AWS Static Website Hosting – Project Documentation

1. Project Name

End-to-End Static Website Hosting using AWS S3, CloudFront, Route 53, ACM, and GoDaddy

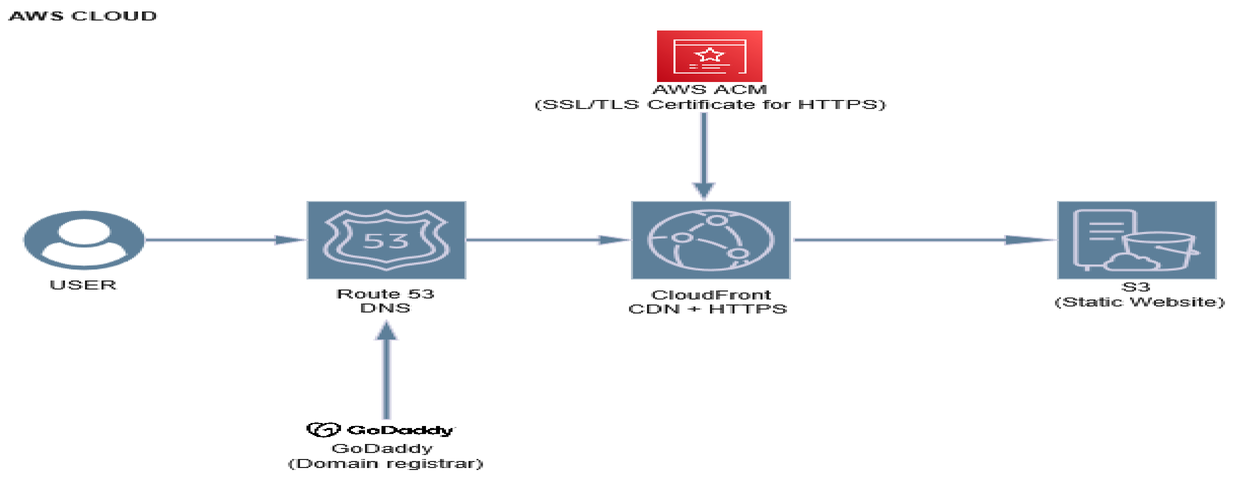
2. Introduction

This project demonstrates how to deploy and secure a static website using multiple AWS services integrated together.
The objective was to design a low-cost, highly available, and globally distributed static website architecture mapped to a custom domain.

I used **Amazon S3** to host the static files, **Amazon CloudFront** as the CDN for global performance, **AWS Certificate Manager (ACM)** for SSL/TLS encryption, and **Amazon Route 53** for DNS management.
The domain was registered with **GoDaddy** and delegated to Route 53 nameservers.

This is the same type of setup I've implemented several times in real client environments — combining cost efficiency, performance, and best-practice security.

Architecture Overview



Key Features

- End-to-end HTTPS with AWS-managed SSL certificates
- Custom domain (aniket123.shop) integrated via Route 53
- Global content caching and acceleration using CloudFront
- Cost-optimized, serverless, and easy to maintain
- Scalable solution following AWS best practices

