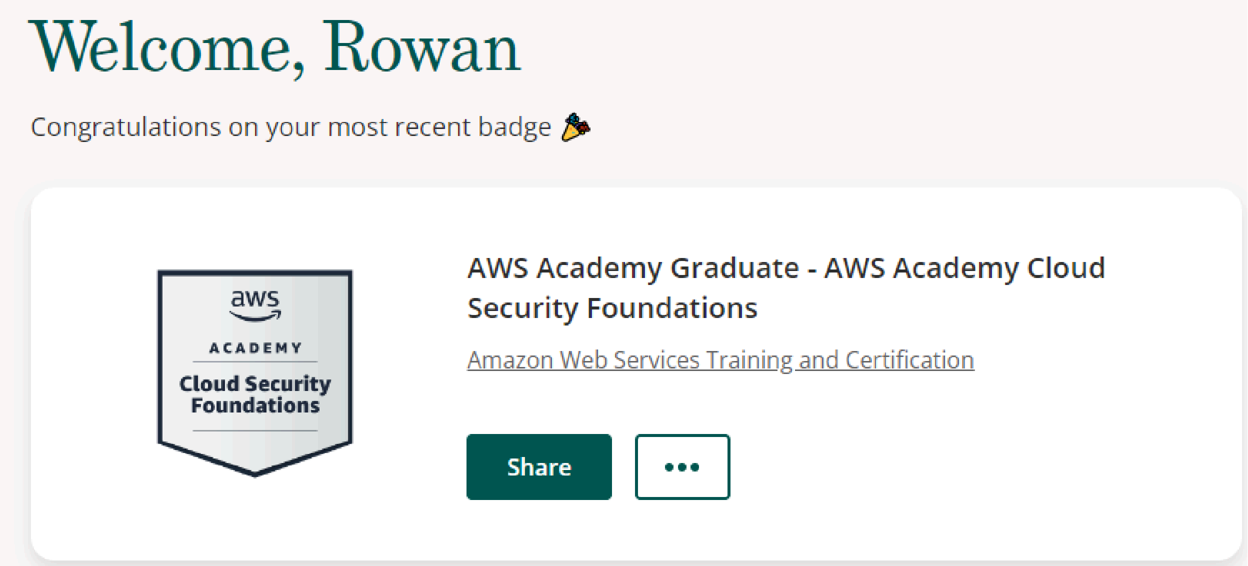


Welcome, Rowan

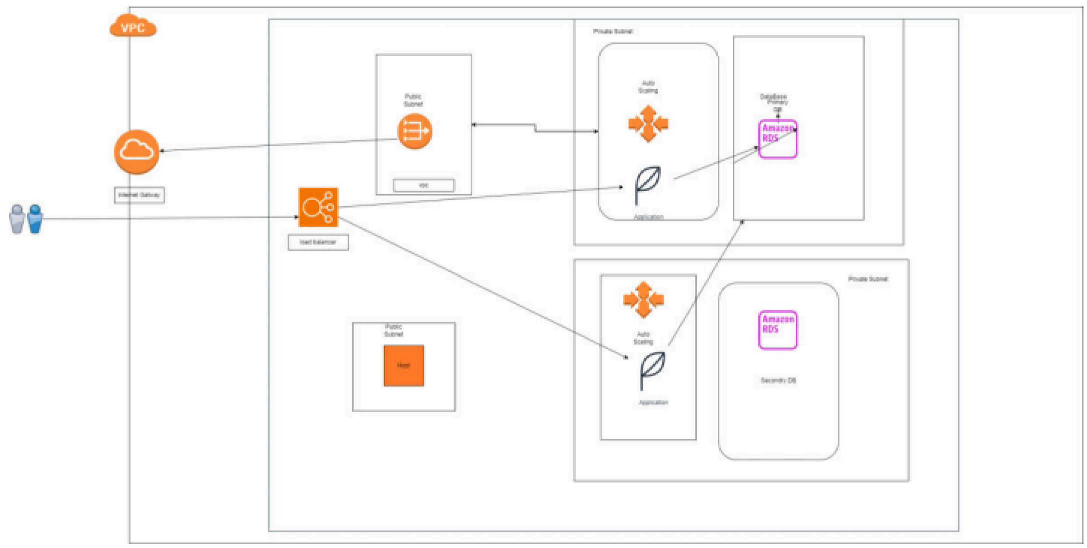
Congratulations on your most recent badge 🎉

AWS Academy Graduate - AWS Academy Cloud Security Foundations

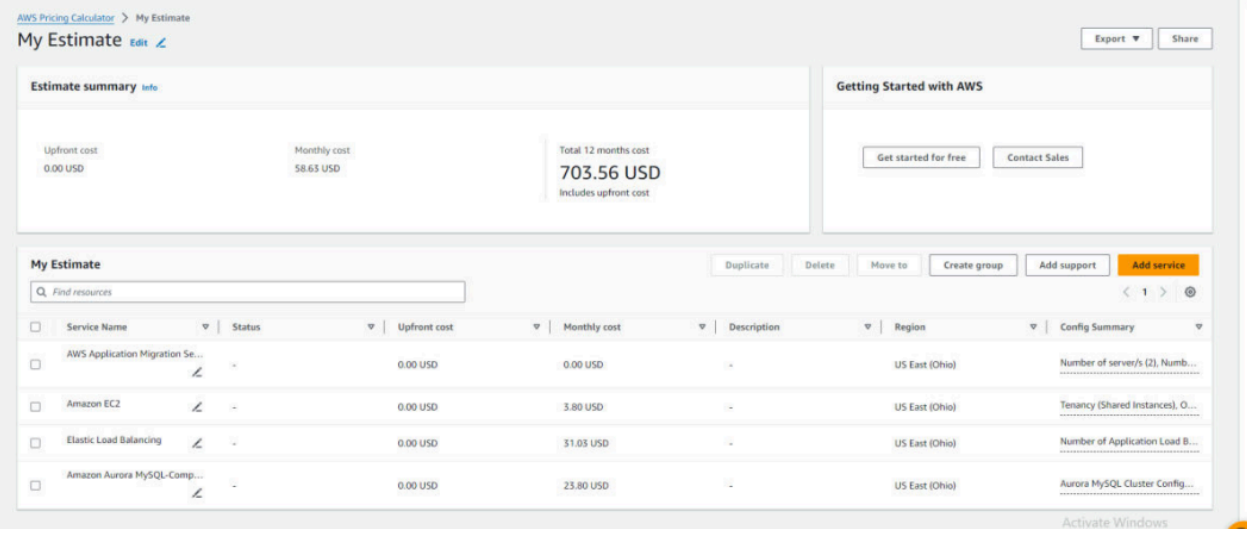
Amazon Web Services Training and Certification

