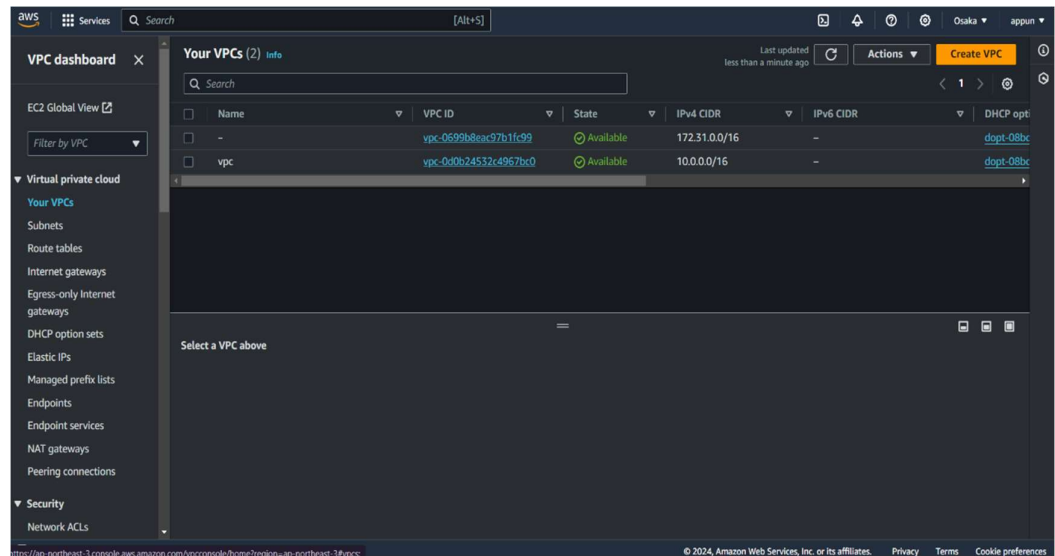


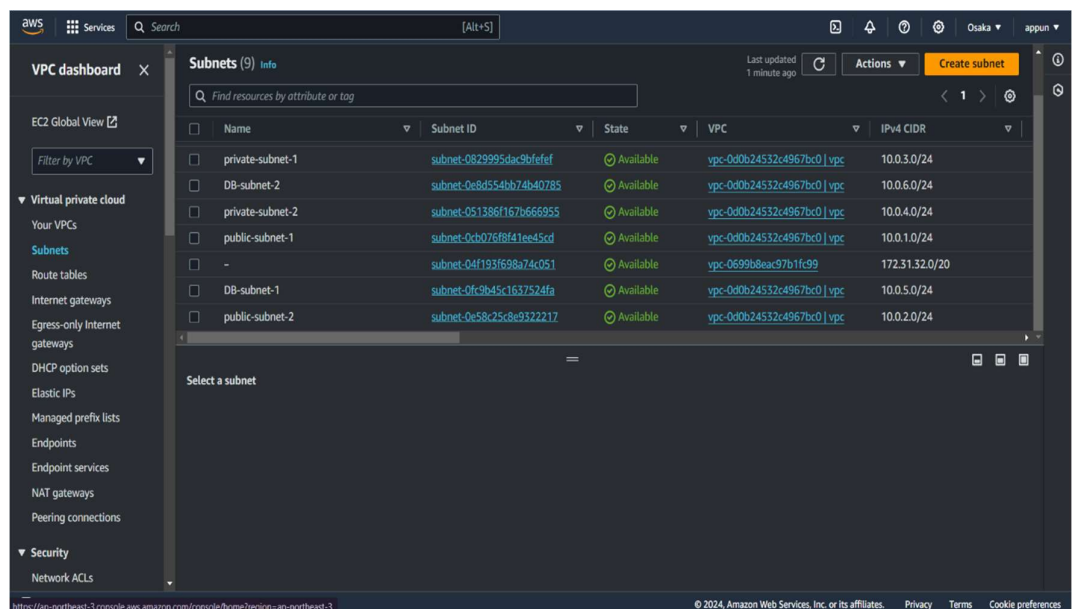
AWS 3 Tier Application Architecture

1. Create VPC – 10.0.0.0/16

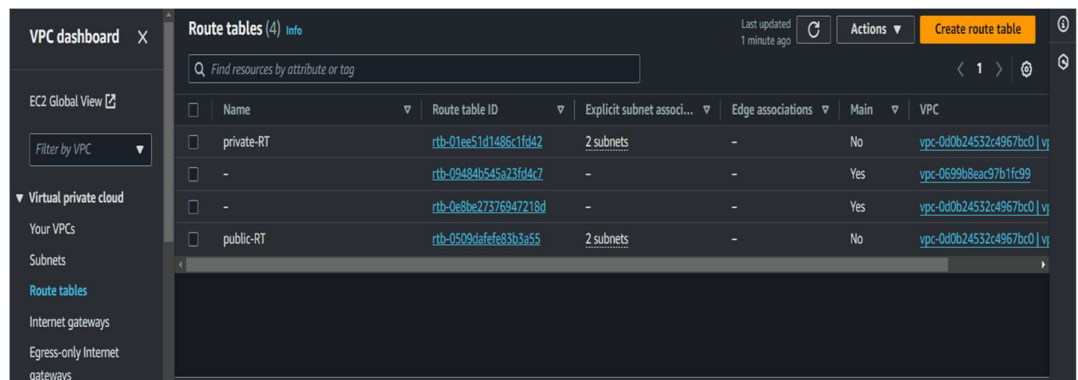


2. Subnets:

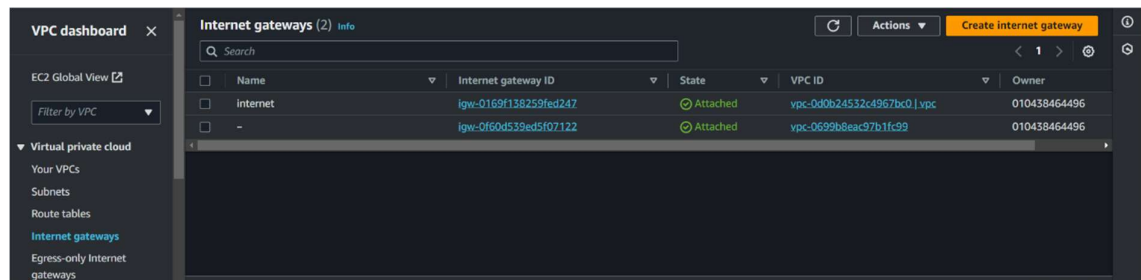
- Public-Subet-1 – 10.0.1.0/24(AZ-a)
- Public-Subet-2 – 10.0.2.0/24(AZ-b)
