

Command Prompt

Connect EC2 Instance.



Sudo su.

↓
cd

TOP (How much we are using CPU it will display here.)



How to install Stress:- yum install stress



(y/n) y



stress --cpu 4 (increase stress)



ctrl + z (it will reduce).

How to check Graph

Go to EC2 Instance



Monitoring



You can see your graph.

IF it will go more than 90% you can receive one mail for AWS instance
Alarm will come to

In alarm

Step 3

Alarm name []



Description []

Next

Check all the content is correct or not then.

⇒ **Create alarm...**

If you want more alarm go to (EC2)

Add Alarm + ✓
created

How to Delete

* Delete **Ec2 Instance**.

* Delete **Cloud Watch** Action: delete

* SNS (not charging anything you can keep it).

What is DNS :- **Domain Name System**

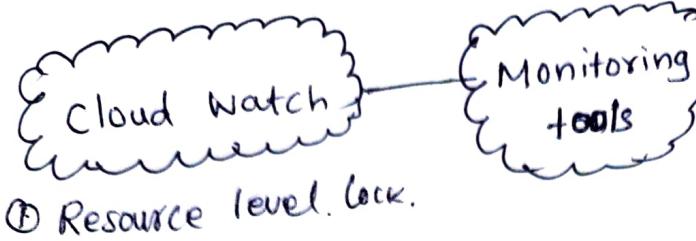
* Domain Name System translates human readable domain names (for example, www.amazon.com) to machine readable IP addresses

(for examples, 192.0.2.44)

GoDaddy (Domain Purchase)



Aws Live - Day 15 (Route 53, GoDaddy, Cloud Watch, SNS) Day-20



Ex: EC2 If more users it will show.

② By using cloud watch.

we can create.

alarm - 90%.

③ By using Mail ID
Simple Notifications Service.



If you want.

↓
I'm creating
S3 Bucket.
Saving there.

Mobaxterm

Connect Ec2 instance.



Sudo su



cd



TOP



stress --cpu 8

Steps

- * Create VPC
- * Create EC2 (Public)
- * Cloud Watch [Create Topics]
 - Greater 95%
 - Greater/equal 80%
 - Lower/equal 60%
 - Lower 50%

* Create Subscription → Go to mail and (confirm)

* Set alarm..

How to Delete Hosted Zone

or select your website.xyz



If you want you can Edit your IP (value)

How to Delete record

or select website.xyz



Delete records



Delete Hosted zone



Delete

How to Delete Alaram

All alarms



Select (alarm)



Actions



Delete,

Route 53 will charge

1 Dollar

Route 53 :-

* Global Based Service.

Go Daddy:-

How to purchase our own website:-

Go to google.



Search GoDaddy



search your domain



Purchase as per your requirement.

Watch youtube video
How to purchase domain.

Signin First

Ex: Balaji.com	Rs.499
Ex: Balaji.XYZ	Rs.169

Go to cart

How to create Hosted Zones:-

Go to Route 53



Create Hosted zone. (1 Time)



Hosted zone configuration



Domain name

xx,yy

what I created in
GoDaddy. GoDaddy



Description - optional

xx,yy



Type

• Public • Private.



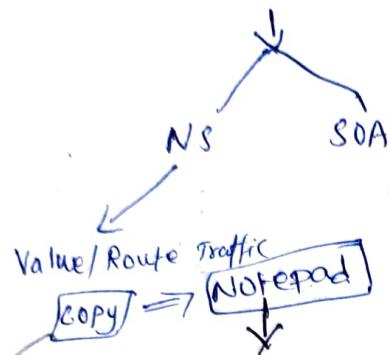
Create hosted zone.

It will Create 2 Records

1) NS

2) SOA

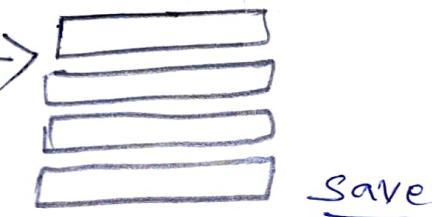
↓
It will create 2 Records



Next ⇒ Go to GoDaddy

↓
Nameservers [change]

↓
Edit nameservers [If you want more Add Nameserver]



↓

Name Server update..

↓

yes

↓

Continue...

Go to Route 53

↓

Create record.

↓

Record name Balaji.xyz

↓

Record TYPE

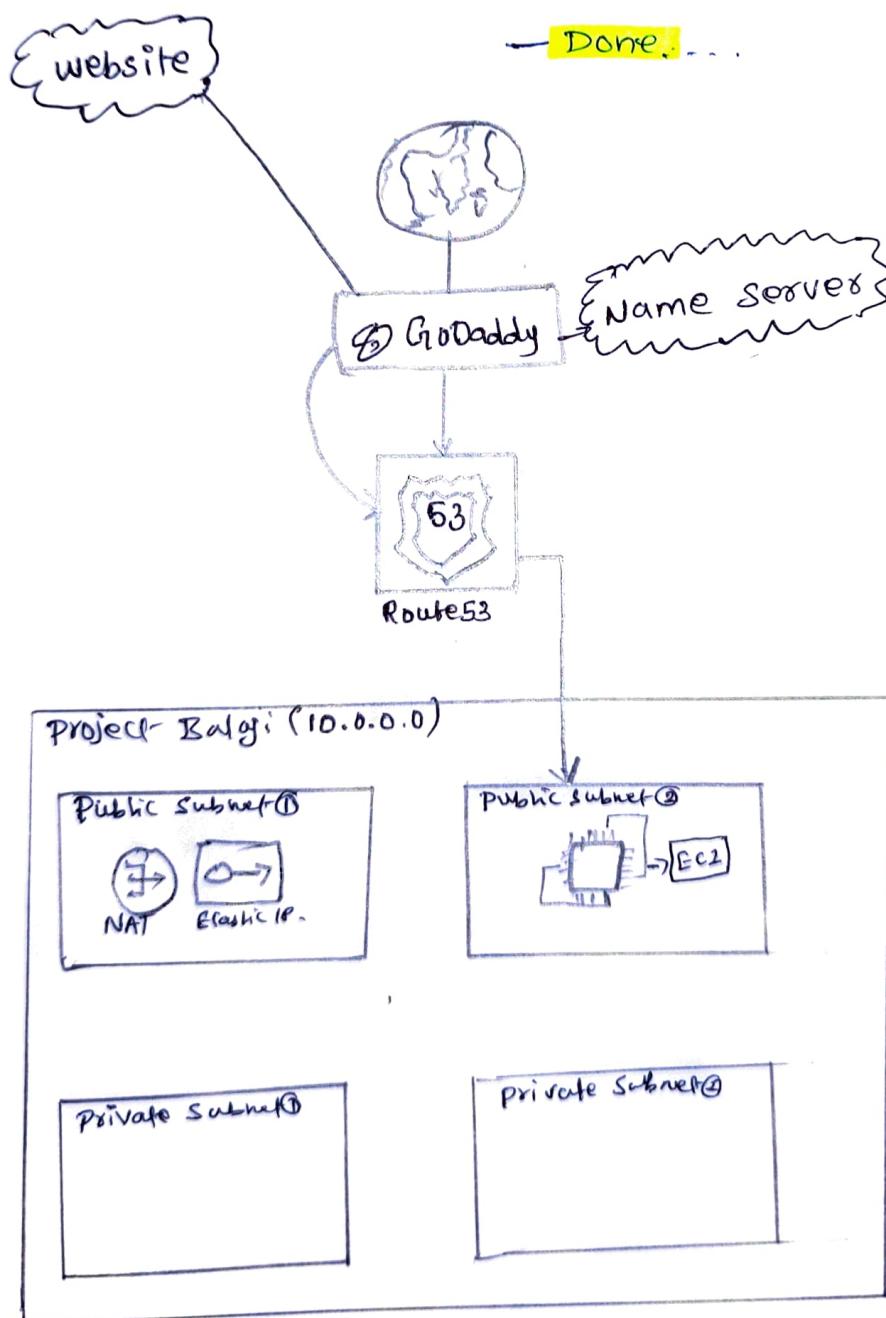
C A - Routes traffic to an IPv4 address and some
Aws resources)

Value: EC2 (Public IP Address) Ex: 192.72.5.6

Create records

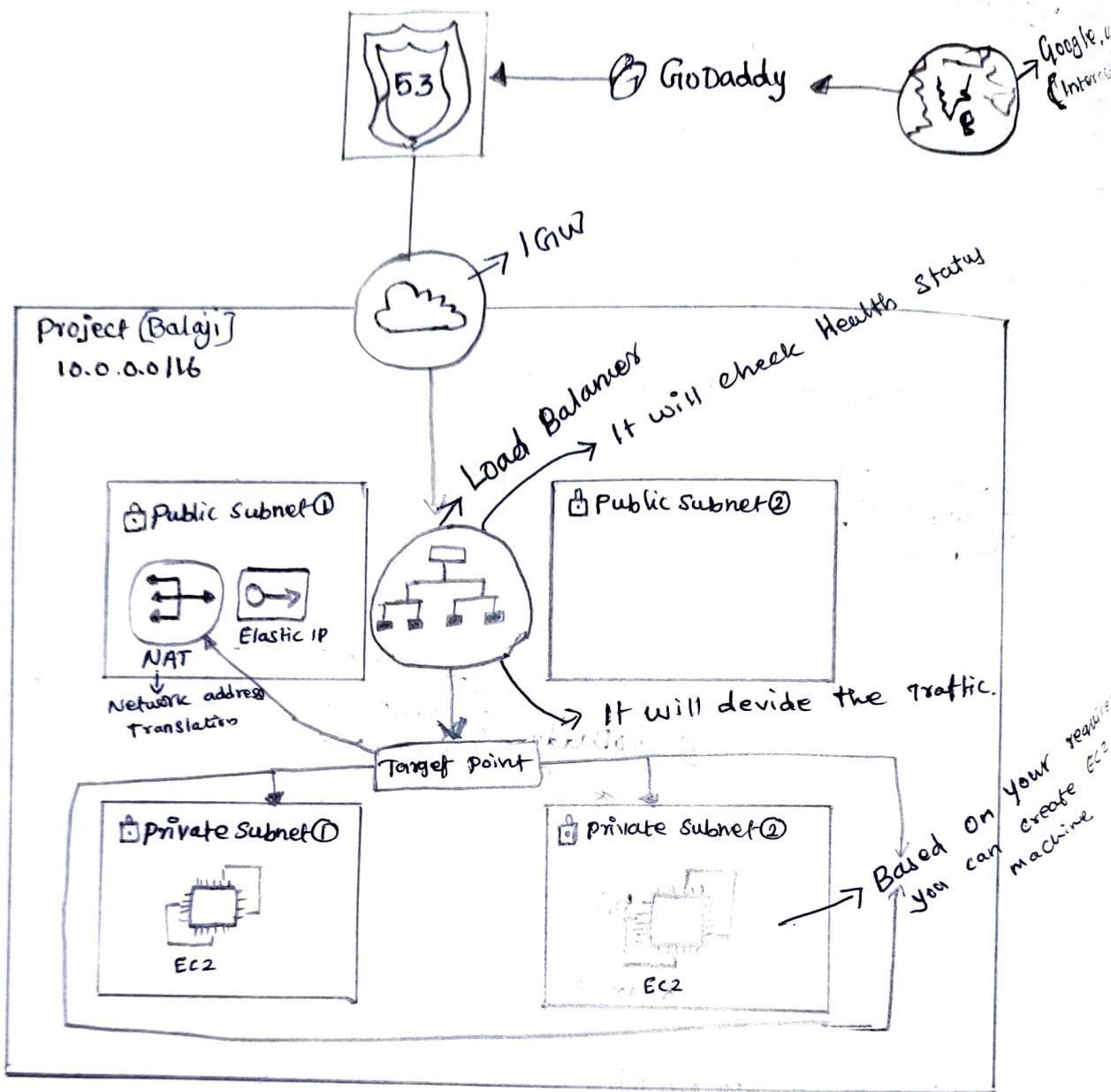
after that you can search www.Balaji.xyz.

our website will come.



