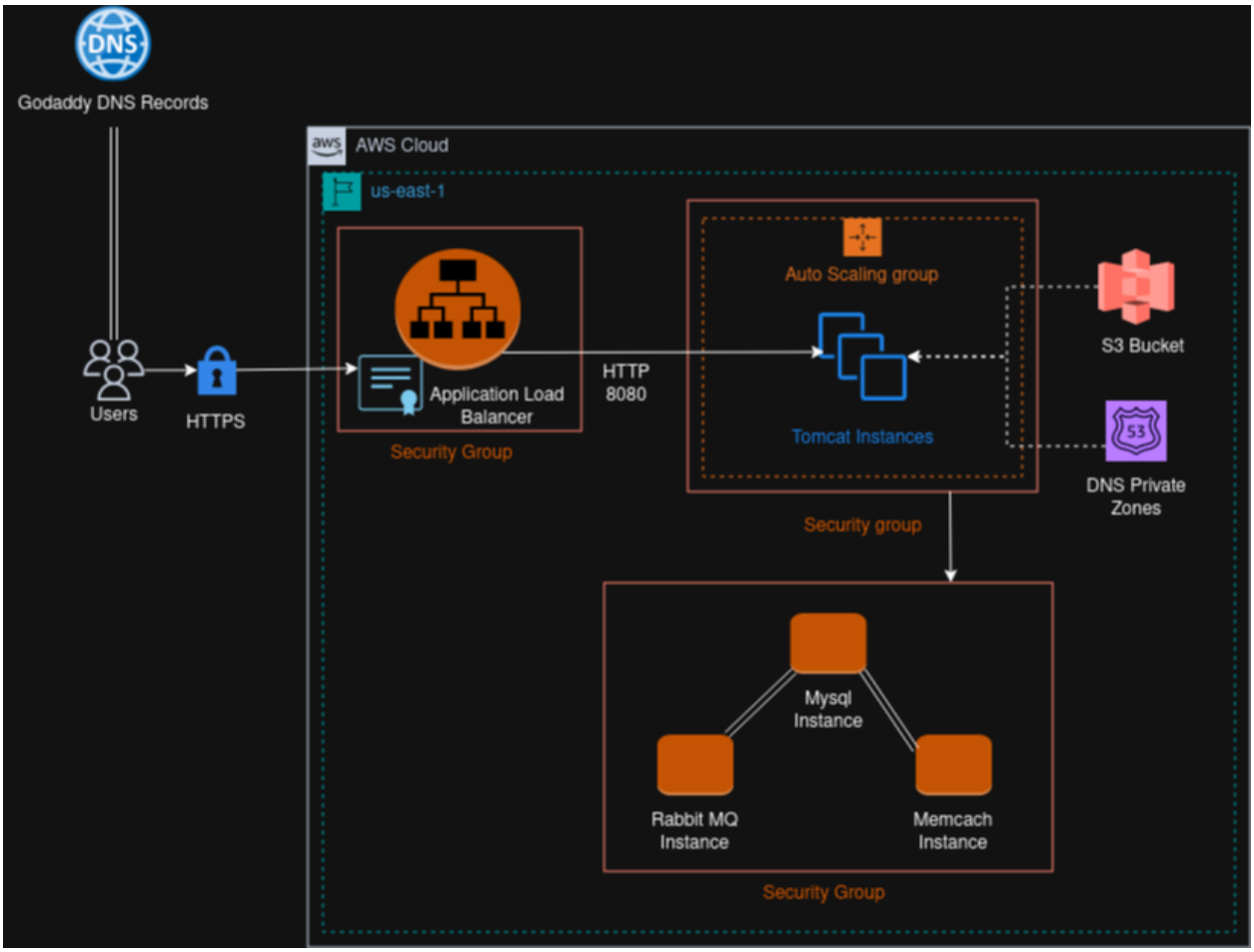
Lift & Shift from local to cloud

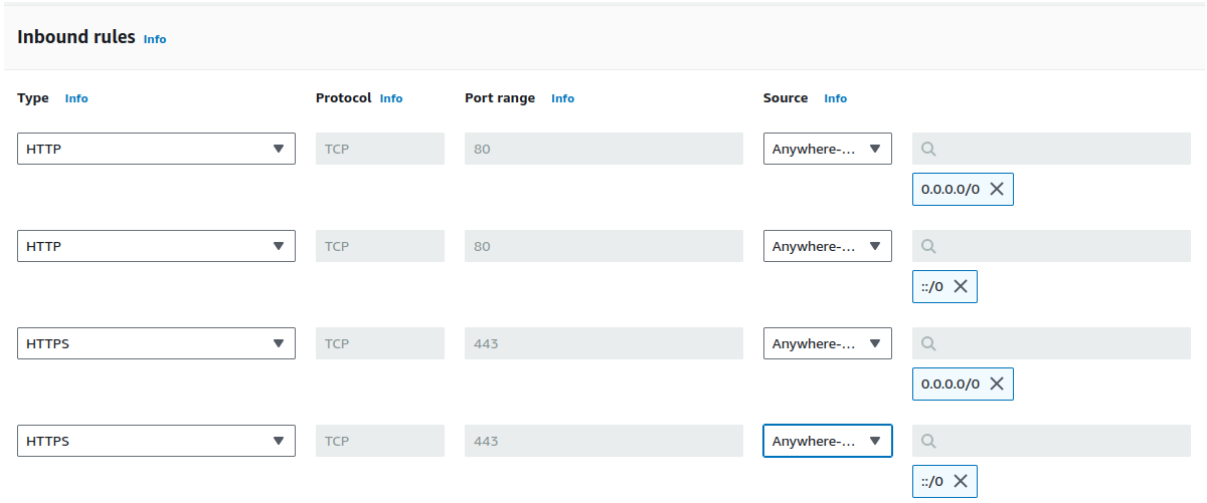
project overview



1) create security groups

