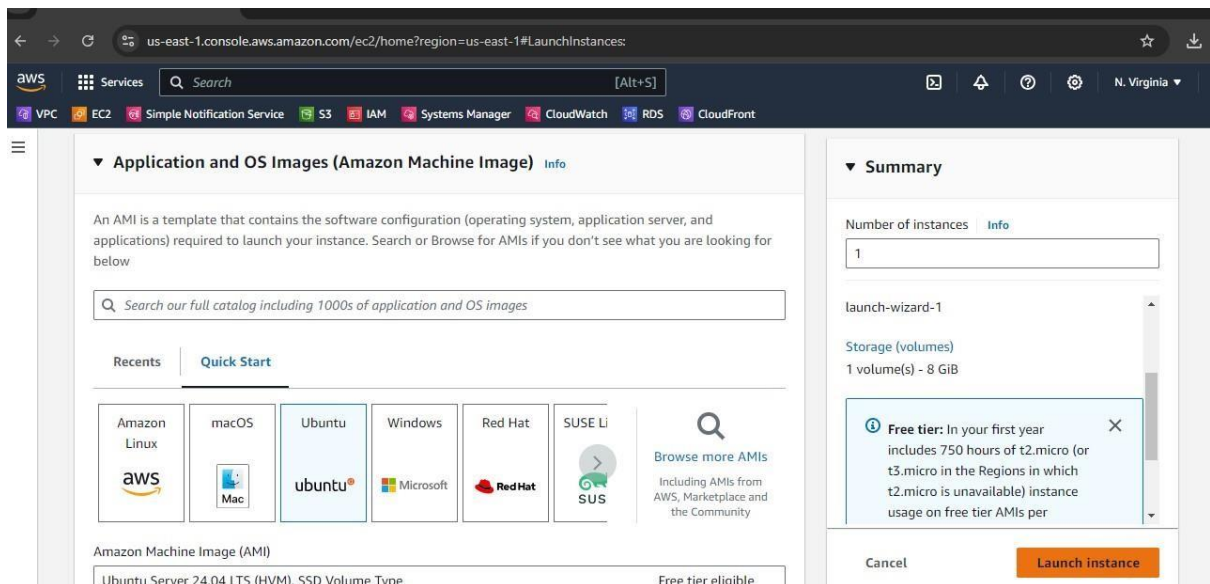


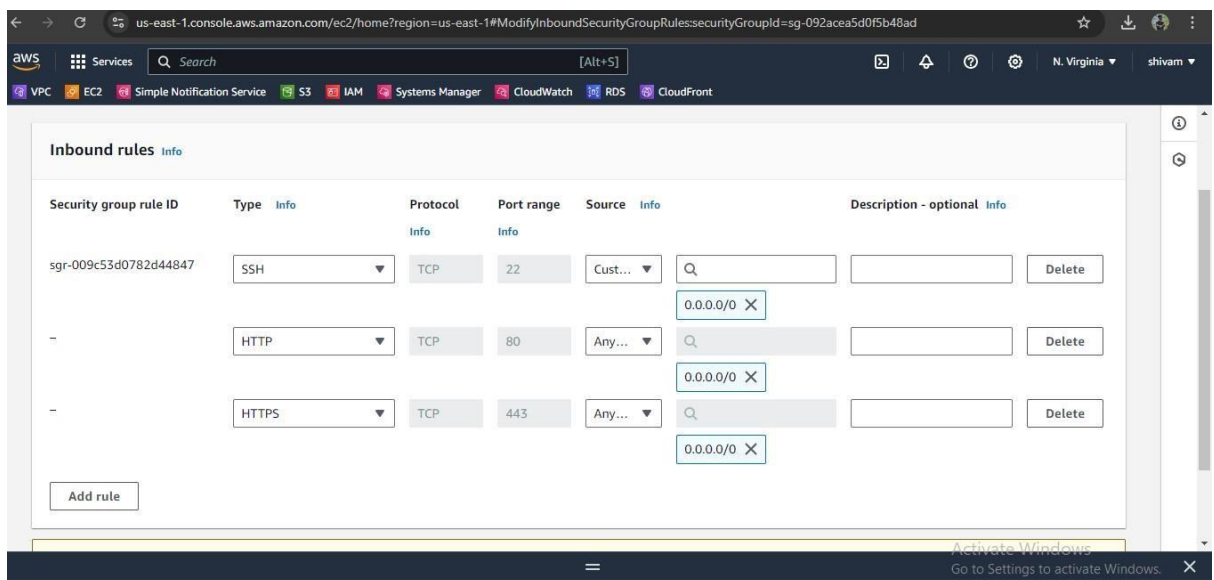
ROUTE 53

Amazon Route 53 is a scalable and highly available Domain Name System (DNS) web service offered by AWS. It provides reliable domain name resolution by translating friendly domain names into IP addresses. Route 53 also integrates with AWS services for routing traffic, offers DNS failover, and supports domain registration. Its features are designed to ensure high availability and low latency for your web applications.