Phase 1: Planning the design and estimating cost

Task 1: Creating an architectural diagram



Task 2: Developing a cost estimate



My Estimate

Estimate summary

Upfront cost
0.00 USD

Monthly cost
58.63 USD

Total 12 months cost
703.56 USD
Includes upfront cost

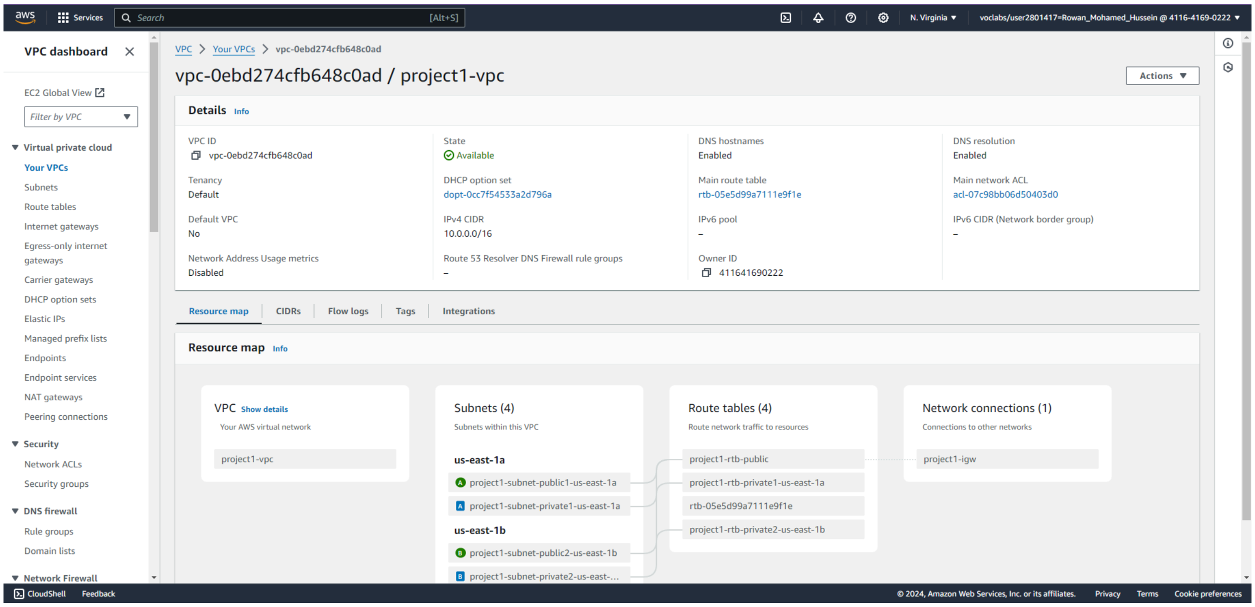
My Estimate

□	Service Name	Status	Upfront cost	Monthly cost	Description	Region	Config Summary
□	AWS Application Migration Se...	-	0.00 USD	0.00 USD	-	US East (Ohio)	Number of server/s (2), Numb...
□	Amazon EC2	-	0.00 USD	3.80 USD	-	US East (Ohio)	Tenancy (Shared Instances), O...
□	Elastic Load Balancing	-	0.00 USD	31.03 USD	-	US East (Ohio)	Number of Application Load B...
□	Amazon Aurora MySQL-Comp...	-	0.00 USD	23.80 USD	-	US East (Ohio)	Aurora MySQL Cluster Config...