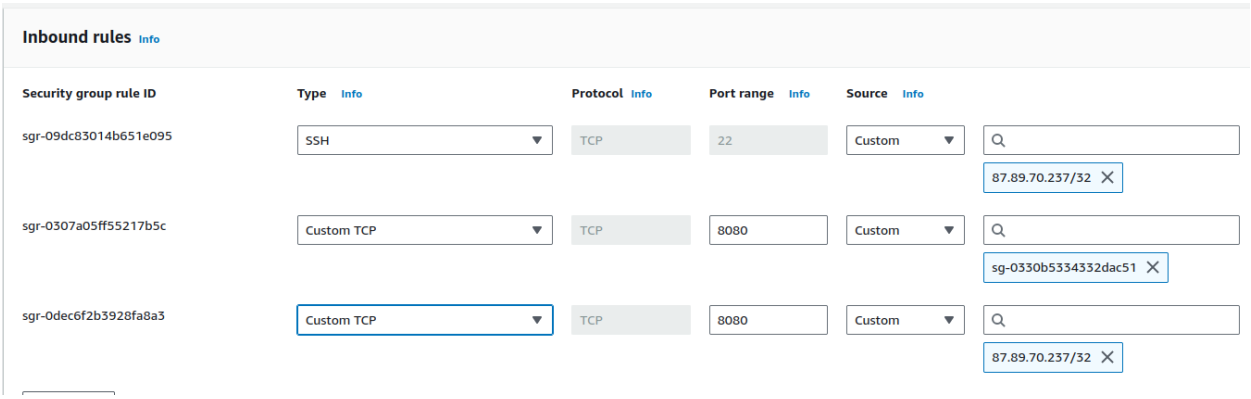
Load Balancer SG:

allow all http/https traffic from anywhere



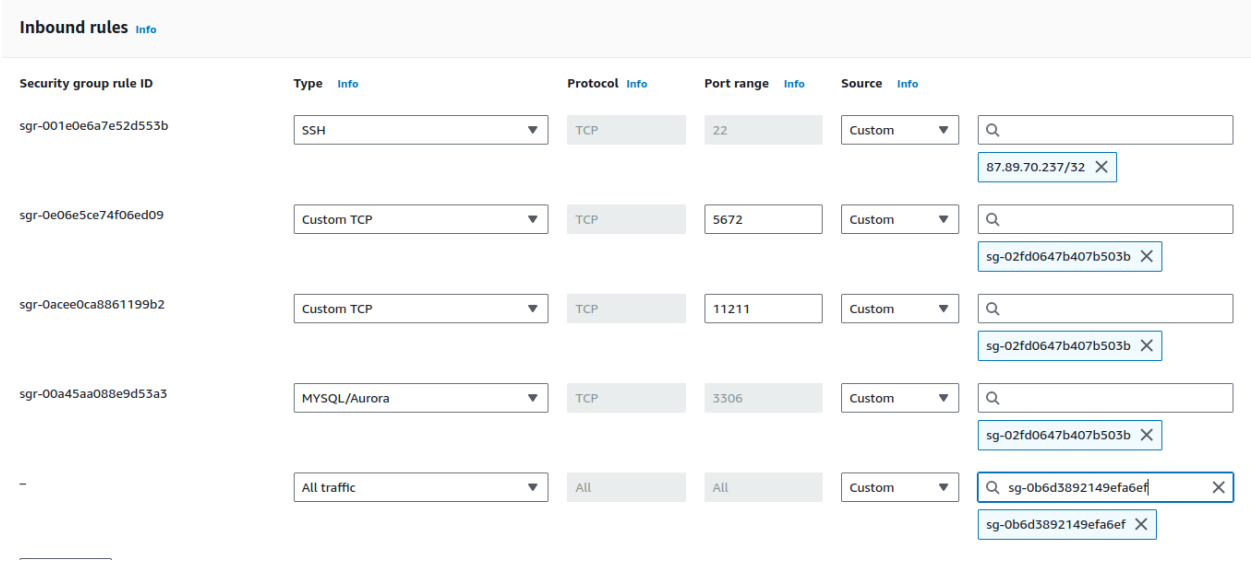
Toomcat SG:

- allow traffic from elb sg on 8080
- allow ssh from myip
- allow 8080 access from my ip (for troubleshoting, to access the web app without the ELB)

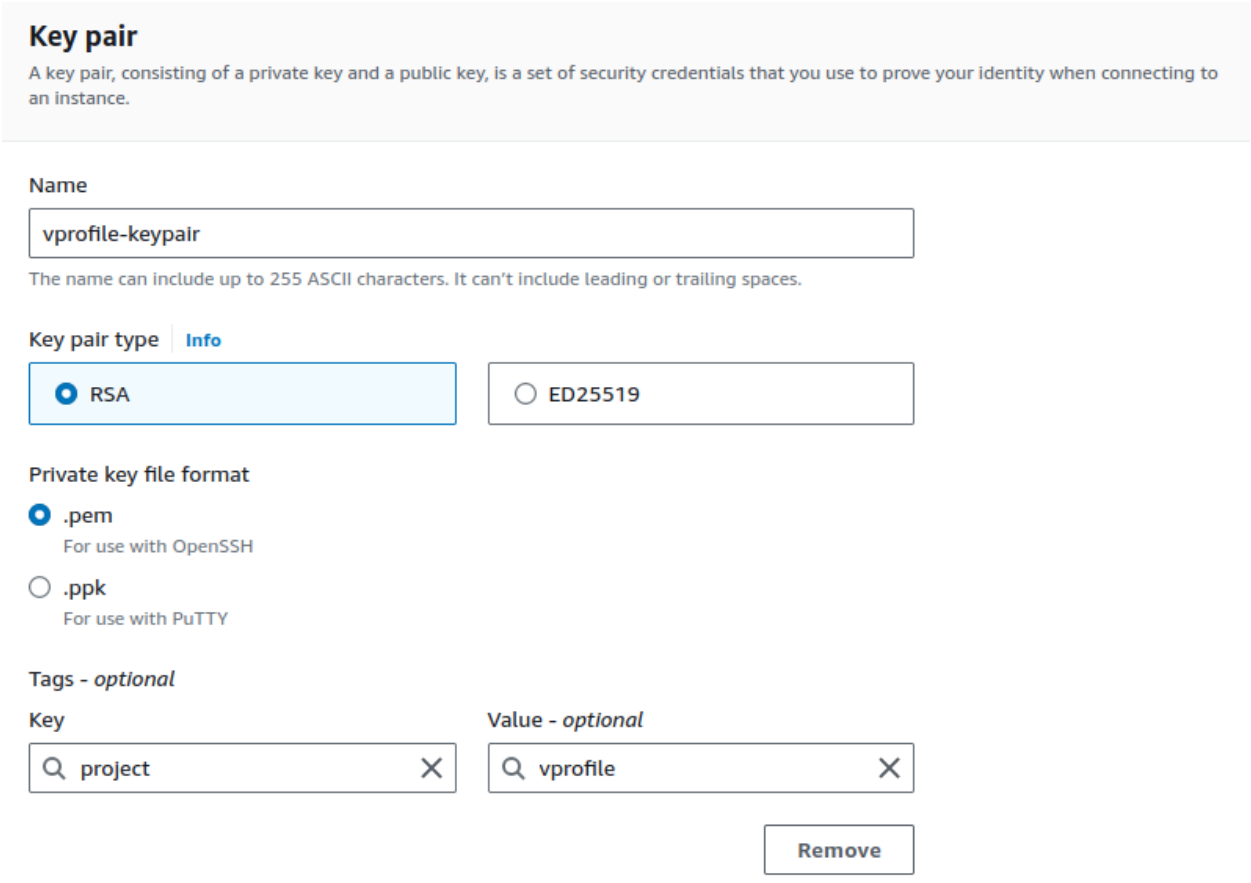


Backend services SG (allow only tomcat SG):

- allow mysql 3306
- allow Memcach 11211
- allow rabitMQ 5672
- allow all traffic to its own SG (services can communicate with eachother)
- allow ssh from my ip



2) create the ssh Key (one for all instances)



3) start instances

create vprofile-db01 instance:

os: almalinux 9

set the key and the sg

copy the myslq script in the provisionning section

create vprofile-mc01

copy the memcach script

create vprofile-rmq01

copy the rapidmq script

create vprofile-app01 (tomcat)