❖ Creating an instance



❖ Whitelisting ports in security group – SSH ; HTTP ; HTTPS



❖ Connecting to instance

```

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-7-237:~$

```

i-08591e4a827427c3c (shivam)

❖ Installing apache2 in hosted server.

\$ sudo apt install apache2

```

ubuntu@ip-172-31-7-237:~$ sudo apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap lib
0 upgraded, 10 newly installed, 0 to remove and 0 not upgraded.
Need to get 2083 kB of archives.
After this operation, 8094 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libapr1t64 amd64 1.7.2-3.1build2 [
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1t64 amd64 1.6.3-1.1ubun
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-ldap amd64 1.6.3-1.1ub
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 liblua5.4-0 amd64 5.4.6-3build2 [1
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2-bin amd64 2.4.58-1
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2-data all 2.4.58-1u
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2-utils amd64 2.4.58
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 apache2 amd64 2.4.58-1ubun

```

Change path to : cd

/var/www/html/

delete the

presented file in it

(index.html)

\$ sudo rm index.html

```
ubuntu@ip-172-31-7-237:~$ cd var/www/html
-bash: cd: var/www/html: No such file or directory
ubuntu@ip-172-31-7-237:~$ cd /var/www/html/
ubuntu@ip-172-31-7-237:/var/www/html$ ls
index.html
ubuntu@ip-172-31-7-237:/var/www/html$ sudo rm index.html
ubuntu@ip-172-31-7-237:/var/www/html$ ls
ubuntu@ip-172-31-7-237:/var/www/html$ cd
```

❖ Download css template

Using wget <https://www.free-css.com/assets/files/free-css-templates/download/page290/fregg.zip>

Unzip the downloaded file \$ sudo apt install unzip

```
ubuntu@ip-172-31-7-237:~$ wget https://www.free-css.com/assets/files/free-css-templates/download/page290/fregg.zip
--2024-08-25 17:39:44-- https://www.free-css.com/assets/files/free-css-templates/download/page290/fregg.zip
Resolving www.free-css.com (www.free-css.com)... 217.160.0.242, 2001:8d8:100f:f000::28f
Connecting to www.free-css.com (www.free-css.com)|217.160.0.242|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1042863 (1018K) [application/zip]
Saving to: 'fregg.zip'

fregg.zip                               100%[=====>] 1018K  3
2024-08-25 17:39:45 (1.53 MB/s) - 'fregg.zip' saved [1042863/1042863]

ubuntu@ip-172-31-7-237:~$
```

i-08591e4a827427c3c (shivam)