Aws Live - Day 16 (Load balancer)

Day - 21



* Best practice of Aws is NAT gateway and Jump server we are keeping in public subnet.

* In private subnet we are launching and configuring.

Load Balancer means It will balance the load

⇒ If we are hosting website means don't host in public subnet because it's open to Internet.

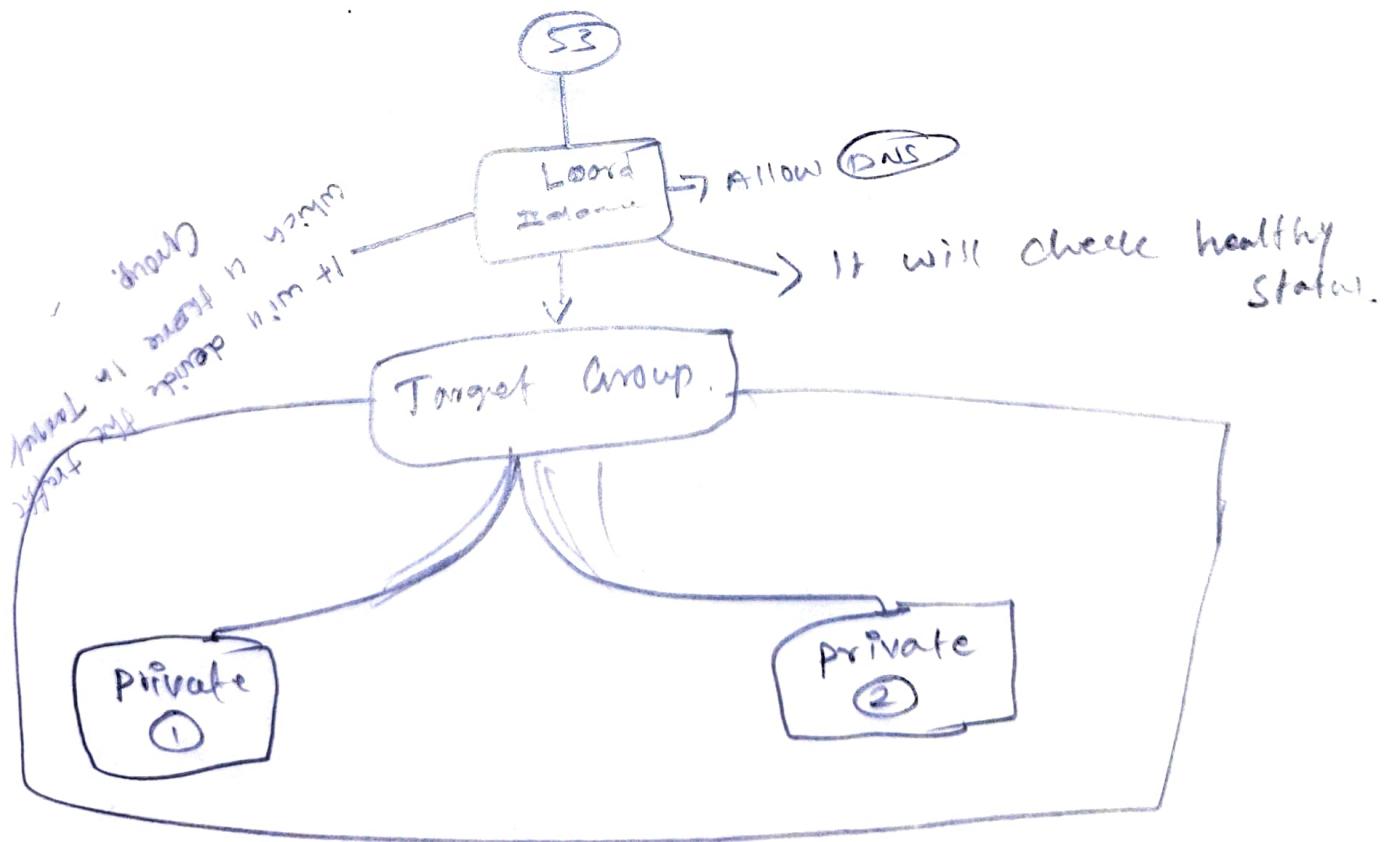
point ① → Safe & secure way to hosting website is private Subnet, why because **NAT Gate Way** will be there. It will deny the Internet with **Elastic IP Address** only you can access your **Ec2 Instance**

→  **Load Balancer**:- Using security group ^{= ALLOW} & DNS you can access the Ec2 machine. **[LD->Ec2]**

→ Ex: 100 people are visiting this Ec2 machine Amazon big billions days is going on so 1000 people will go and visite the site that time Ec2 instance will get slow.

↓
that time I'm create one target Group.

↓
See Load balancer If people are visiting more you can divide and give to the Internet.
↓
Create one more Ec2 machine and divide Internet. (so all can access).



Load Balancer Demo:-

* Create VPC

* Create EC2 Instance (private 1)

* Create EC2 Instance (private 2)

⇒ Attach SSM (Reboot)

⇒ (connect) private Internet.

sudo su → cd → yum install httpd → y → cd / → cd var/
cd www/ → ls → cd html/ → ls → vi index.html → (Hiiiii)
vi index.html
:wq! → systemctl start httpd → systemctl enable httpd

Next Step:- How to create Target Groups :-

GID to EC2 Instance



Target Groups



Create Target groups



@ Instance



Target group name []



Protocol

Port

HTTP ▼ : 80

1 VPC (Select your VPC)



2 Protocol version [or HTTP]



3 Next

Next Step:-

Available Instances



- ① EC2 ① & select Instance ID
- ② EC2 ②



Review targets

- ✗ Pending
- ✗ Pending



Create target group

- Target group created. ✓

Load balancer ① None associated



so

Create Load balancers:-

Load balancer



Create Load balancer



Load balancer type

Application load
Balancer (Created)

Network load
Balancer

Gateway load
Balancer

Basic configuration



Load balancer name []



Scheme [or Internet-facing]



IP address type [or IPv4]



Network Mapping



VPC [Select your VPC]



Mapping [Public subnet]



[P. Subnet]

Security groups



Create a new security group.

next page



Basic details



Security group name []



Description []



VPC [select your VPC]



Inbound rules



HTTP [0.0.0.0/0]



Create security group.

next page

Continue...

Security groups



Select [your security group]



Listeners and routing



Select [your Target] what you created



Create load balancer



view load balancer



Load balancers



DNS name [copy] copy and paste in google



Health Status



healthy

How to make healthy



Go to unhealthy [Ec2 instance]



security group



Enable



HTTP | 0.0.0.1/0



Save rules.

Go to

Hi / Hello
Ec2 | Ec2
google and search
will come.

How to Delete Step by Step:-

- * Delete EC2 Instance ①
- * Delete EC2 Instance ②
- Next * Target groups

↓

~~Deregister Target~~

↓

Delete Load balancer

↓

Confirm

↓

Delete Target Group

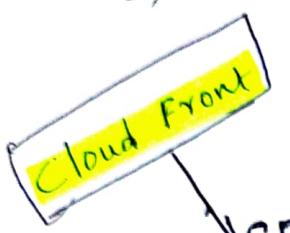
↓

yes, delete.

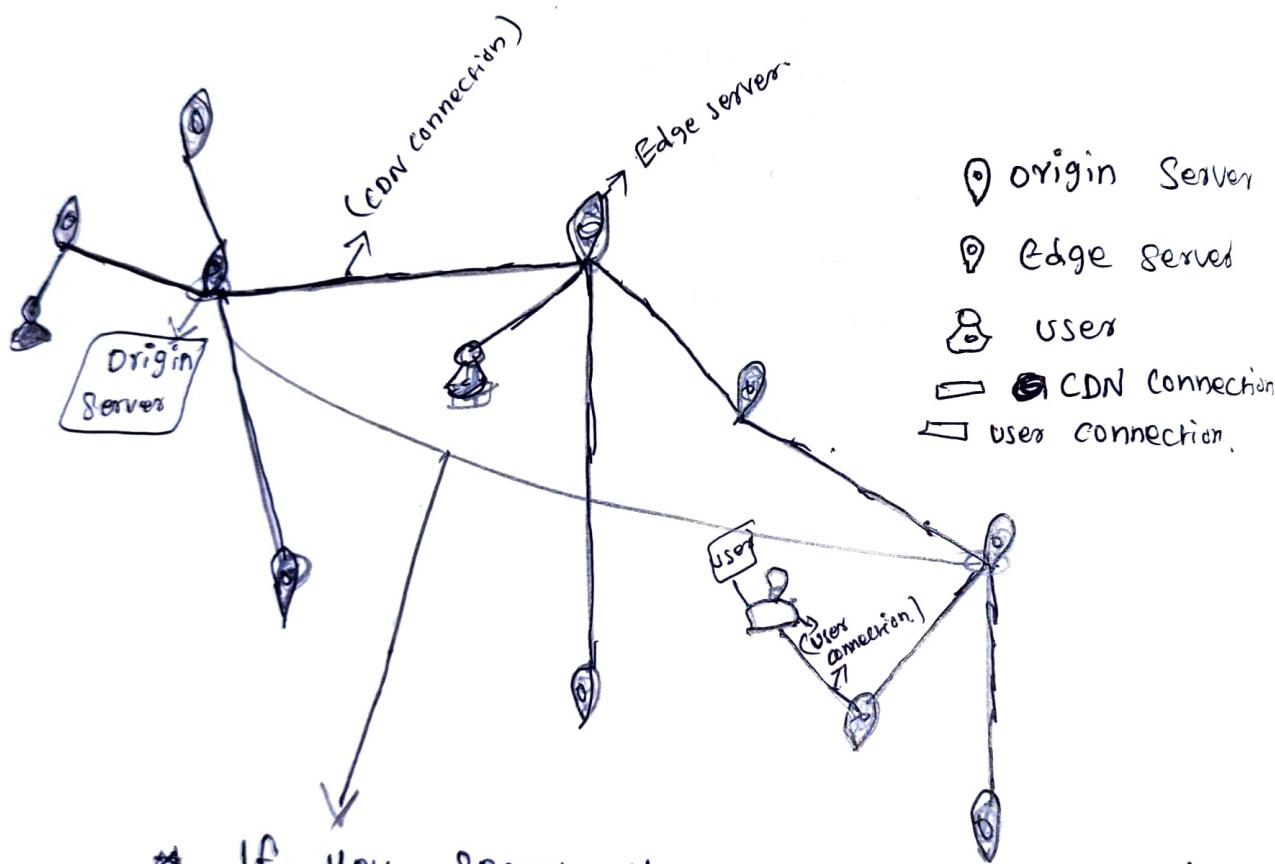
AWS Live - Day 17 (ACM, Cloud Front, Loadbalancer, S3, route 53)