- Private-Subet-1 – 10.0.3.0/24(AZ-a)
- Private-Subet-2 – 10.0.4.0/24(AZ-b)
- DB-Subnet – 1 – 10.0.5.0/24(AZ-a)
- DB-Subnet – 2 – 10.0.6.0/24(AZ-b)



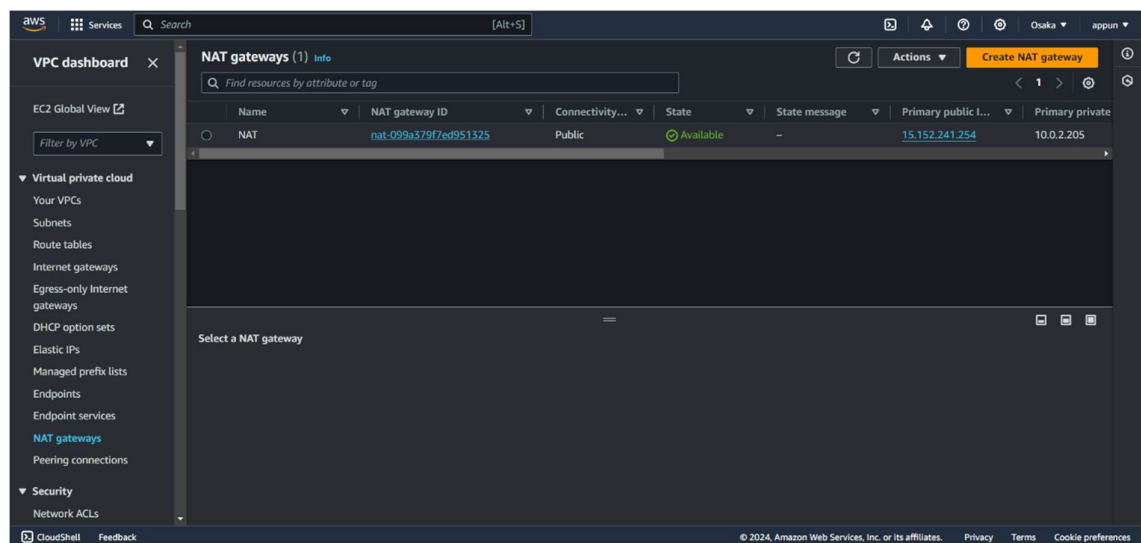
3. Route Tables:
 - a. Public – RT – Associate Public Subnet 1 & 2
 - b. Private – RT – Associate Private Subnet 1 & 2



