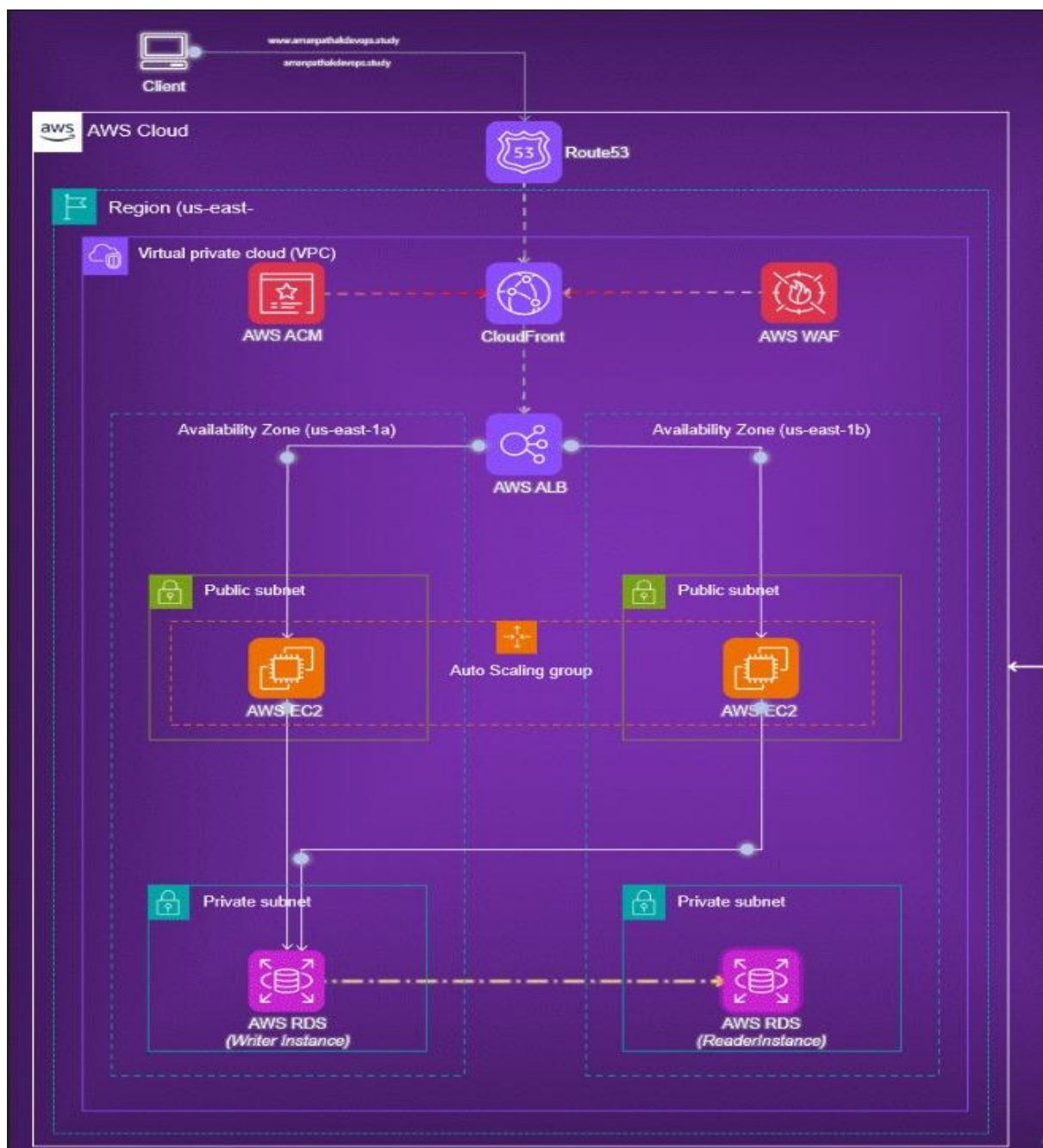


Project -2

2-TIRE STATIC WEB HOSTING

NAME: DASARI SIVA SANKAR

MAIL.ID: Dasarisivasankar6@gmail.com



1.Set Up the VPC

- Go to **VPC** → Launch **VPC MORE**:
 - Create a **VPC and more**.
 - Add **2 public subnets** (e.g., us-west-1a, us-west-1c).
 - Add **2 private subnets**.
 - Enable **DNS resolution** and **DNS hostnames**.
 - **Create Internet Gateway & Route Tables**.
 - Attach an **Internet Gateway (IGW)** to your VPC.

