Static Website Hosting with Amazon S3 and CloudFront

A serverless approach to global content delivery with HTTPS security

Project Objective

Mission

Host a static website using Amazon S3 and deliver it globally with CloudFront CDN and HTTPS support.

This architecture eliminates traditional server management while ensuring fast, secure, and scalable content delivery worldwide.

Amazon S3

Amazon CloudFront

Architecture Overview

User

End users accessing the website from anywhere globally

CloudFront

CDN with HTTPS delivery and edge caching

S3 Bucket

Static website files stored securely

Key Benefits

Serverless Hosting

No EC2 required, eliminating server management overhead

Global CDN

Fast loading through worldwide edge locations

Secure HTTPS

Encrypted delivery for all content

Free Tier Eligible

Cost-efficient under AWS Free Tier

Highly Scalable

Handles traffic spikes automatically

Low Maintenance

Minimal operational overhead

Implementation Steps

01

S3 Bucket Setup

Created S3 bucket and disabled block public access

02

File Upload

Uploaded website files (index.html, style.css)

03

Static Hosting

Enabled static website hosting in S3

04

Access Policy

Added bucket policy for public read access

05

CloudFront Setup

Created CloudFront distribution to S3 endpoint

06

HTTPS Enforcement

Forced HTTPS via viewer policy in CloudFront

07

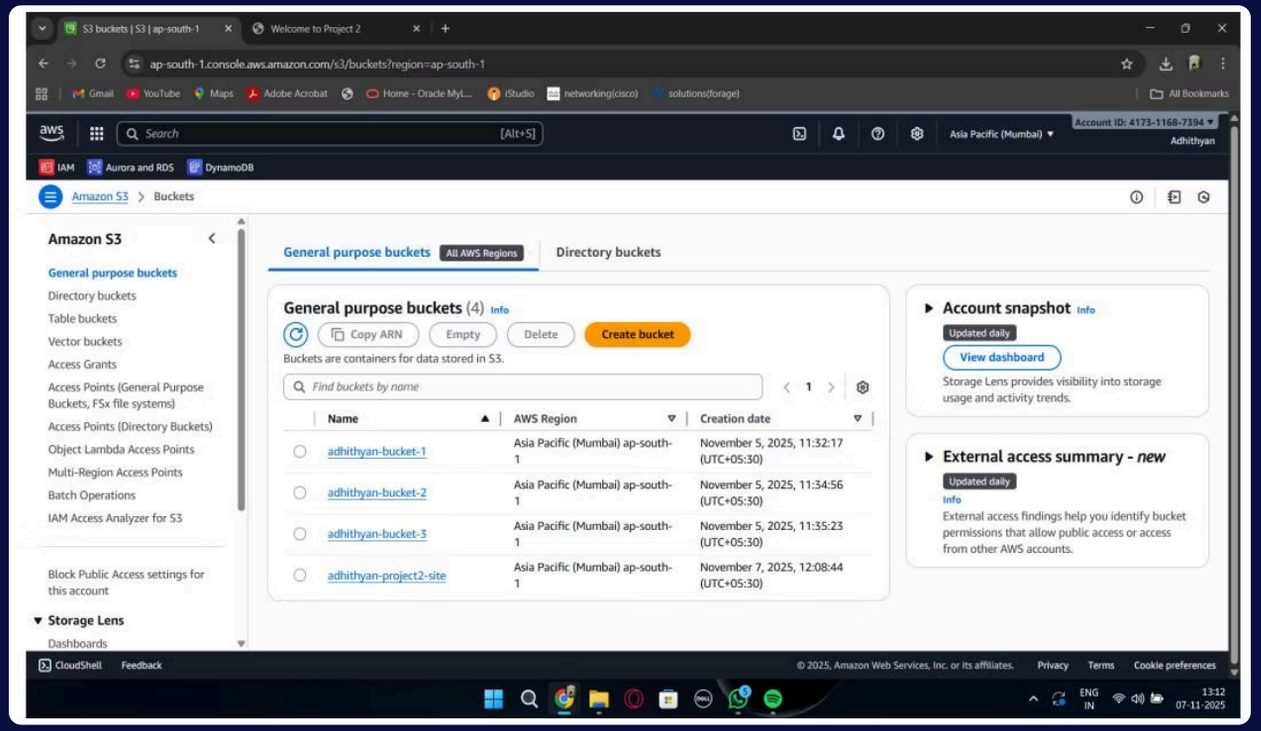
Global Testing

Tested global access using CloudFront URL

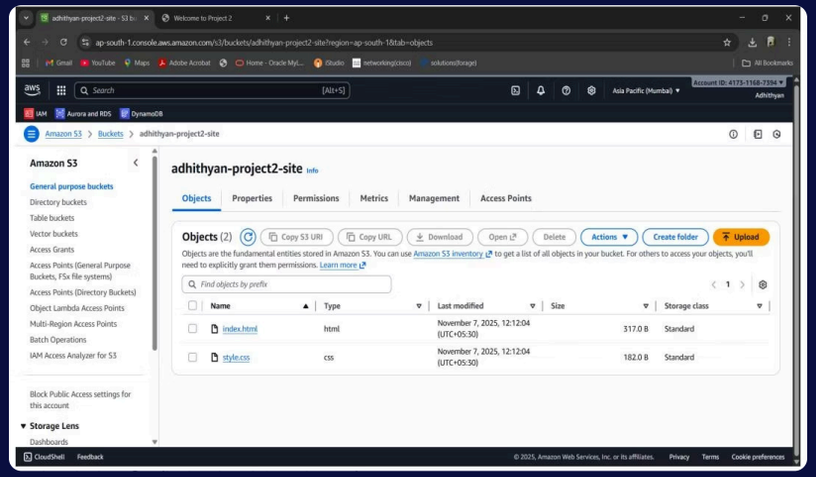
S3 Configuration

Bucket Creation & File Upload

The S3 bucket was created with public access enabled to serve website content. Website files including index.html and style.css were uploaded to the bucket.