\

Phase 2: Creating a basic functional web application

Task 1: Creating a virtual network



vpc-0ebd274cfb648c0ad / project1-vpc

Details

VPC ID
vpc-0ebd274cfb648c0ad

State
Available

DNS hostnames
Enabled

DNS resolution
Enabled

Tenancy
Default

DHCP option set
dopt-0cc7f54533a2d796a

Main route table
rtb-05e5d99a7111e9f1e

Main network ACL
acl-07c98bb06d50403d0

Default VPC
No

IPv4 CIDR
10.0.0.0/16

IPv6 pool
–

IPv6 CIDR (Network border group)
–

Network Address Usage metrics
Disabled

Route 53 Resolver DNS Firewall rule groups
–

Owner ID
411641690222

Resource map

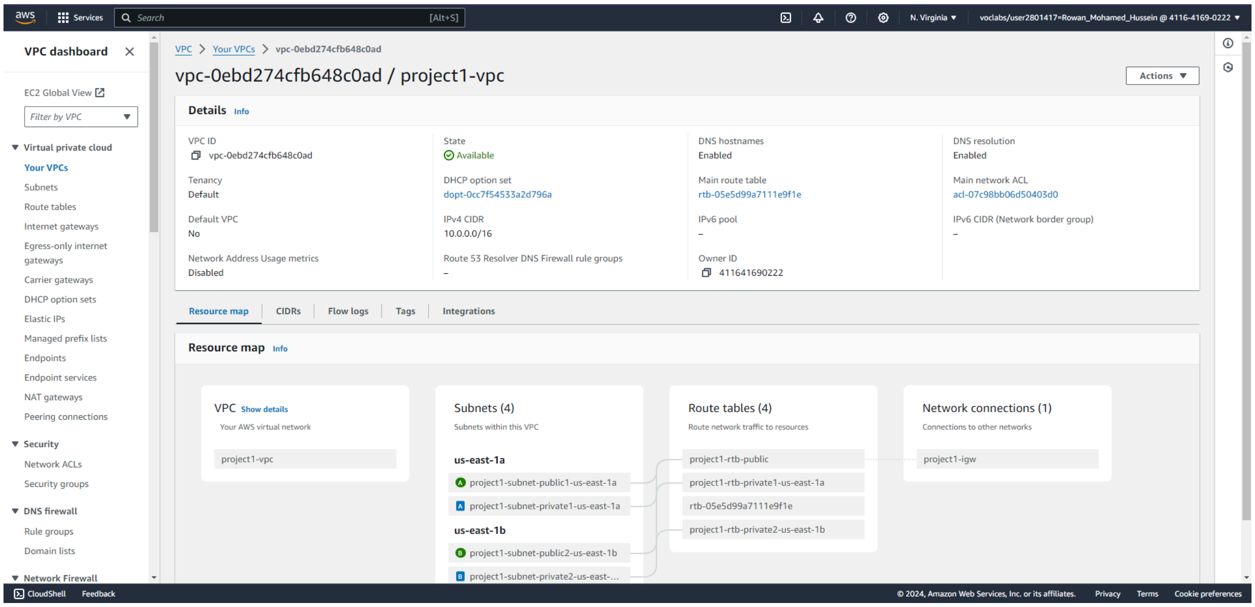
VPC
Your AWS virtual network
project1-vpc

Subnets (4)
Subnets within this VPC
us-east-1a
project1-subnet-public1-us-east-1a
project1-subnet-private1-us-east-1a
us-east-1b
project1-subnet-public2-us-east-1b
project1-subnet-private2-us-east-...

Route tables (4)
Route network traffic to resources
project1-rtb-public
project1-rtb-private1-us-east-1a
rtb-05e5d99a7111e9f1e
project1-rtb-private2-us-east-1b

Network connections (1)
Connections to other networks
project1-igw

Task 2: Creating a virtual machine



vpc-0ebd274cfb648c0ad / project1-vpc

Details Info

VPC ID vpc-0ebd274cfb648c0ad	State Available	DNS hostnames Enabled	DNS resolution Enabled
Tenancy Default	DHCP option set dopt-0cc7f54533a2d796a	Main route table rtb-05e5d99a7111e9f1e	Main network ACL acl-07c98bb06d50403d0
Default VPC No	IPv4 CIDR 10.0.0.0/16	IPv6 pool –	IPv6 CIDR (Network border group) –
Network Address Usage metrics Disabled	Route 53 Resolver DNS Firewall rule groups –	Owner ID 411641690222	

Resource map Info

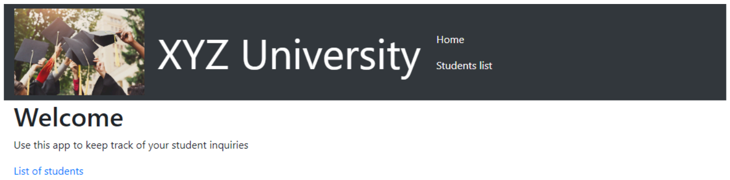
VPC Show details
Your AWS virtual network
project1-vpc

Subnets (4)
Subnets within this VPC
us-east-1a
A project1-subnet-public1-us-east-1a
A project1-subnet-private1-us-east-1a
us-east-1b
B project1-subnet-public2-us-east-1b
B project1-subnet-private2-us-east-…

Route tables (4)
Route network traffic to resources
project1-rtb-public
project1-rtb-private1-us-east-1a
rtb-05e5d99a7111e9f1e
project1-rtb-private2-us-east-1b

Network connections (1)
Connections to other networks
project1-igw

Task 3: Testing the deployment



XYZ University

Home

Students list

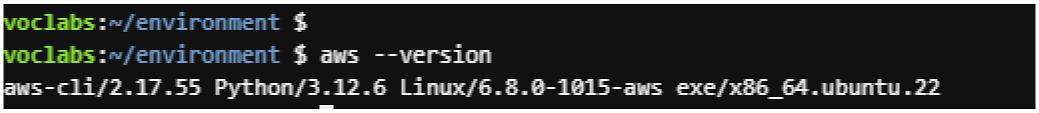
Welcome

Use this app to keep track of your student inquiries

List of students

Phase 3: Decoupling the application components

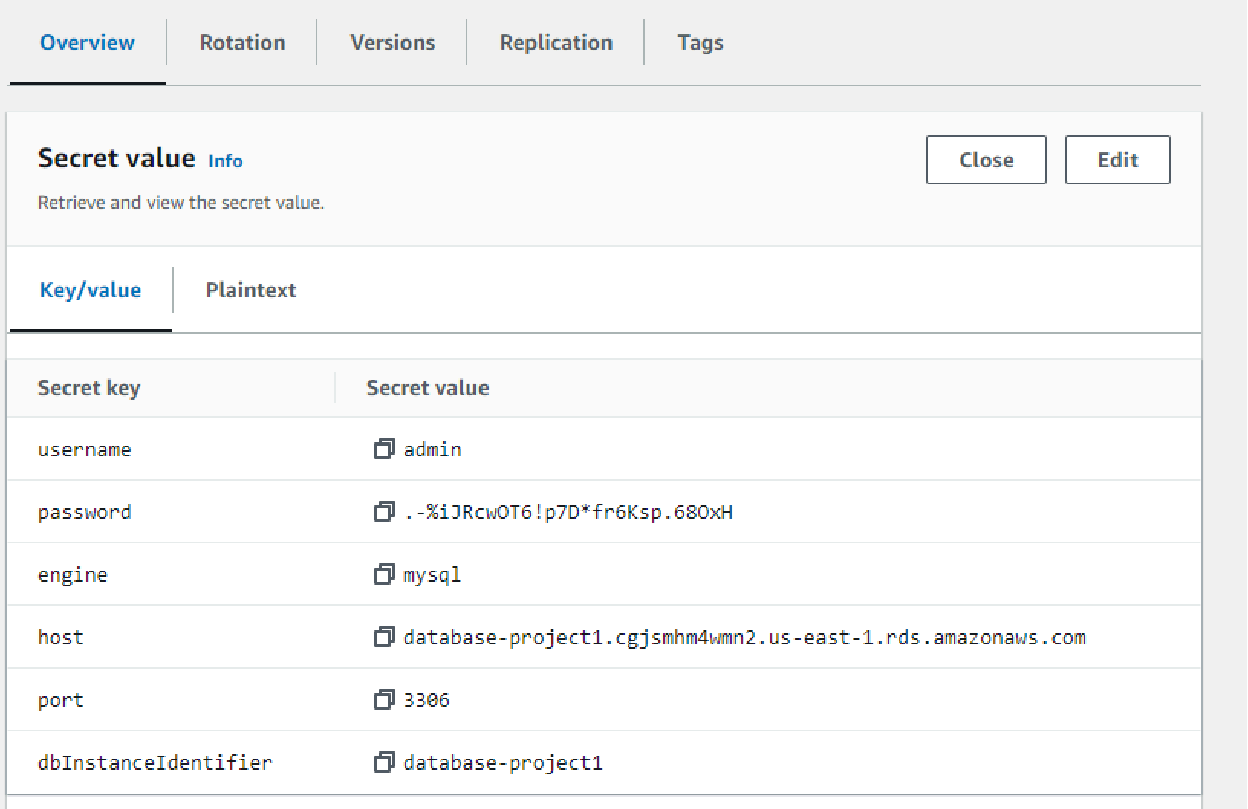
Task 1: Changing the VPC configuration



```
voclabs:~/environment $
voclabs:~/environment $ aws --version
aws-cli/2.17.55 Python/3.12.6 Linux/6.8.0-1015-aws exe/x86_64.ubuntu.22
```

