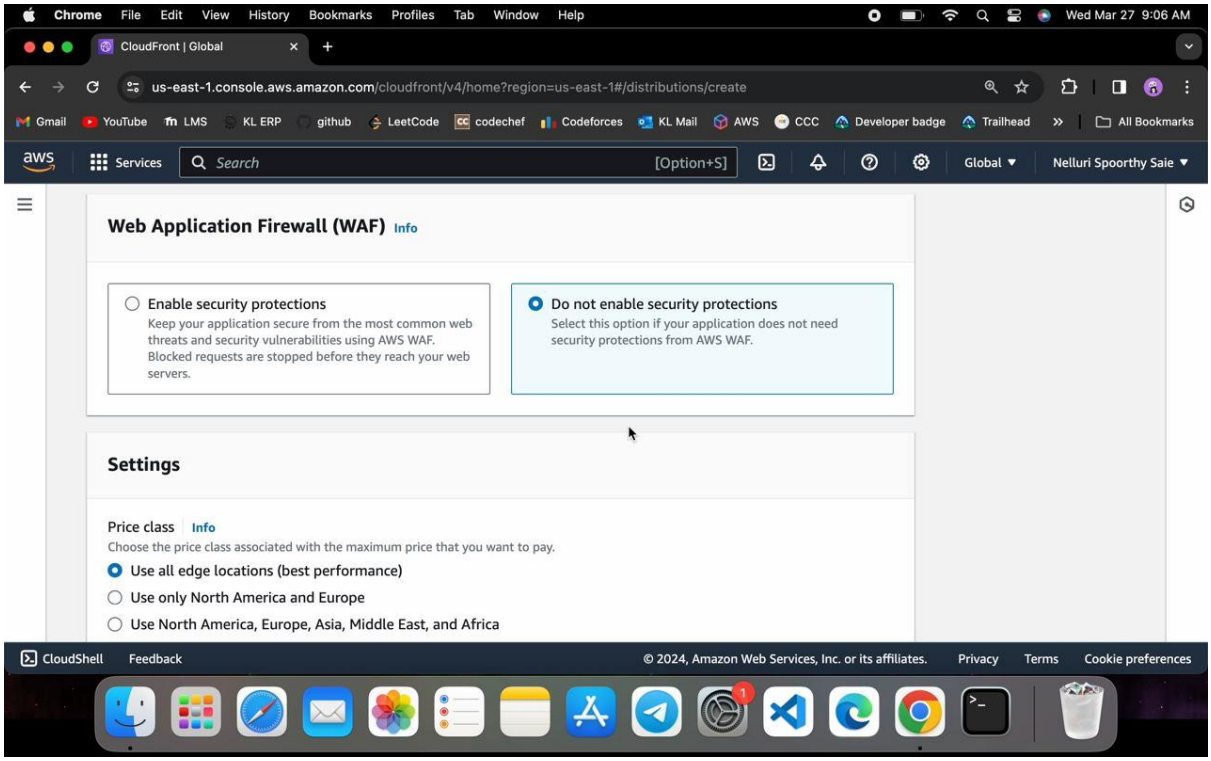
12) Select the origin access



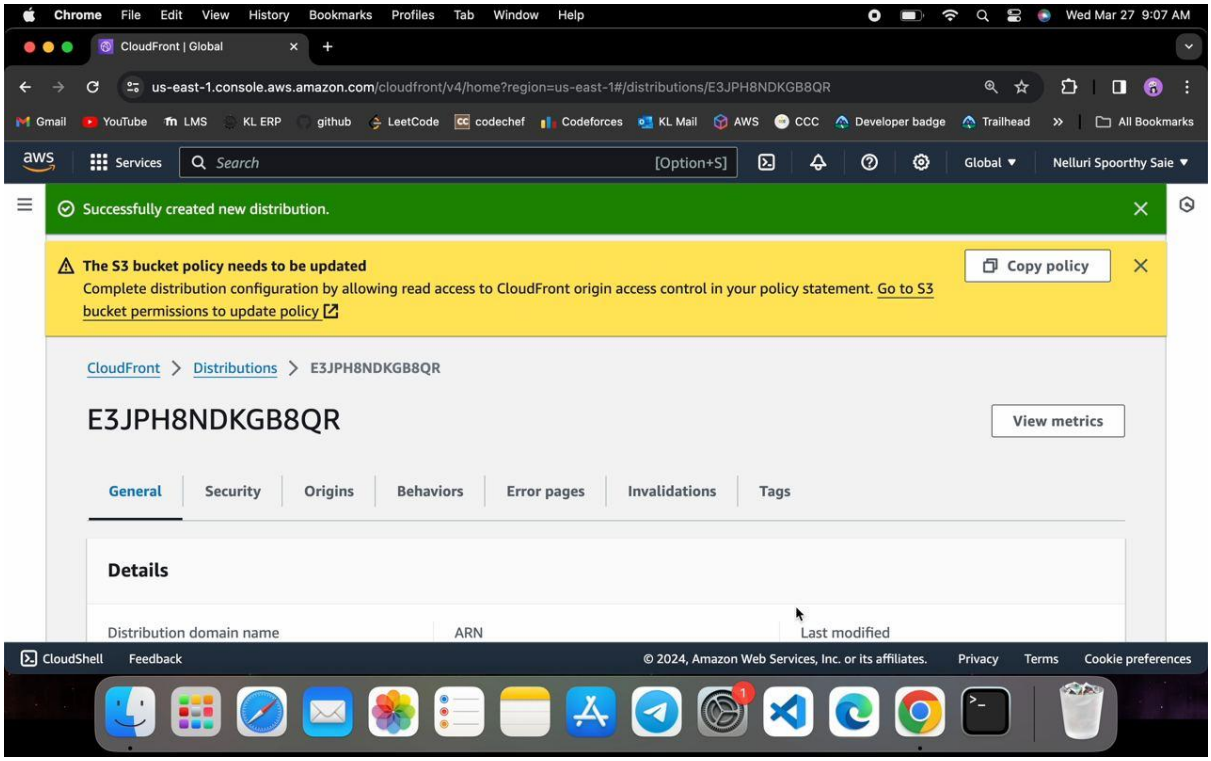
13) Keep the viewer protocol policy to HTTP and HTTPS