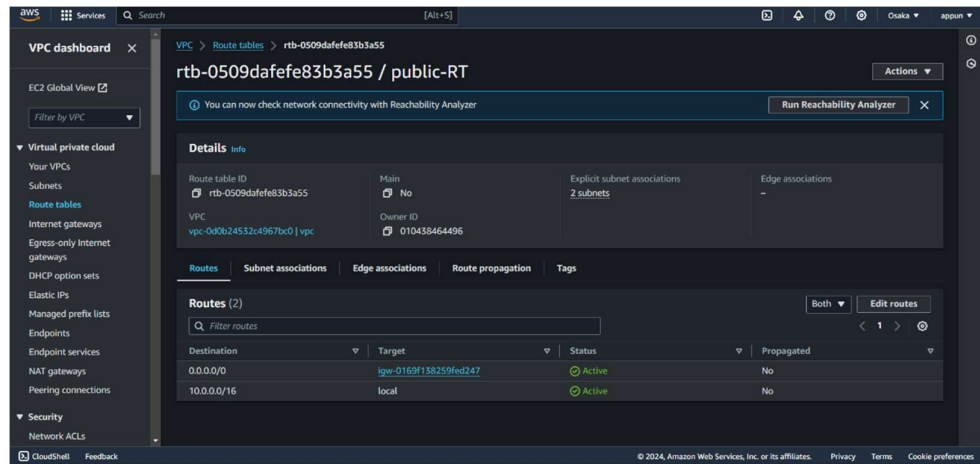
4. Create Internet Gateway - Attach to the VPC we've created.



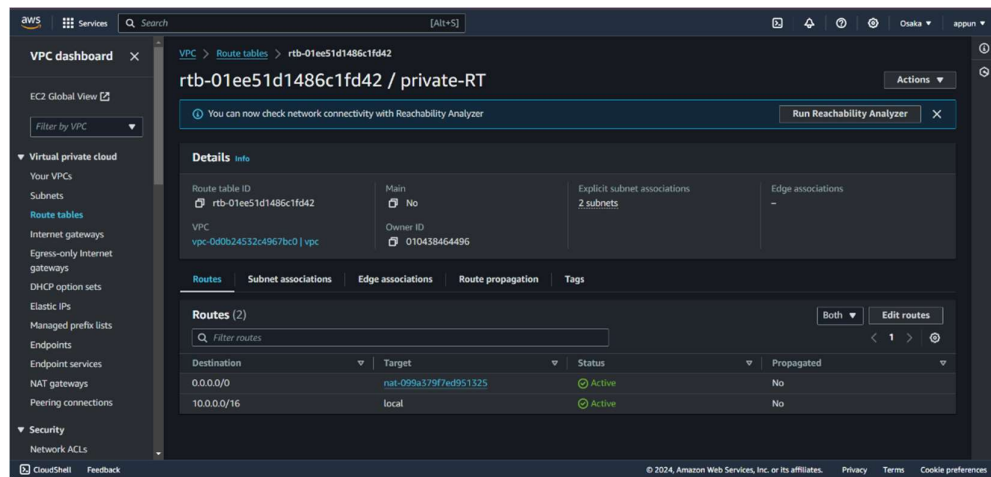
5. Create a NAT Gateway (Use public Subnet 2)