Day - 22

⇒ Aws Best practice is everything should be in ^{Point}



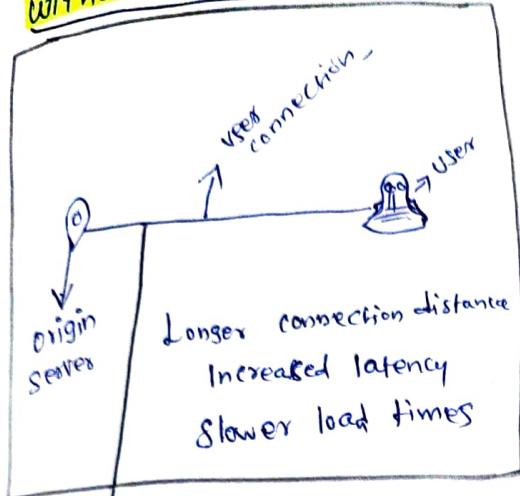
CDN - Content delivery network.



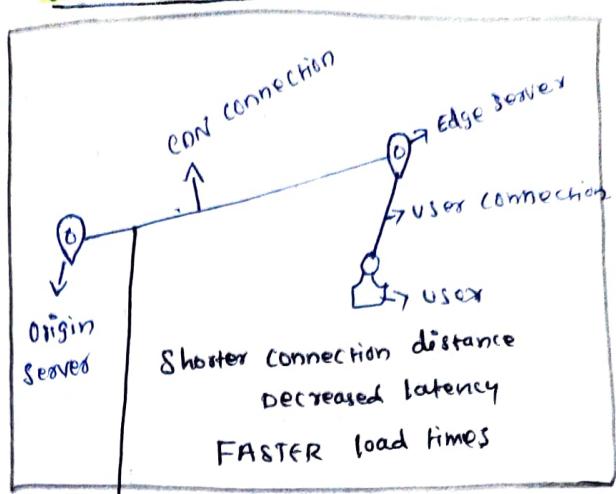
* If you search your website first time.
It will take little more time.

* If somebody searched already it will
factor (Edge location)
that is cached

Without a CDN



With a CDN



[IF he searched first time
means it will take time]

⇒ cloud front to s3 Bucket how traffic will coming we
are checking that.

[IF we are ~~not~~ using CDN we will reach our destination faster]

- * If will work from background we can't prove that
- * It will work automatically.
- * CDN content will enable automatically.
- * In background it will run smooth.

Demo :-

- * Go to s3 bucket and create s3 bucket.
- * Add content (what you created in your local laptop (index.html))
- * Next Go to Cloud Front.

How to create distribution :-

Go to CloudFront



Create a CloudFront distribution



create distribution



Origin domain [take your S3 Bucket] ✓



origin path [] optional. ✓



origin access [Public/Origin/Legacy]



Legacy access identity ✓



Create New OAI ✓



Bucket Policy [yes, update the bucket policy] ✓



Enable origin shield [or no]



Default cache behavior.



all Default



Default root object [index.html] ✓

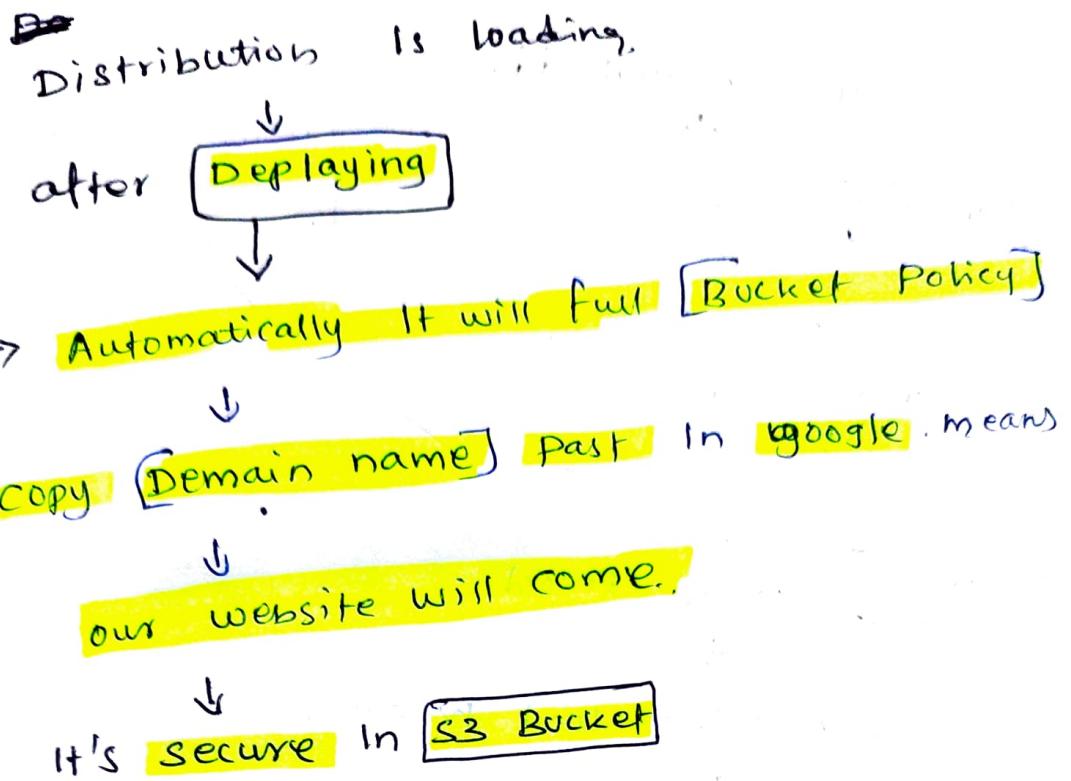


→ web Application Firewall [or do not enable security protection]