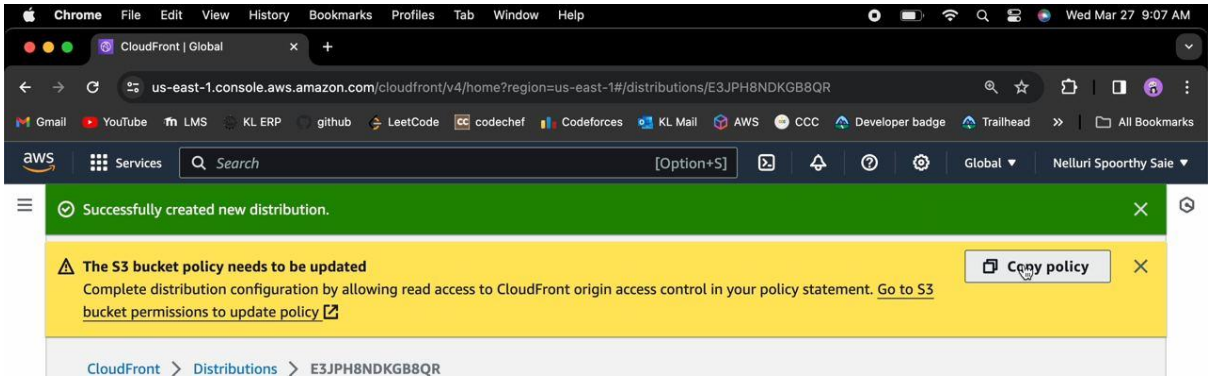


14) Check do not enable security protections and click create

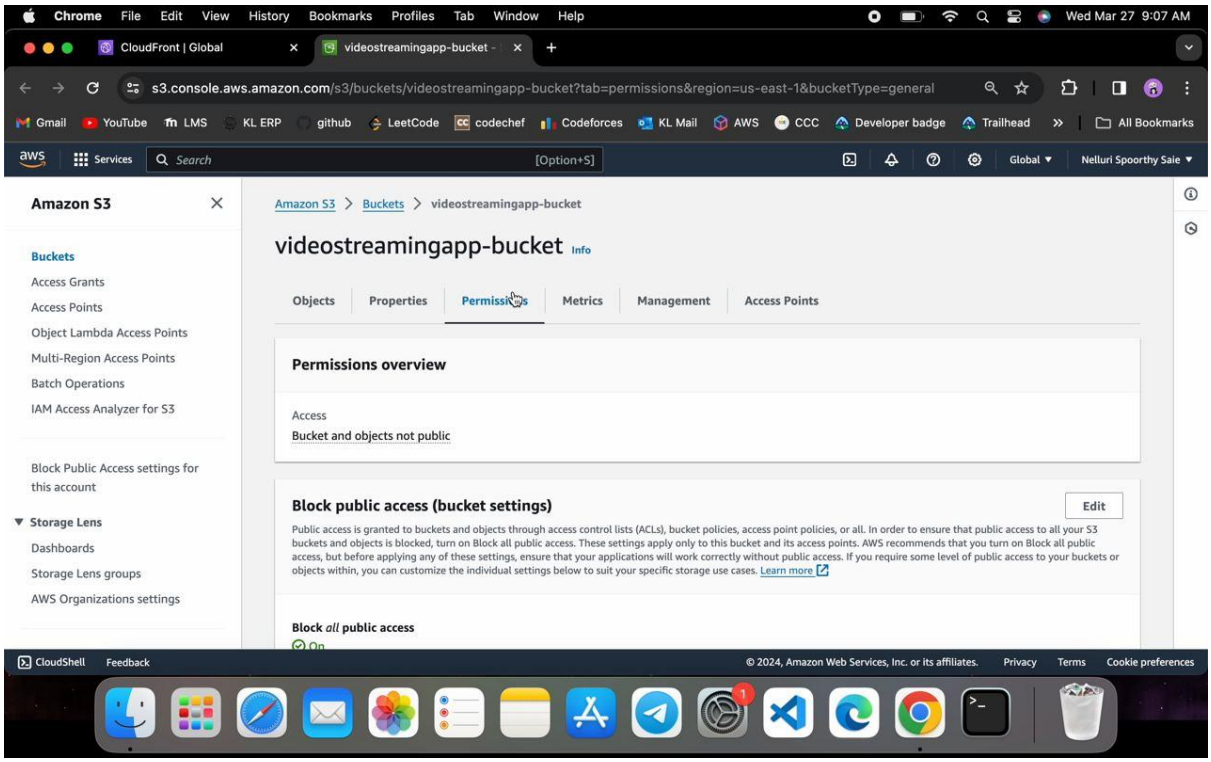