Made sure that aws installed in the machine

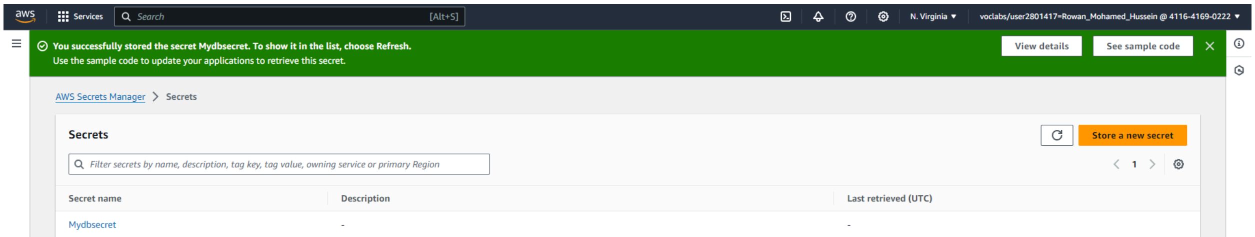
Task 2: Creating and configuring the Amazon RDS database



Secret value Info

Retrieve and view the secret value.

Secret key	Secret value
username	admin
password	.-%iJRcwOT6!p7D*fr6Ksp.68OxH
engine	mysql
host	database-project1.cgjsmhm4wmn2.us-east-1.rds.amazonaws.com
port	3306
dbInstanceIdentifier	database-project1


aws
Services
Search
[Alt+S]
N. Virginia
voclabs/user2801417=Rowan_Mohamed_Hussein @ 4116-4169-0222

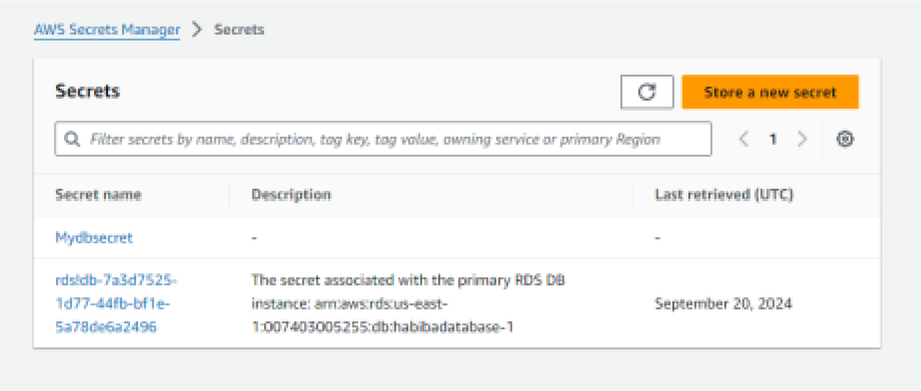
You successfully stored the secret Mydbsecret. To show it in the list, choose Refresh.
Use the sample code to update your applications to retrieve this secret.

View details
See sample code
AWS Secrets Manager
Secrets
Secrets
Store a new secret
Filter secrets by name, description, tag key, tag value, owning service or primary Region
1

Secret name	Description	Last retrieved (UTC)
Mydbsecret	-	-

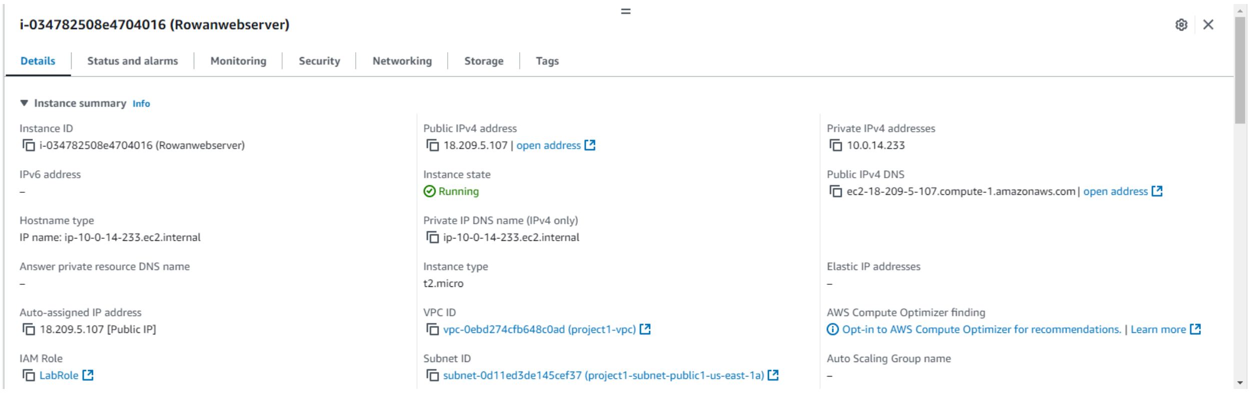
Madea new secret with username and password that i already have