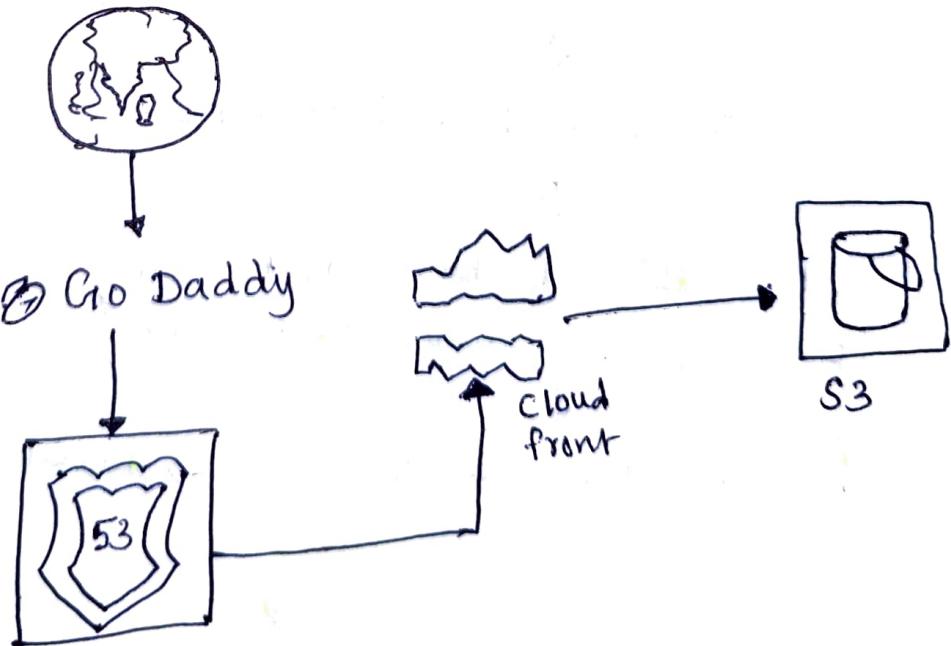


Create distribution

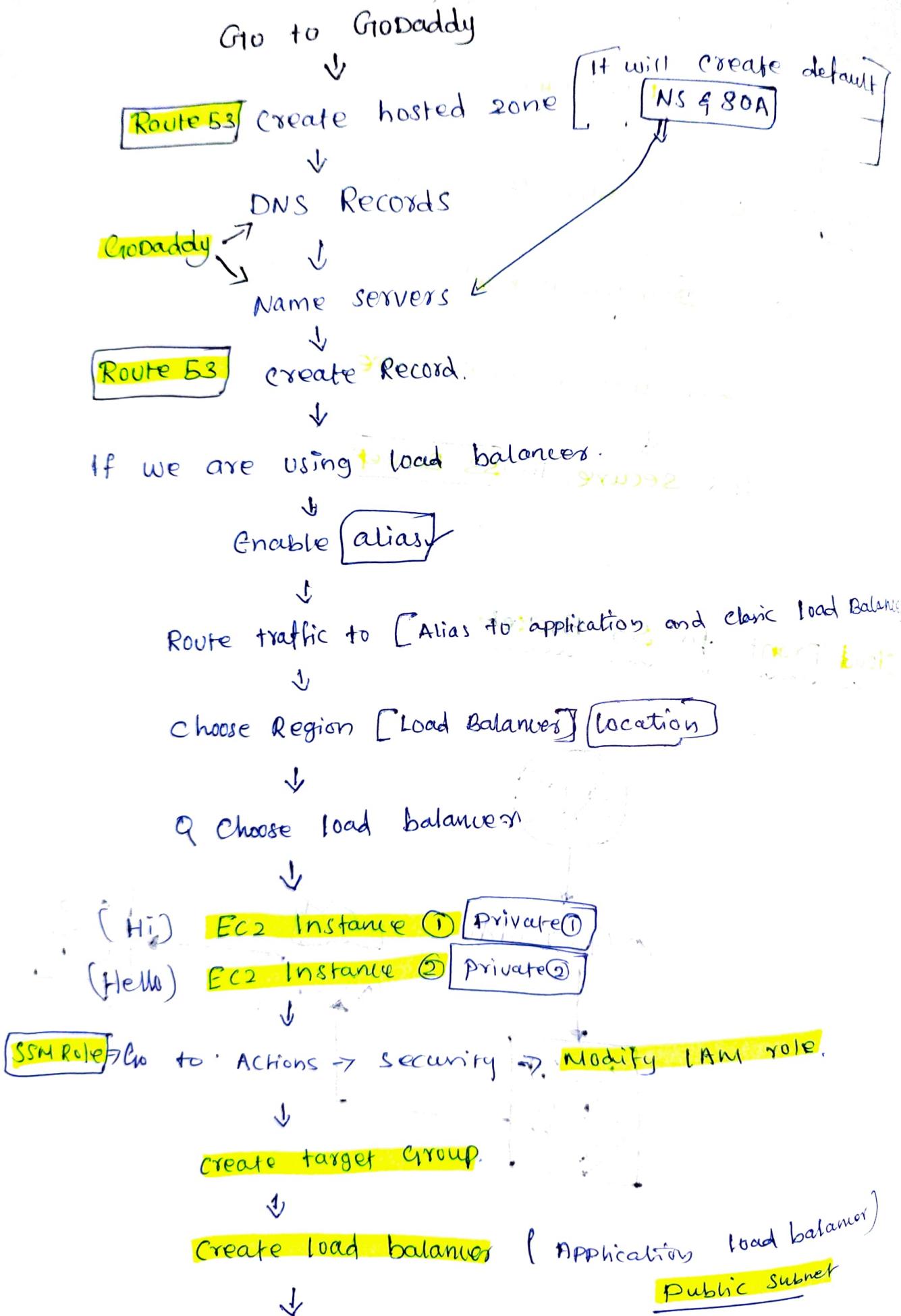
Next Step



Cloud Front to S3 Bucket



Demo:



SSM EC2① Install httpd \Rightarrow yum install httpd (Hi)
EC2② Install httpd \Rightarrow yum install httpd (Hello)

Next

Go to security Group



Enable

http

0.0.0.0/0

How to add load balance record in Route 53

Go to Route 53



Create Record



Alias



Route traffic to [Alias to application and classic load Balancers]



choose Region [select load balance location]



choose load balancer [✓]



Create records



google \rightarrow godaddy.xyz \rightarrow Hi / Hello.



How to secure our website,

[using ACM we can secure our website]

I How to secure website using (ACM) :-

Go to certificate Manager



Godaddy = (Copy) your domain name.



Request a certificate



② Request a public certificate



Next



Godaddy = Domain name (Paste)



Validation Method [or DNS validation]



Key algorithm (your choice)



Request



Using ACM certificates
we can secure our
website.

How to validate [Pending Validation]



click [certificate IP]



Create records in Route 53 (It will fall automatic)



Create records



If will create one record in hosted zone
Now Pending validation will be Issued

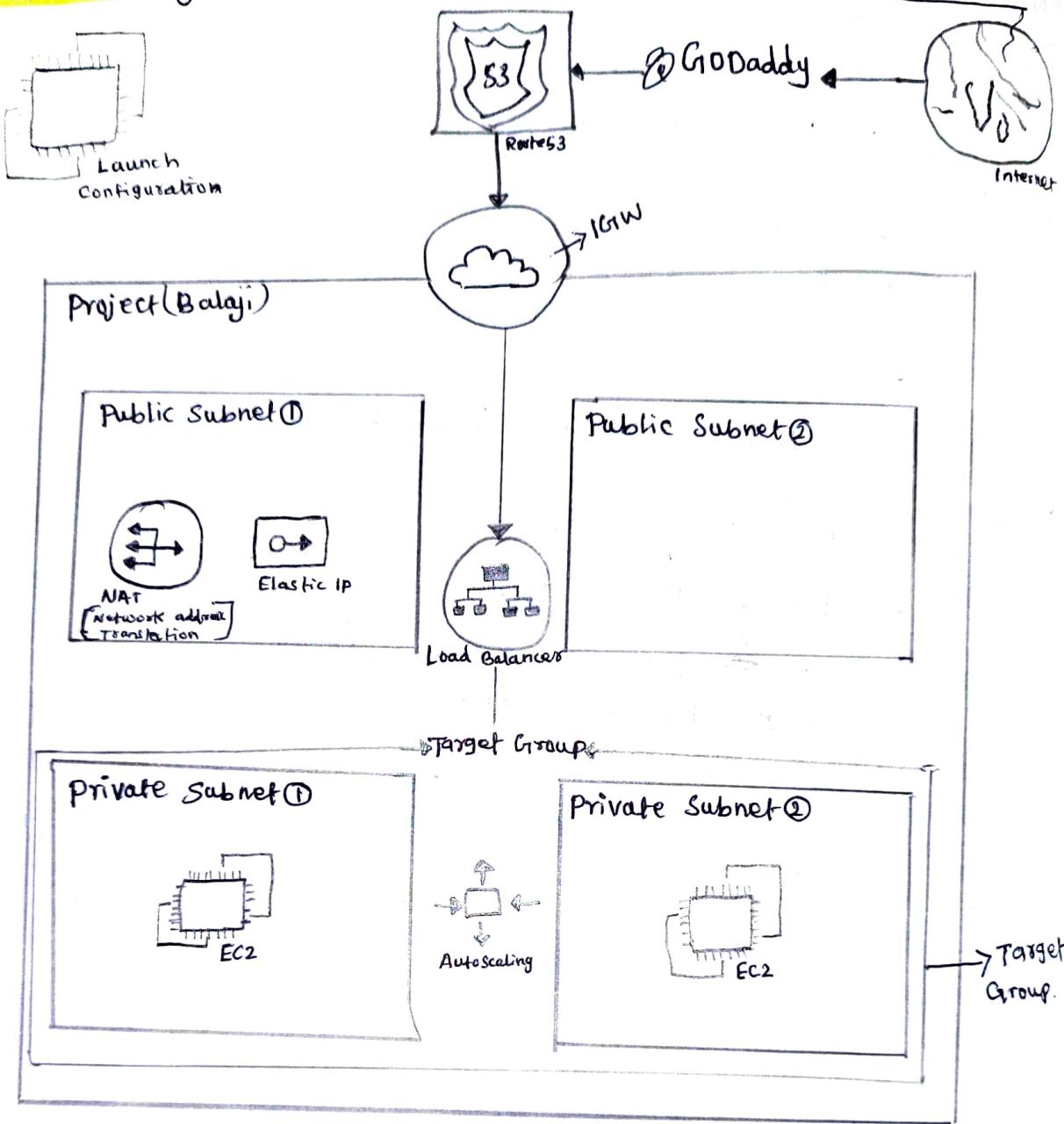
Now Deleting Process:-

- ⇒ Delete ACM certificate [Delete]
- ⇒ Disable (Cloudfront)
- ⇒ Delete (Cloudfront)
- ⇒ Delete EC2 instance.
- ⇒ Load balancer (Delete)
- ⇒ Target group (Delete)
- ⇒ S3 Bucket
 - * Delete objects [Empty bucket]
 - * Empty Bucket
 - * Delete Bucket.
- ⇒ Delete Hosting Zone:-
 - * ~~A~~ ^A ~~C~~ Name - Delete ~~zone~~ records.
 - * Hosted zone - Delete.

AWS Live - Day 18 (Auto Scaling) (Autoscaling)

Day - 23

LC - Launch Configuration



Horizontal Scaling

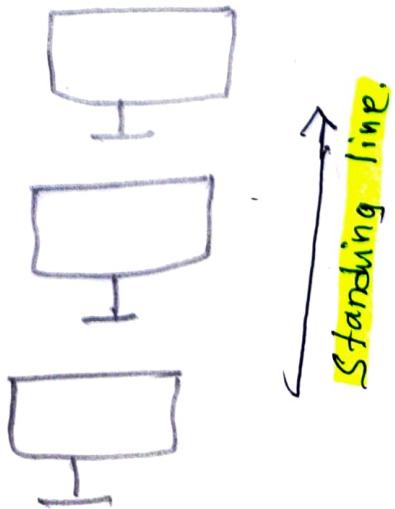
Add more Instances

VS Vertical Scaling

Increase size of Instance
(RAM, CPU, etc)