15) Copy the policy URL

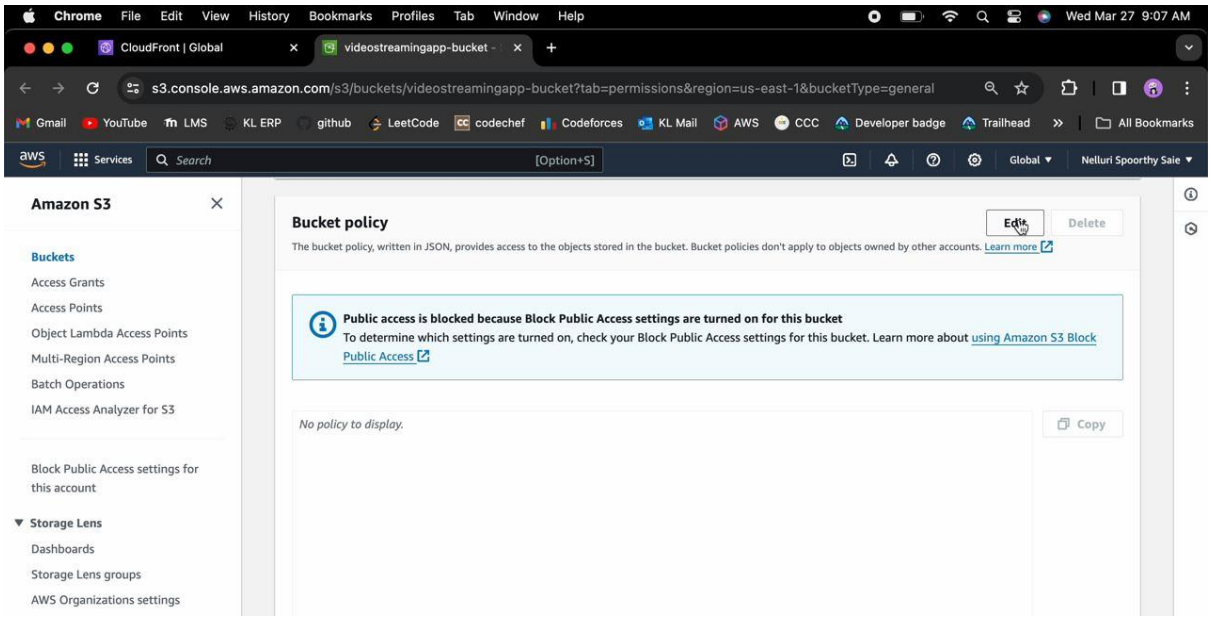




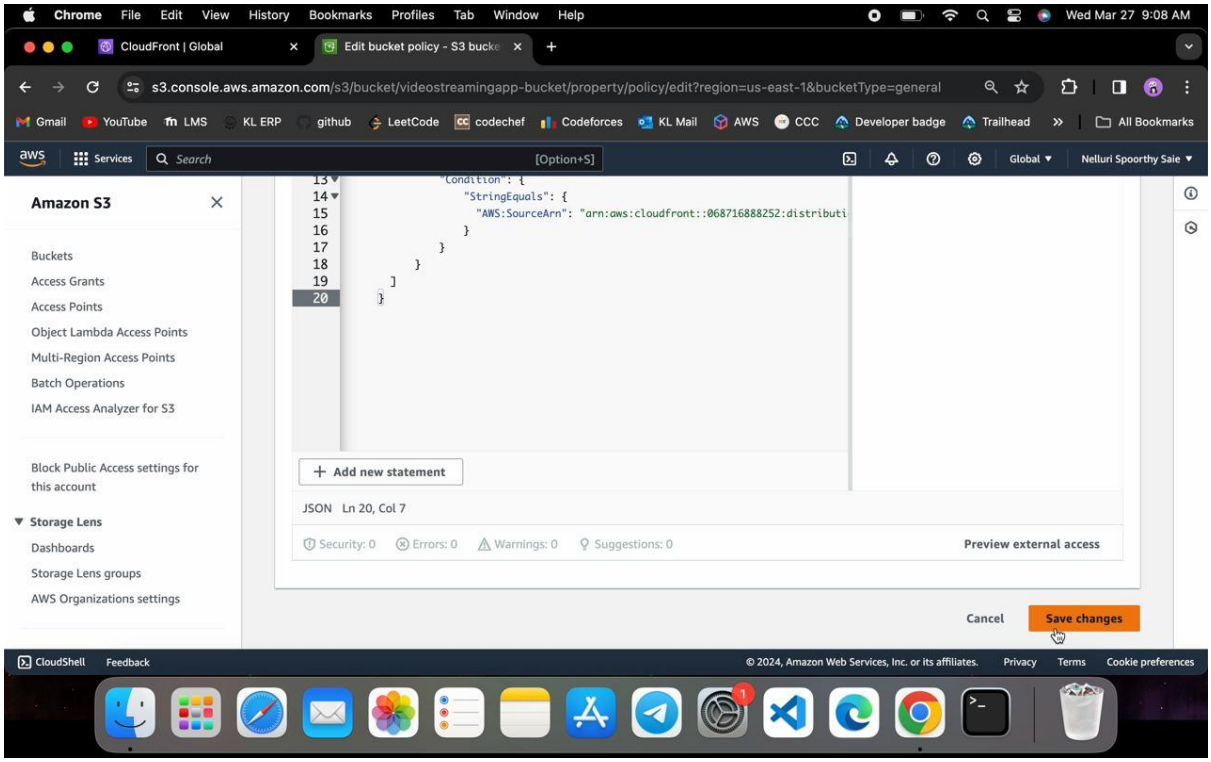
16) Navigate to the page buckets open permissions



