Phase 2: Build a Basic Web Application (POC)

Goal: Launch a single EC2 instance that automatically installs and runs a web server (Port 80) and a MySQL database using your script UserdataScript-phase-2.sh.

#Create a VPC

Name: xyzvpc-vpc IPv4 CIDR: 10.0.0.0/24

#Create Public Subnets

Subnet 1

Name:xyzvpc-subnet-public-1a

CIDR:10.0.0.0/27

Name:xyzvpc-subnet-public-1b

CIDR:10.0.0.32/27

Create Internet Gateway

→ xyzvpc-igw

Create Route Table

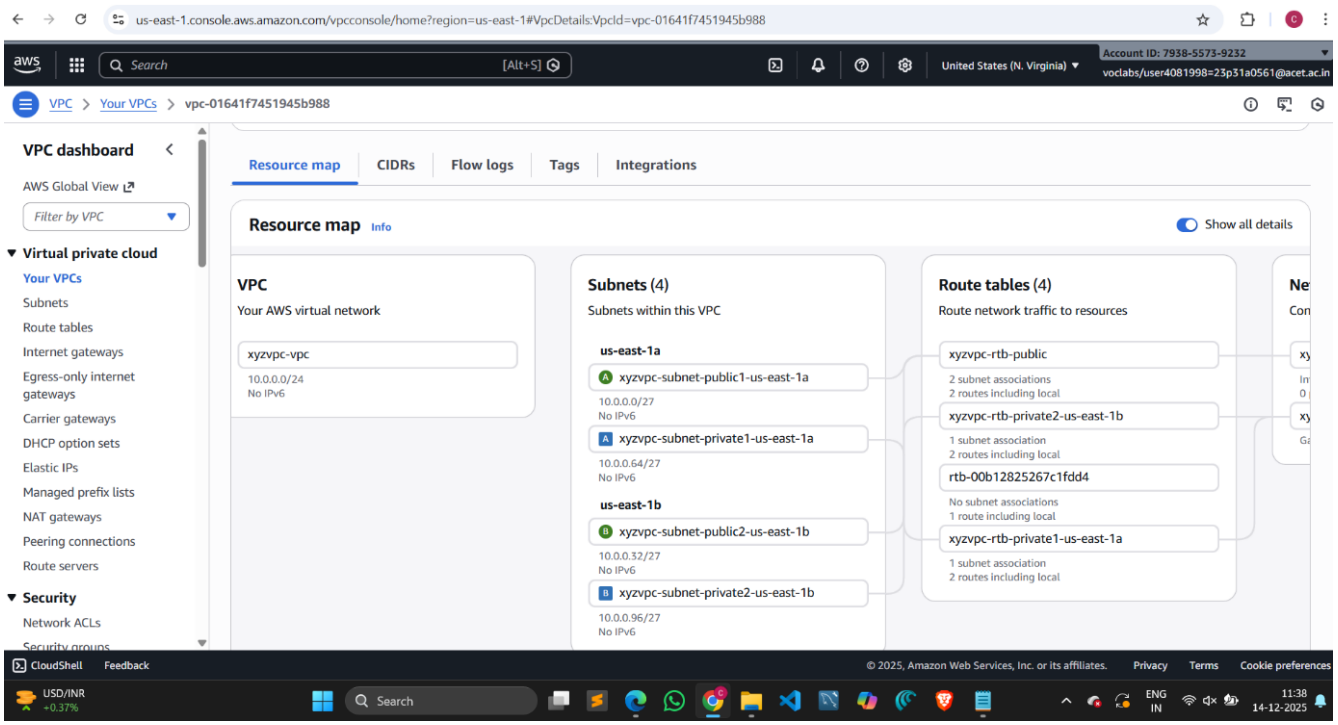
→ Target: Internet Gateway(xyzvpc-igw)