PublicIPs: 44.201.38.127 PrivateIPs: 172.31.7.237

❖ Unzipping the file

❖ Moving the unzip file in /var/www/html/ \$ Sudo mv fregg-html/* /var/www/html/

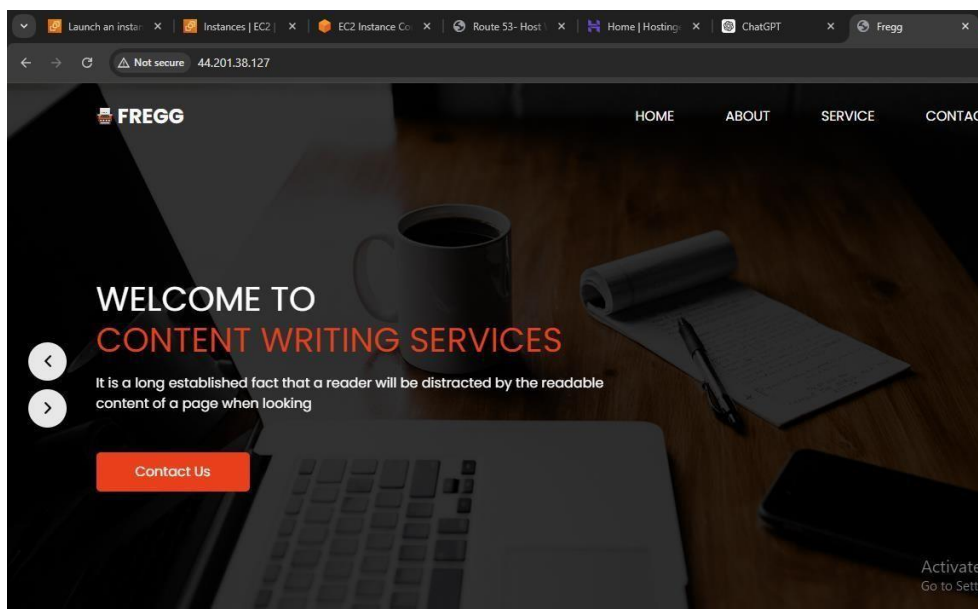
```
ubuntu@ip-172-31-7-237:~$ unzip fregg.zip
Archive:  fregg.zip
  creating:  fregg-html/
  inflating:  fregg-html/about.html
  inflating:  fregg-html/contact.html
  creating:  fregg-html/css/
  inflating:  fregg-html/css/bootstrap.css
  inflating:  fregg-html/css/responsive.css
  inflating:  fregg-html/css/style.css
  inflating:  fregg-html/css/style.css.map
  inflating:  fregg-html/css/style.scss
  creating:  fregg-html/images/
  inflating:  fregg-html/images/about-img.png
  inflating:  fregg-html/images/body bg.jpg
  inflating:  fregg-html/service.html
```

```
ubuntu@ip-172-31-7-237:~$ ls
fregg-html  fregg.zip
ubuntu@ip-172-31-7-237:~$ sudo mv fregg-html/* /var/www/html/
ubuntu@ip-172-31-7-237:~$ cd /var/www/html/
ubuntu@ip-172-31-7-237:/var/www/html$ ls
about.html  contact.html  css  images  index.html  js  service.html
ubuntu@ip-172-31-7-237:/var/www/html$ cd
ubuntu@ip-172-31-7-237:~$
```

i-08591e4a827427c3c (shivam)

PublicIPs: 44.201.38.127 PrivateIPs: 172.31.7.237

❖ Checking the file with the help of the ip of ec2 44.201.38.127



❖

❖ Creating a hosted zone in route 53

us-east-1.console.aws.amazon.com/route53/v2/home?region=us-east-1#GetStarted

aws Services Search [Alt+S]


Route 53 > Get started

Get started [Info](#)

Choose your starting point


☐ Register a domain

Register the name, such as example.com, that your users use to access your application.




☐ Transfer domain

You can transfer domain names to Route 53 that you registered with another domain registrar.




☒ Create hosted zones

A hosted zone tells Route 53 how to respond to DNS queries for a domain such as example.com.




☐ Configure health checks

Health checks monitor your applications and web resources, and direct DNS queries to healthy resources.




☐ Configure traffic flow

A visual tool that lets you easily create policies for multiple endpoints in complex configurations.



☐ Configure resolvers

A regional service that lets you route DNS queries between your VPCs and your network.



Route 53 > Hosted zones > Create hosted zone

Create hosted zone [Info](#)

Hosted zone configuration

A hosted zone is a container that holds information about how you want to route traffic for a domain, such as example.com, and its subdomains.

Domain name [Info](#)

This is the name of the domain that you want to route traffic for:

shivamgodambe.online

Valid characters: a-z, 0-9, ! " # \$ % & ' () * + , - / : ; < = > ? @ [\] ^ _ ` { | } . ~

❖ Creating a record

Route 53 > Hosted zones > shivamgodambe.online

Record for shivamgodambe.online was successfully created. View status ✕

Route 53 propagates your changes to all of the Route 53 authoritative DNS servers within 60 seconds. Use "View status" button to check propagation status.

► Hosted zone details Edit hosted zone

Records (3) | DNSSEC signing | Hosted zone tags (0)

Records (3) 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.

Type ▼ Routing pol... ▼ Alias ▼ < 1 > ⚙

<input type="checkbox"/>	Record ... ▼	Type ▼	Routin... ▼	Differ... ▼	Alias ▼	Value/Route traffic to ▼	TTL (s.)
<input type="checkbox"/>	shivamgo...	A	Simple	-	No	44.201.38.127	300
<input type="checkbox"/>	shivamgo...	NS	Simple	-	No	ns-1028.awsdns-00.org. ns-583.awsdns-08.net. ns-1975.awsdns-54.co.uk. ns-409.awsdns-51.com.	172800
<input type="checkbox"/>	shivamgo...	SOA	Simple	-	No	ns-1028.awsdns-00.org. aws...	900

❖ Selecting ns records

Records (3) | DNSSEC signing | Hosted zone tags (0)

Records (1/3) Info ↻ Delete record Import zone file Create record

The following table lists the existing records in shivamgodambe.online. You can't delete the SOA record or the NS record named shivamgodambe.online.