Sleeping line →

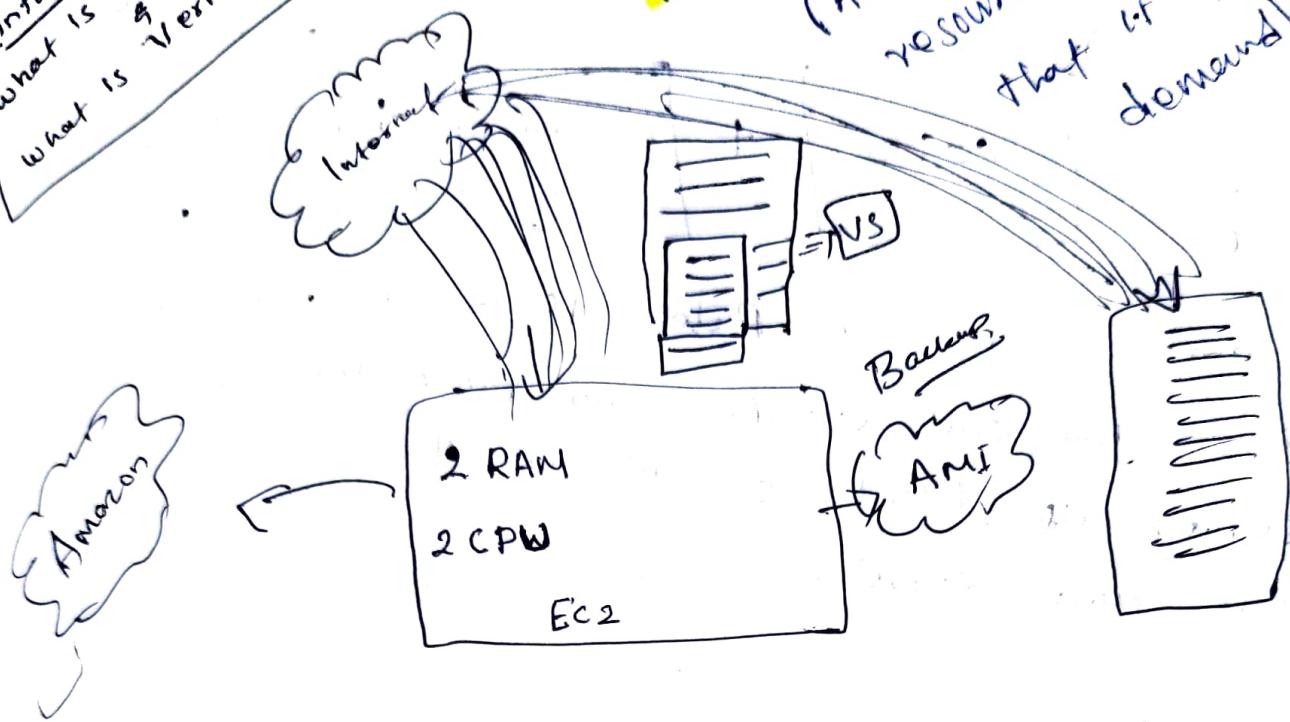


Example :- ①

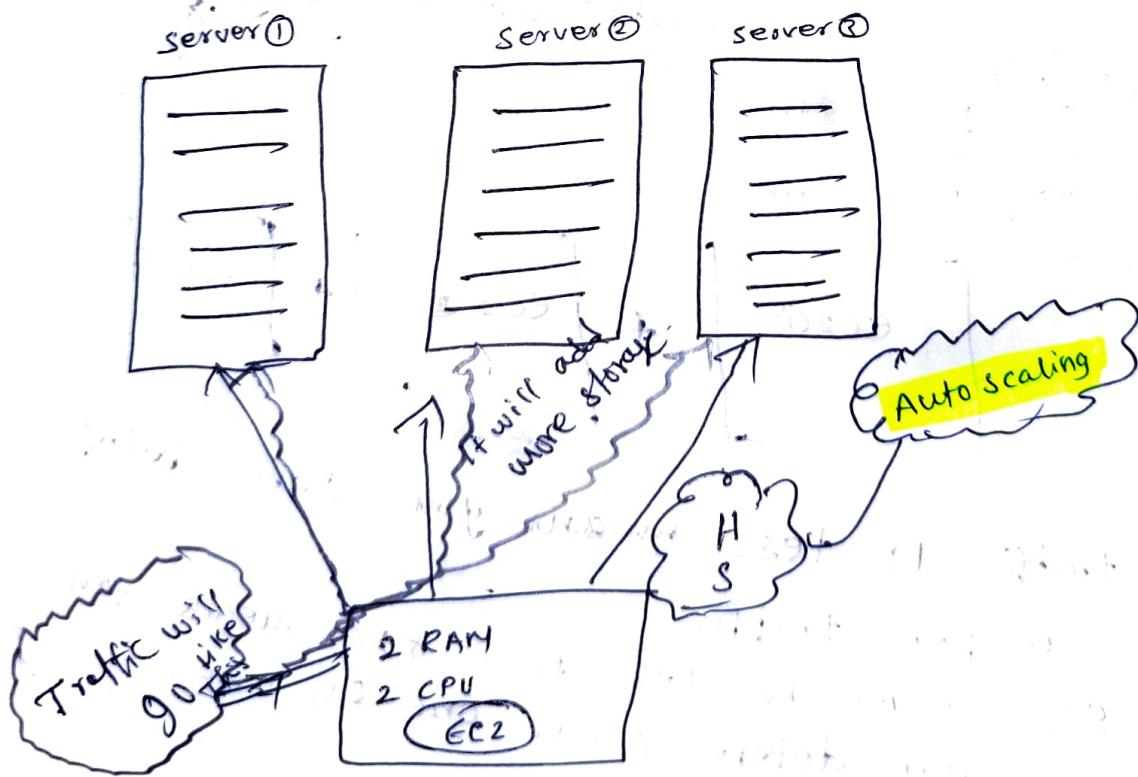
Interview
what is Horizontal scaling.
what is Vertical scaling.

VS - Vertical Scaling

(Adding additional resources to a system so that it meets demand)

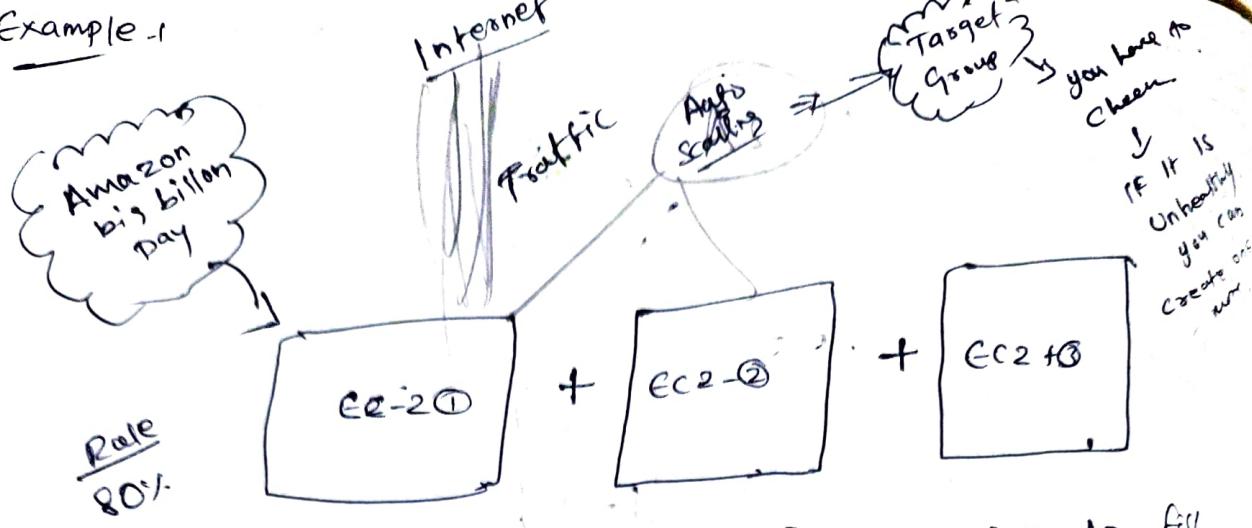


Example :- ② HS - Horizontal Scaling (Sleeping line)



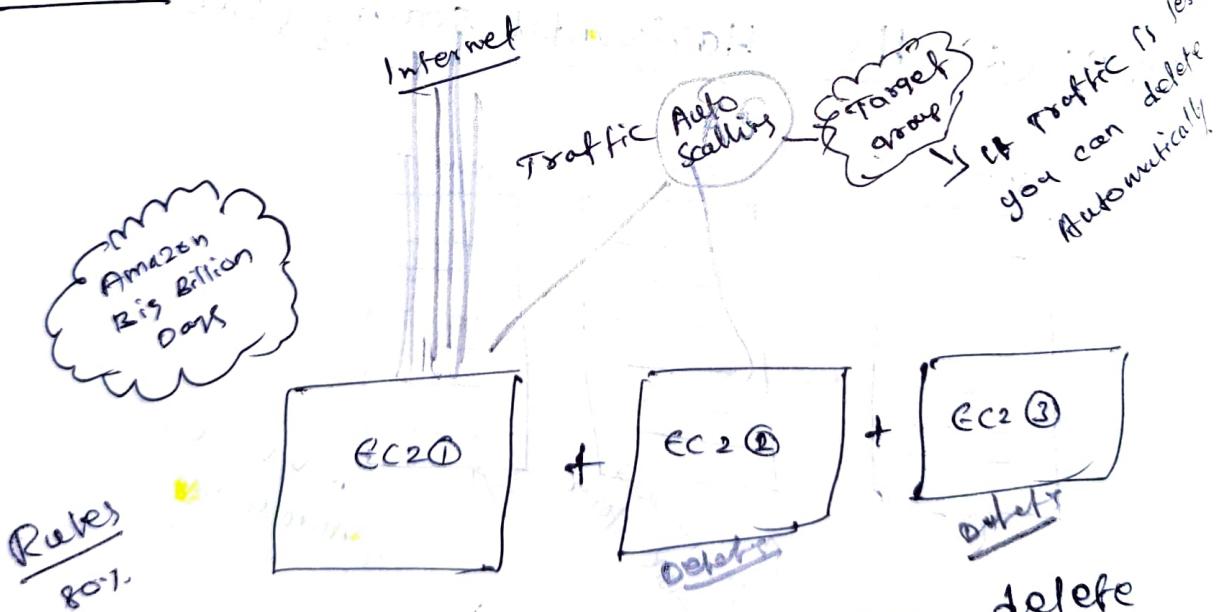
* If we are increasing storage or reducing storage
Horizontal scaling will do

Example -1



I am creating one Rules if it is going to fill 80% you can create one more server, that means: you can create server also filled 80% one more server.

Example -2



If traffic is less means you can delete server as per traffic
Ex: server is less than 80% means you can delete server one by one.

Demo (Autoscaling)

- * Create VPC
 - * Create EC2 Instance (public)
 - * Take Backup
 - ↓ - EC2 Instance
 - ↓ - Actions → Image and templates → Create Image
 - ↓ - Image name → No reboot Enable → Create Image.
 - Image Description
- * Terminate [EC2 Instance] Delete.

Next Step :-

- Go to Auto Scaling
- ↓
- Auto Scaling group
- ↓
- Create Auto Scaling group.
- ↓
- Launch Template [switch to launch configuration]
- ↓
- Create a launch configuration
- ↓
- Launch configuration name,
- ↓
- Name,
- ↓
- Amazon machine image (AMI)
- ↓
- AMI (what I have taken Backup) select.
- ↓
- Instance Type
- ↓
- Choose Instance type [Free trial]
- Example
 t2 micro
- ↓
- Choose
- continue...

Moboxterm or other APP

Connect EC2 instance

```
↓  
Sudo su  
↓  
cd  
↓  
Yum install httpd -y  
↓  
Cd /var  
↓  
cd www/  
↓  
ls  
↓  
cd html  
↓  
ls  
↓  
vi index.html  
↓  
write your website name  
↓  
Systemctl start httpd  
↓  
Systemctl enable httpd  
↓  
After this take backup  
and delete EC2 instance
```

Additional Configuration - optional.



IAM Instance profile



Select SSM Role [what you have created in IAM]



Security Group



Go to EC2 (Create New security group)



[Select your VPC] Enable

SSH
0.0.0.0/0

HTTP
0.0.0.0/0

{ Create security group.

Or select an existing security group.



Search security group [Select your security group]



Key Pair [Login]



Select your Key Pair [Select your key pair]



I acknowledge that I have access to the selected private key file (your key pair), and that without file, I won't be able to log into my instance.



Create launch configuration [Select your key pair]



View Launch Configuration

Next Step :-

Go to load Balancing



Target Groups [create target Group]



Basic Configuration: ⚡ Instance, Target group Name [] ,

select your (VPC), ⚡ HTTP 1, Next → [create target group]



Load Balancers [create load balancer]



⚡ Application load Balancer,
(create)



Basic Configuration: Load balancer name [] , ⚡ Internet-facing,
⚡ IPv4, select your (VPC), select (public subnet ①, ②), select your
(security group),
select your (target group), [create load balancer]

Next Step [configur Auto Scaling] :-

Go to Auto Scaling



Create Auto scaling group.



Auto Scaling group Name []



Switch to launch configuration

[Select launch configuration file
what you have created.]