Task 3: Configuring the development environment


AWS Secrets Manager
Secrets
Secrets
Store a new secret
Filter secrets by name, description, tag key, tag value, owning service or primary Region
1

Secret name	Description	Last retrieved (UTC)
Mydbsecret	-	-
rds!db-7a3d7525-1d77-44fb-bf1e-5a78de6a2496	The secret associated with the primary RDS DB instance: arn:aws:rds:us-east-1:007403005255:db:habibadatabase-1	September 20, 2024

Task 5: Provisioning a new instance for the web server



i-034782508e4704016 (Rowanwebserver)

Instance summary

Instance ID: i-034782508e4704016 (Rowanwebserver)

Public IPv4 address: 18.209.5.107 | open address

Private IPv4 addresses: 10.0.14.233

IPv6 address: –

Instance state: Running

Public IPv4 DNS: ec2-18-209-5-107.compute-1.amazonaws.com | open address

Hostname type: IP name: ip-10-0-14-233.ec2.internal

Private IP DNS name (IPv4 only): ip-10-0-14-233.ec2.internal

Answer private resource DNS name: –

Instance type: t2.micro

Elastic IP addresses: –

Auto-assigned IP address: 18.209.5.107 [Public IP]

VPC ID: vpc-0ebd274cfb648c0ad (project1-vpc)

AWS Compute Optimizer finding: Opt-in to AWS Compute Optimizer for recommendations. | Learn more

IAM Role: LabRole

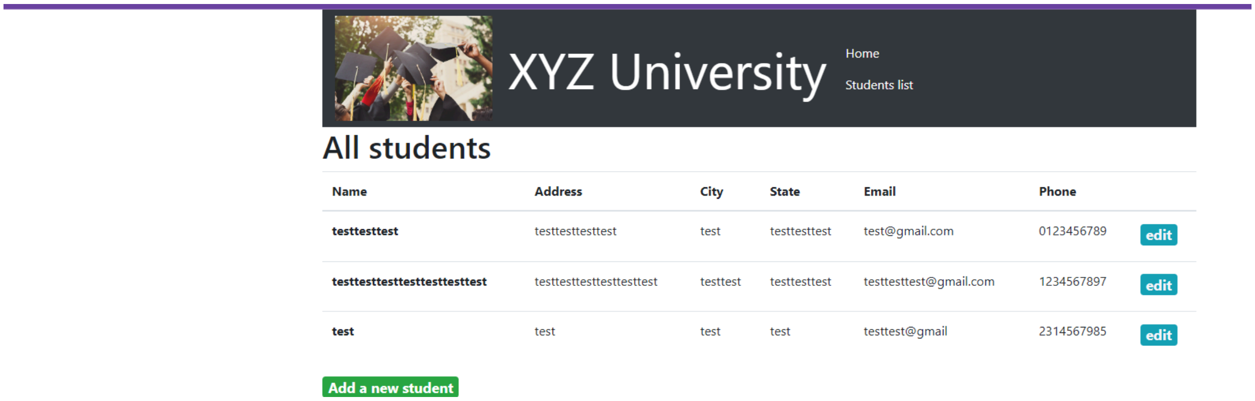
Subnet ID: subnet-0d11ed3de145cef37 (project1-subnet-public1-us-east-1a)

Auto Scaling Group name: –

making a new instance called Rowanwebserver with ubuntu and t2.micro

Task 6: Migrating the database

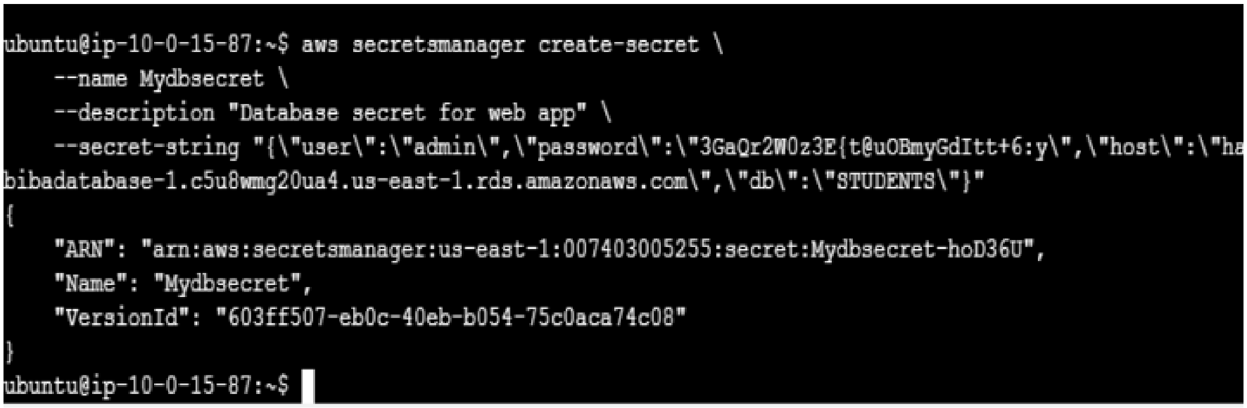
migrate the data that is in Project1 to RDS try to add data and then check if the data moved or not will add some students