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3. Prerequisites

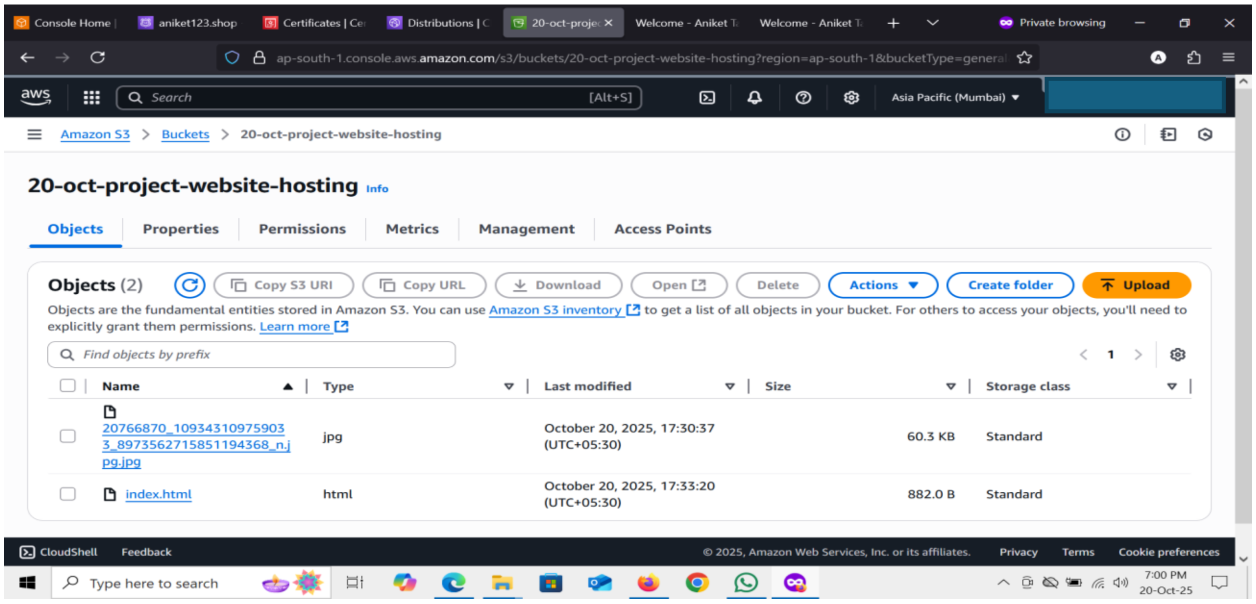
Requirement	Description
AWS Account	Full access to S3, CloudFront, Route 53, and ACM
Domain Name	Purchased from GoDaddy (aniket123.shop)
IAM Role	User with admin or power-user permissions
Browser / Tools	AWS Console, VS Code, Chrome
Knowledge	AWS networking, DNS, SSL basics

4. Project Structure

```
aws-static-website-hosting/
├── index.html              # Main static website
├── screenshots/            # AWS configuration screenshots
│   ├── s3-bucket.png
│   ├── cloudfront.png
│   ├── route53.png
│   ├── acm.png
│   └── final-website.png
└── README.md               # Documentation for GitHub
```

5. Screenshots

S3 Bucket - Static Website Hosting


Console Home
aniket123.shop
Certificates
Distributions
20-oct-project
Welcome - Aniket
Private browsing
ap-south-1.console.aws.amazon.com/s3/buckets/20-oct-project-website-hosting?region=ap-south-1&bucketType=general
Search [Alt+S]
Asia Pacific (Mumbai)
Amazon S3 > Buckets > 20-oct-project-website-hosting

20-oct-project-website-hosting Info

Objects | Properties | Permissions | Metrics | Management | Access Points

Objects (2)

Copy S3 URI | Copy URL | Download | Open | Delete | Actions | Create folder | Upload

Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

Name	Type	Last modified	Size	Storage class
20766870_109343109759033_8973562715851194368_n.jpg.jpg	jpg	October 20, 2025, 17:30:37 (UTC+05:30)	60.3 KB	Standard
index.html	html	October 20, 2025, 17:33:20 (UTC+05:30)	882.0 B	Standard