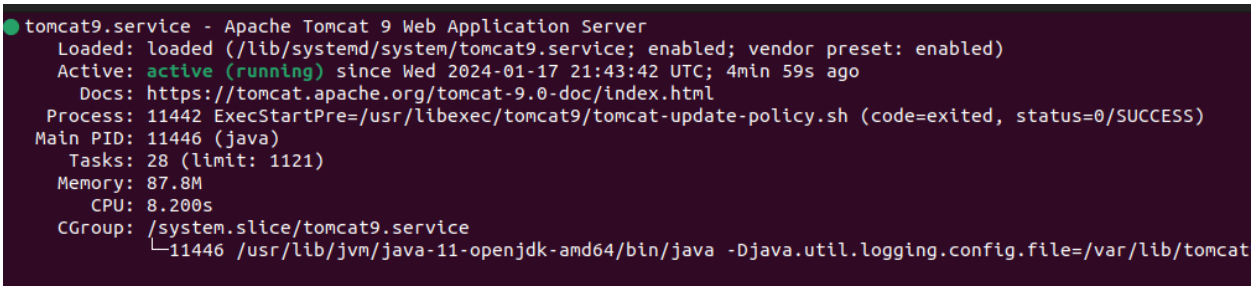
os: ubuntu

set the key and sg

copy the toomcat script

search how to retreive user data

login to tomcat and check if it is running



login to account database

mysql -u admin -padmin123 accounts

show tables

```
MariaDB [accounts]> show tables;
+--------------------+
| Tables_in_accounts |
+--------------------+
| role               |
| user               |
| user_role          |
+--------------------+
3 rows in set (0.000 sec)

MariaDB [accounts]>
```

login to memcash instance

ss -tunlp | grep 11211

```
[ec2-user@ip-172-31-30-60 ~]$ ss -tunlp | grep 11211
tcp   LISTEN 0      1024         0.0.0.0:11211      0.0.0.0:*
tcp   LISTEN 0      1024           [::1]:11211         [::]:*
[ec2-user@ip-172-31-30-60 ~]$
```

login to rabitmq

check the service status

```
[ec2-user@ip-172-31-26-209 ~]$ systemctl status rabbitmq-server
● rabbitmq-server.service - RabbitMQ broker
     Loaded: loaded (/usr/lib/systemd/system/rabbitmq-server.service; enabled; preset: disabled)
     Active: active (running) since Wed 2024-01-17 21:36:14 UTC; 21min ago
   Main PID: 21100 (beam.smp)
      Tasks: 21 (limit: 5736)
     Memory: 85.8M
        CPU: 11.003s
     CGroup: /system.slice/rabbitmq-server.service
```

Instances (4) Info

Connect

Find Instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
vprofile-app	i-0605316f3f7df14ed	Running	t2.micro	2/2 checks passed	View alarms	us-east-1c
vprofile-db	i-0543d0b14c4410363	Running	t2.micro	2/2 checks passed	View alarms	us-east-1c
vprofile-mc	i-090a9e6ec76fe2646	Running	t2.micro	2/2 checks passed	View alarms	us-east-1c
vprofile-rmq	i-0c3e6a17c1d0f4d16	Running	t2.micro	2/2 checks passed	View alarms	us-east-1c

4) set up DNS Records with Route 53

1- create a hosted zone:

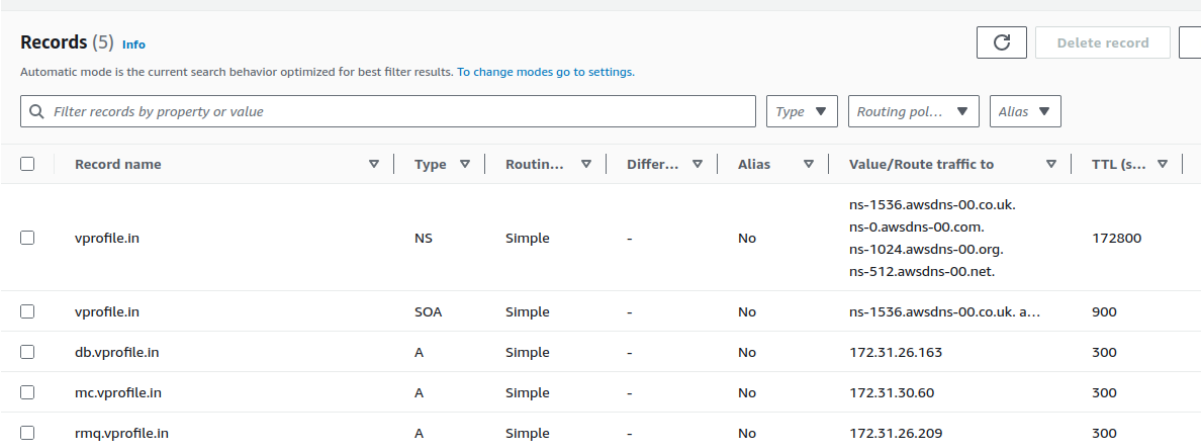
name: vprofile.in

make it private (only accessed from the its subnet / VPC) (records can be resolved only inside

the VPC)

2- create records inside the zone, chose simple routing

for each instance create a record with the name of the instance name.vprofile.in that resolves to its private ip