All students

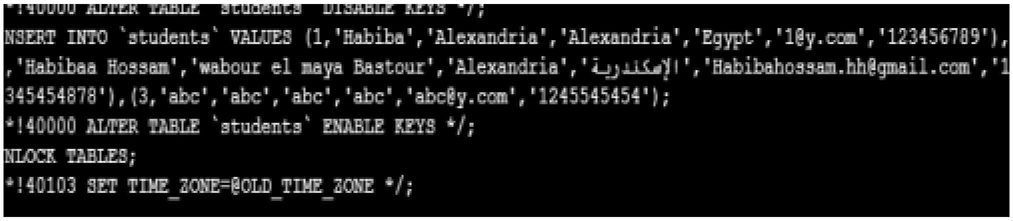
Name	Address	City	State	Email	Phone	
testtesttest	testtesttesttest	test	testtesttest	test@gmail.com	0123456789	edit
testtesttesttesttesttesttest	testtesttesttesttesttest	testtest	testtesttest	testtesttest@gmail.com	1234567897	edit
test	test	test	test	testtest@gmail	2314567985	edit

deleting secret key without-recovery with credential aws secretsmanager delete-secret --secret-id Mydbsecret --force-delete-without-recovery --region us-east-1 AND CREATE A NEW SECRET KEY



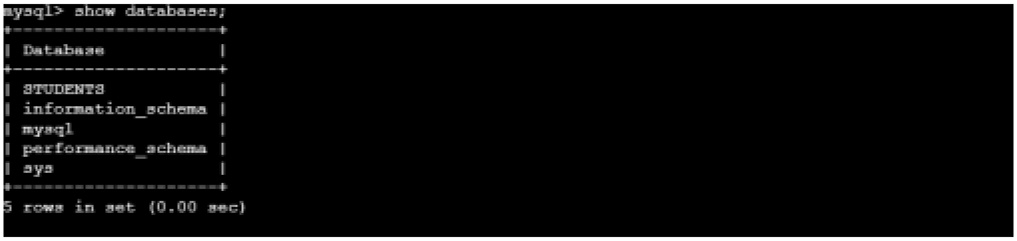
```
ubuntu@ip-10-0-15-87:~$ aws secretsmanager create-secret \
    --name Mydbsecret \
    --description "Database secret for web app" \
    --secret-string "{\"user\":\"admin\",\"password\":\"3GaQr2W0z3E{t@uOBmyGdItt+6:y\",\"host\":\"ha
bibadatabase-1.c5u8wmg20ua4.us-east-1.rds.amazonaws.com\",\"db\":\"STUDENTS\"}"
{
    "ARN": "arn:aws:secretsmanager:us-east-1:007403005255:secret:Mydbsecret-hoD36U",
    "Name": "Mydbsecret",
    "VersionId": "603ff507-eb0c-40eb-b054-75c0aca74c08"
}
ubuntu@ip-10-0-15-87:~$
```

See the data in the DB



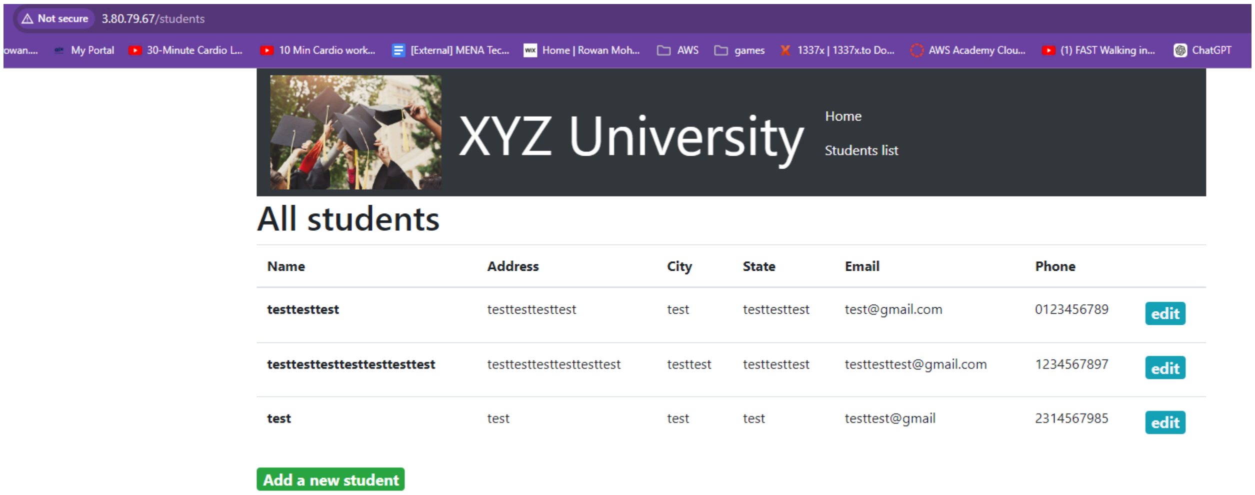
```
*!40000 ALTER TABLE `students` DISABLE KEYS */;
NSERT INTO `students` VALUES (1,'Habiba','Alexandria','Alexandria','Egypt','1@y.com','123456789'),
,'Habibaa Hossam','wabour el maya Bastour','Alexandria','الإسكندرية','Habibahossam.hh@gmail.com','1
345454878'),(3,'abc','abc','abc','abc','abc@y.com','1245545454');
*!40000 ALTER TABLE `students` ENABLE KEYS */;
NLOCK TABLES;
*!40103 SET TIME_ZONE=@OLD_TIME_ZONE */;
```

Then adding the data to the RDS



```
mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| STUDENTS           |
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
5 rows in set (0.00 sec)
```

Task 7: Testing the application



3.80.79.67/students

All students

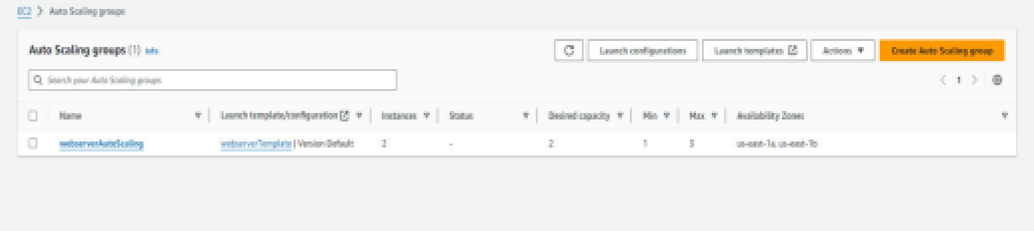
Name	Address	City	State	Email	Phone	
testtesttest	testtesttesttest	test	testtesttest	test@gmail.com	0123456789	edit
testtesttesttesttesttesttest	testtesttesttesttesttest	testtest	testtesttest	testtesttest@gmail.com	1234567897	edit
test	test	test	test	testtest@gmail	2314567985	edit