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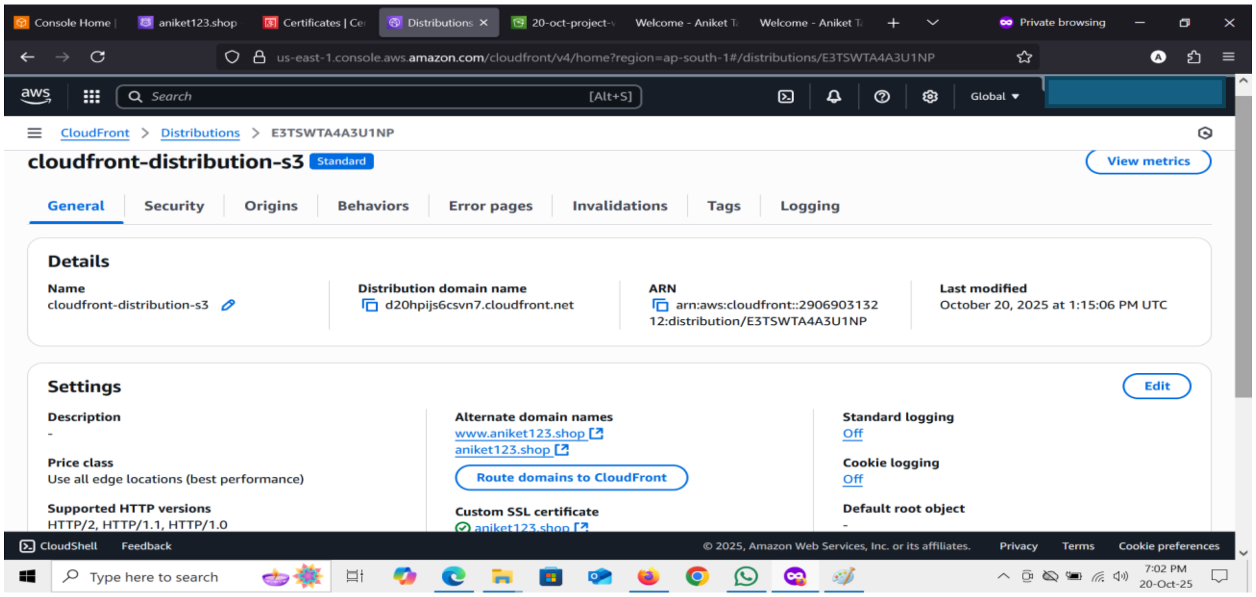
CloudFront Distribution - Deployed


Console Home
aniket123.shop
Certificates
Distributions
20-oct-project
Welcome - Aniket
Private browsing
us-east-1.console.aws.amazon.com/cloudfront/v4/home?region=ap-south-1#/distributions/E3TSWTA4A3U1NP
Search [Alt+S]
Global
CloudFront > Distributions > E3TSWTA4A3U1NP

cloudfront-distribution-s3 Standard

View metrics

General | Security | Origins | Behaviors | Error pages | Invalidations | Tags | Logging

Details

Name
cloudfront-distribution-s3

Distribution domain name
d20hpijs6csvn7.cloudfront.net

ARN
arn:aws:cloudfront::290690313212:distribution/E3TSWTA4A3U1NP

Last modified
October 20, 2025 at 1:15:06 PM UTC

Settings Edit

Description
-

Price class
Use all edge locations (best performance)