Next

1 Continue...

Step-1
Choose launch
Template or
Configuration

Step-2

Choose Instance launch options

Network

Select [VPC]

Subnets
private ① private ②

Next

Step-3

Configure advanced options

Load balancing

or Attach to an existing load balancer

or choose from your load balancer Target groups

Select your [Target groups]

Next

Step-4

Configure group size and scaling policies

Group size - optional.

Desired capacity | minimum capacity

1

1

maximum capacity

Ex: 3

Scaling Policies [or Target tracking Scaling Policy]

Target Value

80%

If more than 80%, you can create one more server.

↓

Next

Step - 5

Add Notification
Enable Notification service

Notification



SNS Topic [If you have any SNS Topic you can add here]



Event Types

launch

terminate

Fail to launch

Fail to terminate



Next.



Step - 6

Add Tag

Add Tag [Tags are optional]



Next.



Step - 7

Review

Review [check once everything is correct or what]



Create Auto Scaling group



Copy

DNS name and paste in google (your website will come)

⇒ IF you delete your EC2 by mistake

⇒ It will create automatically. by using Auto Scaling

⇒ If you give Stress --CPU8 it will create automatically one more EC2 instance while using Auto scaling.

Continue...

How to Delete Autoscaling:-

* Delete EC2 Instance

* Delete Auto Scaling



Actions



delete

* Delete Load Balancer

* Delete Target Group.

* AMI (Deregister AMI)

* Delete Snapshot

* Go to Auto Scaling



Launch Configurations



View Launch Configurations



Select (Launch Configuration)



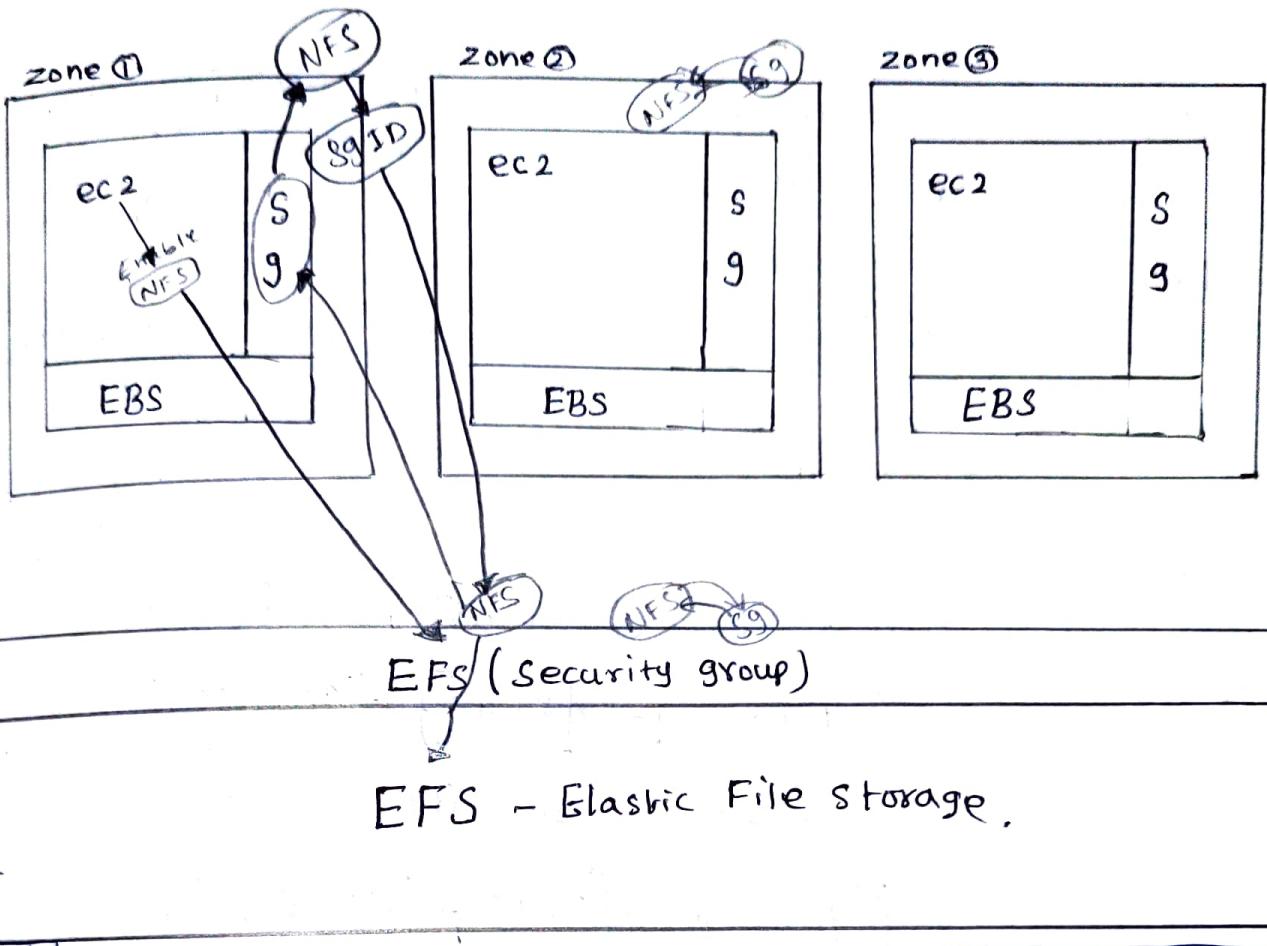
Actions



Delete Launch Configuration



Delete



3 Points:-

- ① Attach and Mount EFS Volume. 2049 Enable Ex: It is like google shared storage Sheet
 - ② Security group (NFS protocol). Ex: Pen drive storage give. 0.0.0.0/0 but
- ⇒ when you enabling NFS you can give. NFS you can access that is not good practice.
- ⇒ Best practice is when you enabling security group NFS → you can give EFS security group ID in EC2 instance.

Demo EFS :-

- * Create VPC
- * Create EC2 Instance (Public Private)
- * Create EC2 Instance (Public Private)
- * Connect Both EC2 Instance using (MobaXterm)
- * Create EFS
- * Copy Security Group ID

Open your notepad copy

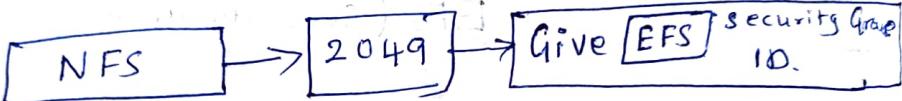
EFS = Security group ID —

EC2① = " " ID —

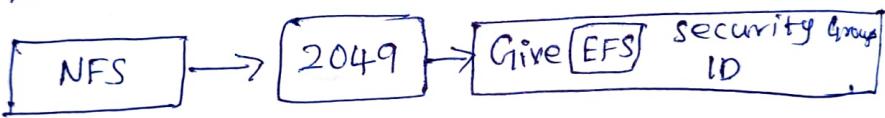
EC2② = " " ID —

How to connect EC2 instance
using Putty? [Home work]

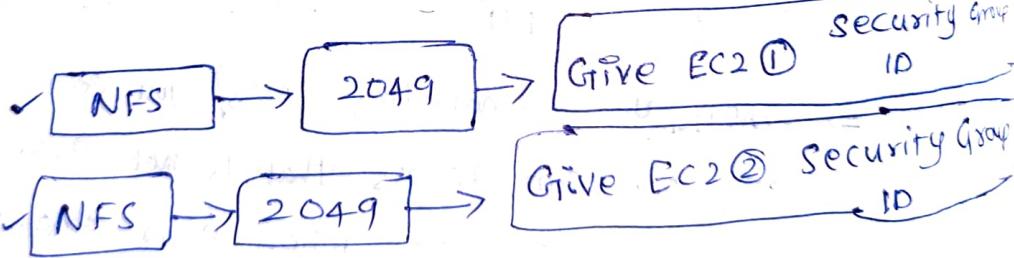
- * Go to EC2 ① security group Enable Inbound



- * Go to EC2 ② security group Enable Inbound



- * Go to EFS security group Enable Inbound



How to Create EFS :-

Go to EFS



Create file System



Name []



Select your [VPC]



Create.

How to mount EFS :-

Go to EFS



Attach



Copy Comments

comment ①

① copy comment

② copy comment ②

How to Delete:-

* Delete Both EC2 Instance.

* Delete EFS

*



What is Data:-

* Data is a collection of records.
* Collection of data is nothing but information.

Mboxoterm

Connect EC2 Instance



Sudo su



Cd.



Yum install [amazon-efs-utils]



(Y/N) Y



Mkdirs [Balaji]



Cd Balaji/



LS (clear)



Df -T



cd.. → LS (Balaji)



