

Project Documentation: AWS Cloud Infrastructure [v-Profile Project/Lift And Shift]

Date: December 22, 2025

Engineer: Abdullah Mudassar

Focus: DevOps / Cloud Administration

1. Project Introduction: vProfile Lift & Shift

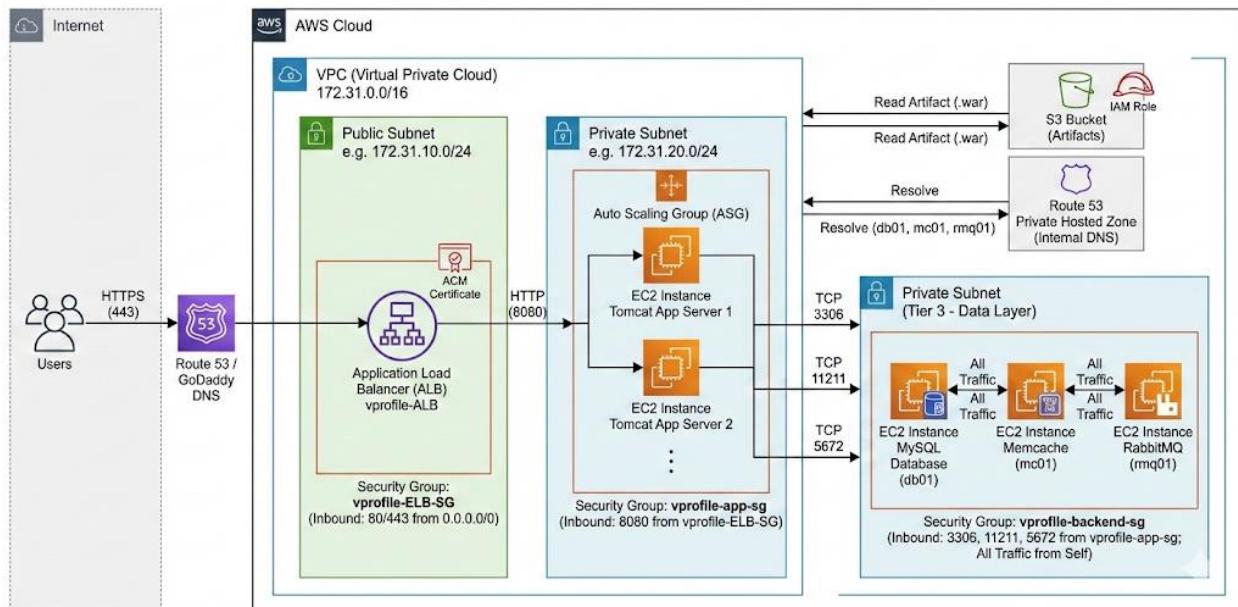
The **vProfile** project is a production-level migration of a multi-tier Java web application stack.

The goal is to move a complex environment consisting of a web server, application server, database, and messaging broker from a local environment to **AWS infrastructure**.

Instead of rewriting the application, we use a **Lift and Shift (Rehosting)** strategy. This approach allows a company to move to the cloud quickly to gain immediate benefits like **High Availability**, **Pay-as-you-go pricing**, and **Auto Scaling**, without the time-consuming process of changing the application code.

2. Technical Architecture Diagram

AWS vProfile Lift & Shift Architecture



3. Architecture Explanation (The Flow)

The architecture is divided into three distinct layers to ensure security and performance:

Tier 1: The User & Public Access (Web Tier)

- **DNS (GoDaddy/Route 53):** The user enters your website URL. DNS translates this URL into the address of your **Application Load Balancer (ALB)**.
- **Load Balancer (ALB):** This is the entry point. It receives traffic on **Port 443 (HTTPS)**. It uses an SSL certificate from **AWS Certificate Manager (ACM)** to ensure the connection is encrypted and secure.

Tier 2: The Application Logic (App Tier)

- **Tomcat Servers:** Your Java code runs here on **EC2 instances**.
- **Auto Scaling Group (ASG):** These servers aren't static. If 1,000 users visit at once, the ASG automatically adds more Tomcat servers. If the traffic drops, it removes them to save money.
- **Port 8080:** The Load Balancer talks to Tomcat specifically on this port.

Tier 3: The Data & Support Services (Backend Tier)

- **MySQL (DB):** The relational database where all user data is stored (**Port 3306**).
- **Memcached:** A caching service that stores frequent data in memory so the app doesn't have to keep asking the database, making the site faster (**Port 11211**).
- **RabbitMQ:** A message broker that helps different parts of the application talk to each other without getting overwhelmed (**Port 5672**).
- **Route 53 (Private Zone):** An internal "phonebook" that lets the Tomcat servers find the Backend servers using names (like db01.vprofile.local) instead of IP addresses.

The Security Shield (Security Groups)

- Each tier has its own **Security Group (Firewall)**.
- The **Backend Tier** is completely hidden from the internet. It will **only** accept requests if they come directly from the **App Tier**. This is the core of cloud security.