Record name	Type	Routin...	Differ...	Alias	Value/Route traffic to	TTL (s...
vprofile.in	NS	Simple	-	No	ns-1536.awsdns-00.co.uk. ns-0.awsdns-00.com. ns-1024.awsdns-00.org. ns-512.awsdns-00.net.	172800
vprofile.in	SOA	Simple	-	No	ns-1536.awsdns-00.co.uk. a...	900
db.vprofile.in	A	Simple	-	No	172.31.26.163	300
mc.vprofile.in	A	Simple	-	No	172.31.30.60	300
rmq.vprofile.in	A	Simple	-	No	172.31.26.209	300

5) create the artifact

build the artifact:

go to src/main/ressources/application.properties, and replace the host names with name.vprofile.in

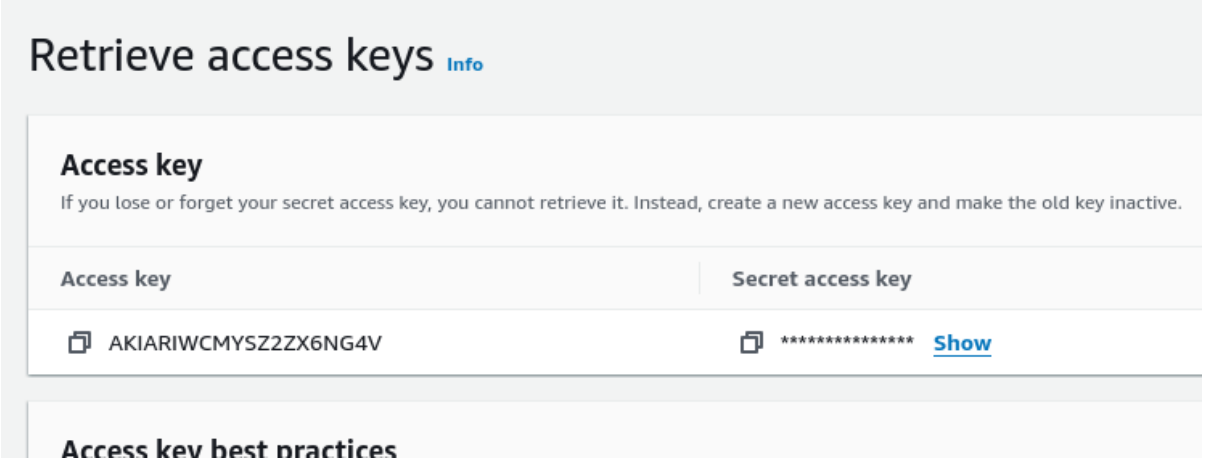
run “mvn install” to build the artifact

create S3 IAM User:

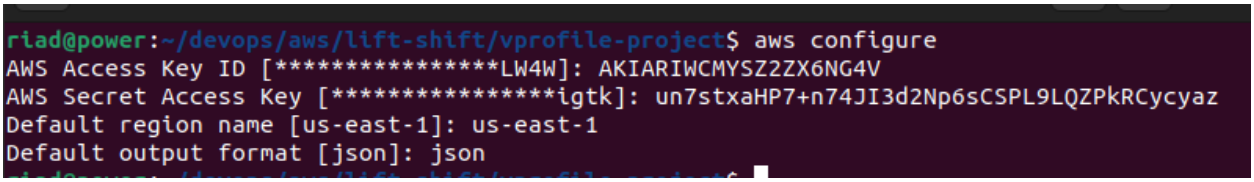
username: s3admin

give it the policy: amazones3fullaccess

create an access key for the CLI



go to terminal and configure the cli with the downalded creds “aws configure” past the key id, and the secret, region: us-east-1, format: json

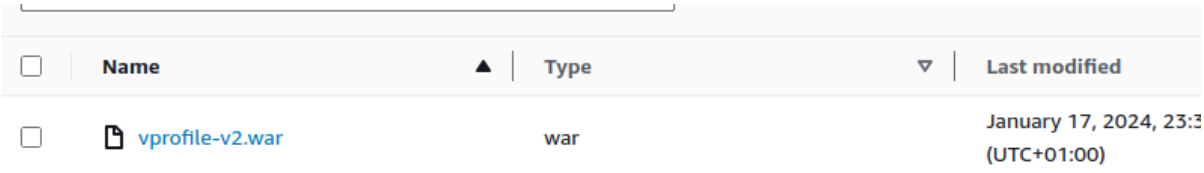


create s3 bucket from aws:

aws s3 mb s3://bucket_name

copy the artifact to the aws bucket

aws s3 cp target/vprofile-v2.war s3://bucket_name



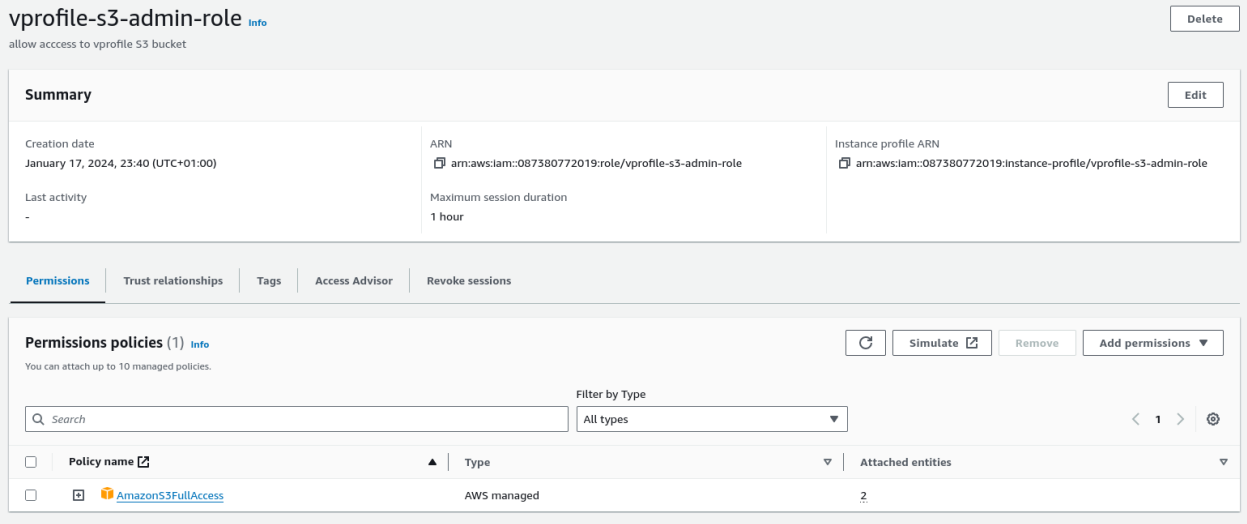
6) get the artifact to the tomcat instance:

create a role to connect to the s3 bucket from the ec2 instance without configuring the aws cli

aws service, ec2

policy: amzones3fullaccess

name: vprofile-s3



go the instance actions, security, modify role and set the role

connect to the instance:

apt install awscli -y

aws s3 ls

aws s3 cp s3://bucketname/vprofile-v2.war /tmp/

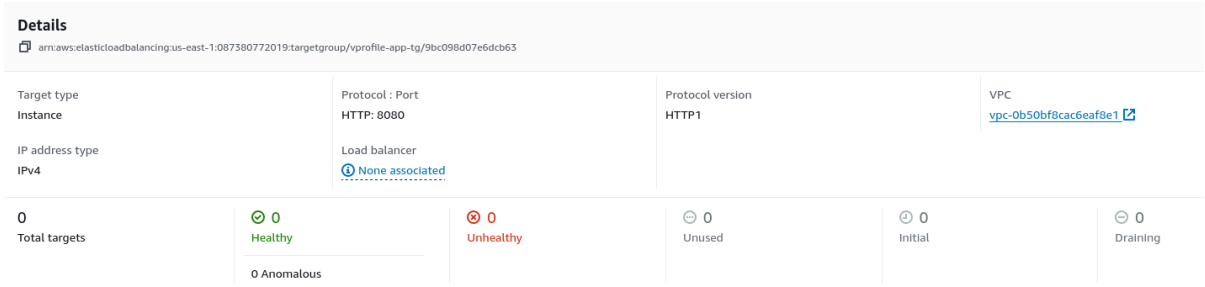
replace the artifact:

```
systemctl stop tomcat9
rm -rf /var/lib/tomcat9/webapps/ROOT
cp /tmp/vprofile-v2.war /var/lib/tomcat9/webapps/ROOT.war
systemctl start tomcat9
ls /var/lib/tomcat9/webapps
# should see ROOT and ROOT.war
cat /var/lib/tomcat9/webapps/ROOT/WEB-INF/classes/application.pr
# check if th
```

7) TG & ELB & DNS

crerate a target group for tomcat instance.