Type ▼ Routing pol... ▼ Alias ▼ < 1 > ⚙

<input type="checkbox"/>	Record ... ▼	Type ▼	Routin... ▼	Differ... ▼	Alias
<input type="checkbox"/>	shivamgo...	A	Simple	-	No
<input checked="" type="checkbox"/>	shivamgo...	NS	Simple	-	No
<input type="checkbox"/>	shivamgo...	SOA	Simple	-	No

Record details Edit record

Record name
shivamgodambe.online

Record type
NS

Value
ns-1028.awsdns-00.org.
ns-583.awsdns-08.net.
ns-1975.awsdns-54.co.uk.
ns-409.awsdns-51.com.

Alias
No

TTL (seconds)
172800

Routing policy
Simple


HOSTINGER

Hostinger is a web hosting company known for offering a range of hosting services at competitive prices. Here's a quick overview:

1. Services Offered:

- **Web Hosting:** Shared hosting plans with various features, including SSD storage and free SSL certificates.
- **VPS Hosting:** Virtual Private Servers with customizable resources for more control and flexibility.
- **Cloud Hosting:** Scalable cloud hosting solutions with enhanced performance and redundancy.
- **Domain Registration:** Domain name registration services with a variety of TLDs (top-level domains).
- **Website Builder:** User-friendly website builder tools to create and manage websites without coding.

❖ Adding ns records to hostinger > select Nameservers



< Main menu

Domain Overview

DNS / Nameservers

Domain Ownership

provider.

ns1.dns-parking.com

ns2.dns-parking.com

Select Nameservers

☐ Use Hostinger nameservers (recommended)