Create route tables:

- Public subnets → Route to IGW.
- Private subnets → No direct internet access.

vpc-08256110db6516a9c / my-project-vpc-vpc Actions ▾

Details Info

VPC ID vpc-08256110db6516a9c	State Available	Block Public Access Off	DNS hostnames Enabled
DNS resolution Enabled	Tenancy default	DHCP option set dopt-07a2aa2aa78463aaa	Main route table rtb-03f4e143ce3d8e9d1
Main network ACL acl-051df964da39a04ae	Default VPC No	IPv4 CIDR 10.0.0.0/16	IPv6 pool -
IPv6 CIDR (Network border group) -	Network Address Usage metrics Disabled	Route 53 Resolver DNS Firewall rule groups -	Owner ID 01339894273

Resource map Info

VPC Show details
Your AWS virtual network
my-project-vpc-vpc

Subnets (4)
Subnets within this VPC
ap-southeast-1a

- my-project-vpc-subnet-public1-ap...
- my-project-vpc-subnet-private1-a...

ap-southeast-1b

- my-project-vpc-subnet-public2-ap...
- my-project-vpc-subnet-private2-a...

Route tables (4)
Route network traffic to resources
rtb-03f4e143ce3d8e9d1

- my-project-vpc-rtb-private1-ap-sout...
- my-project-vpc-rtb-public
- my-project-vpc-rtb-private2-ap-sout...

Network connections (2)
Connections to other networks

- my-project-vpc-igw
- my-project-vpc-nat-public1-ap-south...

Subnets (7) [Info](#)

Last updated
3 minutes ago

Find subnets by attribute or tag

<input type="checkbox"/>	Name	Subnet ID	State	VPC
<input type="checkbox"/>	my-project-vpc-subnet-public2-ap-so...	subnet-0752e1551bf2d8128	Available	vpc-08256110db6516a9c my-...
<input type="checkbox"/>	my-project-vpc-subnet-public1-ap-so...	subnet-0eceed663c45c0a63	Available	vpc-08256110db6516a9c my-...
<input type="checkbox"/>	my-project-vpc-subnet-private2-ap-s...	subnet-0f63becbfda961cdc	Available	vpc-08256110db6516a9c my-...
<input type="checkbox"/>	my-project-vpc-subnet-private1-ap-s...	subnet-0a1c0cd06dbddf6a2	Available	vpc-08256110db6516a9c my-...

Route tables (5) [Info](#)

Last updated
4 minute

Find route tables by attribute or tag

<input type="checkbox"/>	Name	Route table ID	Explicit subnet associ...	Edge associati...
<input type="checkbox"/>	my-project-vpc-rtb-public	rtb-08396cab2e9e5b5d8	2 subnets	–
<input type="checkbox"/>	my-project-vpc-rtb-private2-ap-southe...	rtb-0cc9a9607c8ef5d9f	subnet-0f63becbfda961c...	–
<input type="checkbox"/>	my-project-vpc-rtb-private1-ap-southe...	rtb-065fc4ea7c6e899ea	subnet-0a1c0cd06dbddf...	–

Internet gateways (2) [Info](#)

[Actions](#)

Find internet gateways by attribute or tag

<input type="checkbox"/>	Name	Internet gateway ID	State	VPC ID
<input type="checkbox"/>	my-project-vpc-igw	igw-0b79ae46bbdd37634	Attached	vpc-08256110db6516a9c my-project
<input type="checkbox"/>	–	igw-0e2672a9253140e8f	Attached	vpc-0800d64e803e9fab1

NAT gateways (1) [Info](#)

[Actions](#)

Find NAT gateways by attribute or tag

<input type="radio"/>	Name	NAT gateway ID	Connectivity...	State	State message	Primary public I
<input type="radio"/>	my-project-vpc-nat-...	nat-0f6155597a69ede6e	Public	Available	–	18.142.111.180

2. Launch EC2 Instances

- Go to **EC2** → Launch Instances:
 - Click **“Launch Instances”**
 - Named them webserver-1 and webserver-2
 - Key Pair**: Create or select an existing one

Network Settings:

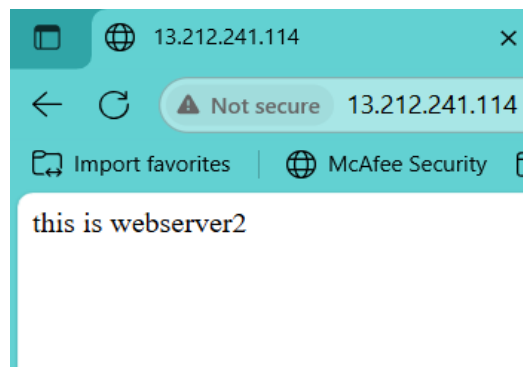
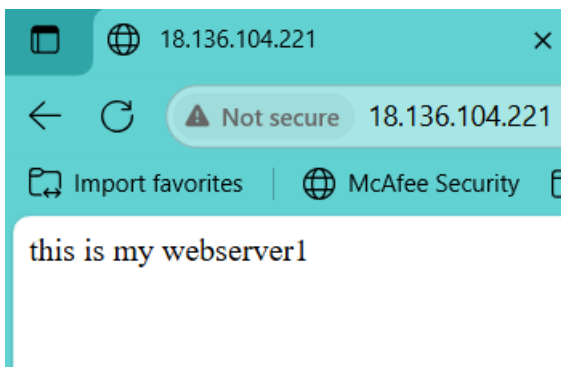
- Allow **SSH (22)** and **HTTP (80)**
 - Connect via SSH
 - Run this on both instances
 - Install Web Server

- `sudo -l && apt update -y`
- `apt install apache2`
- `systemctl start apache2`
- `systemctl status apache2`
- After create **Amazon Machine Images (AMI)**

Instances (3) [Info](#) Last updated less than a minute ago [Connect](#) [Instance state](#) [Actions](#) [Launch](#)

Find Instance by attribute or tag (case-sensitive) [All states](#)

<input type="checkbox"/>	Name ↗	Instance ID	Instance state ▼	Instance type ▼	Status check	Alarm status	Availability Zone ▼
<input type="checkbox"/>	webserver-1	i-09b2d9adc87074c56	Running 🔍 🔍	t2.micro	2/2 checks passed	View alarms +	ap-southeast-1a
<input type="checkbox"/>	webserver-2	i-02dd6fc26bc750ec1	Running 🔍 🔍	t2.micro	Initializing	View alarms +	ap-southeast-1b



Amazon Machine Images (AMIs) (1) [Info](#) [Recycle Bin](#) [EC2 Image Builder](#)

Owned by me [Find AMI by attribute or tag](#)

<input type="checkbox"/>	Name ↗	AMI name	AMI ID	Source
<input checked="" type="checkbox"/>		my-projectimg	ami-05c895d7f3933e446	013399894273/my-projectimg

3. Create an Application Load Balancer

- **Configure Target Group**
- **Target group name:** my-target-group
- **Target type:** Instance
- **Availability Zones:** Select your **VPC**, and then select **two public subnets**
- Select an **existing security group**
- Select Load Balancer Type

- Choose **Application Load Balancer**

Target groups (1) [Info](#)

Q Filter target groups

<input type="checkbox"/>	Name	ARN	Port	Protocol	Target type
<input type="checkbox"/>	mytg	arn:aws:elasticloadbalancin...	80	HTTP	Instance

Load balancers (1) [Actions](#)

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Q Filter load balancers

<input type="checkbox"/>	Name	DNS name	State	VPC ID	Availability Zones	Type	Date created
<input type="checkbox"/>	mylb	mylb-1046516514.ap-sout...	Active	vpc-08256110db6516a9c	2 Availability Zones	application	July 11, 2025, 11:36 (UTC+05:30)

4.Create Auto Scaling

- Navigate to **EC2 Dashboard** → **Launch Templates**.
- Click **Create launch template**.
- **Key pair**: Select an existing key (for SSH access).
- **Security Group**: Allow HTTP (80) and/or SSH (22).
- Open Auto Scaling Groups
- Go to **EC2 Dashboard** → Scroll down → Click **Auto Scaling Groups**.
- Click **Create Auto Scaling group**.
- Configure Network
- **VPC**: Choose your VPC.
- **Availability Zones and subnets**: Select **at least 2 public subnets**
- You can attach an **existing ALB** here
- Select your **Target Group**
- **Minimum capacity**: 1
- **Minimum capacity**: 4

mytemp (lt-01a4ba72fdc84c4b2)

