

CSC-PROJECT

BUILDING A SERVERLESS VIDEO STREAMING SERVICE

-2100031397

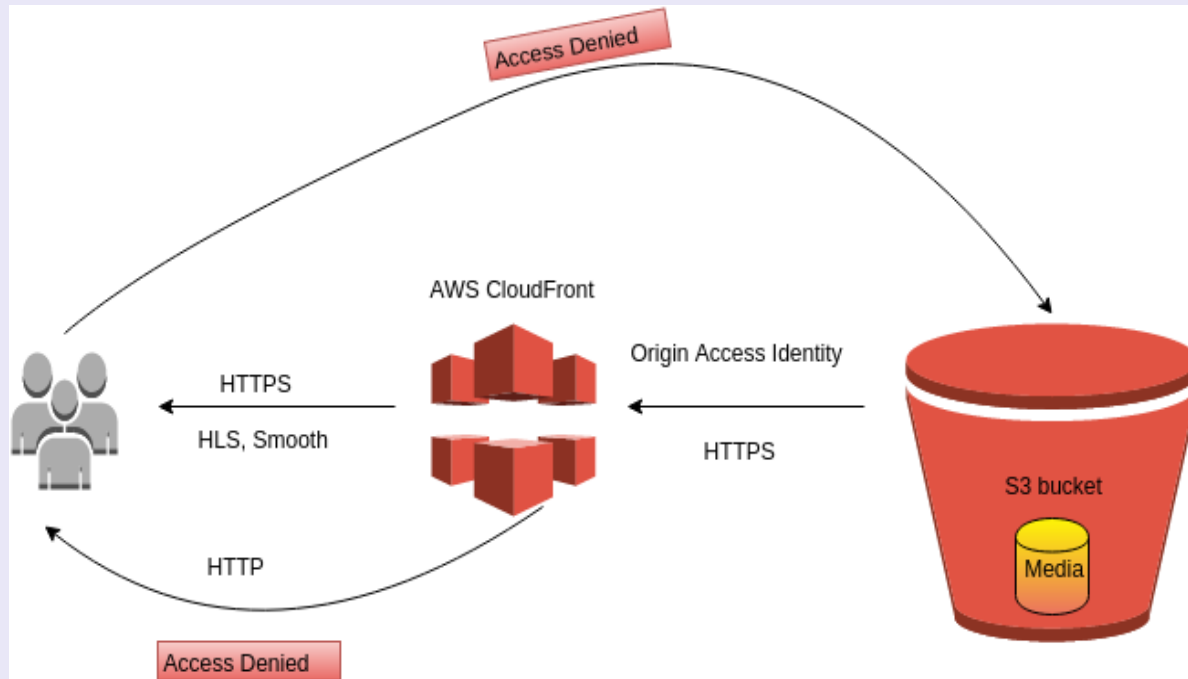
ABSTRACT

In this comprehensive guide, we delve into the innovative approach of building a serverless video streaming service using Amazon S3 and CloudFront. By abandoning traditional server setups, we not only slash costs and reduce complexity but also elevate scalability to meet the demands of modern users. Throughout this walkthrough, we shine a light on crucial aspects such as user authentication, video transcoding, and seamless CloudFront integration. With an unwavering focus on simplicity and efficiency, this solution promises to deliver a flawless video streaming experience that caters perfectly to today's dynamic requirements.

INTRODUCTION

Welcome, esteemed audience, to a realm where digital landscapes are shaped by the fluidity of video streaming. In today's fast-paced digital epoch, the creation of a video streaming service often stands as a daunting venture, fraught with complexities and formidable costs. However, fear not, for we stand on the precipice of a transformative era, where Amazon Web Services (AWS) unfurls a tapestry of simplicity and affordability in the realm of video streaming platforms. Today, we embark on a journey to unravel the intricacies of AWS-driven serverless video streaming services, where the amalgamation of Amazon S3 for video storage and CloudFront for expeditious content delivery paves the path towards streamlined processes and economical solutions. Let us immerse ourselves in the boundless possibilities as we explore how AWS holds the key to revolutionizing the dissemination of video content in the digital sphere.