S3 bucket list showing created bucket

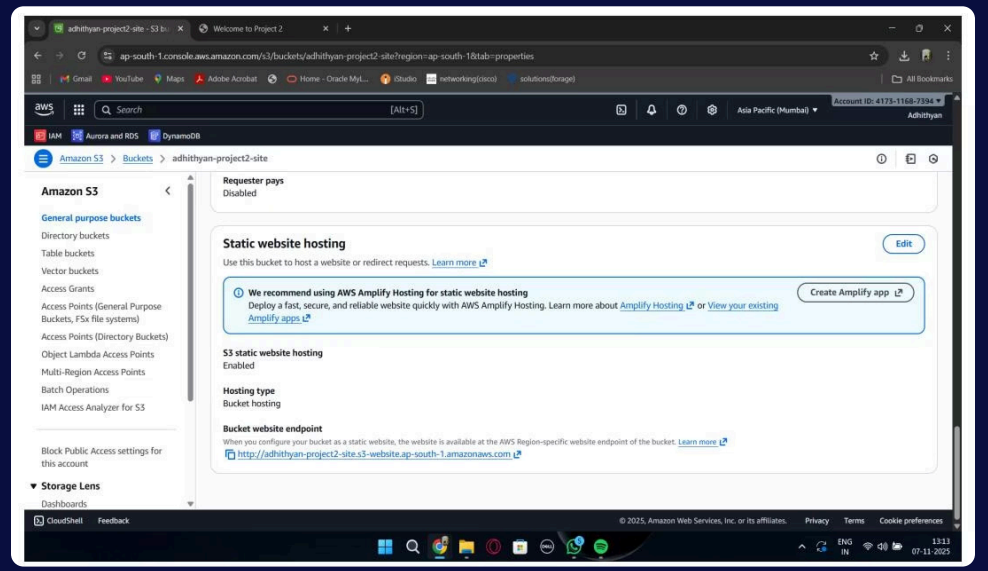


Website files uploaded to S3

Static Website Hosting & Access Policy

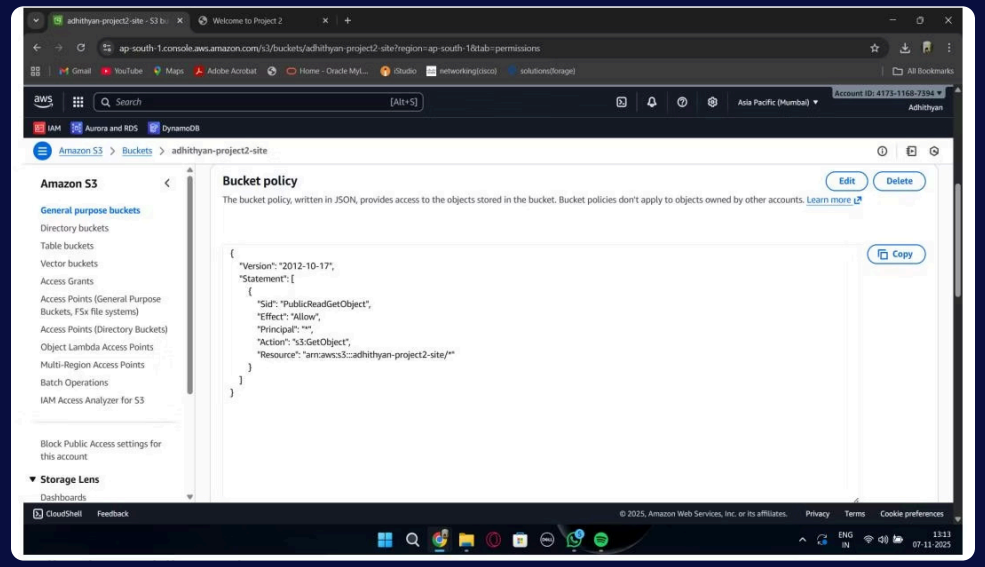
Static Hosting Enabled

S3 bucket configured to serve static website content with index document specified.



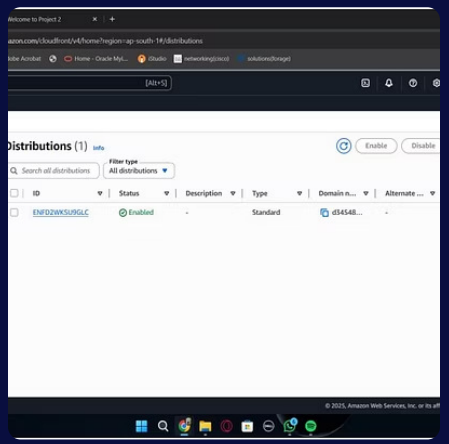
Public Read Access

Bucket policy configured to allow public read access for all objects in the bucket.

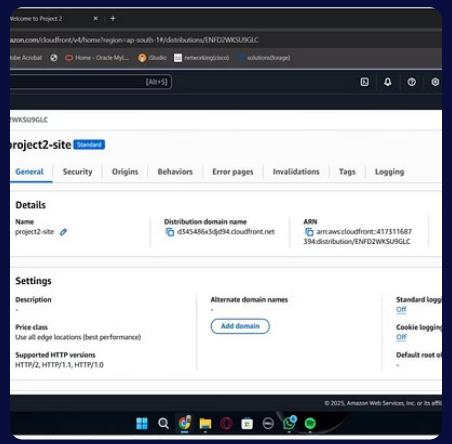


CloudFront Distribution

CloudFront CDN was configured to accelerate content delivery globally with HTTPS enforcement.