☒ Change nameservers

ns-1028.awsdns-00.org

ns-583.awsdns-08.net

ns-1975.awsdns-54.co.uk

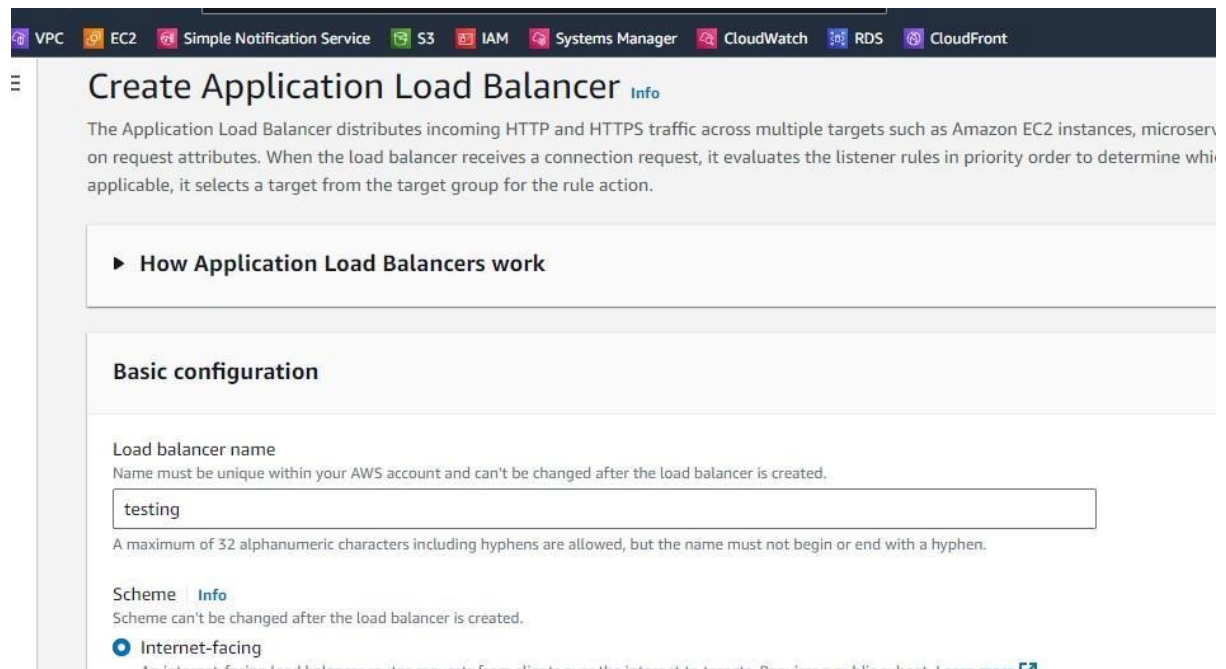
ns-409.awsdns-51.com

Save

Cancel

Give feedback

❖ Creating a load balancer



The screenshot shows the AWS Management Console interface for creating an Application Load Balancer. At the top, a navigation bar includes icons for VPC, EC2, Simple Notification Service, S3, IAM, Systems Manager, CloudWatch, RDS, and CloudFront. The main heading is 'Create Application Load Balancer' with an 'Info' link. Below the heading, a paragraph explains that the Application Load Balancer distributes incoming HTTP and HTTPS traffic across multiple targets such as Amazon EC2 instances, microservices, and AWS Lambda functions. It notes that the load balancer evaluates listener rules in priority order to determine which rule is applicable and selects a target from the target group for the rule action.

Below the introductory text, there is a section titled 'How Application Load Balancers work' with a right-pointing arrow. Further down, the 'Basic configuration' section is visible. It includes a 'Load balancer name' field with the value 'testing' and a note that the name must be unique within the AWS account and cannot be changed after creation. A sub-note specifies that a maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen. Below this, the 'Scheme' section is shown with an 'Info' link and a note that the scheme cannot be changed after creation. The 'Internet-facing' option is selected with a radio button, and a sub-note explains that an Internet-facing load balancer routes requests from clients over the internet to targets and requires a public subnet, with a 'Learn more' link.

Create Application Load Balancer [Info](#)

The Application Load Balancer distributes incoming HTTP and HTTPS traffic across multiple targets such as Amazon EC2 instances, microservices, and AWS Lambda functions. When the load balancer receives a connection request, it evaluates the listener rules in priority order to determine which rule is applicable, it selects a target from the target group for the rule action.

► **How Application Load Balancers work**

Basic configuration

Load balancer name
Name must be unique within your AWS account and can't be changed after the load balancer is created.

testing

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Scheme [Info](#)
Scheme can't be changed after the load balancer is created.

☒ **Internet-facing**
An Internet-facing load balancer routes requests from clients over the internet to targets. Requires a public subnet. [Learn more](#)

❖ Selecting all availability zones.

☒ **us-east-1d (use1-az6)**

Subnet

subnet-0473c86430ce88ec7
IPv4 subnet CIDR: 172.31.32.0/20

IPv4 address

Assigned by AWS

☒ **us-east-1e (use1-az3)**

Subnet

subnet-0aa7eee941b22f4fd
IPv4 subnet CIDR: 172.31.48.0/20

IPv4 address

Assigned by AWS

☒ **us-east-1f (use1-az5)**

Subnet

Availability Zones

☒ **us-east-1a (use1-az1)**

Subnet

subnet-0d656ab3c8bbe7fc1
IPv4 subnet CIDR: 172.31.0.0/20

IPv4 address

Assigned by AWS

☒ **us-east-1b (use1-az2)**

Subnet

subnet-0c77bcc43ceec85c5
IPv4 subnet CIDR: 172.31.80.0/20

IPv4 address

Assigned by AWS

☒ **us-east-1c (use1-az4)**

Subnet

subnet-05bf170a971167a40
IPv4 subnet CIDR: 172.31.16.0/20



- ❖ Same security group as instance and whitelist https port

Listeners and routing [Info](#)

A listener is a process that checks for connection requests using the port and protocol you configure. The rules that you define for a listener determine how the load balancer routes requests to its registered targets.

▼ Listener HTTPS:443

Remove

Protocol

Port

Default action [Info](#)

HTTPS ▼

:

443

Forward to Select a target group ▼

⌂

1-65535

[Create target group](#) [↗](#)

- ❖ Create target group now White listing http port in target group

Target group name

tg-1

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Protocol : Port

Choose a protocol for your target group that corresponds to the Load Balancer type that will route traffic to it. Some protocols no anomaly detection for the targets and you can set mitigation options once your target group is created. This choice cannot be changed after creation

HTTP ▼

80

1-65535

- ❖ Make a request for SSL to ACM (AWS Certificate Manager)-

Default SSL/TLS server certificate

The certificate used if a client connects without SNI protocol, or if there are no matching certificates. You can source this certificate from AWS Certificate Manager (ACM), Amazon Identity and Access Management (IAM), or import a certificate. This certificate will automatically be added to your listener certificate list.

Certificate source

☒ From ACM

☐ From IAM

☐ Import certificate

Certificate (from ACM)

The selected certificate will be applied as the default SSL/TLS server certificate for this load balancer's secure listeners.