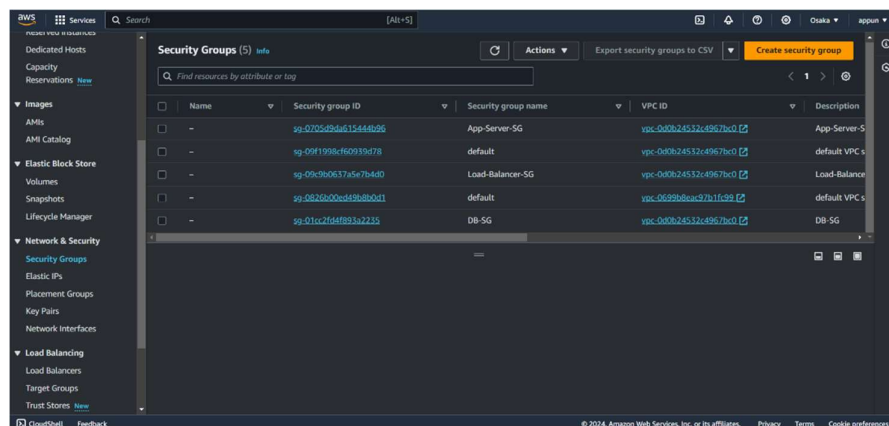
6. In the Public – RT -- Add a route to Internet
 - a. 0.0.0.0/0 -- IGW (Internet Gateway)



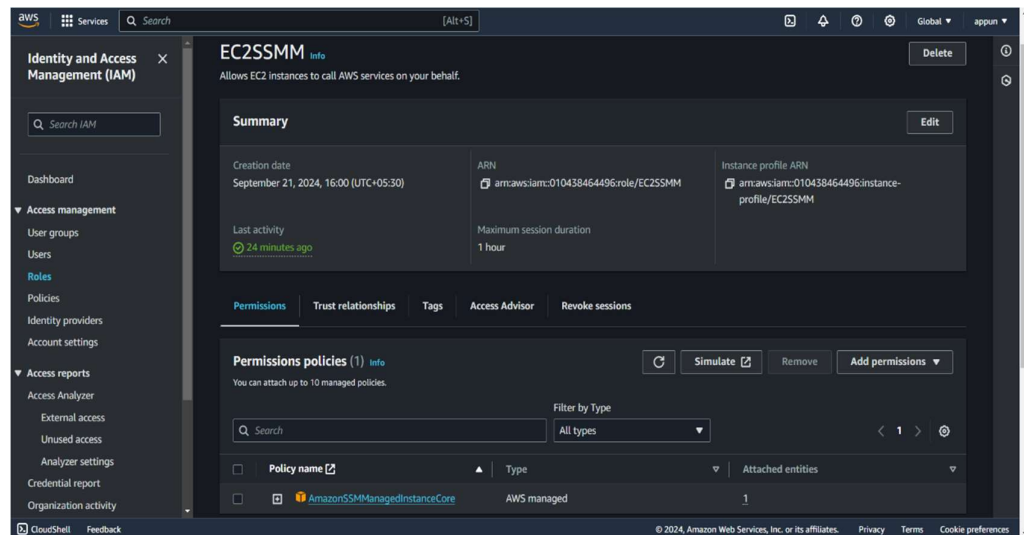
7. In the Private – RT -- Add a route to Internet
 - a. 0.0.0.0/0 -- NAT (NAT Gateway)



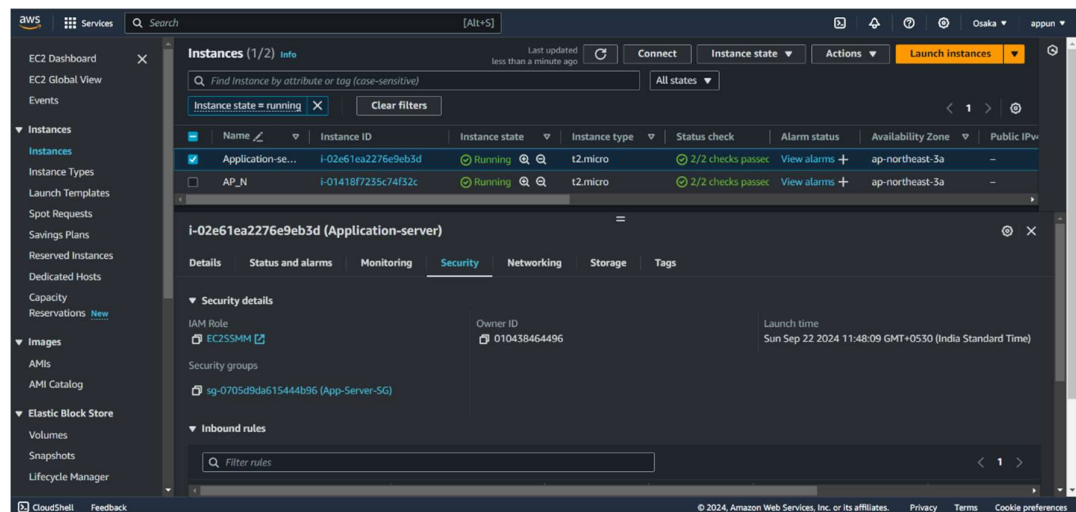
8. Security Groups:
 - a. LoadBalancer-SG -- Allow HTTP & HTTPS from 0.0.0.0/0
 - b. App-Server-SG -- Allow HTTP from **LoadBalancer-SG**
 - c. DB-SG -- Allow MySQL from **App-Server-SG**