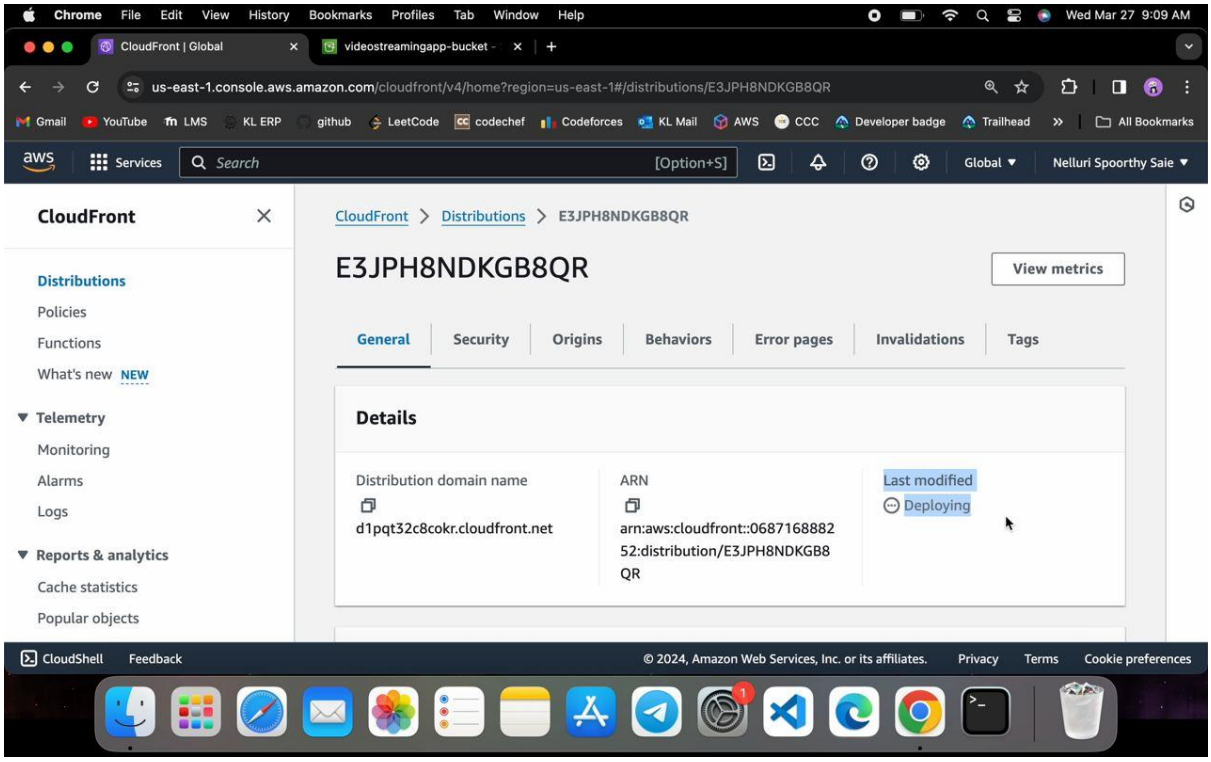
17) Click on edit bucket policy, click on edit