Architecture

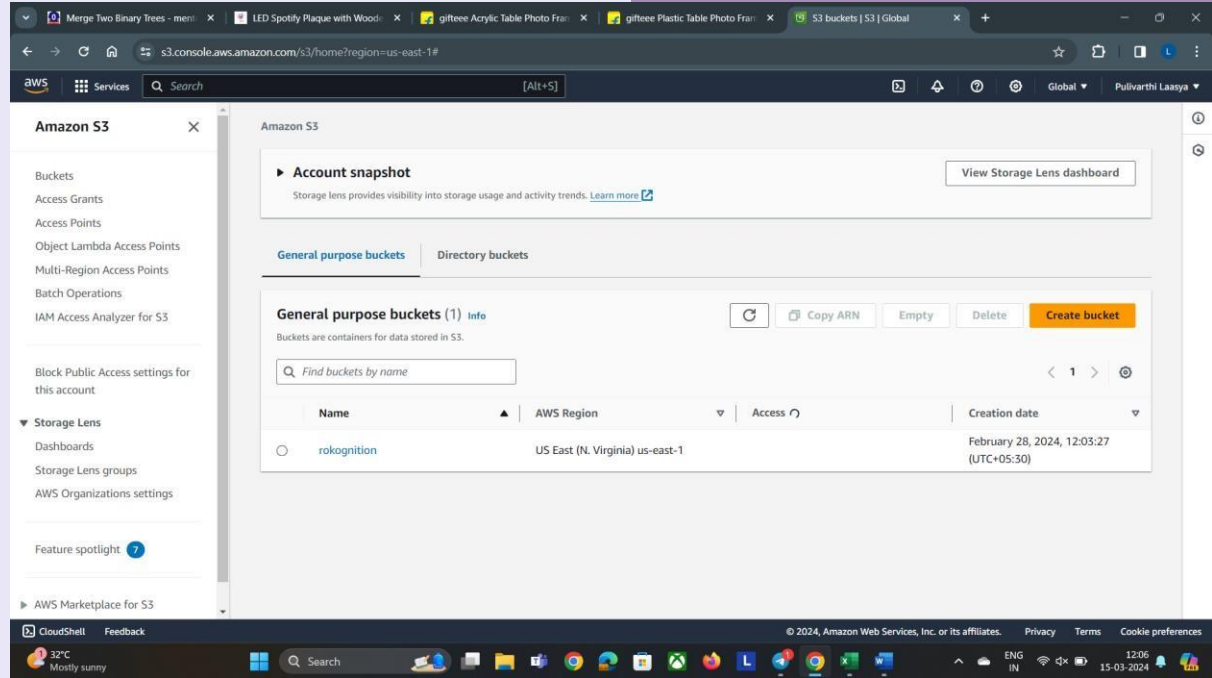


Services Used

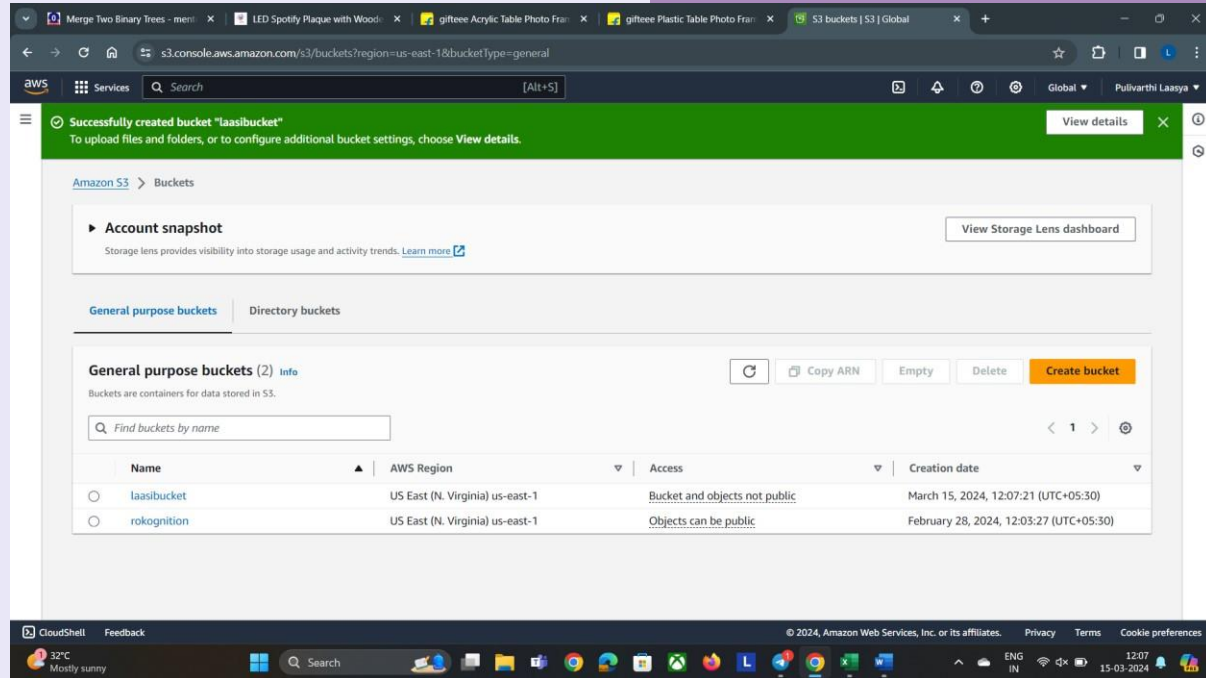
Amazon S3(Simple Storage Service)
Amazon CloudFront

Steps:

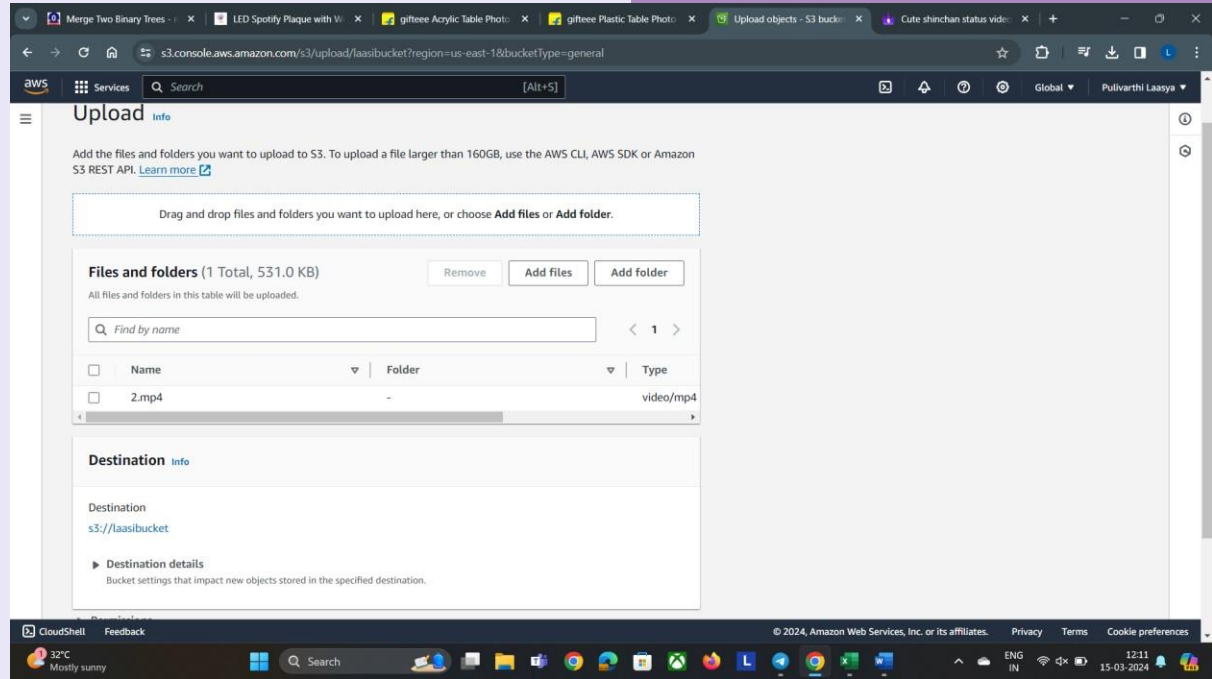
- step1: Signin to Amazon console
- Step2: Go to services and search for s3 bucket, and create a bucket



- **Step3: After that go to cloud front service in that go to origin access and create a control setting.**



- Upload Videos to S3:



Upload objects - S3 bucket

Cute shanchan status video

s3.console.aws.amazon.com/s3/upload/laasibucket?region=us-east-1&bucketType=general

Services Search [Alt+S]

Global Pulivarthi Laasya

Upload succeeded
View details below.