Supported HTTP versions
HTTP/2, HTTP/1.1, HTTP/1.0

Alternate domain names
www.aniket123.shop
aniket123.shop

Route domains to CloudFront

Custom SSL certificate
aniket123.shop

Standard logging
Off

Cookie logging
Off

Default root object
-

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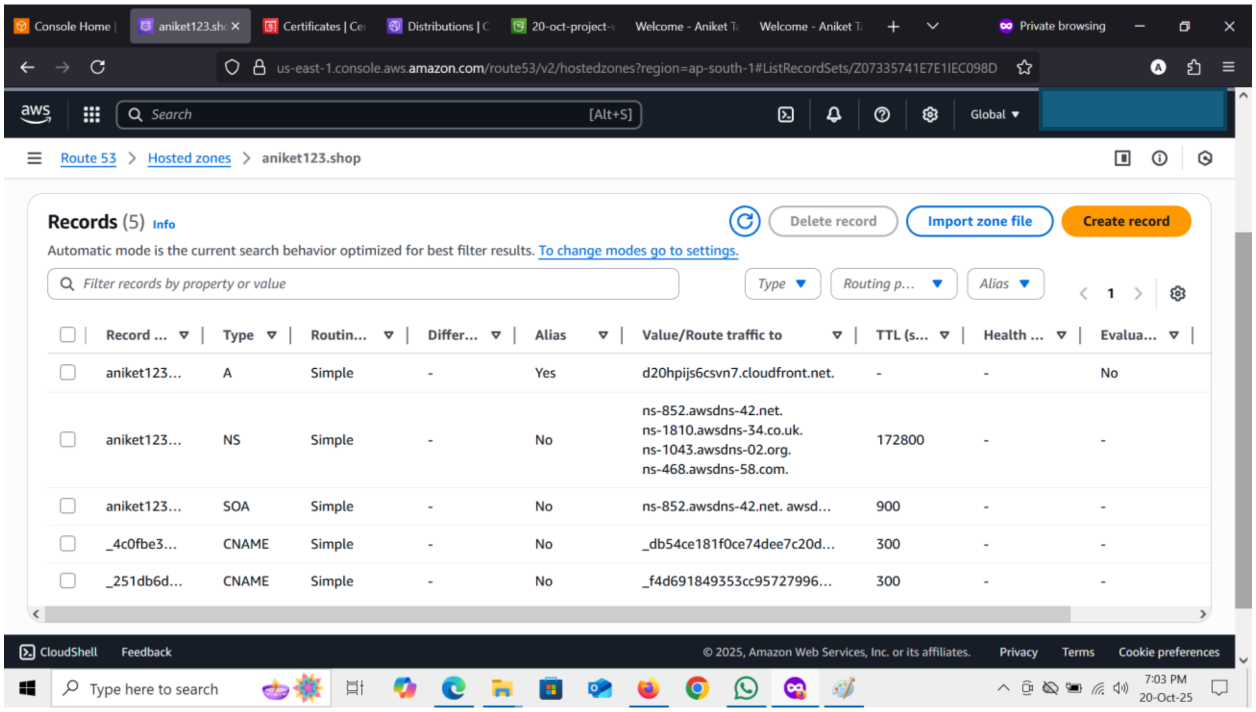
Route 53 Hosted Zone - DNS Records



Console Home | aniket123.sho | Certificates | Ce | Distributions | C | 20-oct-project- | Welcome - Aniket T | Welcome - Aniket T | Private browsing

us-east-1.console.aws.amazon.com/route53/v2/hostedzones?region=ap-south-1#ListRecordSets/Z07335741E7E1IEC098D

Search [Alt+S] | Global | [redacted]

Route 53 > Hosted zones > aniket123.shop

Records (5) Info

Delete record | Import zone file | Create record

Automatic mode is the current search behavior optimized for best filter results. To change modes go to settings.

Record ...	Type	Routin...	Differ...	Alias	Value/Route traffic to	TTL (s...	Health ...	Evalua...
aniket123...	A	Simple	-	Yes	d20hpijs6csvn7.cloudfront.net.	-	-	No
aniket123...	NS	Simple	-	No	ns-852.awsdns-42.net. ns-1810.awsdns-34.co.uk. ns-1043.awsdns-02.org. ns-468.awsdns-58.com.	172800	-	-
aniket123...	SOA	Simple	-	No	ns-852.awsdns-42.net. awsd...	900	-	-
_4c0fbe3...	CNAME	Simple	-	No	_db54ce181f0ce74dee7c20d...	300	-	-
_251db6d...	CNAME	Simple	-	No	_f4d691849353cc95727996...	300	-	-