9. Create an IAM Role called **EC2SSMAGENT** -- Add the below policy
[AmazonSSMManagedInstanceCore](#)



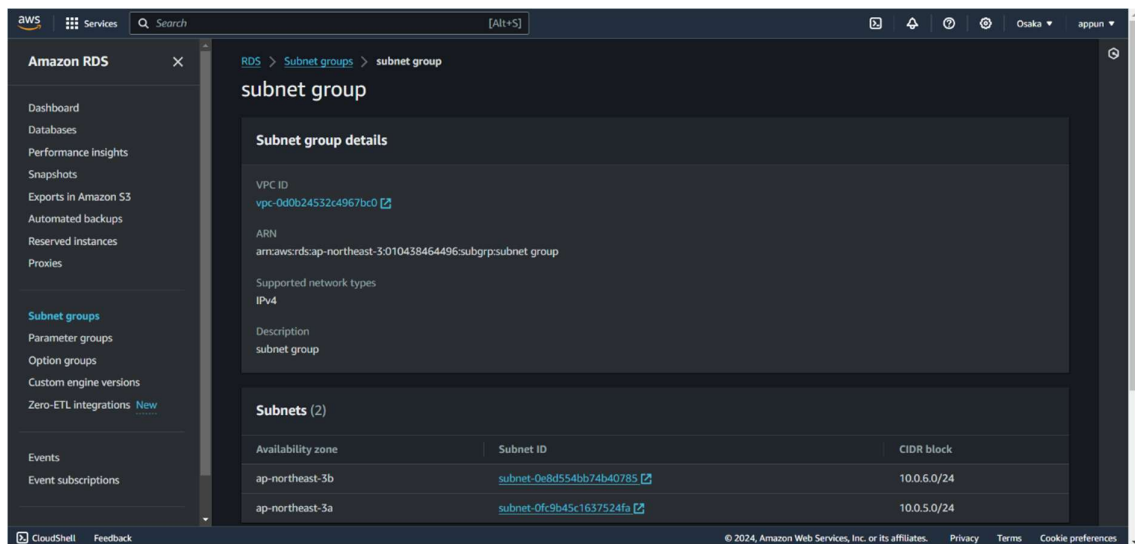
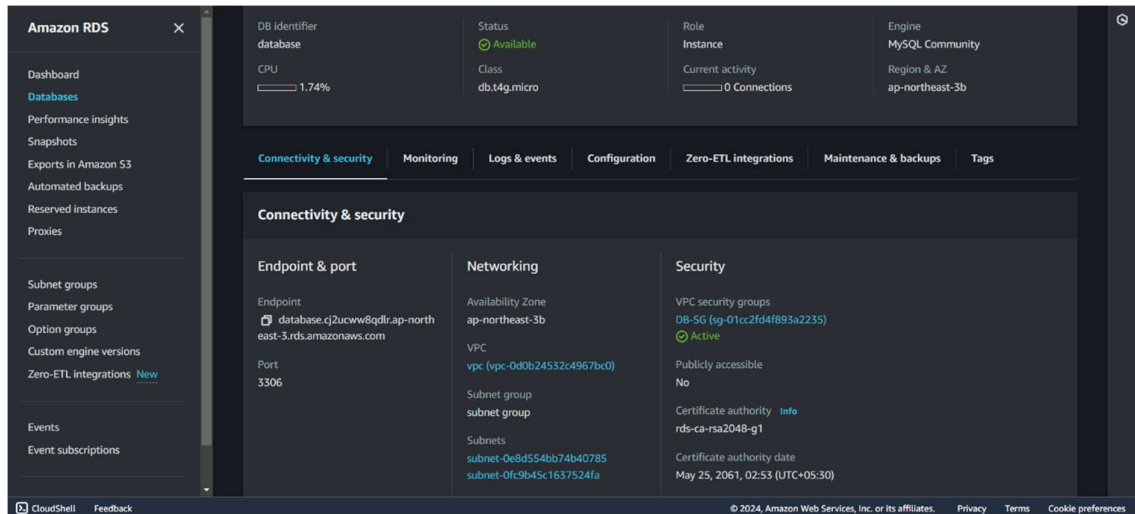
10. Create an Application-Server
- a. Launch Instance
 - b. Select your VPC and Private-Subnet-1
 - c. Select Existing SG -- Application-SG
- Under Advance Details -- IAM Instance Profile -- Choose the Role you've Created (EC2SSM)