1. CREATING SECURITY GROUPS:

sg-08593f92205e75822 - VprofileBackendSecurityGroup

| Security group name VprofileBackendSecurityGroup | Security group ID sg-08593f92205e75822 | Description SecurityGroup for mysql memcached and rabbitmq allowed from tomcat app server | VPC ID vpc-0e4b07304bf1d8739 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--|---|--------------|----------|------------|------------|--------------------------|---|-----------------------|------|--------------|-----|------|--------------------------|---|-----------------------|------|-------------|-----|-----|--------------------------|---|-----------------------|------|------------|-----|-------|--------------------------|---|-----------------------|------|------------|-----|------|--------------------------|---|-----------------------|------|-----|-----|----|--------------------------|---|-----------------------|---|-------------|-----|-----|--------------------------------------|-----------------|---------------------------------------|---|-----|--------------------------------------|------------------------------|---------------------------------------|---|-----|--------------------------------------|-----------------|---------------------------------------|-------------------------------------|-----|
| Owner 682983208880 | Inbound rules count 6 Permission entries | Outbound rules count 1 Permission entry | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Inbound rules Outbound rules Sharing VPC associations Tags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Inbound rules (6) <div style="display: flex; justify-content: space-between;"> Search Manage tags Edit inbound rules </div> <table border="1"> <thead> <tr> <th><input type="checkbox"/></th> <th>Name</th> <th>Security group rule ID</th> <th>IP version</th> <th>Type</th> <th>Protocol</th> <th>Port range</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/></td><td>-</td><td>sgr-02c39c9818d3f8049</td><td>-</td><td>MySQL/Aurora</td><td>TCP</td><td>3306</td></tr> <tr><td><input type="checkbox"/></td><td>-</td><td>sgr-0d5813239000c6848</td><td>-</td><td>All traffic</td><td>All</td><td>All</td></tr> <tr><td><input type="checkbox"/></td><td>-</td><td>sgr-05a1b941a3d78804f</td><td>-</td><td>Custom TCP</td><td>TCP</td><td>11211</td></tr> <tr><td><input type="checkbox"/></td><td>-</td><td>sgr-0b7824ebcc4c676c4</td><td>-</td><td>Custom TCP</td><td>TCP</td><td>5672</td></tr> <tr><td><input type="checkbox"/></td><td>-</td><td>sgr-0d711caa170f7204c</td><td>IPv4</td><td>SSH</td><td>TCP</td><td>22</td></tr> <tr><td><input type="checkbox"/></td><td>-</td><td>sgr-0e14d38d36006f083</td><td>-</td><td>All traffic</td><td>All</td><td>All</td></tr> </tbody> </table> <table border="1"> <tr><td>sg-057dae476566676da</td><td>vprofile-ELB-sg</td><td>vpc-0e4b07304bf1d8739</td><td>Security group for the vProfile Load Balancer</td><td>68:</td></tr> <tr><td>sg-08593f92205e75822</td><td>VprofileBackendSecurityGroup</td><td>vpc-0e4b07304bf1d8739</td><td>SecurityGroup for mysql memcached and rabbitmq allowed from tomcat app server</td><td>68:</td></tr> <tr><td>sg-0227c12dd804450f6</td><td>Vprofile-App-sg</td><td>vpc-0e4b07304bf1d8739</td><td>SecurityGroup for Tomcat App server</td><td>68:</td></tr> </table> | <input type="checkbox"/> | Name | Security group rule ID | IP version | Type | Protocol | Port range | <input type="checkbox"/> | - | sgr-02c39c9818d3f8049 | - | MySQL/Aurora | TCP | 3306 | <input type="checkbox"/> | - | sgr-0d5813239000c6848 | - | All traffic | All | All | <input type="checkbox"/> | - | sgr-05a1b941a3d78804f | - | Custom TCP | TCP | 11211 | <input type="checkbox"/> | - | sgr-0b7824ebcc4c676c4 | - | Custom TCP | TCP | 5672 | <input type="checkbox"/> | - | sgr-0d711caa170f7204c | IPv4 | SSH | TCP | 22 | <input type="checkbox"/> | - | sgr-0e14d38d36006f083 | - | All traffic | All | All | sg-057dae476566676da | vprofile-ELB-sg | vpc-0e4b07304bf1d8739 | Security group for the vProfile Load Balancer | 68: | sg-08593f92205e75822 | VprofileBackendSecurityGroup | vpc-0e4b07304bf1d8739 | SecurityGroup for mysql memcached and rabbitmq allowed from tomcat app server | 68: | sg-0227c12dd804450f6 | Vprofile-App-sg | vpc-0e4b07304bf1d8739 | SecurityGroup for Tomcat App server | 68: |
| <input type="checkbox"/> | Name | Security group rule ID | IP version | Type | Protocol | Port range | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | - | sgr-02c39c9818d3f8049 | - | MySQL/Aurora | TCP | 3306 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | - | sgr-0d5813239000c6848 | - | All traffic | All | All | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | - | sgr-05a1b941a3d78804f | - | Custom TCP | TCP | 11211 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | - | sgr-0b7824ebcc4c676c4 | - | Custom TCP | TCP | 5672 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | - | sgr-0d711caa170f7204c | IPv4 | SSH | TCP | 22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | - | sgr-0e14d38d36006f083 | - | All traffic | All | All | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| sg-057dae476566676da | vprofile-ELB-sg | vpc-0e4b07304bf1d8739 | Security group for the vProfile Load Balancer | 68: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| sg-0227c12dd804450f6 | Vprofile-App-sg | vpc-0e4b07304bf1d8739 | SecurityGroup for Tomcat App server | 68: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Security group name Vprofile-ELB-sg | Security group ID sg-057dae476566676da | Description Security group for the vProfile Load Balancer | VPC ID vpc-0e4b07304bf1d8739 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Owner 682983208880 | Inbound rules count 4 Permission entries | Outbound rules count 0 Permission entries | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <input type="checkbox"/> | Name | Security group rule ID | IP version | Type | Protocol | Port range | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | - | sgr-027581a54b0e6befc | IPv6 | HTTP | TCP | 80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | - | sgr-0238bb7bc95ebc8bc | IPv4 | HTTP | TCP | 80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | - | sgr-0067ebaa6872a2aa0 | IPv4 | HTTPS | TCP | 443 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | - | sgr-0465bb5685b41d53a | IPv6 | HTTPS | TCP | 443 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