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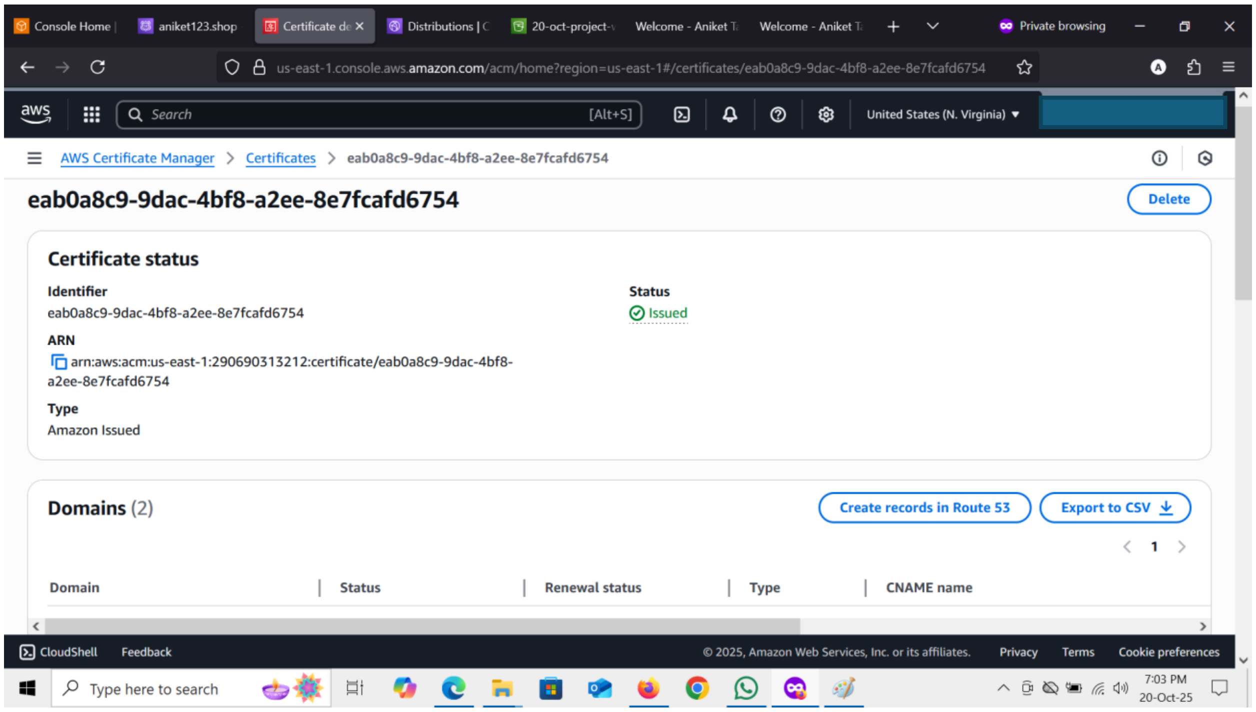
SSL Certificate – Issued



Console Home | aniket123.shop | Certificate de | Distributions | C | 20-oct-project- | Welcome - Aniket T | Welcome - Aniket T | Private browsing

us-east-1.console.aws.amazon.com/acm/home?region=us-east-1#/certificates/eab0a8c9-9dac-4bf8-a2ee-8e7fcafd6754

Search [Alt+S] | United States (N. Virginia) | [redacted]

AWS Certificate Manager > Certificates > eab0a8c9-9dac-4bf8-a2ee-8e7fcafd6754

eab0a8c9-9dac-4bf8-a2ee-8e7fcafd6754 Delete

Certificate status

Identifier
eab0a8c9-9dac-4bf8-a2ee-8e7fcafd6754

Status
Issued

ARN
arn:aws:acm:us-east-1:290690313212:certificate/eab0a8c9-9dac-4bf8-a2ee-8e7fcafd6754

Type
Amazon Issued

Domains (2)