11. Install HTTPD, Start & Enable it.
- a. Sudo su
 - b. Yum install httpd -y
 - c. Systemctl start httpd
 - d. Systemctl enable httpd
 - e. dnf install mariadb105-server

```
yum install php php-mysqli
```

12. Go to RDS & Create Subnet Group -- Select AZ a & b, Select your DB Subnets.



13. Login to Database using the below command

- MySQL -h <db-hostname> -u <user name> -p
- Show databases;
- Create database wordpress;
- Show databases;
- Exit

```
[root@ip-10-0-3-203 ~]# mysql -h database.cj2ucw8qdlr.ap-northeast-3.rds.amazonaws.com -u admin -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 644
Server version: 8.0.35 Source distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MySQL [(none)]> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
| wordpress |
+-----+
5 rows in set (0.005 sec)

MySQL [(none)]>
```

14. Go to Root Directory and Download WordPress

- Cd /var/www/html
- Wget <https://wordpress.org/latest.zip>
- Rm latest.zip
- Mv wordpress/* .

```
[root@ip-10-0-3-203 html]# ls
index.php  readme.html  wp-activate.php  wp-blog-header.php  wp-config.php  wp-cron.php  wp-links-opml.php  wp-login.php  wp-settings.php  wp-trackback.php
license.txt  wordpress  wp-admin  wp-comments-post.php  wp-content  wp-includes  wp-load.php  wp-mail.php  wp-signup.php  xmlrpc.php
[root@ip-10-0-3-203 html]#
```

15. Rename config-sample file

- Mv wp-config-sample.php wp-config.php
- Vi wp-config.php
- Give Database Parameters
 - Dbname
 - Db username
 - Db password