sg-0227c12dd804450f6 - Vprofile-App-sg

sg-0227c12dd804450f6 - Vprofile-App-sg

Actions ▾

| Details | | Description | VPC ID |
|--|---|--|-----------------------------------|
| Security group name Vprofile-App-sg | Security group ID sg-0227c12dd804450f6 | Description SecurityGroup for Tomcat App server | VPC ID vpc-0e4b07304bf1d8739 ↗ |
| Owner 682983208880 | Inbound rules count 2 Permission entries | Outbound rules count 1 Permission entry | |

Inbound rules | **Outbound rules** | **Sharing** | **VPC associations** | **Tags**

Inbound rules (2)

Manage tags | **Edit inbound rules**

| Security group rule ID | IP version | Type | Protocol | Port range | Source | Description |
|------------------------|------------|------------|----------|------------|------------------------|-----------------------------|
| sgr-0517ee13c15c6cc92 | - | Custom TCP | TCP | 8080 | sg-057dae476566676d... | Allows traffic on port 8080 |
| sgr-0fd49a1a78e26628e | IPv4 | SSH | TCP | 22 | 202.77.139.105/32 | - |

2. Creating Key Pairs:

Key pairs (5) [Info](#)

Actions ▾ | **Create key pair**

| Name | Type | Created | Fingerprint | ID |
|-------------------|------|------------------------|---|-----------------------|
| Vprofile-prod-key | rsa | 2025/12/22 00:11 GMT+5 | 07:10:2e:5e:a2:99:af:98:cc:38:a9:e9:... | key-03ce92ca9a1d7b529 |

3. Creating Ec2 Instances With user Data Scripts :

Instances (4) [Info](#)

Last updated less than a minute ago

Actions ▾ | **Launch instances**

| Name | Instance ID | Instance state | Instance type | Status check | Alarm status | Availability Zone | Public IPv4 |
|----------------|---------------------|----------------|---------------|-------------------|-------------------------------|-------------------|-------------|
| Vprofile-db01 | i-0c3594cc01f4422a9 | Running | t3.micro | 3/3 checks passed | View alarms + | us-east-1c | ec2-34-229- |
| Vprofile-mc01 | i-06a453b0821b5a035 | Running | t3.micro | 3/3 checks passed | View alarms + | us-east-1c | ec2-54-160- |
| Vprofile-app01 | i-0f3db3e41e81228d7 | Running | t3.micro | Initializing | View alarms + | us-east-1c | ec2-54-242- |
| Vprofile-rmq01 | i-02b0732824e12124a | Running | t3.micro | 3/3 checks passed | View alarms + | us-east-1c | ec2-13-220 |

Select an instance

Create hosted Zone Using Route53:

The screenshot shows the AWS Route 53 Hosted Zones interface. At the top, there's a search bar and a navigation menu with options like 'View details', 'Edit', 'Delete', and 'Create hosted zone'. Below the header is a table titled 'Hosted zones (1)'. The table has columns for 'Hosted zone name', 'Type', 'Create...', 'Record ...', 'Descri...', and 'Hosted zone ID'. A single row is selected, showing 'vprofile.in' as the Hosted zone name, 'Private' as the Type, 'Route 53' as the Create..., '2' as the Record ..., and 'Z0703752CCKXW2FAA0SW' as the Hosted zone ID. There are also buttons for filtering and navigating through the results.