Upload: status

The information below will no longer be available after you navigate away from this page.

Summary

Destination
s3://laasibucket

Succeeded
0 files, 531.0 KB (100.00%)

Failed
0 files, 0 B (0%)

Files and folders Configuration

Files and folders (1 Total, 531.0 KB)

Find by name

Name	Folder	Type	Size	Status	Error
2.mp4	-	video/mp4	531.0 KB	Succeeded	-

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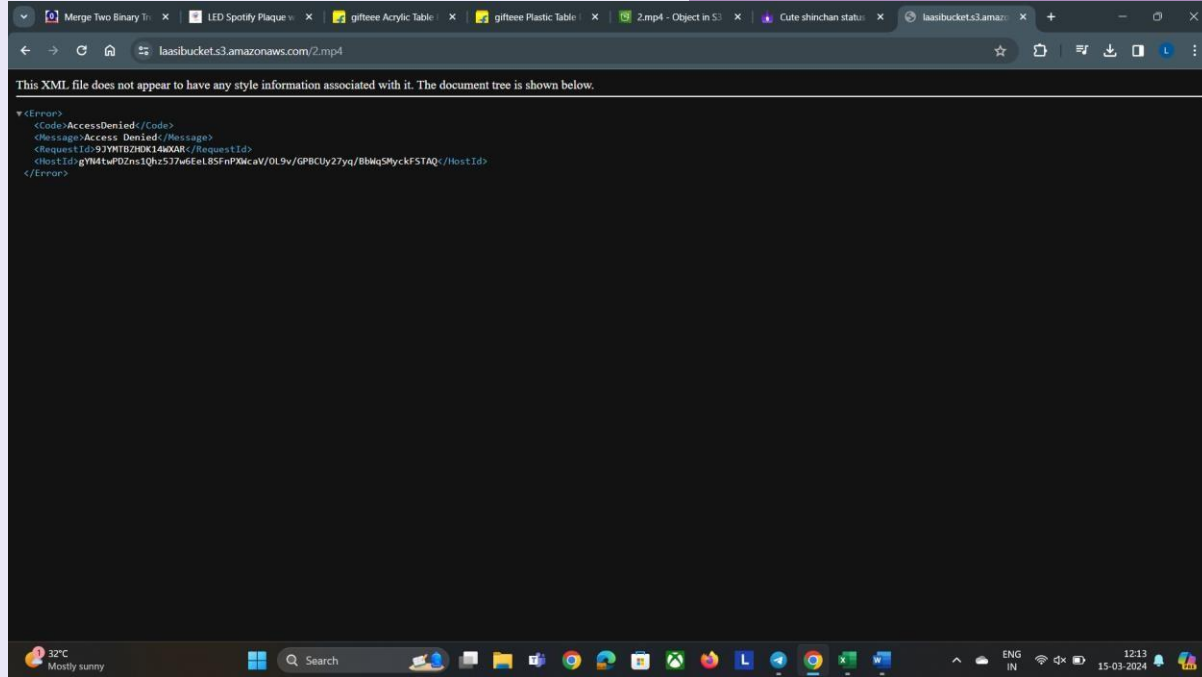
CloudShell Feedback