Add a new student

Phase 4: Implementing high availability and scalability

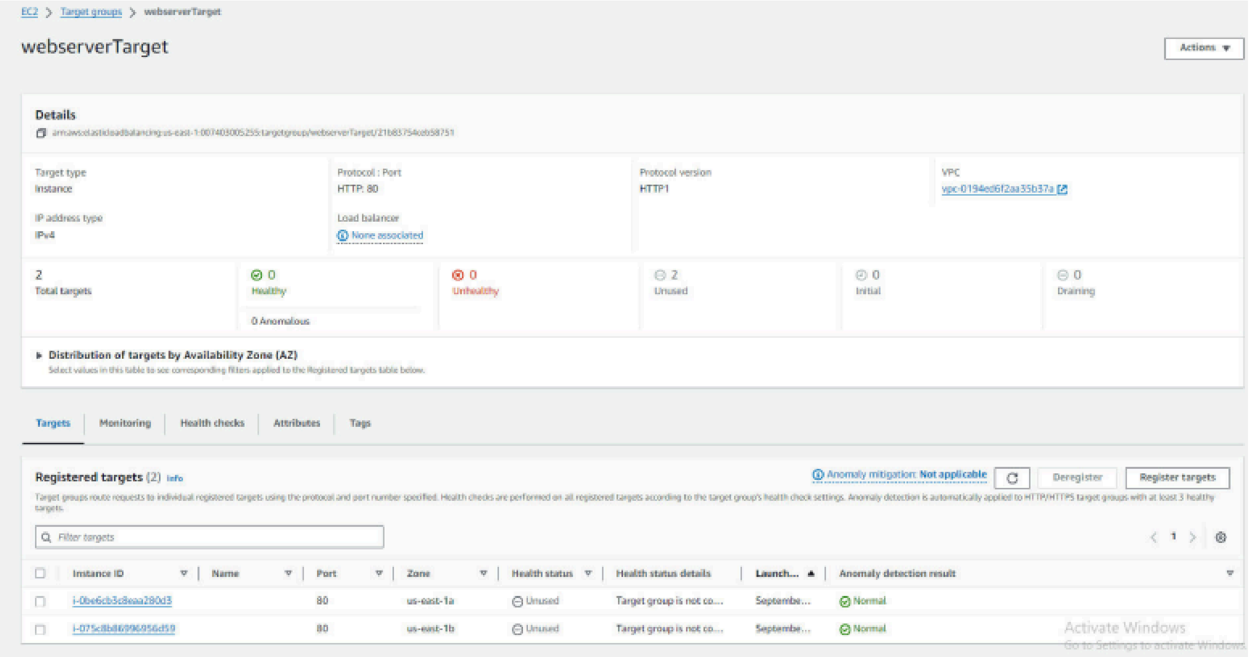
Task 1: Creating an Application Load Balancer

Made an image for The instance,create a template for auto scaling of launch template then create the auto scaling group


EC2 > Auto Scaling groups
Auto Scaling groups (1) Info
Launch configurations
Launch templates
Actions
Create Auto Scaling group
Search your Auto Scaling groups
1

☐	Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability Zones
☐	webserverAutoScaling	webserverTemplate | Version Default	2	-	2	1	5	us-east-1a, us-east-1b

Creating load Balancer by creating Target Group



webserverTarget

Details

arn:aws:elasticloadbalancing:us-east-1:007403005255:targetgroup/webserverTarget/21b83754ceb58751

Target type: Instance
Protocol : Port: HTTP: 80
Protocol version: HTTP1
VPC: vpc-0194ed6f2aa35b37a
IP address type: IPv4
Load balancer: None associated

2 Total targets | 0 Healthy | 0 Unhealthy | 2 Unused | 0 Initial | 0 Draining
0 Anomalous

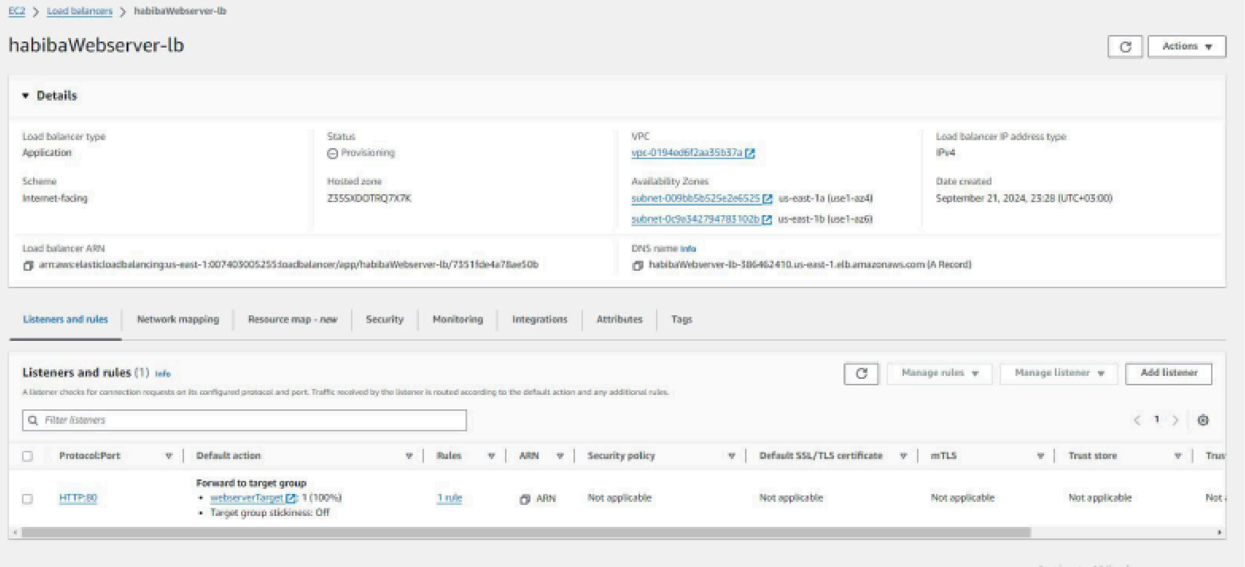
▸ Distribution of targets by Availability Zone (AZ)
Select values in this table to see corresponding filters applied to the Registered targets table below.