INTERNAL DNS RESOLUTION(Create a Record):

The screenshot shows the AWS Route 53 Records page. A blue banner at the top states: "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." Below this, there's a table titled 'Records (5)'. The table has columns for 'Record ...', 'Type', 'Routing p...', 'Alias', and 'Value/Route traffic to'. Five records are listed:

| Record ... | Type | Routing p... | Alias | Value/Route traffic to |
|--------------|---------|--------------|---------|------------------------|
| db01.vpro... | A | Simple | - | 172.31.23.148 |
| mc01.vpr... | A | Simple | - | 172.31.26.102 |
| rmq01.vpr... | A | Simple | - | 172.31.27.95 |
| (empty) | (empty) | (empty) | (empty) | (empty) |

The screenshot shows the AWS Route 53 Record Details page for the record 'db01.vprofile.in'. The title bar says 'db01.vprofile.in Selected'. On the right, there's a message: 'Select a record to see its details'. The main area is currently empty, indicating no specific record is selected.

Checking Connection:

```
ubuntu@ip-172-31-21-16: ~
ubuntu@ip-172-31-21-16:~$ ping -c 4 db01.vprofile.in
PING db01.vprofile.in (172.31.23.148) 56(84) bytes of data.
64 bytes from ip-172-31-23-148.ec2.internal (172.31.23.148): icmp_seq=1 ttl=127 time=0.676 ms
64 bytes from ip-172-31-23-148.ec2.internal (172.31.23.148): icmp_seq=2 ttl=127 time=0.173 ms
64 bytes from ip-172-31-23-148.ec2.internal (172.31.23.148): icmp_seq=3 ttl=127 time=0.157 ms
64 bytes from ip-172-31-23-148.ec2.internal (172.31.23.148): icmp_seq=4 ttl=127 time=0.179 ms

--- db01.vprofile.in ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3075ms
rtt min/avg/max/mdev = 0.157/0.296/0.676/0.219 ms
ubuntu@ip-172-31-21-16:~$
```

Creating S3 Bucket:

Successfully created bucket "vprofile-las-artifact0193"
To upload files and folders, or to configure additional bucket settings, choose [View details](#).

General purpose buckets (1) [Info](#)

Buckets are containers for data stored in S3.

| Name | AWS Region | Creation date |
|---------------------------|---------------------------------|---|
| vprofile-las-artifact0193 | US East (N. Virginia) us-east-1 | December 22, 2025, 17:31:05 (UTC+05:00) |

Account snapshot [Info](#)
Updated daily
Storage Lens provides visibility into storage usage and activity trends.

External access summary - new [Info](#)
Updated daily
External access findings help you identify bucket permissions that allow public access or access from other AWS accounts.



Create IAM user :

us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#/users

Identity and Access Management (IAM)

Users (2) [Info](#)
An IAM user is an identity with long-term credentials that is used to interact with AWS in an account.

| User name | Path | Group | Last activity | MFA | Password age | Console last sign-in | Access |
|-------------------|------|-------|---------------|-----|--------------|----------------------|--------|
| vprofile-s3-admin | / | 0 | - | - | - | - | Act |

Attach policies:

Permissions [Groups](#) [Tags](#) [Security credentials](#) [Last Accessed](#)

Permissions policies (1)
Permissions are defined by policies attached to the user directly or through groups.

Filter by Type

| Policy name | Type | Attached via |
|--------------------|-------------|--------------|
| AmazonS3FullAccess | AWS managed | Directly |

Permissions boundary (not set)

Generate policy based on CloudTrail events

Create access key with the new user :

Access keys (1)

Use access keys to send programmatic calls to AWS from the AWS CLI, AWS Tools for PowerShell, AWS SDKs, or direct AWS API calls. You can have a maximum of two access keys (active or inactive) at a time. [Learn more](#)

| AKIAZ6BHYW6YBJZRTKHR | | Actions ▾ |
|----------------------|------|-------------------|
| Description | - | Status |
| Last used | None | Created |
| Last used region | N/A | Last used service |

Create a Role with s3 full access permission:

The screenshot shows the AWS IAM Roles page. A new role named "s3-admin" has been created. The "Permissions" tab is selected, showing one attached policy: "AmazonS3FullAccess".

s3-admin Info

Allows EC2 instances to call AWS services on your behalf.

Summary

Creation date: December 22, 2025, 17:53 (UTC+05:00)

ARN: arn:aws:iam::682983208880:role/s3-admin

Last activity: -

Maximum session duration: 1 hour

Instance profile ARN: arn:aws:iam::682983208880:instance-profile/s3-admin

Permissions Trust relationships Tags Last Accessed Revolve sessions

Permissions policies (1) Info

You can attach up to 10 managed policies.

| Policy name | Type | Attached entities |
|--------------------|-------------|-------------------|
| AmazonS3FullAccess | AWS managed | 2 |

Opening a terminal:

File Edit Selection View Go Run Terminal Help ← → Q vprofile-project

EXPLORER

OPEN EDITORS

V VPROFILE-PROJECT

src > main > resources > application.properties

```
4 jdbc.username=admin11
5 jdbc.password=admin123
6
7 #Memcached Configuration For Active and StandBy Host
8 #For Active Host
9 memcached.active.host=mco1.vprofile.in
10 memcached.active.port=11211
11 #For StandBy Host
12 memcached.standby.host=127.0.0.2
13 memcached.standby.port=11211
14
15 #RabbitMQ Configuration
16 rabbitmq.address=rmbq1.vprofile.in
17 rabbitmq.port=5672
18 rabbitmq.username=test
19 rabbitmq.password=test
20
21 #Elasticsearch Configuration
22 elasticsearch.host=localhost
23 elasticsearch.port=9300
24 elasticsearch.cluster=vprofile
25 elasticsearch.node=vprofilenode
26
27
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Admin@DESKTOP-59406LH MINGW64 /d/hkhcoder/vprofile-project (awsliftandshift)

\$

OUTLINE

TIMELINE

Verifying maven and AWS :

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS ⚙ bash + ⌂ ⌂ ⌂ ... | ⌂

Admin@DESKTOP-59406LH MINGW64 ~/d/hkhcoder/vprofile-project (awsliftandshift)
$ mvn -version
Maven home: C:\ProgramData\chocolatey\lib\maven\apache-maven-3.9.11
Java version: 17.0.17, vendor: Amazon.com Inc., runtime: c:\Program Files\Amazon Corretto\jdk17.0.17_10
Default locale: en_US, platform encoding: Cp1252
OS name: "windows 11", version: "10.0", arch: "amd64", family: "windows"

Admin@DESKTOP-59406LH MINGW64 ~/d/hkhcoder/vprofile-project (awsliftandshift)
① $ aws
usage: aws [options] <command> <subcommand> [<subcommand> ...] [parameters]
To see help text, you can run:
```

Running a mvn install Command to build Artifact:

```
Admin@DESKTOP-59406LH MINGW64 /d/hkhcoder/vprofile-project (awsliftandshift)
$ mvn install
[INFO] Copying webapp resources [D:\hkhcoder\vprofile-project\src\main\webapp]
[INFO] Building war: D:\hkhcoder\vprofile-project\target\vprofile-v2.war
[INFO]
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 21.967 s
[INFO] Finished at: 2025-12-22T18:10:30+05:00
[INFO] -----
```

(note: after building configure aws using aws configure)

Pushing Artifact to s3 bucket:

```
Admin@DESKTOP-59406LH MINGW64 /d/hkhcoder/vprofile-project (awsliftandshift)
$ aws s3 cp target/vprofile-v2.war s3://vprofile-las-artifact0193/
upload: target\vprofile-v2.war to s3://vprofile-las-artifact0193/vprofile-v2.war

Admin@DESKTOP-59406LH MINGW64 /d/hkhcoder/vprofile-project (awsliftandshift)
$
```

```
Admin@DESKTOP-59406LH MINGW64 /d/hkhcoder/vprofile-project (awsliftandshift)
$ aws s3 ls s3://vprofile-las-artifact0193/
2025-12-22 18:29:56    83278595 vprofile-v2.war

Admin@DESKTOP-59406LH MINGW64 /d/hkhcoder/vprofile-project (awsliftandshift)
$
```

◊ Imran Teli (1 year ago) · In 28 · Col 45 · Spaces 4 · UTF-8 · CRLF · { } Properties · 📁 · (6) Go Live

(Note: ssh app instance)

Install AWS CLI:

```
root@ip-172-31-21-16:~#
root@ip-172-31-21-16:~# snap install aws-cli --classic
aws-cli (v2/stable) 2.32.21 from Amazon Web Services (aws✓) installed
root@ip-172-31-21-16:~#
```

Copying Artifact from S3 bucket:

```
root@ip-172-31-21-16:~# aws s3 cp s3://vprofile-las-artifact0193/vprofile-v2.war /tmp/
download: s3://vprofile-las-artifact0193/vprofile-v2.war to ../tmp/vprofile-v2.war
root@ip-172-31-21-16:~# |
```

Stopping Tomcat service

```
root@ip-172-31-21-16:~# systemctl stop tomcat10
Warning: The unit file, source configuration file or drop-ins of tomcat10.service changed on disk. Run
'systemctl daemon-reload' to reload units.
root@ip-172-31-21-16:~# systemctl daemon-reload
Unknown command verb 'daemon-reload', did you mean 'daemon-reload'?
root@ip-172-31-21-16:~# systemctl daemon-reload
root@ip-172-31-21-16:~# |
```

Manual Deployment and Hot-Swapping of vProfile Artifact to Tomcat Application Server:

```
root@ip-172-31-21-16:~# ls /var/lib/tomcat10/webapps/
ROOT
root@ip-172-31-21-16:~# rm -rf /var/lib/tomcat10/webapps/ROOT
root@ip-172-31-21-16:~# cp /tmp/vprofile-v2.war /var/lib/tomcat10/webapps/ROOT.war
root@ip-172-31-21-16:~# systemctl start tomcat10
root@ip-172-31-21-16:~# ls /var/lib/tomcat10/webapps/
ROOT  ROOT.war
root@ip-172-31-21-16:~# |
```

Adding rule to check app is running:

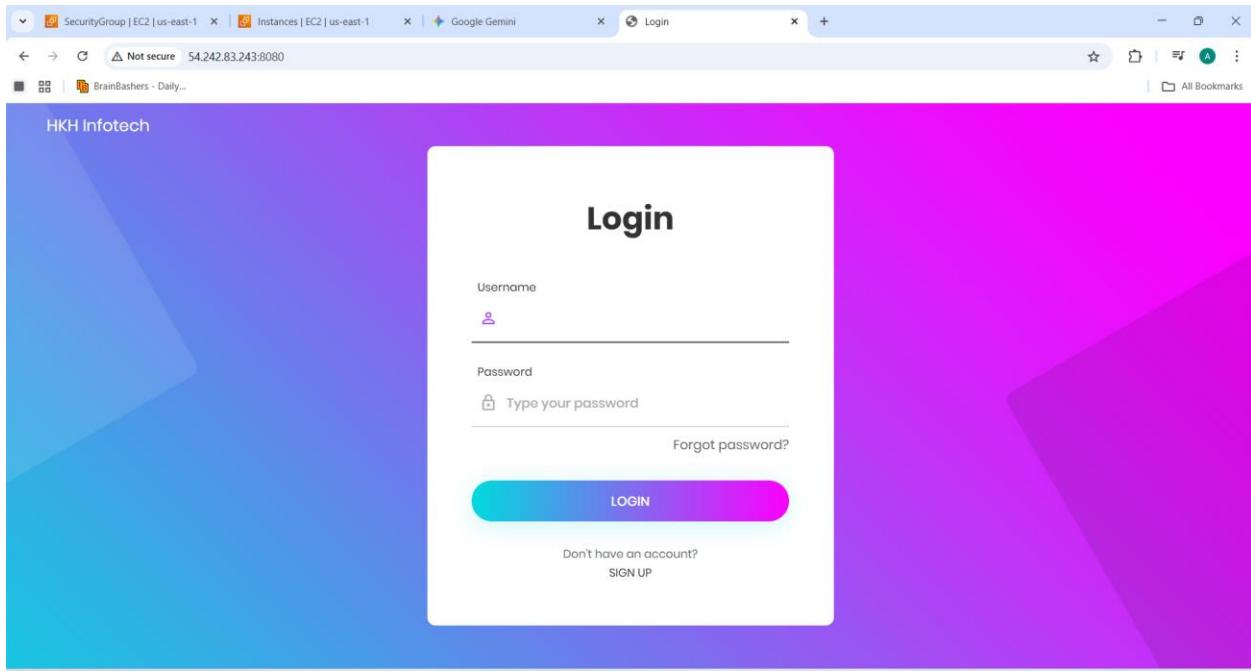
The screenshot shows the AWS CloudShell interface with an inbound rule configuration. The rule is named "Inbound rule 3". It has the following details:

- Security group rule ID:** -
- Type:** Custom TCP
- Protocol:** TCP
- Port range:** 8080
- Source type:** My IP
- Source:** 157.20.146.232/32
- Description - optional:** (Empty text input field)

At the bottom, there are buttons for **Add rule**, **Cancel**, **Preview changes** (highlighted in blue), and **Save rules**.

Footer navigation links include CloudShell, Feedback, Console Mobile App, Privacy, Terms, and Cookie preferences. Copyright notice: © 2025, Amazon Web Services, Inc. or its affiliates.

Accessing App from public app for verification:



Creating Target Group:

| Name | ARN | Port | Protocol | Target type | Load balancer | VPC ID |
|-----------------|--|------|----------|-------------|-----------------|------------|
| vprofile-las-tg | arn:aws:elasticloadbalancing:us-east-1:123456789012:targetgroup/vprofile-las-tg/1234567890123456 | 8080 | HTTP | Instance | None associated | vpc-0e4b0f |

Creating Load Balancer And adding Acm certificate:

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.

*.achaudhry.online
00047b6b-517e-4efd-ac9...



[Request new ACM certificate](#)

Client certificate handling | [Info](#)

Client certificates are used to make authenticated requests to remote servers. [Learn more](#)

Mutual authentication (mTLS)

Mutual TLS (Transport Layer Security) authentication offers two-way peer authentication. It adds a layer of security

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Load balancers (1) [What's new?](#)

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

Filter load balancers



[Actions](#) ▾

[Create load balancer](#)

| <input type="checkbox"/> | Name | State | Type | Scheme | IP address type | VPC ID | Availability Zones |
|--------------------------|-------------------|-----------------|-------------|-----------------|-----------------|-----------------------|----------------------|
| <input type="checkbox"/> | vprofile-las0-alb | Provisioning... | application | Internet-facing | IPv4 | vpc-0e4b07304bf1d8739 | 6 Availability Zones |

0 load balancers selected

Select a load balancer above.