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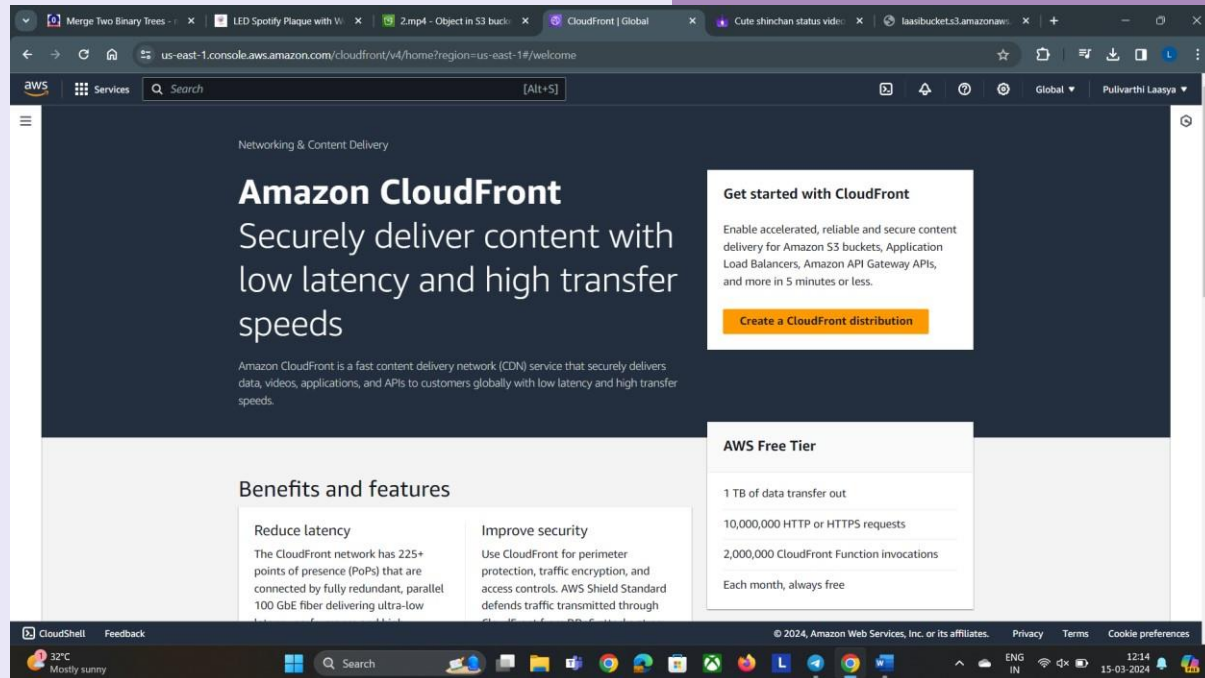
Search