Launch template details

Launch template ID

lt-01a4ba72fdc84c4b2

Launch template name

mytemp

Default version

1

Auto Scaling groups (1) [Info](#)

Last updated
less than a minute ago

[Launch configurations](#)

[Launch templates](#)

Search your Auto Scaling groups

<input type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max
<input type="checkbox"/>	myasg	mytemp Version Default	1	-	1	1	1

4. Now Create RDS

- Go to AWS RDS Console
- Click **Create Database**
- Choose **Standard Create**
- Choose **MySQL**
- **Multi-Az DB instance identifier:** database-1
- **Master username:** e.g., admin
- **Set a strong password**
- For production: Choose based on your needs
- **(VPC):** Choose an existing VPC
- Add rule for **inbound access on port 3306** (MySQL)
- Click **Create database**

Databases (1)

☒ Group resources [Modify](#)

Filter by databases

<input type="checkbox"/>	DB identifier	Status	Role	Engine	Region ...	Size
<input checked="" type="checkbox"/>	database-1	Available	Instance	MySQL Community	ap-southe...	db.m7g.large

5. Using Route 53 in AWS

- Click on Route 53 to open the service
- Create a Hosted Zone
- Click **Create hosted zone**.
- Enter your **domain name**
- Choose **Public hosted zone**
- Update Name Servers
 1. Go to your domain registrar (e.g., GoDaddy)
 2. replace default Name Servers with the **NS records from Route 53**
- Click **Create record**
- Record name: Leave blank or add www if needed
- Alias Load Balancer

Hosted zones (2)

Automatic mode is the current search behavior optimized for best filter results. [To change modes go to settings.](#)

Filter records by property or value

	Hosted zone name	Type	Created by	Record count
<input type="radio"/>	dasari.shop	Public	Route 53	4

[Records \(5\)](#) | [DNSSEC signing](#) | [Hosted zone tags \(0\)](#)

Records (5) Info

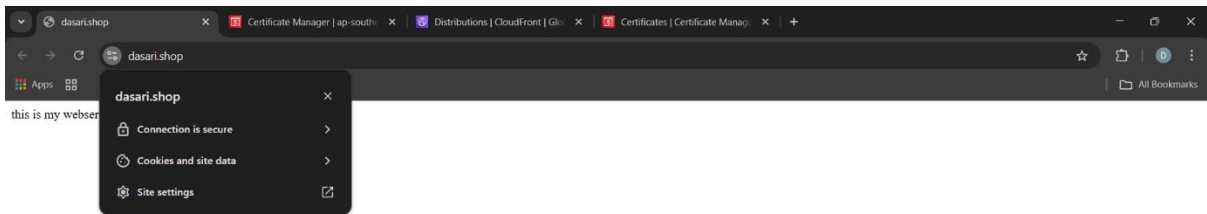
Automatic mode is the current search behavior optimized for best filter results. [To change modes go to settings.](#)

Filter records by property or value

	Record name	Type	Routin...	Differ...	Alias	Value/Route traffic to	TTL (s...
<input type="checkbox"/>	dasari.shop	A	Simple	-	Yes	www.dasari.shop.	-
<input type="checkbox"/>	dasari.shop	NS	Simple	-	No	ns-1411.awsdns-48.org. ns-18.awsdns-02.com. ns-515.awsdns-00.net. ns-1899.awsdns-45.co.uk.	172800
<input type="checkbox"/>	dasari.shop	SOA	Simple	-	No	ns-1411.awsdns-48.org. aws...	900
<input type="checkbox"/>	_ffd24533e49f786b5456ec76c...	CNAME	Simple	-	No	_60be48da96115c33c675f7...	300
<input type="checkbox"/>	www.dasari.shop	A	Simple	-	Yes	dualstack.mylb-1046516514...	-

6: Secure the Domain

- Initially, the domain used HTTP and was not secure.
- To make it secure: o Set up a CloudFront Distribution using the certificate.
- Added an HTTPS listener to the Load Balancer.
- Verified the domain was accessible securely (HTTPS) using the CloudFront domain



Gold +1.27%

22:04 11-07-2025

Add listener [Info](#)

Add a listener to your Application Load Balancer (ALB) to define how client requests and network traffic are routed within your application. Every listener is made up of a default action that's required and can only be edited. Additional rules can be added and deleted from the listener.

