**Lift & shift from local machine to AWS**

**AWS Services**:

EC2 Instances: TOMCAT, RABBITMQ, MEMCACHE, MYSQL.

ELB [Load Balancer]: Replacement for NGINX service.

Auto Scaling: Automation for VM scaling.

S3/EFS Storage: Shared Storage.

ROUTE 53: Private DNS Service.

ACM: Amazon certificat manager

**Objective:**

Flexible Infra.

Pay as we go.

IAAC.

Modernize application.

**Architecture:**

Users access url ---> GODaddy Dns🡪 Load balancer-🡪ACM for https certificate-🡪tomcat service--🡪

Access to the backend services db01, mc01, rmq01(Private DN IPS: ROUTE 53): these services will have their own security groups

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1. We set security group for the load balancer and allow it from anywhere
2. Tomcat security group and add rules to inbound security group of load balancer on port 8080.
3. Security group of backend services (memcache, rabbitmq, mysql) choose the port written in application.properties. connect it to the tomcat security group.
4. Allow all traffic of the internal communication between backend services (security group of backend services)
5. Add rules for backend and app to be able to ssh through.
6. Add rule to access server from your ip instead of load balancer for trouble shooting purposes.

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1. Launch all instances with the bash scripts in the advanced tab.
2. Ssh to all the instances and check if all the services are running.
3. We use amazon Route53 for DNS service (vprovile.in)
4. Update application.properties to map the right host (db01.vprofile.in) and same for rmq01 and mc01.
5. mvn install to build the project artifacts
6. Create IAM user and grant s3allaccess for s3 bucket, create access key for that user.
7. Aws configure (provide access and secret keys)
8. aws s3 mb s3://safat-vprofile-arts (unique)
9. aws s3 cp target/vprofile-v2.war s3://safat-vprofile-arts/ (to copy target into s3)
10. we need to download the artifacts to app01 (add roles in the iam and attached it to the instance)
11. install awscli in the instance
12. aws s3 cp s3://safat-vprofile-arts/vprofile-v2.war /tmp
13. systemctl stop tomcat9
14. rm -rf /var/lib/tomcat9/webapps/ROOT/
15. cp /tmp/vprofile-v2.war /var/lib/tomcat9/webapps/ROOT.war
16. systemctl start tomcat9
17. ROOT.war will get extracted

**Load balancer set up**

Create target group for tomcat port 8080 and attached it to the instance app01.

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Certificate

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Copy dns of the load balancer and paste it into dns record in godaddy

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