Db endpoint

```
*
* The wp-config.php creation script uses this file during the installation.
* You don't have to use the website, you can copy this file to "wp-config.php"
* and fill in the values.
*
* This file contains the following configurations:
*
* * Database settings
* * Secret Keys
* * Database table prefix
* * ABSPATH
*
* @link https://developer.wordpress.org/advanced-administration/wordpress/wp-config/
*
* @package WordPress
*/

/** Database settings - You can get this info from your web host */
/** The name of the database for Wordpress */
define( 'DB_NAME', 'wordpress' );

/** Database username */
define( 'DB_USER', 'admin' );

/** Database password */
define( 'DB_PASSWORD', 'ab1th123' );

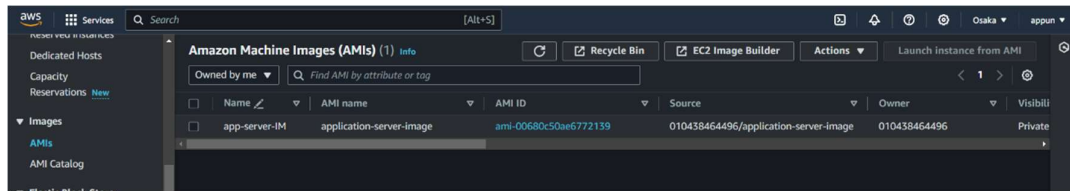
/** Database hostname */
define( 'DB_HOST', 'database.cj2ucw8qdlr.ap-northeast-3.rds.amazonaws.com' );

/** Database charset to use in creating database tables. */
define( 'DB_CHARSET', 'utf8' );

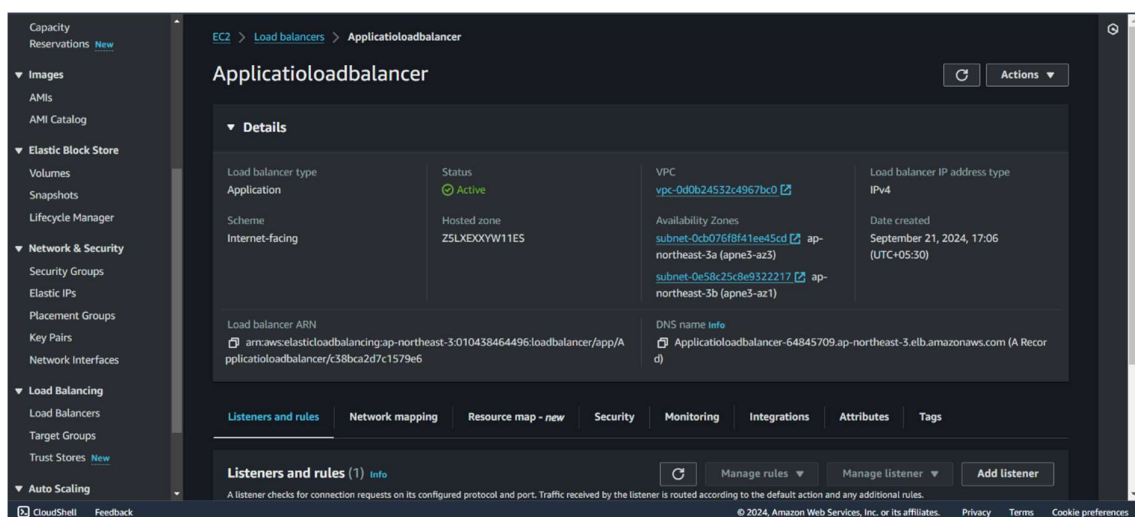
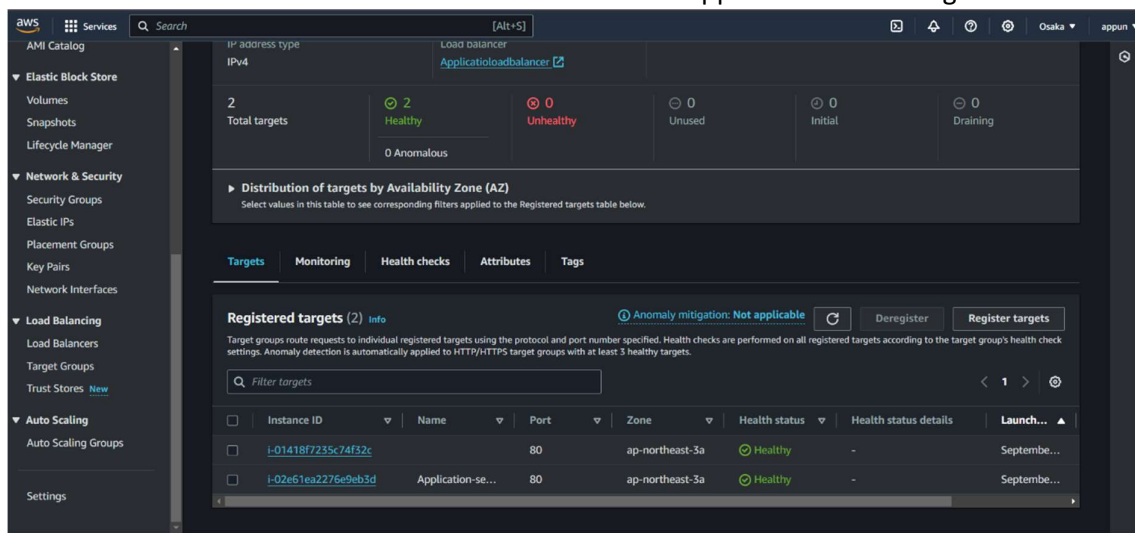
/** The database collate type. Don't change this if in doubt. */
define( 'DB_COLLATE', '' );

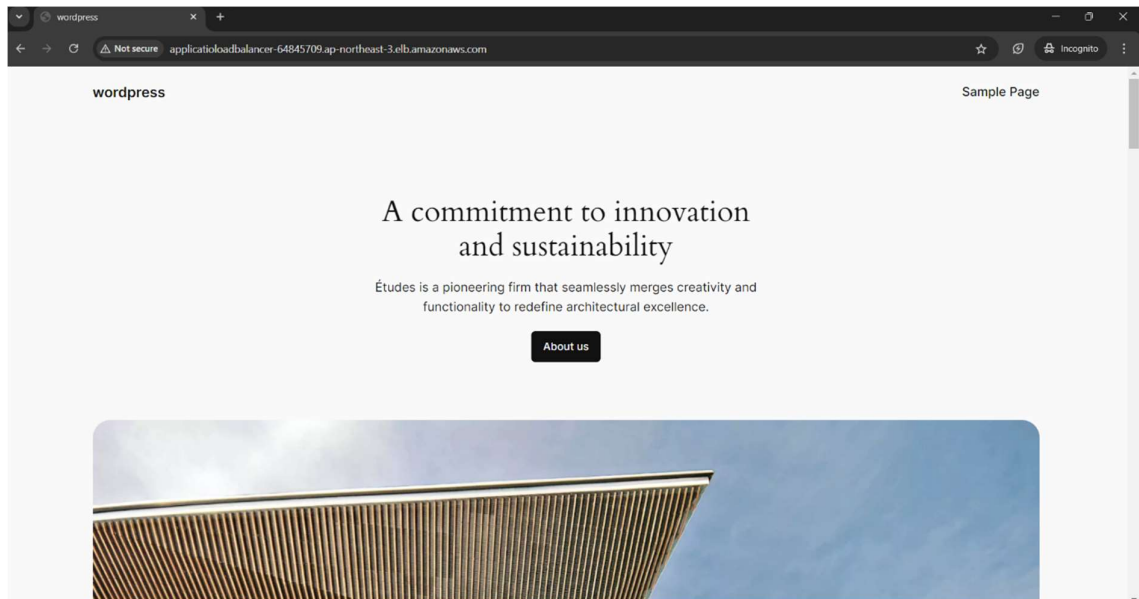
/* wp-config.php (last 961, 3056) */
```