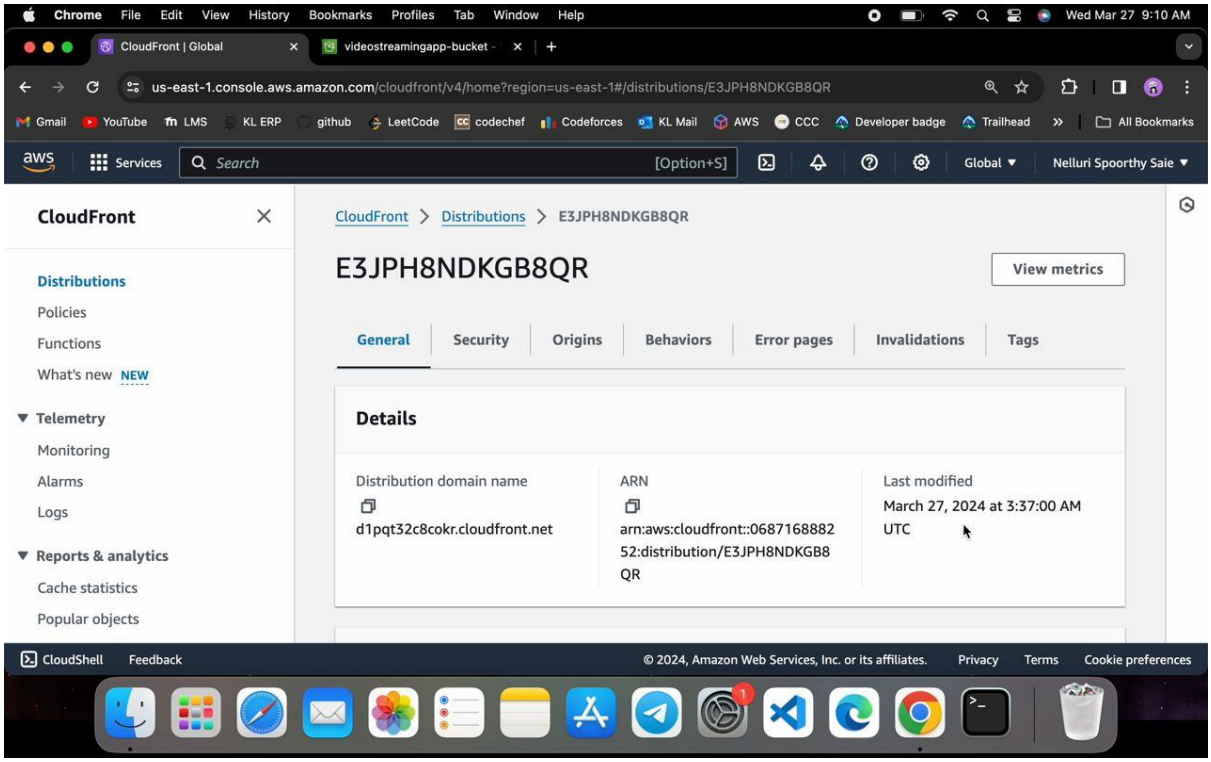


18) Copy the policy here and click save changes

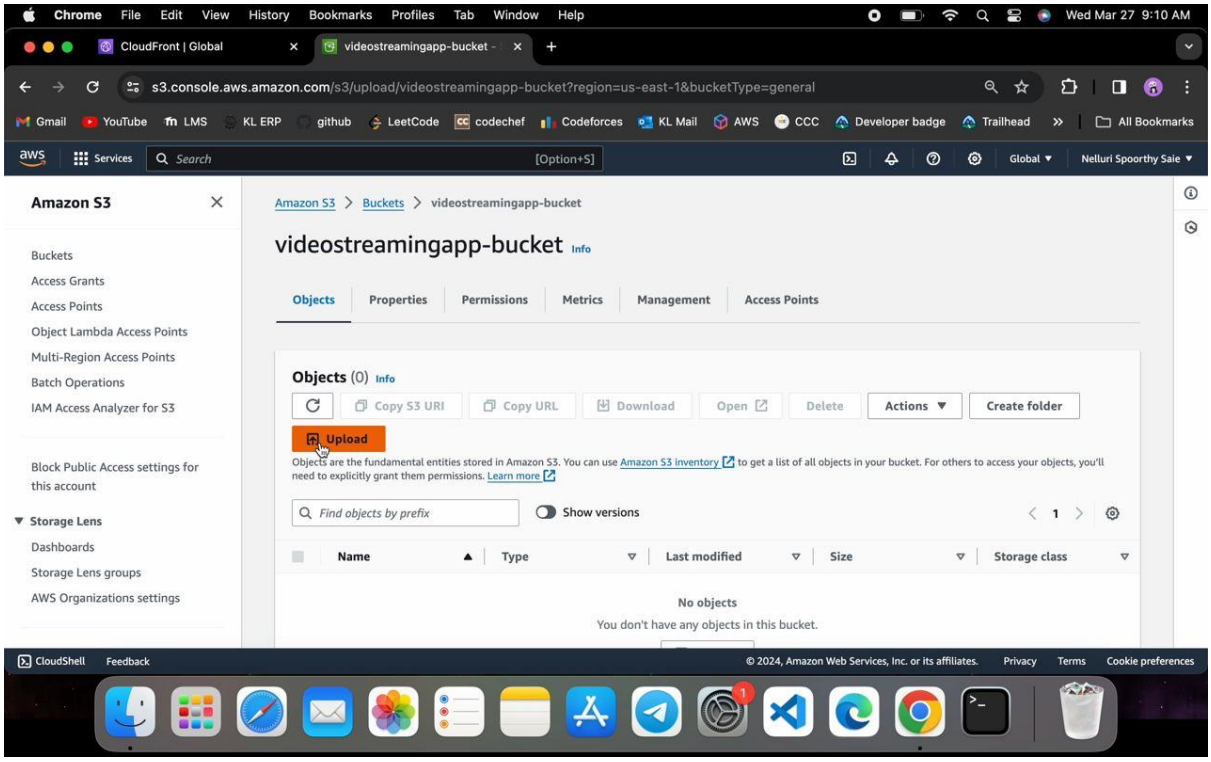


19) Now navigate back to cloudfront and wait