Select a certificate ▼

⌂

[Request new ACM certificate](#) [↗](#)

- ❖ Mentioning only domain and creating a certificate

AWS Certificate Manager > Certificates

Certificates (1)

[Refresh](#) [Delete](#) [Manage expiry events](#) [Import](#) [Request](#)

< 1 > [Settings](#)

<input type="checkbox"/>	Certificate ID	Domain name	Type	Status
<input type="checkbox"/>	70a0dff4-d1a7-48b5-8aa0-35ac117ca5a2	shivamgodambe.online	Amazon Issued	Pending

❖ Select records in route 53

Amazon Issued

Domains (1)

[Create records in Route 53](#) [Export to CSV](#)

< 1 >

Domain	Status	Renewal status	Type	CNAME name
--------	--------	----------------	------	------------

❖ Create records

AWS Certificate Manager > Certificates > [70a0dff4-d1a7-48b5-8aa0-35ac117ca5a2](#) > Create DNS records in Amazon Route 53

Create DNS records in Amazon Route 53 (1/1)

1 match

[Validation status = Pending validation](#) [Validation status = Failed](#)

[Is domain in Route 53? = Yes](#) [Clear filters](#)

< 1 >

<input checked="" type="checkbox"/>	Domain	Validation status	Is domain in Route 53?
<input checked="" type="checkbox"/>	shivamgodambe.online	Pending validation	Yes

[Cancel](#) [Create records](#)

- ❖ New Cname records are added

The screenshot shows the 'Records (4)' tab in the Amazon Route 53 console. It displays a table of DNS records for a hosted zone. The records include an A record for 'shivamgo...' pointing to '44.201.38.127', an NS record for 'shivamgo...' with multiple authoritative nameservers, a SOA record for 'shivamgo...' with 'ns-1028.awsdns-00.org' as the primary nameserver, and a CNAME record for '_df4d8bf...' pointing to '_9fea0af2bf693d6be8f8410...'. The interface includes filters for 'Type', 'Routing policy', and 'Alias', and buttons for 'Delete record', 'Import zone file', and 'Create record'.

Record ...	Type	Routin...	Differ...	Alias	Value/Route traffic to	TTL (s.)
shivamgo...	A	Simple	-	No	44.201.38.127	300
shivamgo...	NS	Simple	-	No	ns-1028.awsdns-00.org. ns-583.awsdns-08.net. ns-1975.awsdns-54.co.uk. ns-409.awsdns-51.com.	172800
shivamgo...	SOA	Simple	-	No	ns-1028.awsdns-00.org. aws...	900
_df4d8bf...	CNAME	Simple	-	No	_9fea0af2bf693d6be8f8410...	300

- ❖ Waiting for the certificate to be issued

The screenshot shows a green notification banner at the top stating 'Successfully created DNS records' for certificate ID '70a0dff4-d1a7-48b5-8aa0-35ac117ca5a2'. Below the banner, the 'Certificates (1)' tab is selected, showing a table with one certificate entry. The certificate ID is '70a0dff4-d1a7-48b5-8aa0-35ac117ca5a2', the domain name is 'shivamgodambe.online', the type is 'Amazon Issued', and the status is 'Issued'.

Certificate ID	Domain name	Type	Status
70a0dff4-d1a7-48b5-8aa0-35ac117ca5a2	shivamgodambe.online	Amazon Issued	Issued

- ❖ Select the issued ACM certificate in load balancer

The screenshot shows the 'Default SSL/TLS server certificate' configuration page in the AWS Load Balancing console. The 'Certificate source' is set to 'From ACM'. Under 'Certificate (from ACM)', the selected certificate is 'shivamgodambe.online' with ID '70a0dff4-d1a7-48b5-8aa0-35ac117ca5a2'. A link to 'Request new ACM certificate' is also visible.

Default SSL/TLS server certificate

The certificate used if a client connects without SNI protocol, or if there are no matching certificates. You can source this certificate from AWS Certificate Manager (ACM), Amazon Identity and Access Management (IAM), or import a certificate. This certificate will automatically be added to your listener certificate list.

Certificate source

☒ From ACM ☐ From IAM ☐ Import certificate

Certificate (from ACM)

The selected certificate will be applied as the default SSL/TLS server certificate for this load balancer's secure listeners.

shivamgodambe.online
70a0dff4-d1a7-48b5-8aa0-35ac117ca5a2

[Request new ACM certificate](#)

- ❖
- ❖
- ❖
- ❖ Waiting till the status is been active state

EC2 > Load balancers > testing

testing

Refresh

Actions

Details

Load balancer type

Application

Status

Provisioning

VPC

vpc-010212c3c5aa19d21

Load balancer IP address type

IPv4

Scheme

Internet-facing

Hosted zone

Z35SXDOTRQ7X7K

Availability Zones

subnet-0473c86430ce88ec7 us-east-1a (us-east-1)

Date created

August 26, 2024, 00:25 (UTC+05:30)

❖ Same for target group

Target group: tg-2

to the target group's health check settings. Anomaly detection is automatically applied to HTTP/HTTPS target groups with at least 3 healthy targets.