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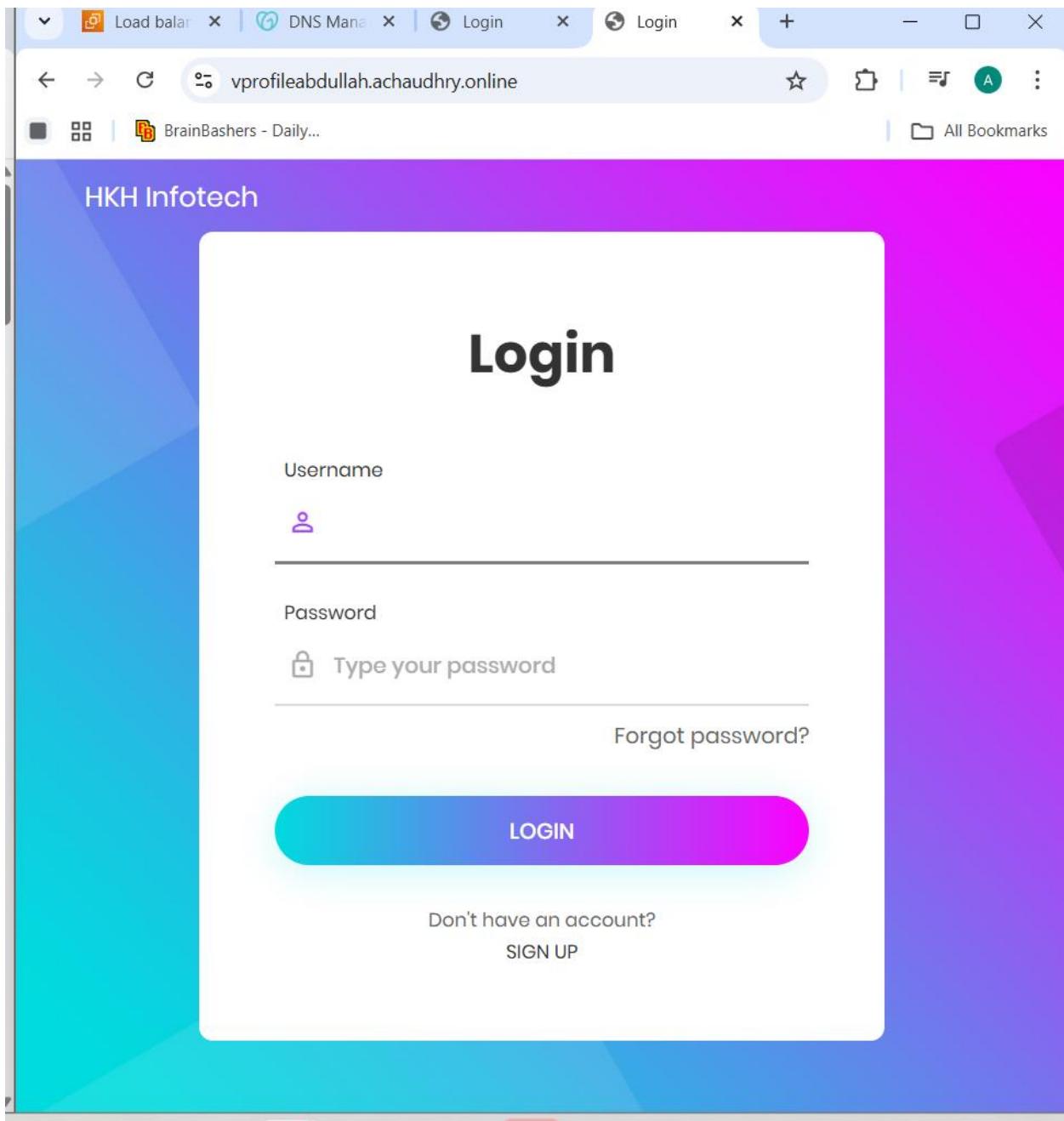
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Adding Load Balancers DNS name in our domain Record:

(Note: I am using GoDaddy)

| | | | | | | |
|-------------------------------------|-------|------------------|---|--------|--|--|
| <input checked="" type="checkbox"/> | CNAME | vprofileabdullah | vprofile-las0-alb-1574271398.us-east-1.elb.amazonaws.com. | 1 Hour | | |
|-------------------------------------|-------|------------------|---|--------|--|--|

Accesing app with our own url:





Security

vprofileabdullah.achaudhry.online



Connection is secure

Your information (for example, passwords or credit card numbers) is private when it is sent to this site. [Learn more](#)



Certificate is valid



Username



Type your username

Password



Type your password

[Forgot password?](#)

Certificate Viewer: *.achaudhry.online

General Details

Issued To

| | |
|--------------------------|---------------------------|
| Common Name (CN) | *.achaudhry.online |
| Organization (O) | <Not Part Of Certificate> |
| Organizational Unit (OU) | <Not Part Of Certificate> |

Issued By

| | |
|--------------------------|---------------------------|
| Common Name (CN) | Amazon RSA 2048 M04 |
| Organization (O) | Amazon |
| Organizational Unit (OU) | <Not Part Of Certificate> |

Validity Period

| | |
|------------|--|
| Issued On | Thursday, October 30, 2025 at 5:00:00 AM |
| Expires On | Sunday, November 29, 2026 at 4:59:59 AM |

SHA-256 Fingerprints

| | |
|-------------|--|
| Certificate | e705269030bfd2014cc596b09493302b1c28bb4426f0ba670cde49c9c7 2c9184 |
| Public Key | cd61b73b3d3ab1285e465f989fb0a2b75663d3fdbaf7d43be6182fa2a96 79c6a |