16. Systemctl restart httpd
17. Create an AMI of you Application Server

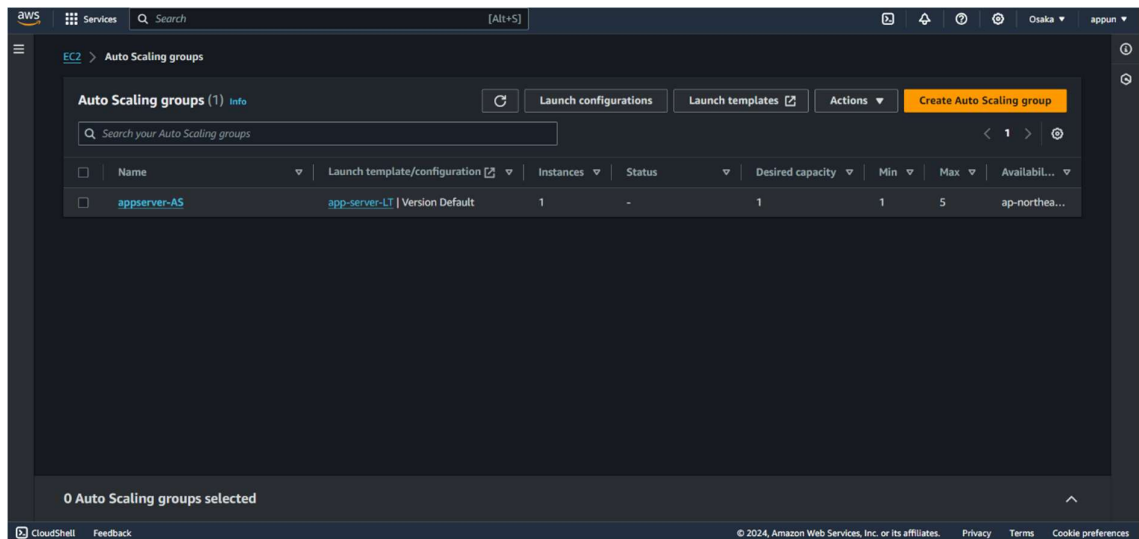


18. Create a Target Group -- Select your VPC and Add Application Server
19. Create an Application Load Balancer -- Select your VPC and Select public subnet 1 & 2, Select the Load Balancer Security Group.
20. Check the Load Balancer DNS and confirm whether the Application is Working or not





21. Create AutoScaling Group



22. Create SNS and CloudWatch