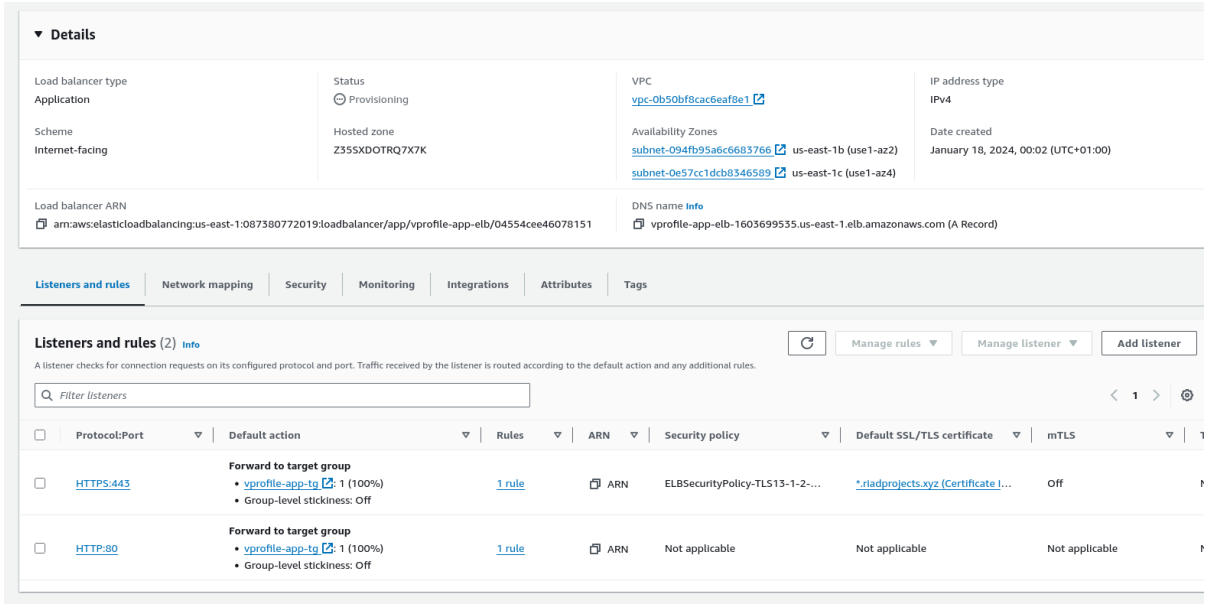
port 8080, health check override with 8080



create the application load balancer

set http and https to the target group

select the certificat (ACM) in the security settings



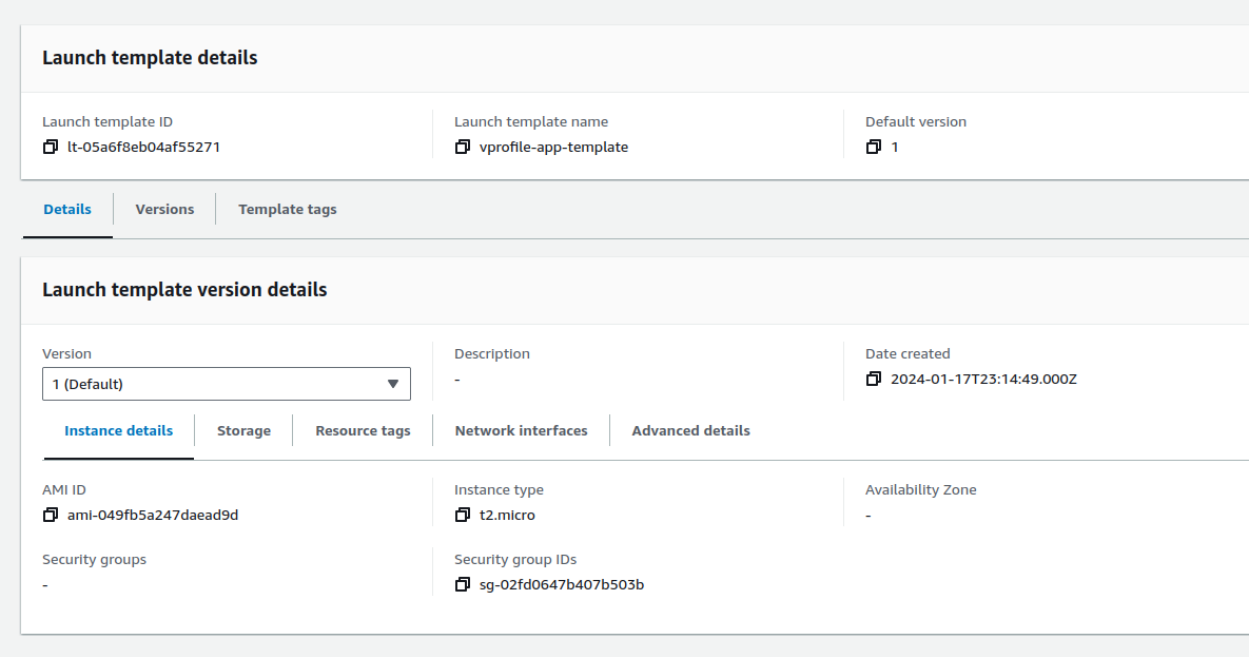
create a CNAME DNS record in godaday domain: paste the ELB DNS name as a cname record (vproapp → dns name)

☐	CNAME	vproapp	vprofile-app-elb-1603699535.us-east-1.elb.amazonaws.com.	1 heure

8) autoscalling group for the APP:

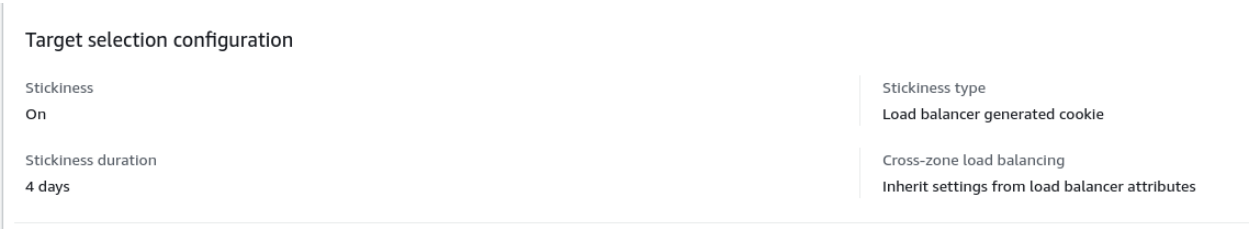
create an AMI for the EC2 app machine.