Filter targets

< 1 >

<input checked="" type="checkbox"/>	Instance ID	Name	Port	Zone	Health status	Health status details
<input checked="" type="checkbox"/>	i-08591e4a827427c3c	shivam	80	us-east-1a	Healthy	-

❖ In route 53 edit A record

Records (4)

DNSSEC signing

Hosted zone tags (0)

Records (1/4)

Info

Refresh

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.

Filter records by property

Type

Routing pol...

Alias

< 1 >

Settings

<input checked="" type="checkbox"/>	Record ...	Type	Routin...	Differ...	Alias
<input checked="" type="checkbox"/>	shivamgo...	A	Simple	-	No
<input type="checkbox"/>	shivamgo...	NS	Simple	-	No
<input type="checkbox"/>	shivamgo...	SOA	Simple	-	No
<input type="checkbox"/>	df4d8f6...	CNAME	Simple	-	No

Record name

Info

subdomain

shivamgodambe.online

Keep blank to create a record for the root domain.

Record type

Info

A – Routes traffic to an IPv4 address and ...

☒ Alias

Route traffic to

Info

Alias to Application and Classic Load Bala...

US East (N. Virginia)

Q dualstack.testing-2109334620.us-east-

X

Alias hosted zone ID: Z35SXDOTRQ7X7K

Routing policy

Info

Simple routing

Evaluate target health

☐ No

Activate Windows

Go to Settings to

Cancel


Save

❖ Status updated to insync

[Route 53](#) > [Hosted zones](#) > [shivamgodambe.online](#) > [Change Info](#)

C08536173FOPEGS8A40F4 [Info](#)

Change info details

ID	Subm
/change/C08536173FOPEGS8A40F4	August
Status	Comm
 INSYNC	-

❖ Test Record using Domain & Public IP

[Route 53](#) > [Hosted zones](#) > [shivamgodambe.online](#) > [Test record](#)

Test record [Info](#)

Test records to simulate the values that Route 53 returns in response to DNS queries. This tool displays the standard values that Route 53 provides based on the settings in the hosted zone. The tool doesn't send actual DNS queries.

Record to test

Hosted zone
shivamgodambe.online

Record name - *optional* [Info](#)
To check a record that has the same name as the hosted zone shivamgodambe.online, leave this field blank. To check the record for a subdomain, enter the subdomain name excluding the domain name.

Record type [Info](#)
The DNS type of the record determines the format of the value that Route 53 returns in response to DNS queries.

Response

Response returned by Route 53

Response from Route 53 based on the following options.