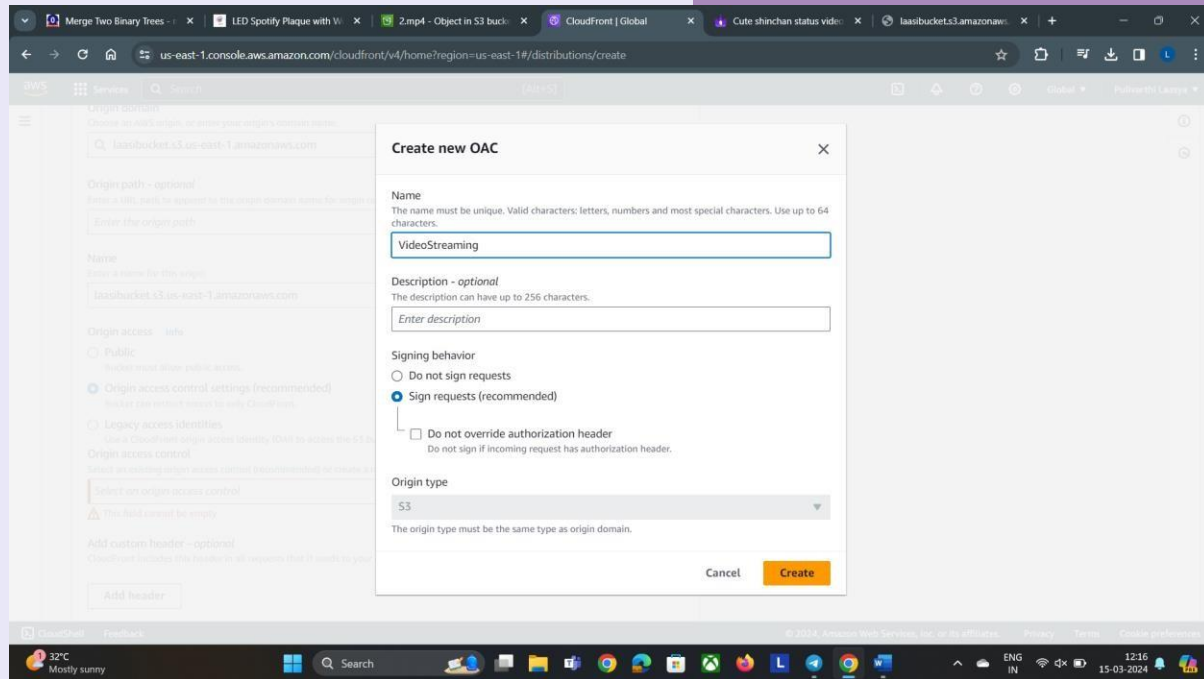
ENG IN

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- Set Up CloudFront Distribution:





us-east-1.console.aws.amazon.com/cloudfront/v4/home?region=us-east-1#/distributions/create

ServicesSearch[Alt+S]

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Web Application Firewall (WAF) Info

☐ Enable security protections
Keep your application secure from the most common web threats and security vulnerabilities using AWS WAF. Blocked requests are stopped before they reach your web servers.

☒ Do not enable security protections
Select this option if your application does not need security protections from AWS WAF.

Settings

Price class Info
Choose the price class associated with the maximum price that you want to pay.

☒ Use all edge locations (best performance)
☐ Use only North America and Europe
☐ Use North America, Europe, Asia, Middle East, and Africa

Alternate domain name (CNAME) - optional
Add the custom domain names that you use in URLs for the files served by this distribution.

Add item

To add a list of alternative domain names, use the bulk editor.

Custom SSL certificate - optional

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us-east-1.console.aws.amazon.com/cloudfront/v4/home?region=us-east-1#/distributions/E1WD2G0MACZS2

awsServicesSearch[Alt+S]

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Introducing the CloudFront Security Dashboard

The new security tab is a unified place to configure, manage, and monitor security for your CloudFront distribution. The built-in dashboard gives you visibility into top security trends, allowed and blocked traffic, as well as visibility and controls for bots. CloudFront geographic restrictions are now part of the security dashboard.

Successfully created new distribution.

The S3 bucket policy needs to be updated

Complete distribution configuration by allowing read access to CloudFront origin access control in your policy statement. [Go to S3 bucket permissions to update policy](#)

Copy policy

Settings

Edit

Description

-

Price class

Use only North America and Europe

Supported HTTP versions

HTTP/2, HTTP/1.1, HTTP/1.0

Alternate domain names

-

Standard logging

Off

Cookie logging

Off

Default root object

-

Continuous deployment

info

Create staging distribution

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Amazon S3

Buckets

Access Grants

Access Points

Object Lambda Access Points

Multi-Region Access Points

Batch Operations

IAM Access Analyzer for S3

Block Public Access settings for this account

Storage Lens

Dashboards

Storage Lens groups

AWS Organizations settings

Feature spotlight

AWS Marketplace for S3

Bucket policy

Policy examples

Policy generator

The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to objects owned by other accounts. [Learn more](#)

Bucket ARN
arn:aws:s3:::laasibucket

Policy

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

```
{
  "Version": "2008-10-17",
  "Id": "PolicyforCloudFrontPrivateContent",
  "Statement": [
    {
      "Sid": "AllowCloudFrontServicePrincipal",
      "Effect": "Allow",
      "Principal": {
        "Service": "cloudfront.amazonaws.com"
      },
      "Action": "s3:GetObject",
      "Resource": "arn:aws:s3:::laasibucket/*",
      "Condition": {
        "StringEquals": {
          "AWS:SourceArn": "arn:aws:cloudfront::825654863943:distribution/E17ND2G0NAC252"
        }
      }
    }
  ]
}
```

Edit statement

Select a statement

Select an existing statement in the policy or add a new statement.

+ Add new statement

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Amazon S3

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Feature spotlight

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Successfully edited bucket policy.