Listeners and rules (2) [Info](#)

A listener checks for connection requests on its configured protocol and port. Traffic received by the listener is routed according to the default action and any additional rules.

| Filter listeners | Manage rules | Manage listener | Add listener | | |
|---|------------------------------|---------------------------------|---------------------------------|---|----------|
| ▼ Default action | ▼ Rules | ▼ ARN | ▼ Security policy | ▼ Default SSL/TLS certificate | ▼ mTLS |
| • Forward to target group vprofile-las-tg : 1 (100%) Target group stickiness: Off | 1 rule | ARN | ELBSecurityPolicy-TLS13-1-2-... | *.achaudhry.online (Certificate ... | Off |

Logging to verify Database Connection:

@hkhinfotech.co.in Welcome, to Hkhinfotech Social Media!

#DevOps #Continuous Integration #Continuous Delivery #Automation All Users RabbitMq Elasticsearch

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Verifying Memcached Working :

| User Name | User Id |
|---------------|---------|
| Hilbo Prince | 4 |
| Aejaaz Habeeb | 5 |
| Jackie | 6 |
| admin_vp | 7 |
| Abrar Nirban | 8 |
| Amayra Fatima | 9 |
| Aron | 10 |
| Kiran Kumar | 11 |
| Balbir Singh | 12 |

[Data is From Cache] [Back](#)

User Primary Details

| ID | Name | Father's Name | Mother's Name | Email | Phone Number |
|----|-------------|---------------|---------------|-----------------------|--------------|
| 4 | Hibo Prince | Abara | Queen | hibo.prince@gmail.com | 9146389863 |

User Extra Details

| Date Of Birth | Gender | Marital Status | Permanent Address | Temporary Address | Primary Occupation | Secondary Occupation | Skills | Secondary PhoneNumber | Nationality | Language | Working Experience |
|---------------|--------|----------------|---------------------|---------------------|--------------------|----------------------|------------|-----------------------|-------------|----------|--------------------|
| 6/09/2000 | male | unMarried | Electronic City,UAE | Electronic City,UAE | Tester | Freelancing | Python PHP | 9146389871 | Indian | hindi | 3 |

[Data is From DB and Data Inserted In Cache !!] [Back](#)

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Process to configure autoscaling group:

1. First we need Ami of the instance
2. Launch Template
3. Auto scaling group

AMI created of app01 instance:

| Name | AMI name | AMI ID | Source | Owner | Visibility |
|-------------|----------------------|-----------------------|-----------------------------------|--------------|------------|
| vprofile... | vprofile-las-app-ami | ami-02efb1e266509a2eb | 682983208880/vprofile-las-app-ami | 682983208880 | Private |

Create Launch Template:

| Launch Template ID | Launch Template Name | Default Version | Latest Version | Create Time | Created By |
|----------------------|----------------------|-----------------|----------------|--------------------------|---------------------------|
| lt-058c368d6f523eb79 | vprofile-las-app-lt | 1 | 1 | 2025-12-23T13:30:05.000Z | arn:aws:iam::682983208880 |

Created auto Scaling Group:

| Name | Launch template/configuration | Instances | Status | Desired capacity | Min | Max |
|----------------------|---------------------------------------|-----------|--------|------------------|-----|-----|
| vprofile-las-app-asg | vprofile-las-app-lt Version Default | 1 | - | 1 | 1 | 4 |

Enable stickiness on auto scaling Group:

Slow start duration
Slow start duration is used to specify a period of time where newly registered targets are placed in slow start mode and receive a lower number of requests, giving them time to ramp up. When the slow start duration expires, the load balancer can send the target a full share of requests.
0 seconds
30-900 seconds or 0 to disable. Not compatible with the Least outstanding requests and Weighted random routing algorithms.

Target selection configuration

Stickiness Info
Stickiness allows the load balancer to bind a user's session to a specific target within the target group. The stickiness type differs based on the type of cookie used.

Turn on stickiness
Not compatible with the Weighted random routing algorithm. Can't be turned on if Cross-zone load balancing is off.

Stickiness type
 Load balancer generated cookie
 Application-based cookie

Stickiness duration **Unit of time**
1 days

Deregister target App01 from Target Group and delete app01 instance to AutoScallingGroup to handle:

The screenshot shows the AWS CloudWatch Metrics interface. At the top, there's a search bar and a navigation menu. Below it, a table lists metrics for a specific Lambda function execution. The columns include Metric Name, Value, Unit, and a detailed view icon. One row is expanded to show a histogram of the 'Latency' metric over time.

| Metric Name | Value | Unit | View |
|-------------|-------|------|------|
| Latency | 1000 | ms | |

Below the table, there's a section titled 'Metrics' with a table showing metrics like 'Latency' and 'Throughput' across different dimensions like 'Function Name' and 'Region'.

At the bottom, there's a 'Logs' section with a table showing log entries for the Lambda function, including timestamp, log level, and message content.

AutoScalling Group handling the application instance:

← → ⌛ vprofileabdullah.achaudhry.online/welcome

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