Create records in Route 53 | Export to CSV

Domain	Status	Renewal status	Type	CNAME name

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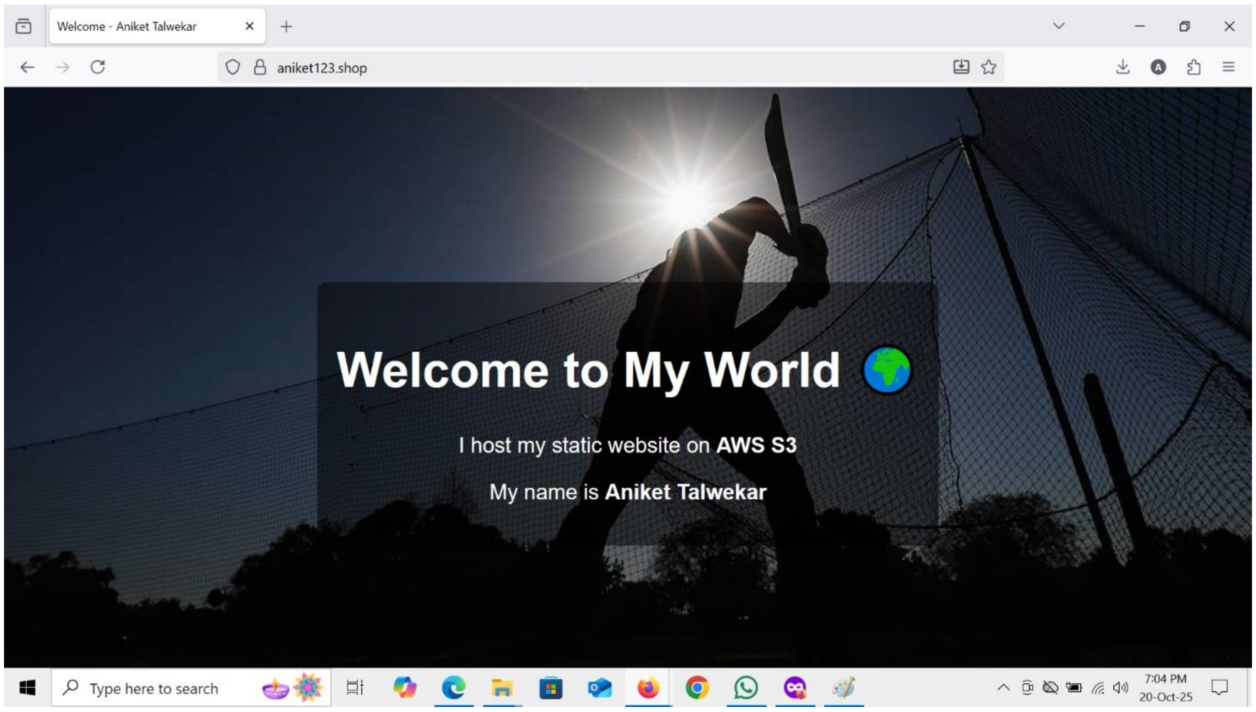
Final Live Website


Welcome - Aniket Talwekar
aniket123.shop
Welcome to My World 🌍
I host my static website on **AWS S3**
My name is **Aniket Talwekar**
Type here to search
7:04 PM
20-Oct-25

6. Explanation

Step 1 – S3 Configuration

Created a dedicated S3 bucket named 20-oct-project-website-hosting and enabled **Static Website Hosting**.
Uploaded the index.html file and adjusted the bucket policy to allow public read access.
I ensured versioning and logging were disabled for cost control but can be enabled in production for compliance.

Step 2 – CloudFront Distribution

Configured a new **CloudFront distribution** using the S3 website endpoint as the origin.
Set Viewer Protocol Policy to **Redirect HTTP to HTTPS** for secure access.
Added Alternate Domain Names (aniket123.shop, www.aniket123.shop) and linked a custom SSL certificate from ACM.
Configured cache behavior and disabled query-string forwarding for optimized caching.

Step 3 – SSL Certificate (ACM)

Requested a **public certificate** from **AWS Certificate Manager** in **us-east-1 (N. Virginia)**, since CloudFront requires certificates from this region.
Validated ownership using DNS by adding CNAME records in Route 53.
Once validated, ACM automatically issued the certificate without downtime or manual intervention.