Bucket policy

The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to objects owned by other accounts. [Learn more](#)

Public access is blocked because Block Public Access settings are turned on for this bucket

To determine which settings are turned on, check your Block Public Access settings for this bucket. [Learn more about using Amazon S3 Block Public Access](#)

```
{
  "Version": "2008-10-17",
  "Id": "PolicyForCloudFrontPrivateContent",
  "Statement": [
    {
      "Sid": "AllowCloudFrontServicePrincipal",
      "Effect": "Allow",
      "Principal": {
        "Service": "cloudfront.amazonaws.com"
      },
      "Action": "s3:GetObject",
      "Resource": "arn:aws:s3:::laasibucket/*",
      "Condition": {
        "StringEquals": {
          "AWS:SourceArn": "arn:aws:cloudfront:825654863943:distribution/E1JWD2G0MACZ52"
        }
      }
    }
  ]
}
```

Edit

Delete

Copy

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us-east-1.console.aws.amazon.com/cloudfront/v4/home?region=us-east-1#/distributions/E1JWD2G0MACZS2

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The new security tab is a unified place to configure, manage, and monitor security for your CloudFront distribution. The built-in dashboard gives you visibility into top security trends, allowed and blocked traffic, as well as visibility and controls for bots. CloudFront geographic restrictions are now part of the security dashboard.

Successfully created new distribution.

Details

Distribution domain name copied

dhsyufbaho83.cloudfront.net

ARN

arn:aws:cloudfront::825654863943:distribution/E1JWD2G0MACZS2

Last modified

March 15, 2024 at 6:48:22 AM UTC

Settings

Edit

Description

-

Price class

Use only North America and Europe

Supported HTTP versions

HTTP/2, HTTP/1.1, HTTP/1.0

Alternate domain names

-

Standard logging

Off

Cookie logging

Off

Default root object

-

Continuous deployment info

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2.mp4 - Object in S3 bucket

CloudFront | Global

laasibucket - S3 bucket

laasibucket.s3.amazonaws.com

dsyufbaho83.cloudfront.net

s3.console.aws.amazon.com/s3/object/laasibucket?region=us-east-1&bucket=general&prefix=2.mp4&tab=details

aws

Services

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AWS Region

US East (N. Virginia) us-east-1

Last modified

March 15, 2024, 12:11:57 (UTC+05:30)

Size

531.0 KB

Type

mp4

Key Copied

2.mp4

Amazon Resource Name (ARN)

arn:aws:s3:::laasibucket/2.mp4

Entity tag (Etag)

2fe44c9f1c7a8e6850cc17da5a204b50

Object URL

https://laasibucket.s3.amazonaws.com/2.mp4

Object management overview

The following bucket properties and object management configurations impact the behavior of this object.

Bucket properties

Bucket Versioning

When enabled, multiple variants of an object can be stored in the bucket to easily recover from unintended user actions and application failures.

Disabled

Management configurations

Replication status

When a replication rule is applied to an object the replication status indicates the progress of the operation.

View replication rules

Expiration rule

Bucket "laasibucket" doesn't have Bucket Versioning enabled

We recommend that you enable Bucket Versioning to help protect against

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Conclusion

In harnessing Amazon Web Services (AWS) to forge a serverless video streaming service, we unveil a paradigm-shifting solution that resonates profoundly with businesses and developers alike. Through the judicious utilization of AWS's formidable arsenal, encompassing stalwarts like Amazon S3 and CloudFront, we embark on a transformative journey marked by diminished complexities and mitigated costs, all while amplifying scalability and operational efficiency to unprecedented heights. This architectural marvel empowers us to orchestrate seamless video streaming experiences tailored to the exigencies of today's digital milieu. With AWS as our stalwart companion, the arduous task of constructing and stewarding a resilient video streaming platform transcends into an eminently accessible endeavor, freeing us to dedicate our energies towards delivering superlative content experiences sans the encumbrance of archaic server infrastructures.

Links

Linked In Article Link: <https://www.linkedin.com/pulse/serverless-video-streaming-service-pulivarthi-laasya-8c0hc>

YouTube Link: <https://www.youtube.com/watch?v=GgVtV1Kz0dI>

THANK YOU