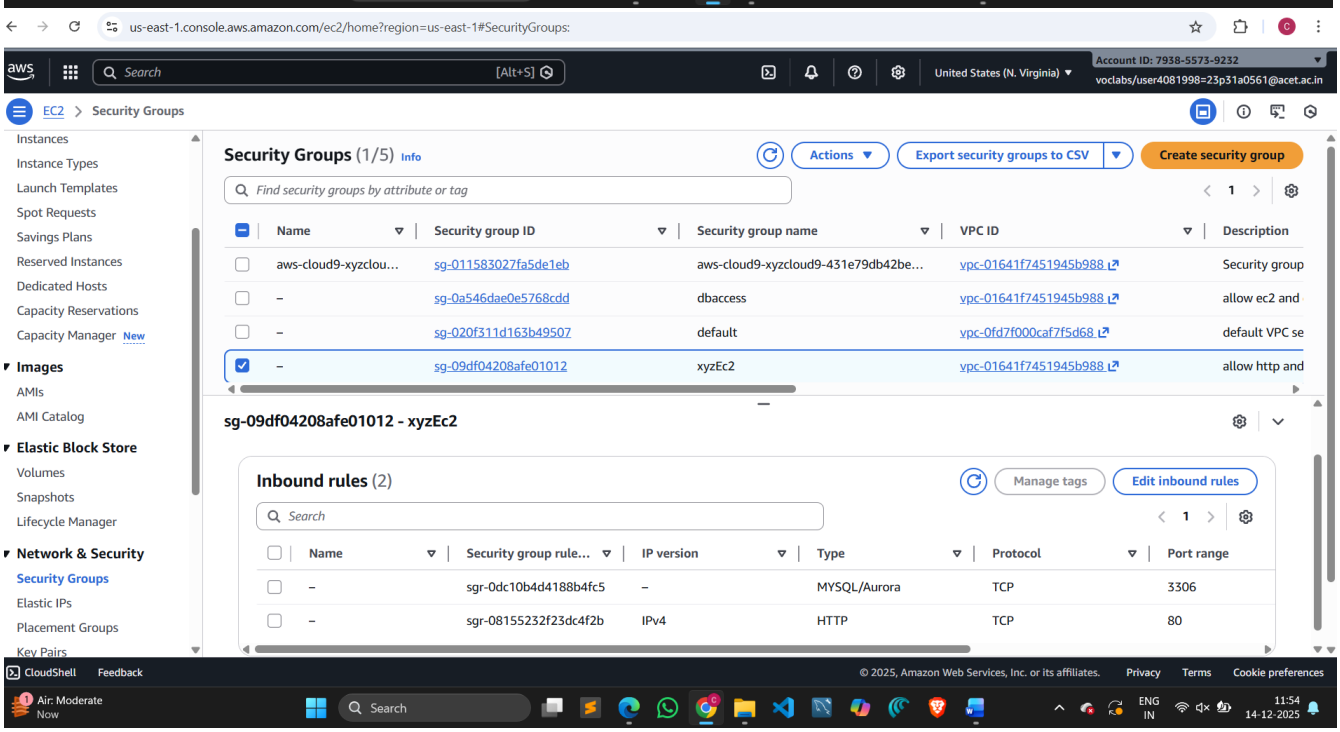
Create Security Group (xyzEc2)