till the distribution is deployed

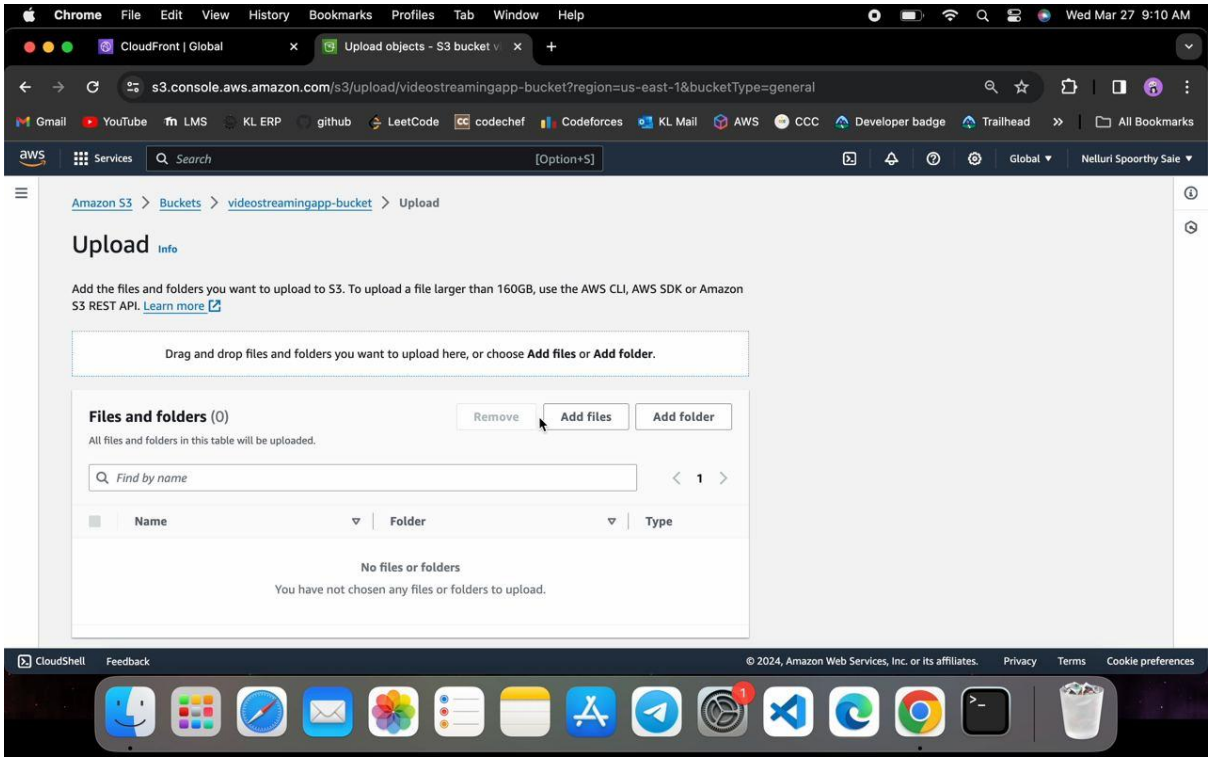




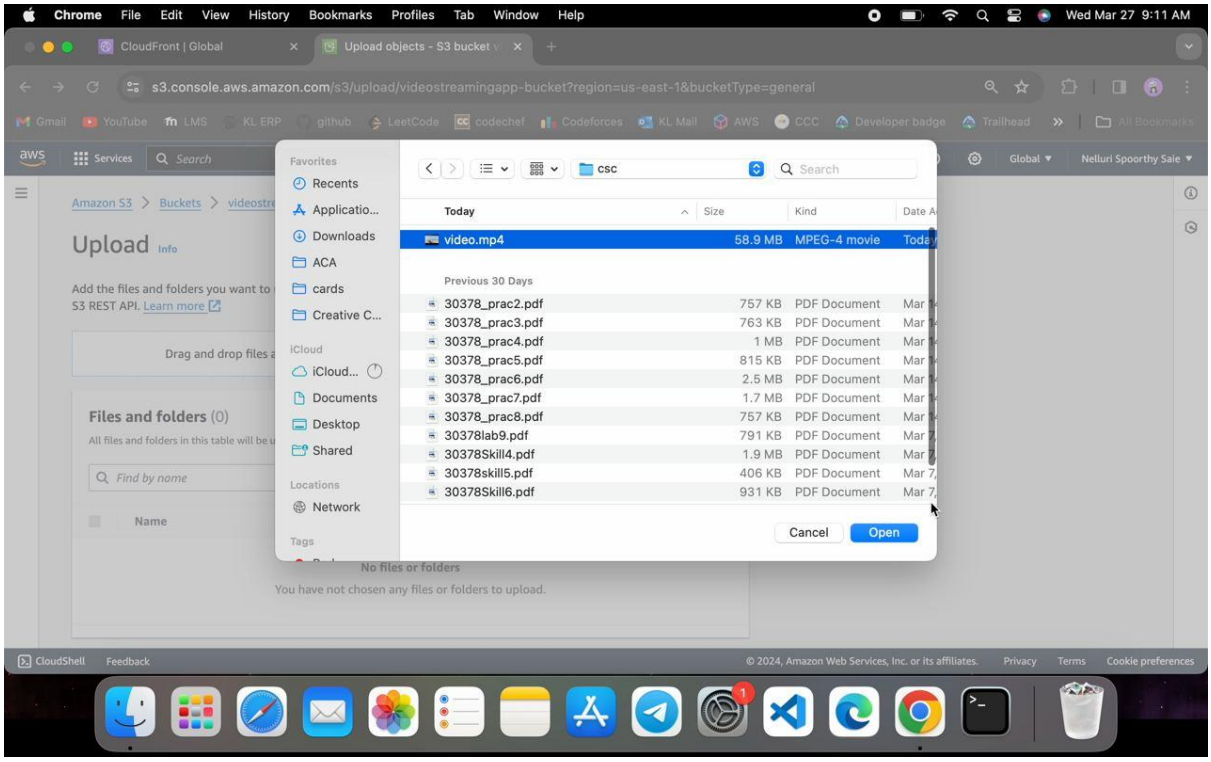
20) Now navigate back to bucket and click on upload file