How to mount
[EFS] copy comments _____ :/Balaji

copy comments _____ :/Balaji



Df -Th



Cd Balaji/



Touch



Touch one → LS



Touch two → LS

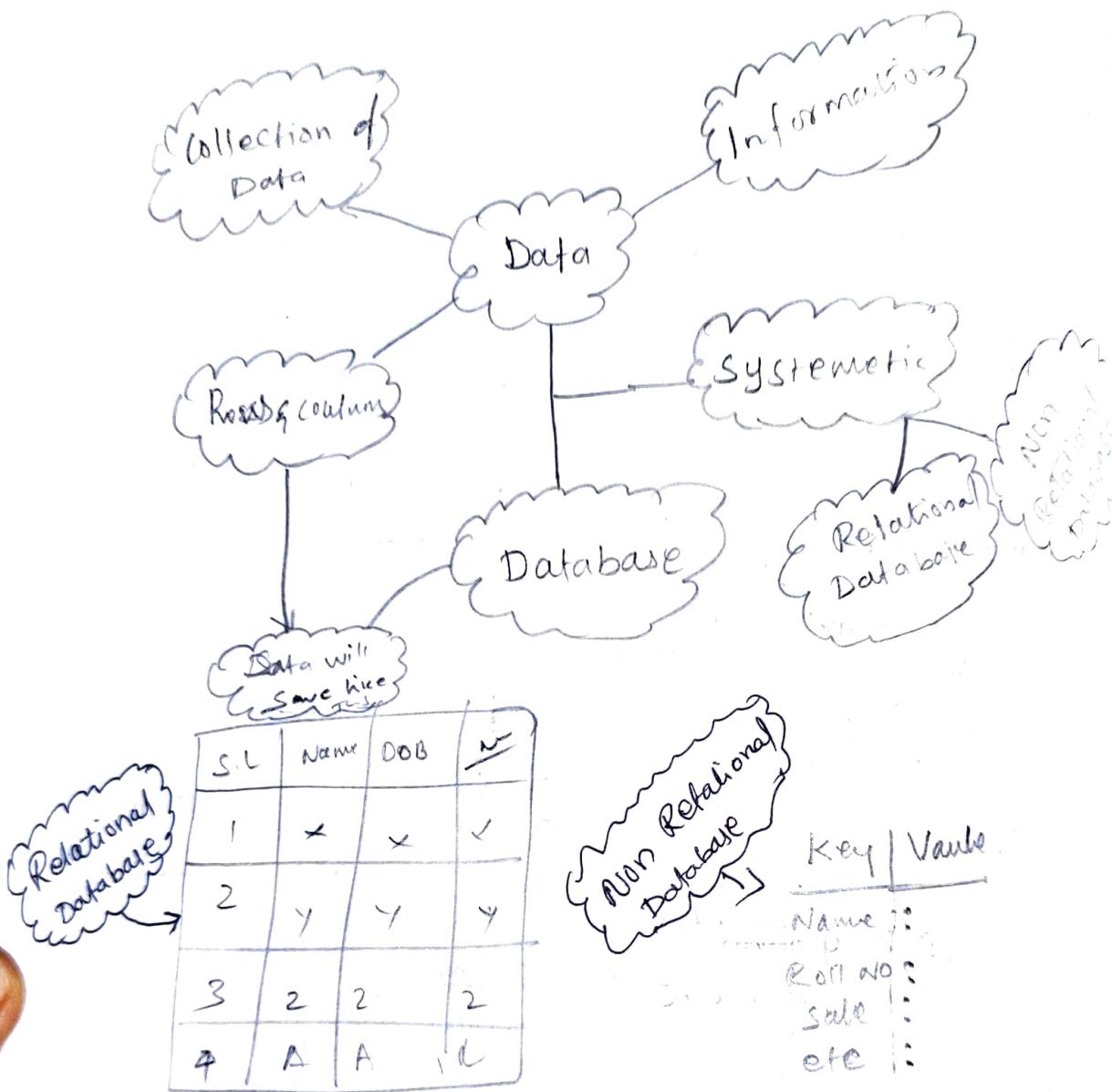


Cat one (website)

AWS Live - Day 20 [RDS Database]

Day - 25

Relational Database Service.



Relational Database :-
* one table of format in rows and column devide the data and we are saving.

⇒ RDS = Relational Database Service.

Non Relational Database :-

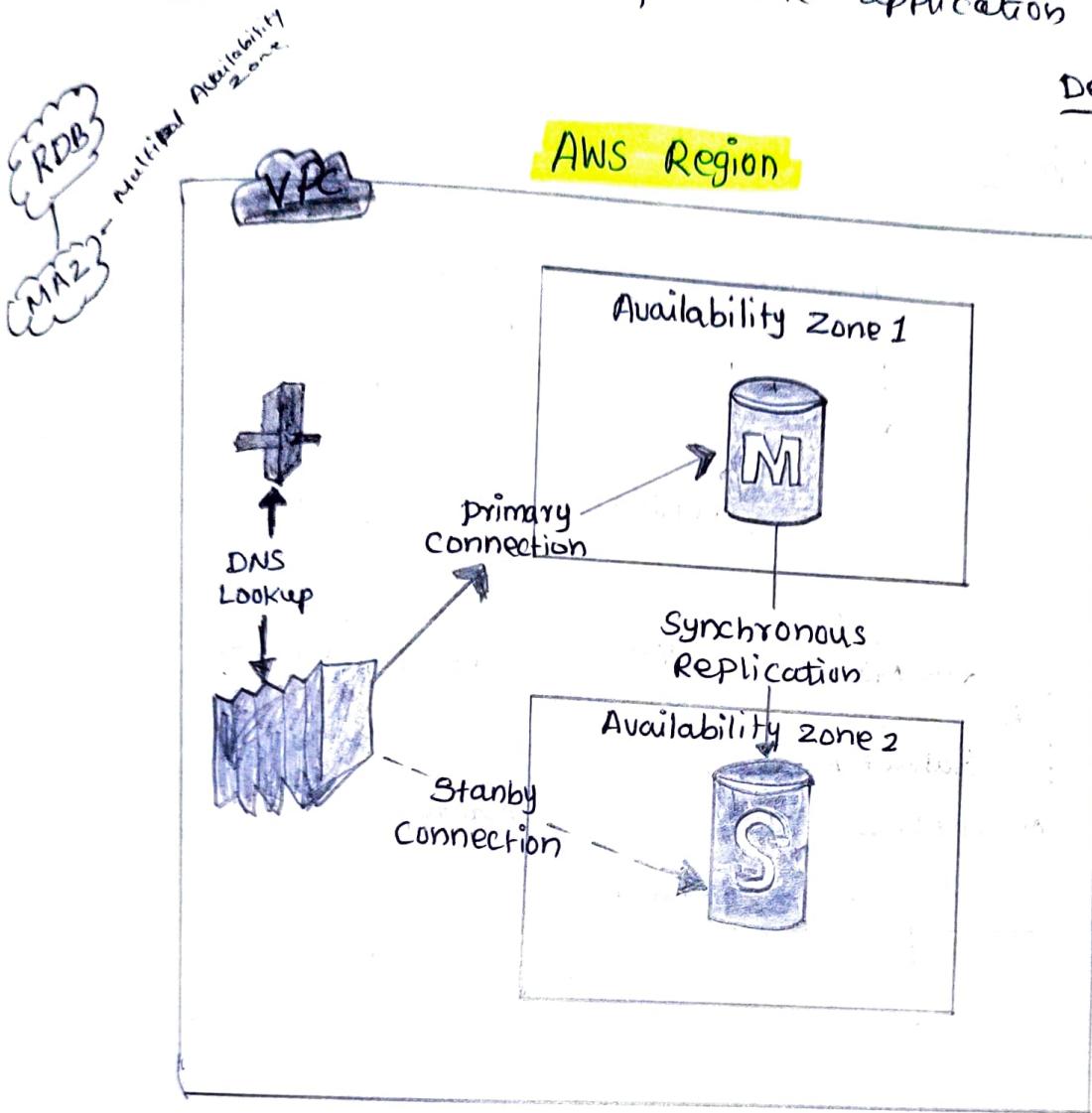
* Amazon DynamoDB is a fully managed, serverless, key-value NoSQL database designed to run high-performance applications at any scale.

* It don't save in rows and column. It will create one table Inside the table It will save in Keys & Values.

Example: where we are using Database.

Ex: Insta, FB, mail & all the application

Demo - 1



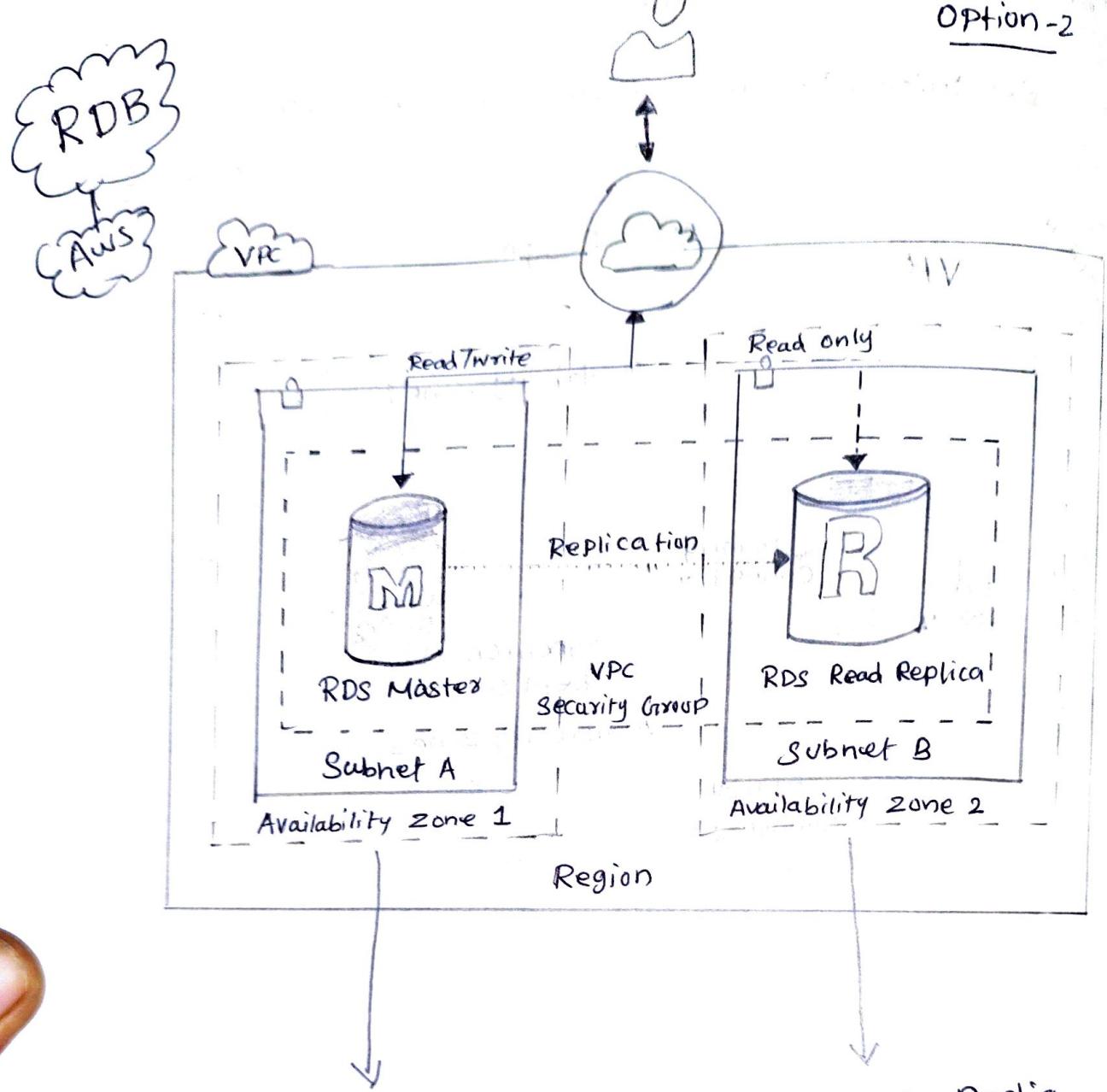
* IF you Enable Multi A2 :-

⇒ Whatever we are working in primary connection, it automatically save in Stanby connection.

⇒ Ex: If anything happen in one availability zone, we can take data from another availability zone that is called **Multi A2**.

⇒ Primary Server will go down Stanby will convert automatically to Primary.

OPTION-2



- * In RDS master they have Read / write access only
- * If server is down here they will Read / write here.
- * Aws console
- * Using RDB. = Relational Database service,
- * RDS Read Replica they have only Read access.
- * They will Read atleast.
- * If server is down here * Aws console.

Demo RDS Management :- How to Create Database

* Create VPC * Create EC2 Instance [Ubuntu Public subnet]

Go to RDS Management

8
Devices



Create database ✓



② Standard Create ✓



Engine Options [② MySQL] ✓



Engine Version [MySQL 8.0.32] your choice.



Templates [Based on your requirement]



As of now I'm selecting [② Free tier]



DB Instance identifier [database-1 - Balaji] ✓



Credentials settings



Master Username [admin] ✓

Copy in
Note Pad



Master Password [] ✓



Confirm master password [] ✓

How Environment will work.