create a template using the AMI (don’t forget to give the s3 role to the template)



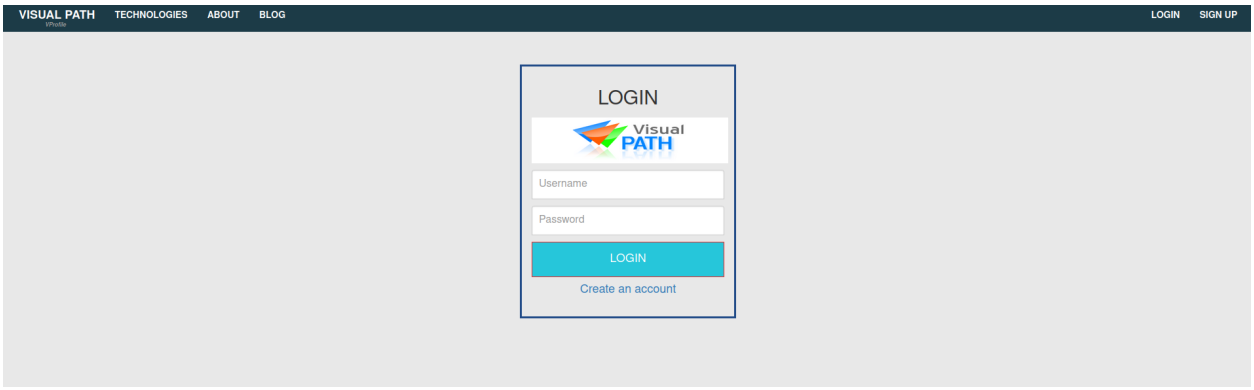
create the auto scalling group

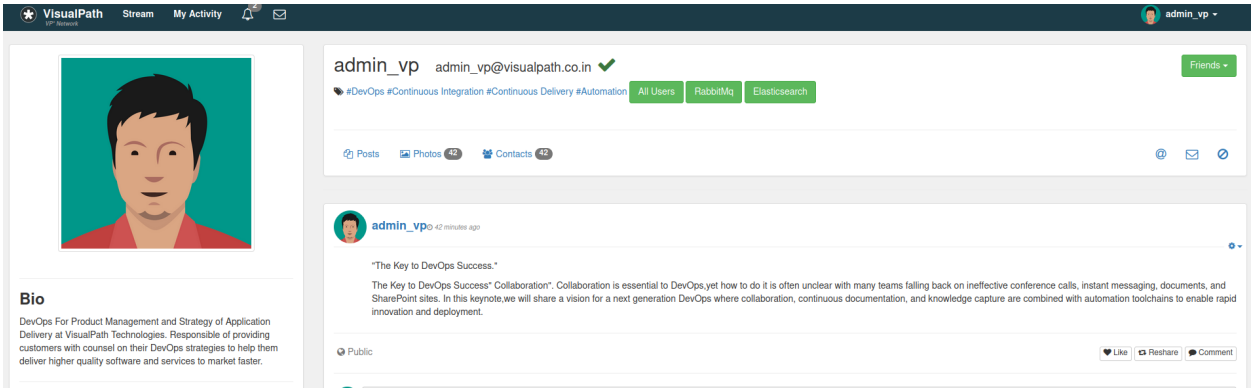
configure the stickiness on the target group (requests from a user sticks two one instance)



know the moment of truth: let try navigating to https://vproapp.riadprojects.xyz

and voila: the website is live


VISUAL PATH
TECHNOLOGIES
ABOUT
BLOG
LOGIN
SIGN UP
LOGIN
Visual PATH
Username
Password
LOGIN
Create an account


VisualPath
Stream
My Activity
admin_vp
admin_vp
admin_vp@visualpath.co.in
Friends
#DevOps #Continuous Integration #Continuous Delivery #Automation
All Users
RabbitMq
Elasticsearch
Posts
Photos 42
Contacts 42
admin_vp
"The Key to DevOps Success."
The Key to DevOps Success" Collaboration". Collaboration is essential to DevOps,yet how to do it is often unclear with many teams falling back on ineffective conference calls, instant messaging, documents, and SharePoint sites. In this keynote,we will share a vision for a next generation DevOps where collaboration, continuous documentation, and knowledge capture are combined with automation toolchains to enable rapid innovation and deployment.
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Bio
DevOps For Product Management and Strategy of Application Delivery at VisualPath Technologies. Responsible of providing customers with counsel on their DevOps strategies to help them deliver higher quality software and services to market faster.