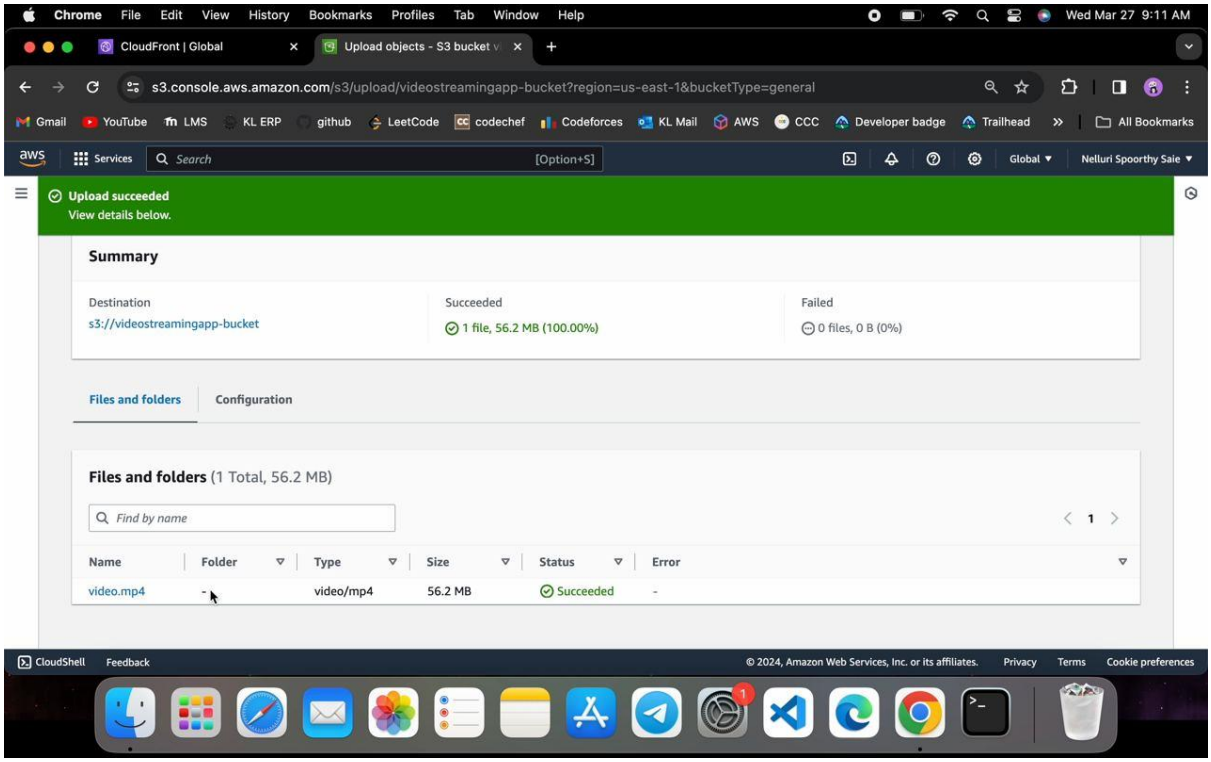


21) Click on add file

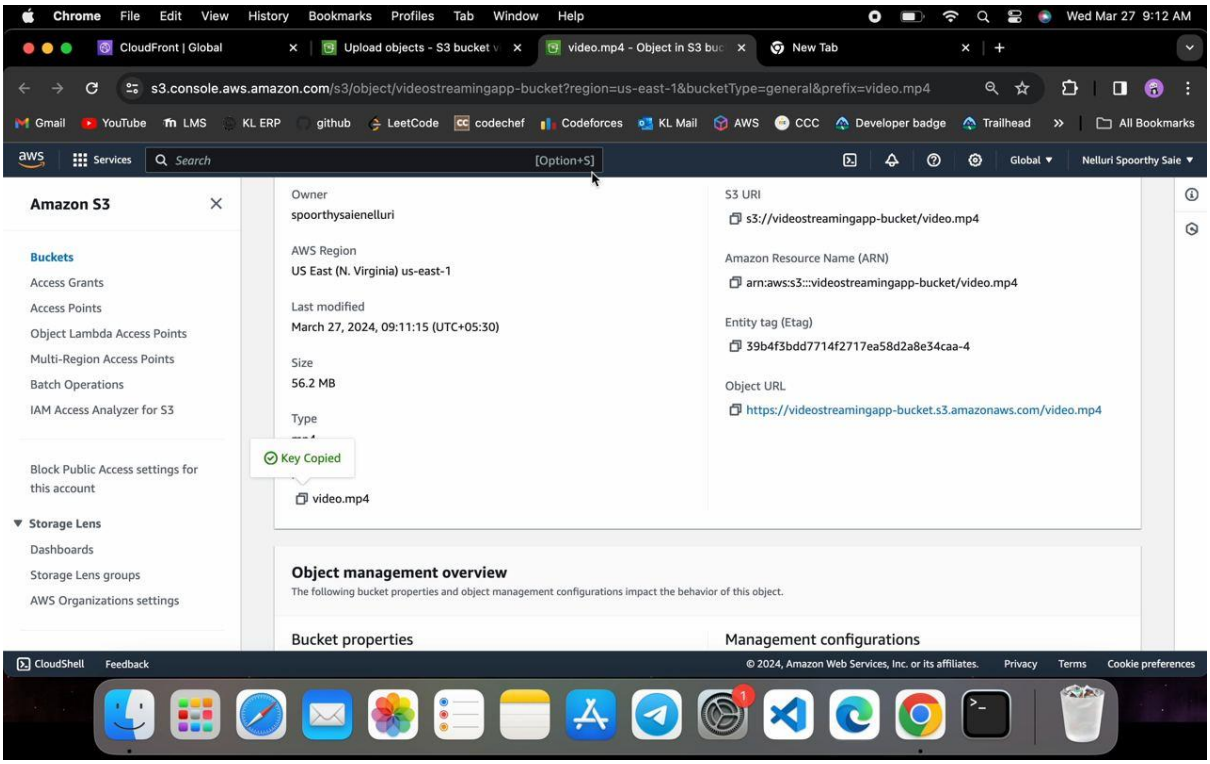


22) Choose any video from your PC , click open then upload file

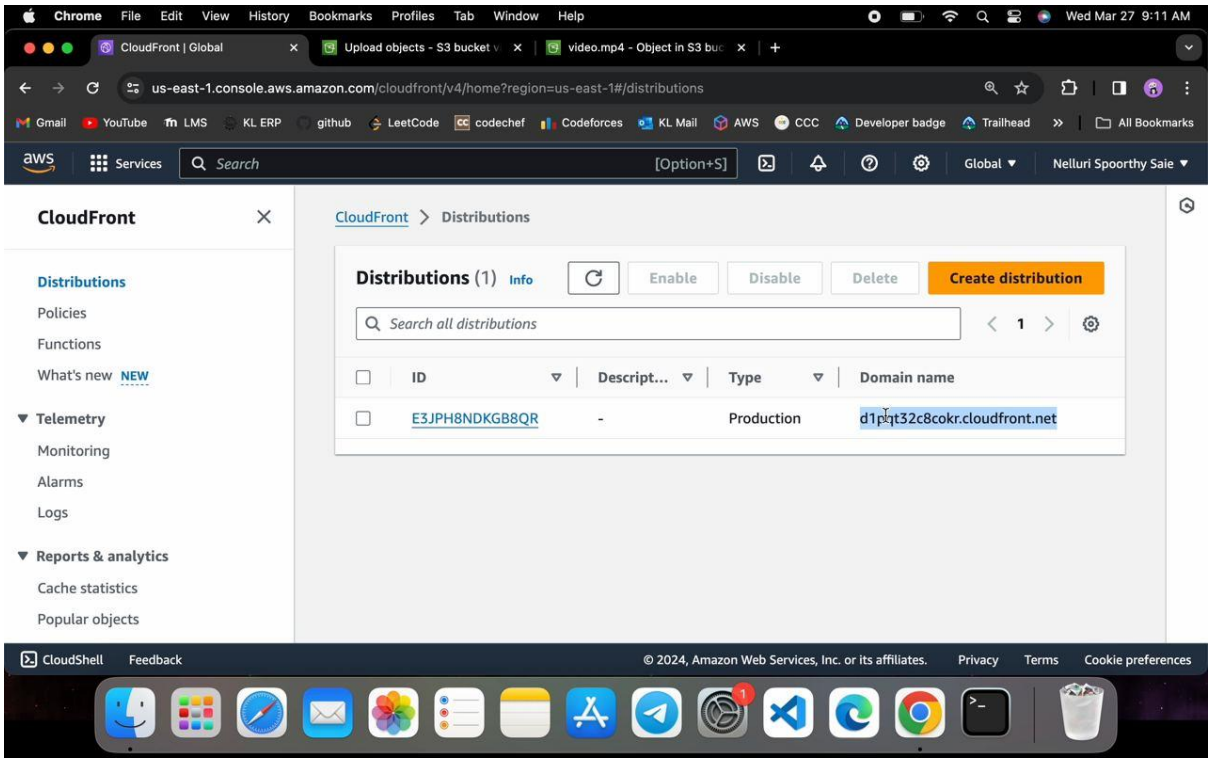




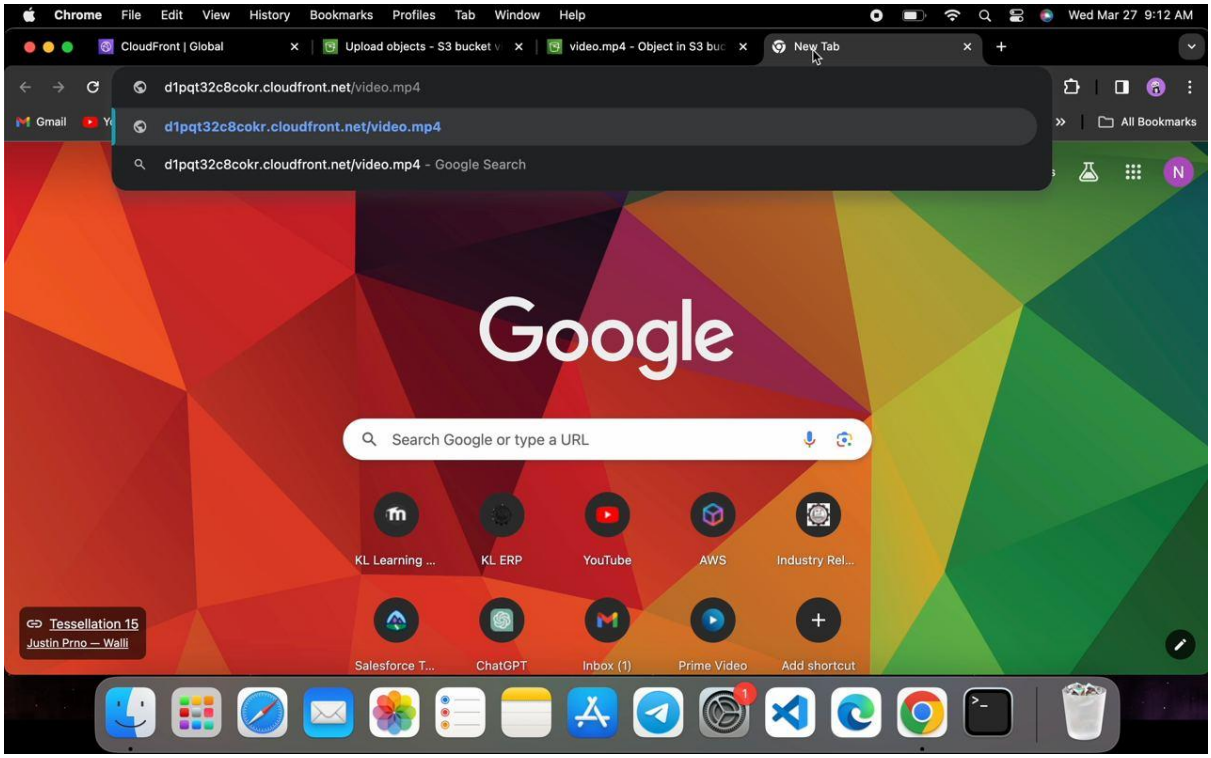
23) Open the uploaded file and copy the key



24) In cloudfront distribution copy the domain name



25) Now put domain name / key name of file “d1pqt32c8cokr.cloudfront.net/video.mp4”



26) You can stream the video without using any server