Add inbound rules

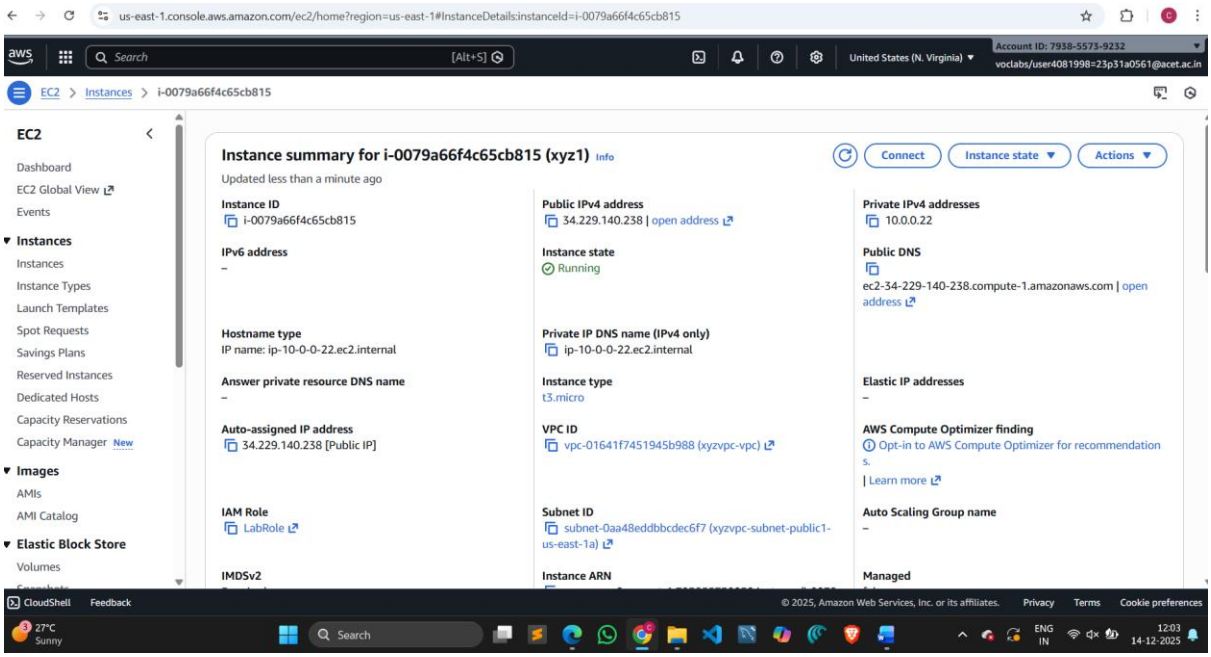
Type**:**MYSQL/Aurora

Type:HTTP


us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#VpcDetails:VpcId=vpc-01641f7451945b988
Search
[Alt+S]
United States (N. Virginia)
Account ID: 7938-5573-9232
voclabs/user4081998=23p31a0561@acet.ac.in
VPC > Your VPCs > vpc-01641f7451945b988
VPC dashboard
AWS Global View
Filter by VPC
Virtual private cloud
Your VPCs
Subnets
Route tables
Internet gateways
Egress-only internet gateways
Carrier gateways
DHCP option sets
Elastic IPs
Managed prefix lists
NAT gateways
Peering connections
Route servers
Security
Network ACLs
Resource map
CIDRs
Flow logs
Tags
Integrations
Resource map Info
Show all details
VPC
Your AWS virtual network
xyzvpc-vpc
10.0.0.0/24
No IPv6
Subnets (4)
Subnets within this VPC
us-east-1a
xyzvpc-subnet-public1-us-east-1a
10.0.0.0/27
No IPv6
xyzvpc-subnet-private1-us-east-1a
10.0.0.64/27
No IPv6
us-east-1b
xyzvpc-subnet-public2-us-east-1b
10.0.0.32/27
No IPv6
xyzvpc-subnet-private2-us-east-1b
10.0.0.96/27
No IPv6
Route tables (4)
Route network traffic to resources
xyzvpc-rtb-public
2 subnet associations
2 routes including local
xyzvpc-rtb-private2-us-east-1b
1 subnet association
2 routes including local
rtb-00b12825267c1fdd4
No subnet associations
1 route including local
xyzvpc-rtb-private1-us-east-1a
1 subnet association
2 routes including local
CloudShell
Feedback
© 2025, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
USD/INR
+0.37%
Search
ENG
IN
11:38
14-12-2025


us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#SecurityGroups:
Search
[Alt+S]
United States (N. Virginia)
Account ID: 7938-5573-9232
voclabs/user4081998=23p31a0561@acet.ac.in
EC2 > Security Groups
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Capacity Manager New
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Security Groups (1/5) Info
Actions
Export security groups to CSV
Create security group
Find security groups by attribute or tag
Name
Security group ID
Security group name
VPC ID
Description
aws-cloud9-xyzclou...
sg-011583027fa5de1eb
aws-cloud9-xyzcloud9-431e79db42be...
vpc-01641f7451945b988
Security group
dbaccess
sg-0a546dae0e5768cdd
allow ec2 and
default
sg-020f311d163b49507
vpc-0fd7f000caf7f5d68
default VPC se
xyzEc2
sg-09df04208afe01012
allow http and
sg-09df04208afe01012 - xyzEc2
Inbound rules (2)
Manage tags
Edit inbound rules
Search
Name
Security group rule...
IP version
Type
Protocol
Port range
sgr-0dc10b4d4188b4fc5
MYSQL/Aurora
TCP
3306
sgr-08155232f23dc4f2b
IPv4
HTTP
80
CloudShell
Feedback
© 2025, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
Air: Moderate
Now
Search
ENG
IN
11:54
14-12-2025

Task 2: Launch EC2 with User Data



User Data:

```
#!/bin/bash -xe

apt update -y

apt install nodejs unzip wget npm mysql-server -y

#wget https://aws-tc-largeobjects.s3.us-west-2.amazonaws.com/CUR-TF-200-ACCAP1-1-DEV/code.zip -P /home/ubuntu

wget https://aws-tc-largeobjects.s3.us-west-2.amazonaws.com/CUR-TF-200-ACCAP1-1-91571/1-lab-capstone-project-1/code.zip -P /home/ubuntu

cd /home/ubuntu

unzip code.zip -x "resources/codebase_partner/node_modules/*"

cd resources/codebase_partner

npm install aws aws-sdk

mysql -u root -e "CREATE USER 'nodeapp' IDENTIFIED WITH mysql_native_password BY 'student12'";

mysql -u root -e "GRANT all privileges on *.* to 'nodeapp'@'%';"
```

```
mysql -u root -e "CREATE DATABASE STUDENTS;"
mysql -u root -e "USE STUDENTS; CREATE TABLE students(
        id INT NOT NULL AUTO_INCREMENT,
        name VARCHAR(255) NOT NULL,
        address VARCHAR(255) NOT NULL,
        city VARCHAR(255) NOT NULL,
        state VARCHAR(255) NOT NULL,
        email VARCHAR(255) NOT NULL,
        phone VARCHAR(100) NOT NULL,
        PRIMARY KEY ( id ));"
sed -i 's/.*bind-address.*/bind-address = 0.0.0.0/' /etc/mysql/mysql.conf.d/mysqld.cnf
systemctl enable mysql
service mysql restart
export APP_DB_HOST=$(curl http://169.254.169.254/latest/meta-data/local-ipv4)
export APP_DB_USER=nodeapp
export APP_DB_PASSWORD=student12
export APP_DB_NAME=STUDENTS
export APP_PORT=80
npm start &
echo '#!/bin/bash -xe
cd /home/ubuntu/resources/codebase_partner
export APP_PORT=80
npm start' > /etc/rc.local
chmod +x /etc/rc.local
```

Task 3: Test Phase 2

http://34.229.140.238/studentsS