Continue . . .

DB Instance class

✓ **Burstable classes** (includes t classes)

↓
db.t3.micro ✓ default.

↓
Storage.

↓
allocated storage [20 GB] ✓

↓
Storage autoscaling

✓ **Enable storage autoscaling**

Maximum storage threshold [1000 GB]

{ as of now
am not
Enable, I don't
want.

↓
Connectivity

↓
✓ **Don't connect to an EC2 compute resource.**

↓
Virtual Private Cloud (VPC) [select your VPC]

↓
DB Subnet group [default - VPC]

↓
public access [or NO]

↓
VPC security group (Firewall)

✓ choose existing

↓
VPC security group [default]

↓
availability zone ①

↓
□ NO Backup

- **Create database.**

Connectivity & security

Endpoint export
COPY IN NOTepad

Install [MySQL Workbench 8.0 CE] ✓

Go to Enable security group (port)

↓
RDS

↓
VPC security groups

It will go to EC2 security group

↓
MySQL / Aurora

[give] → EC2 [Security groups] ID ✓

How to Delete:-

* Delete EC2 Instance

RDS * Delete Database.

↓
Select Database

↓
Actions (Delete)

Remove (Create Final Snapshot)

I Acknowledge

↓

Delete.

If I want to use
Database

Open MoboXterm

Remote host Public IP

Specify Username Ubuntu

User private key [] OK

↓

Sudo su → cd → clear

↓

apt-get install mysql

↓

MySQL>

mysql -h [Copy Endpoint] -u [username] -P

apt install mysql-client-core-8.0

↓

mysql -h [Copy Endpoint] -u [username] -P

↓

Enter [MySQL]>

↓

Show databases;

↓

Create database Balaji;

↓

Show databases;

↓

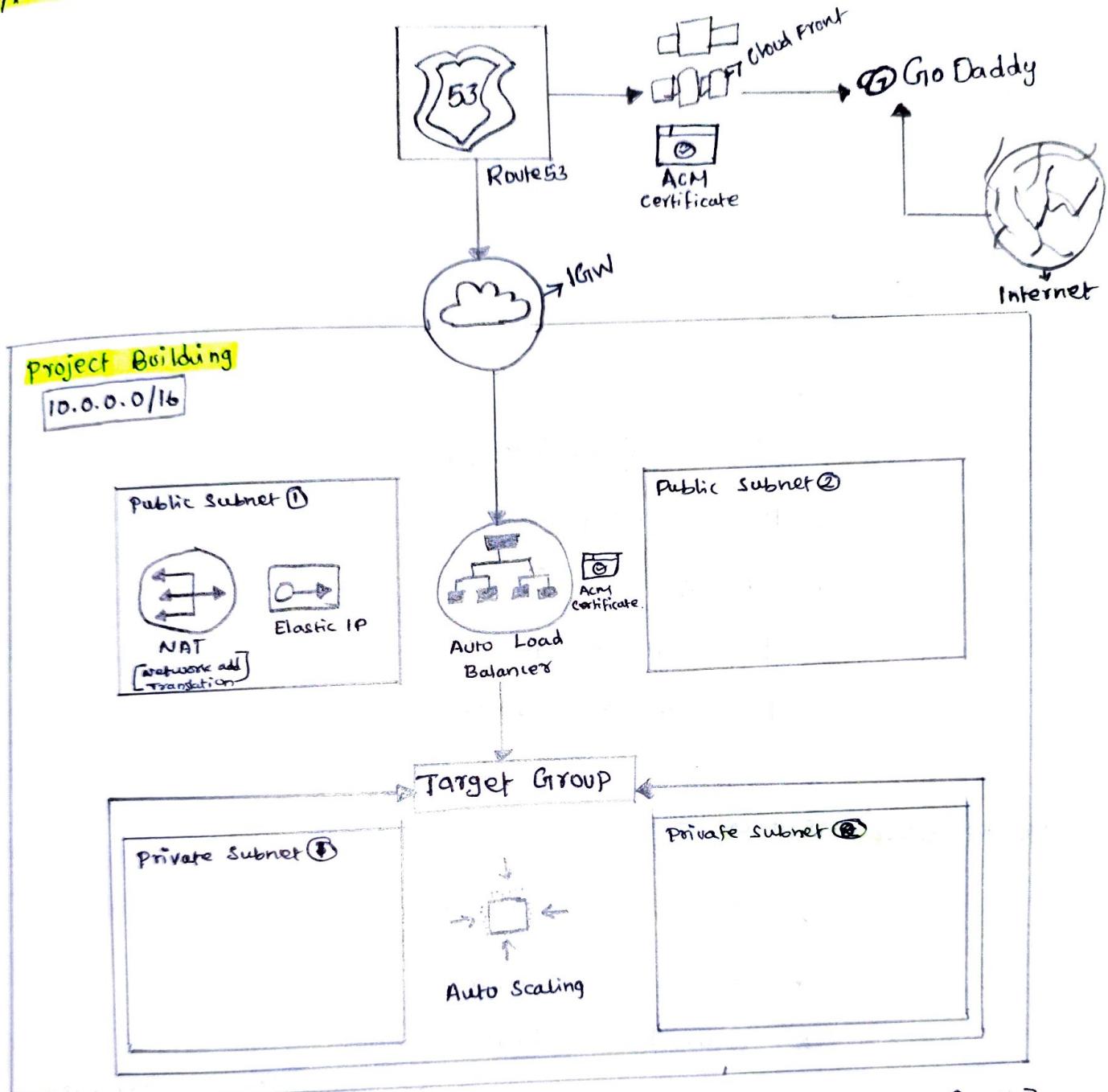
use Balaji [Database changed]

↓

MySQL>

↓

exit => BYE.



- * Route 53 [Hosted zone]
- * Godaddy [Attach]
- * VPC
- * EC2 (Public)
- * AMI (Autoscaling Backup)
- * security group → ① Load Balancer ② launch configuration
- * Target Group (create Empty)
- * load Balancer (public)
- * Auto Scaling [Launch configuration]
- * cloud Front
- * ACM certificate.
- * Route 53 [(Alias)] [create A record]

Create Route 53 (Hosted zone)

- * Create Hosted zone (with Your Domain name) (Public)
- * Give your name servers to GoDaddy

Create VPC :-

- * VPC
- * Subnet (Public ② , Private ②)
- * Internet gateway
- * NAT gateway (Public)
- * Route Table (Public)
- * Route Table (Private)

Create EC2 Instance :-

- * EC2 Instance (public)
- * Connect EC2 Instance ✓
- * Yum Install httpd -y
- * Create website [Hi this is my website]
- * In security Group you can enable [HTTP]

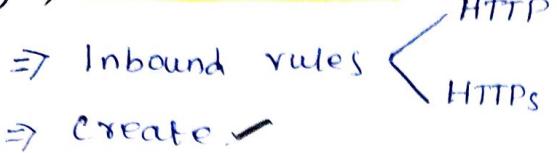
Create AMI Backup:-

- * Select your EC2 Instance
- * Action → Create Image. reboot.
- * Stop EC2 Instance

Continue...

Create Security Group:-

1) ⇒ Load Balancer.



⇒ Create ✓

2) ⇒ Launch Configuration



⇒ Create ✓

Create Target group:-

⇒ Create [one] Empty Target group.

Create Load Balancer:-

⇒ Application Load Balancer [Create]

Basic configuration:-

* Name _____ * internet facing * Subnets (Public)

* Security group (Load Balancer) * Default action [Target group] ✓

* Create load balancer.

* Create Auto Scaling :-

⇒ Create Auto Scaling group. [Launch configuration]

* Switch to launch template [Create a launch configuration]

* Name [] * select (AMI) * Instance type [t2.micro]

[Create one SSM role] ⇒ select IAM role [] ✓
or select an existing security group. (select ✓ Launch configuration sg)

* Key pair ✓

I acknowledge

* Create launch configuration

Continue... →

Create Auto Scaling (Final)

Step-1

- * Name [] *
- * Switch to Launch configuration [select what you created]
- * Next.

Step-2

- * VPC [select your VPC]
- * Subnet [select Private Subnet] Select Both Pvt①, Pvt② ✓
- * Next.

Step-3

- ② Attach to an existing load balancer.
- ③ choose from your load balancer target group.
- * select [your Target group] ✓
- * Next.

Step-4

- * Group size - Optional.

Desired capacity	Minimum capacity	Maximum capacity
2	2	3

- ④ Target tracking Scaling Policy.

⇒ Average CPU utilization

⇒ Target Value.

- * Next.

1 Step-5 ⇒ Add notifications (optional)

2 Step-6 ⇒ Add Tags (optional)

- * Create Auto Scaling group.

Continue...

Create Cloud Front:-

- * Create Distribution
- * Select (Load Balancer) ✓
- ② HTTPS Only [443]

- * Viewer ⇒ ② Redirect HTTP to HTTPS
- ⇒ Cache Policy [Disabled ✓], [All Viewers]
- ⇒ Default root object [Index.html]

>Create (ACM) certificate In [N.Virginia] name: your Domain name ✓

Pending validation

- * Select Certificate ID ✓
- * Create one record [CNAME] Record.
- * Create record. [Issued]

[SSL] ⇒ Select (ACM certificate)

⇒ (CNAME) → Balajikinghalco. xyz

② Enable security protections

⇒ Create distribution.

Select (ACM certificate) In Sydney name: domain name Request Certificate

⇒ Go to Load Balancer:-

② listeners → Actions → Edit listeners

[HTTPS] → [443]

② select ACM certificate. Set [Sydney] → Save changes.

⇒ Route 53 (Create records), (A) Name,

② Alias

Select (choose endpoint) ② Alias to CloudFront distribution.

* select distribution ID. (Create records)

⇒ Now search your Domain Name:-

② Your website will come. ✓

Reached Destination.

How to Delete :-

- ⇒ Route 53 {
 (A Name)
 (C Name) } Delete.
- ⇒ Route 53 (Hosted zone) - Delete
- ⇒ Auto Scaling [Actions → Delete]
- ⇒ Auto Scaling [Launch configuration] Action → Delete
- ⇒ Load Balancer [Actions → Delete]
- ⇒ Target group [Actions → Delete]
- ⇒ AMI (Backup) → Deregister AMI
- ⇒ EBS [Snapshot → Actions → Delete]
- ⇒ EC2 Instance → Terminate.
- ⇒ ACM Certificate → Delete [sydney]
- VPC ⇒ NAT gateway → Delete.
- ⇒ Route Tables → Remove [IGW & NAT]
- ⇒ Internet gateway → Delete.
- ⇒ VPC → Delete [Pending at]
- ⇒ Elastic IPs → Release.
- ⇒ IAM Role → Delete.
- ⇒ CloudFront [Disable] → Delete
- ⇒ ACM Certificate → Delete [N. Virginia]