► Load balancer details: mylb

Listener: HTTPS:443

A listener checks for connection requests using the protocol and port that you configure. The default action and any additional rules that you create determine how the Application Load Balancer routes requests to its registered targets.

Listener configuration

The listener will be identified by the protocol and port.

Protocol
Used for connections from clients to the load balancer.

Port
The port on which the load balancer is listening for connections.

HTTPS 443 1-65535

Default action [Info](#)

The default action is used if no other rules apply. Choose the default action for traffic on this listener.

Authentication action - optional [Info](#)

Authentication requires IPv4 connectivity to authentication endpoints. [Learn more](#)

☐ Authenticate users
Configure user authentication through either OpenID Connect (OIDC) or Amazon Cognito.

Routing action

☒ Forward to target groups ☐ Redirect to URL ☐ Return fixed response

Forward to target group [Info](#)

Choose a target group and specify routing weight or [Create target group](#)

Target group	HTTP	Weight	Percent
mytg Target type: Instance, IPv4		1	100%


```

reading /usr/share/mecab/dic/ipadic/Noun.org.csv ... 16668
reading /usr/share/mecab/dic/ipadic/Suffix.csv ... 1393
reading /usr/share/mecab/dic/ipadic/Postp.csv ... 146
reading /usr/share/mecab/dic/ipadic/Noun.nai.csv ... 42
reading /usr/share/mecab/dic/ipadic/Symbol.csv ... 208
reading /usr/share/mecab/dic/ipadic/Adverb.csv ... 3032
reading /usr/share/mecab/dic/ipadic/Noun.demonst.csv ... 120
reading /usr/share/mecab/dic/ipadic/Adnominal.csv ... 135
reading /usr/share/mecab/dic/ipadic/Postp-col.csv ... 91
reading /usr/share/mecab/dic/ipadic/Interjection.csv ... 252
reading /usr/share/mecab/dic/ipadic/Adj.csv ... 27210
reading /usr/share/mecab/dic/ipadic/Noun.others.csv ... 151
reading /usr/share/mecab/dic/ipadic/Auxil.csv ... 199
reading /usr/share/mecab/dic/ipadic/Noun.proper.csv ... 27328
emitting double-array: 100% |#####|
reading /usr/share/mecab/dic/ipadic/matrix.def ... 1316x1316
emitting matrix      : 100% |#####|

done!
update-alternatives: using /var/lib/mecab/dic/ipadic-utf8 to provide /var/lib/mecab/dic/debian (mecab-dictionary) in auto mode
Setting up libhtml-parser-perl:amd64 (3.81-1build3) ...
Setting up libhttp-message-perl (6.45-1ubuntu1) ...
Setting up mysql-server (8.0.42-0ubuntu0.24.04.1) ...
Setting up libcgi-pm-perl (4.63-1) ...
Setting up libhtml-template-perl (2.97-2) ...
Setting up libcgi-fast-perl (1:2.17-1) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.4) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
root@ip-20-0-1-19:~#

```

```

owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create database Gowri;
Query OK, 1 row affected (0.00 sec)

mysql> show databases;
+-----+
| Database |
+-----+
| Gowri    |
| information_schema |
| mysql    |
| performance_schema |
| sys      |
+-----+
5 rows in set (0.00 sec)

mysql> use Gowri;
Database changed
mysql> CREATE TABLE Gowri ( ID int NOT NULL,
->   LastName varchar(255) NOT NULL, FirstName varchar(255),
->   Age int,
->   PRIMARY KEY (ID)
-> );
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO Gowri (ID, LastName, FirstName, Age)
->   VALUES (432, 'shiva', 'sankar', 23);
Query OK, 1 row affected (0.00 sec)

mysql> select * from Gowri;
+----+-----+-----+-----+
| ID | LastName | FirstName | Age |
+----+-----+-----+-----+
| 432 | shiva   | sankar   | 23  |
+----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>

```

Final Conclusion:

- Launched and configured two EC2 instances with Apache.
- Set up load balancing using Target Group and Application Load Balancer.
- Registered a domain and configured Route 53 records.
- Mapped domain name servers to Route 53 for DNS resolution.
- Made the domain secure using ACM and CloudFront.
- The website was successfully deployed and is accessible securely through the domain.