Hosted zone

shivamgodambe.online

Record name

-

Record type

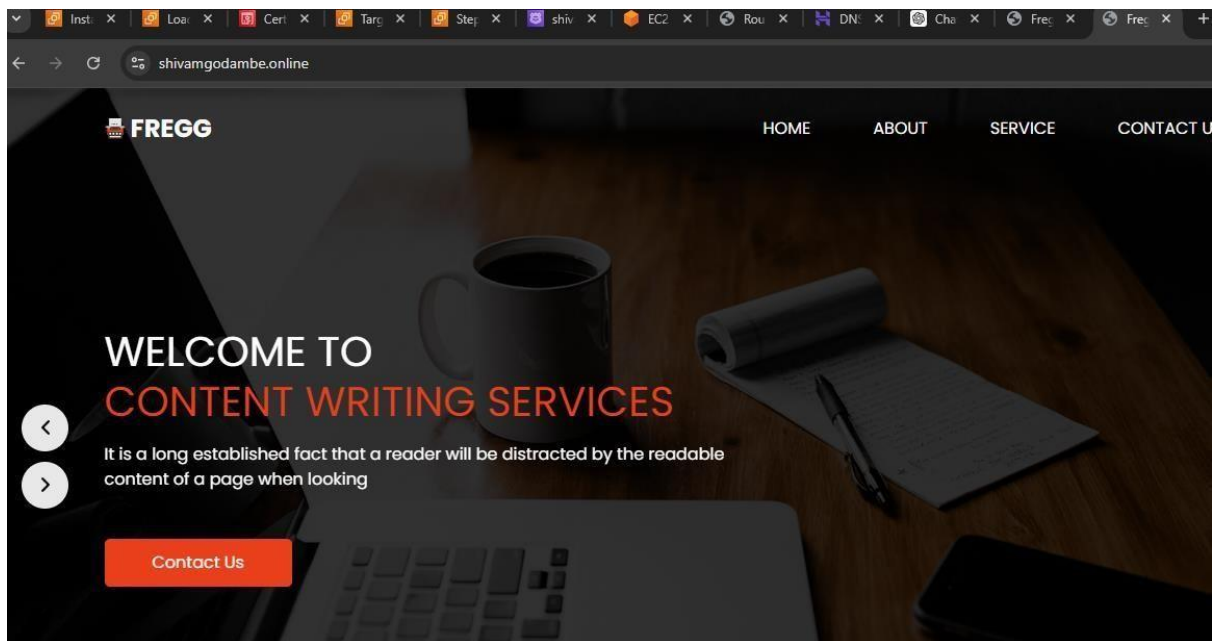
A

DNS response code

✓ No Error

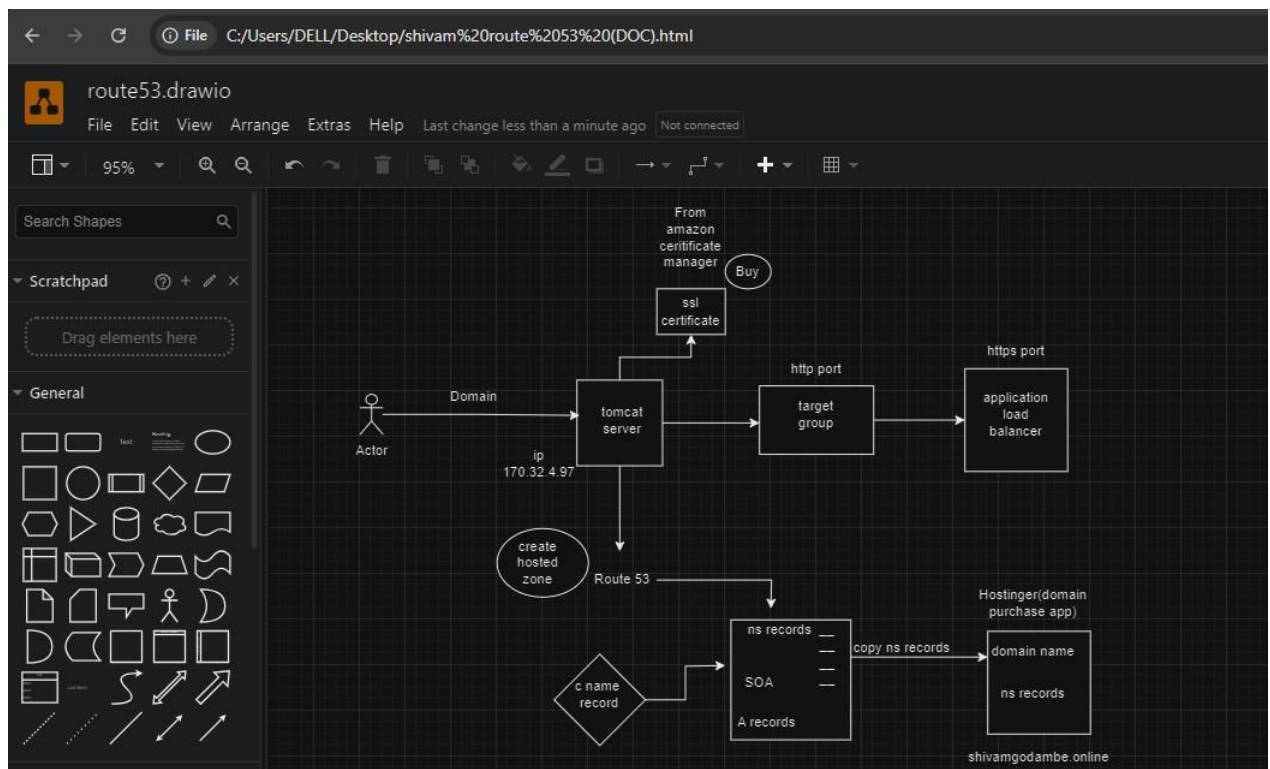


❖ Successfully done using domain



Making a diagram in draw.io

Architecture of the route53



❖ For Deletion

1. Route 53 - Delete A & CNAME records only → Delete Hosted Zone
2. Delete Load Balancer
3. Delete Target Group
4. ACM – Delete SSL Certificate
5. Terminate Instance