Registered targets (2) Info

Target groups route requests to individual registered targets using the protocol and port number specified. Health checks are performed on all registered targets according to the target group's health check settings. Anomaly detection is automatically applied to HTTP/HTTPS target groups with at least 3 healthy targets.

□	Instance ID	Name	Port	Zone	Health status	Health status details	Launch...	Anomaly detection result
□	i-0be6cb3c8eaa280d3		80	us-east-1a	Unused	Target group is not co...	Septembe...	Normal
□	i-075c8b86996956d59		80	us-east-1b	Unused	Target group is not co...	Septembe...	Normal

Then create load balancer



habibaWebserver-lb

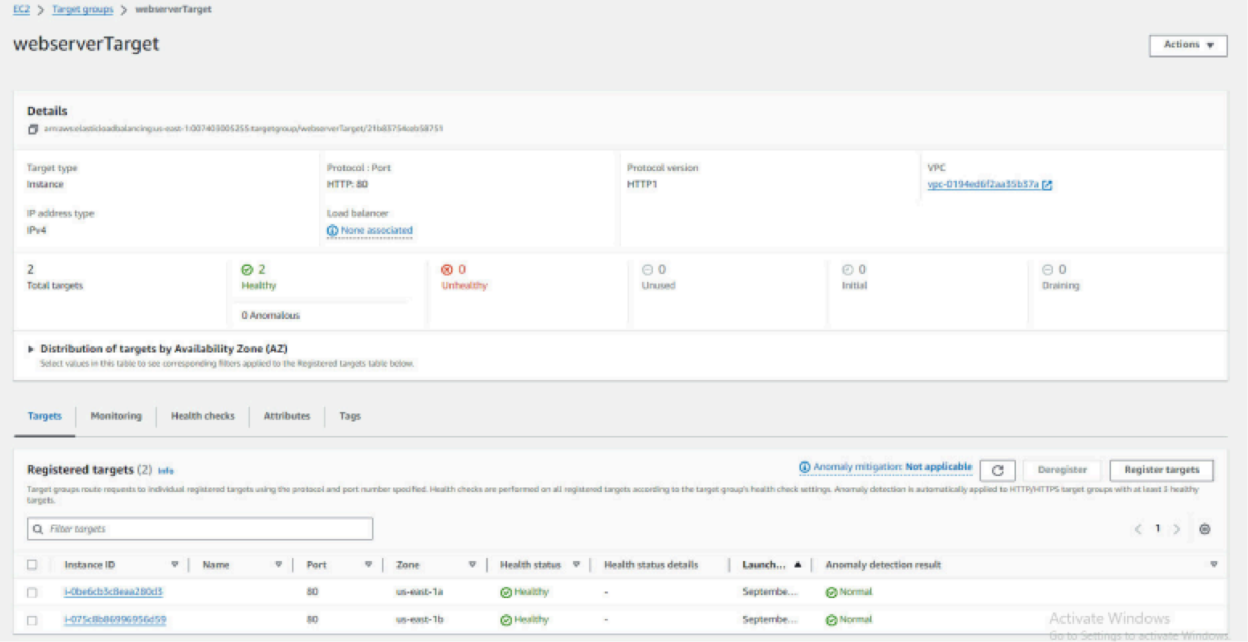
▾ **Details**

Load balancer type: Application
Status: Provisioning
VPC: vpc-0194ed6f2aa35b37a
Load balancer IP address type: IPv4
Scheme: Internet-facing
Hosted zone: Z35SXDOTRQ7X7K
Availability Zones: subnet-009bb5b525e2e6525 us-east-1a (use1-az4); subnet-0c9e342794783102b us-east-1b (use1-az6)
Date created: September 21, 2024, 23:28 (UTC+03:00)
Load balancer ARN: arn:aws:elasticloadbalancing:us-east-1:007403005255:loadbalancer/app/habibaWebserver-lb/7351fde4a78ae50b
DNS name Info: habibaWebserver-lb-386462410.us-east-1.elb.amazonaws.com (A Record)

Listeners and rules (1) 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.

□	Protocol:Port	Default action	Rules	ARN	Security policy	Default SSL/TLS certificate	mTLS	Trust store	Trus
□	HTTP:80	Forward to target group • webserverTarget: 1 (100%) • Target group stickiness: Off	1 rule	ARN	Not applicable	Not applicable	Not applicable	Not applicable	Not



EC2 > Target groups > webserverTarget

webserverTarget

Actions ▾

Details

arn:aws:elasticloadbalancing:us-east-1:007403005255:targetgroup/webserverTarget/21b83754ceb58751

Target type: Instance

Protocol : Port: HTTP: 80

Protocol version: HTTP1

VPC: vpc-0194ed6f2aa35b37a

IP address type: IPv4

Load balancer: None associated

2	2	0	0	0	0
Total targets	Healthy 0 Anomalous	Unhealthy	Unused	Initial	Draining

▸ **Distribution of targets by Availability Zone (AZ)**

Select values in this table to see corresponding filters applied to the Registered targets table below.

Registered targets (2) Info

Anomaly mitigation: **Not applicable**

Target groups route requests to individual registered targets using the protocol and port number specified. Health checks are performed on all registered targets according to the target group's health check settings. Anomaly detection is automatically applied to HTTP/HTTPS target groups with at least 3 healthy targets.

□	Instance ID	Name	Port	Zone	Health status	Health status details	Launch... ▲	Anomaly detection result
□	i-0be6cb3c8eaa280d3		80	us-east-1a	✓ Healthy	-	Septembe...	✓ Normal
□	i-075c8b86996956d59		80	us-east-1b	✓ Healthy	-	Septembe...	✓ Normal