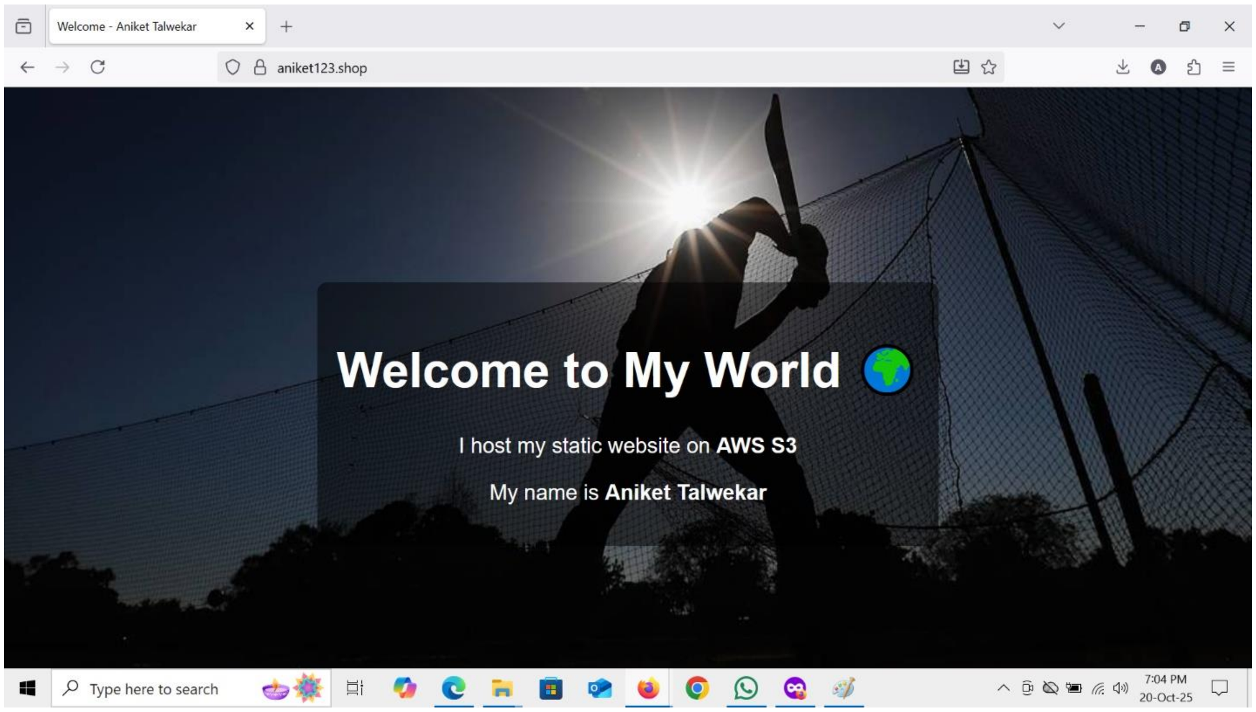
Step 4 – Route 53 and Domain Integration

Created a **hosted zone** for aniket123.shop in Route 53.
Added an **A (Alias)** record pointing to the CloudFront distribution, and a **CNAME** for www**.**
In GoDaddy, updated the domain's nameservers to the four Route 53 nameservers.
After propagation (30 minutes), the domain began resolving through AWS DNS.

Step 5 – Testing and Validation

Tested both URLs:

https://aniket123.shop
https://www.aniket123.shop



Welcome to My World 🌍

I host my static website on **AWS S3**

My name is **Aniket Talwekar**

Both responded successfully with valid HTTPS, served from CloudFront edge locations.
Also verified the SSL certificate chain and TTL resolution using dig and nslookup tools.

Troubleshooting

During setup, handled:

- **AccessDenied** errors due to missing bucket policy
- **504 Gateway Timeout** during CloudFront propagation
- **DNS delays** while waiting for global resolution
  All were fixed through IAM review, cache invalidation, and propagation checks.

7. Cost Overview

Service	Description	Monthly Cost
S3	Static website hosting	$0.02 per GB
CloudFront	CDN delivery (Free Tier up to 1TB)	Free
Route 53	Hosted zone and DNS management	$0.50/month
ACM	SSL/TLS certificate	Free
GoDaddy	Domain name	₹499/year (~$6)

Total Estimated Cost: Less than $1/month (AWS) + yearly domain renewal.

This design follows the AWS **Free Tier** model and is suitable for personal or small-scale business websites.

8. Conclusion

This project was a good example of how different AWS services can be combined to create a complete, production-ready static website setup.
I used my AWS experience to design this solution in a simple yet scalable way — where each component has a clear role.

Using **S3** for static hosting and **CloudFront** for distribution gave me a fast and secure website with minimal cost.
Configuring **AWS Certificate Manager** and integrating it with CloudFront ensured full HTTPS support without any manual certificate renewal.
With **Route 53**, I managed the DNS routing efficiently, and by connecting it with **GoDaddy**, I made sure the domain resolution was clean and stable.

I also focused on practical troubleshooting — handling issues like access permissions in S3, CloudFront caching problems, and SSL validation delays.
These are the kind of real-world issues we face while working in AWS environments, so it felt like managing an actual production workload.

Overall, this project reflects how I approach cloud implementations — keeping things simple, cost-effective, and secure, following AWS best practices.
It's a small project, but it shows the complete flow from **infrastructure setup to deployment and optimization**, something I often do in real projects.