CloudFront distributions list showing enabled status



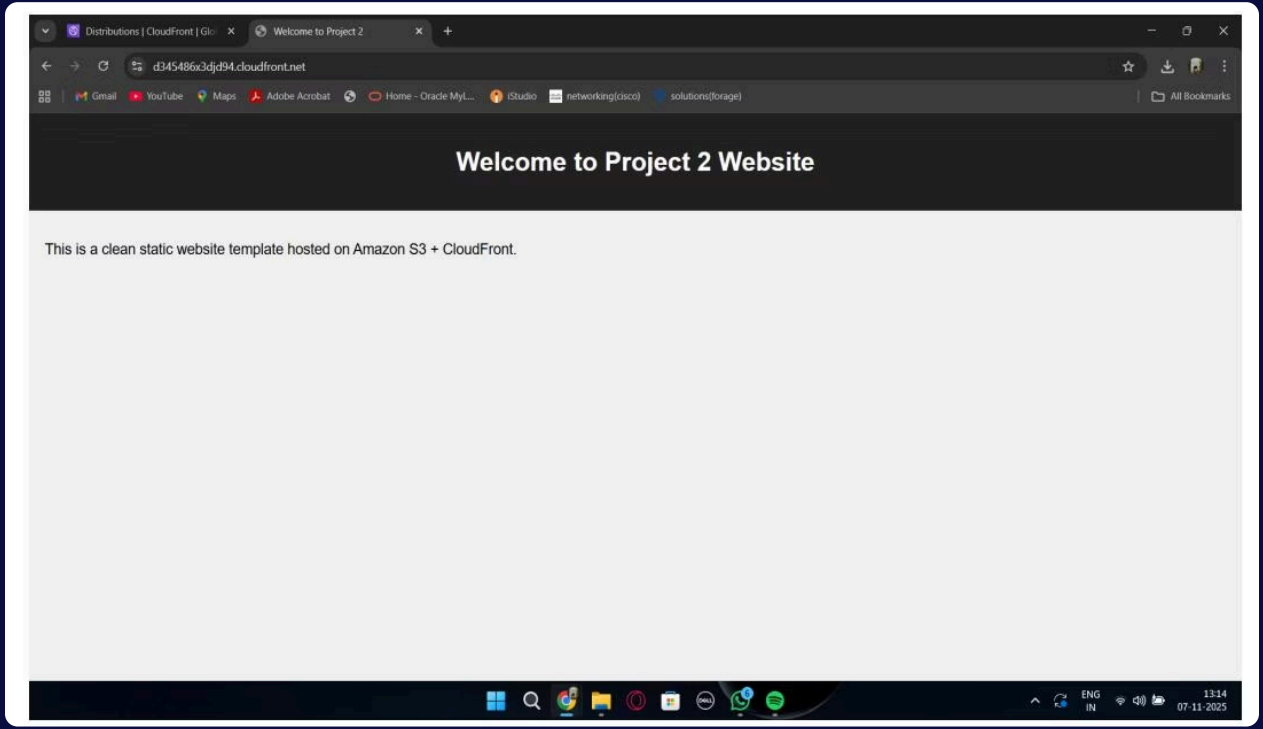
Distribution details with domain endpoint

Successful Deployment

Live Website

The website is successfully deployed and globally accessible through CloudFront with HTTPS security.

Users worldwide can access the site with minimal latency thanks to CloudFront's edge locations.



Final website loaded via CloudFront URL with HTTPS

Conclusion

Serverless Excellence

Eliminates EC2 and backend compute resources for cost-efficient, scalable hosting

Global Performance

CloudFront accelerates content delivery worldwide, reducing latency for all users

Industry Standard

Ideal for portfolios, landing pages, documentation sites, and production-grade static apps

This architecture demonstrates a production-ready approach with HTTPS support, global CDN caching, and near-zero operational cost under AWS Free Tier. It clearly differentiates from EC2-hosted websites by eliminating server management and ongoing compute costs.