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PROJECT:

3-tier architecture in two available zones

vpc:

- create a vpc with specific name 3tier-vpc
- now create a subnets available zone 1a:

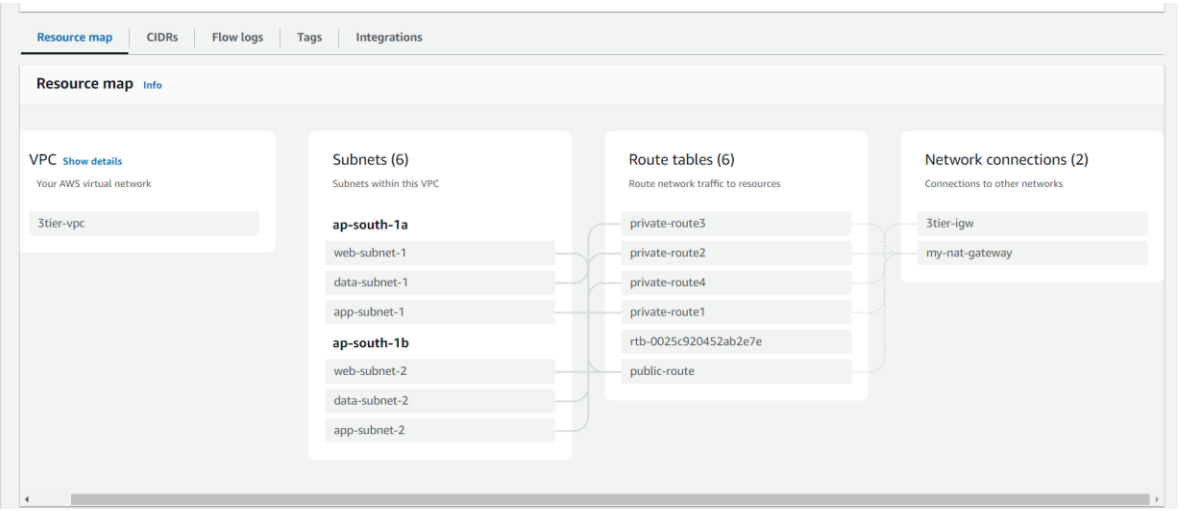
1. web-subnet-1
2. app-subnet-1
3. data-subnet-1

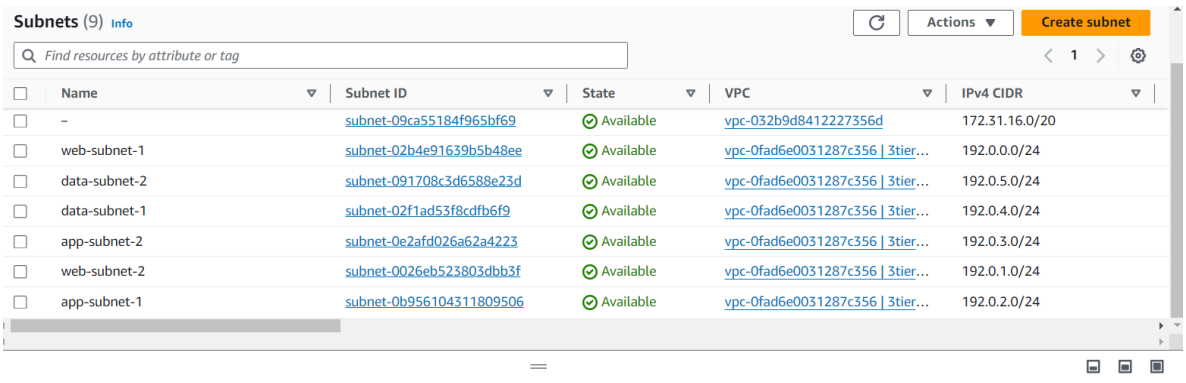
- now create a subnet available zone 1b:

1. web-subnet-2
2. app-subnet-2
3. data-subnet-2

- create a internet gate way to attach the vpc
- create a natway to connect the app-subnets using route table
- create a public-route table and private-route table

1. public-routes to add web-subnets to attach the internet gate way
2. private-routes to add app-subnets individual to attatch the nat gate way





Subnets (9) Info

Actions | Create subnet

Find resources by attribute or tag

1

Name	Subnet ID	State	VPC	IPv4 CIDR
–	subnet-09ca55184f965bf69	Available	vpc-032b9d8412227356d	172.31.16.0/20
web-subnet-1	subnet-02b4e91639b5b48ee	Available	vpc-0fad6e0031287c356 | 3tier…	192.0.0.0/24
data-subnet-2	subnet-091708c3d6588e23d	Available	vpc-0fad6e0031287c356 | 3tier…	192.0.5.0/24
data-subnet-1	subnet-02f1ad53f8cdfb6f9	Available	vpc-0fad6e0031287c356 | 3tier…	192.0.4.0/24
app-subnet-2	subnet-0e2afd026a62a4223	Available	vpc-0fad6e0031287c356 | 3tier…	192.0.3.0/24
web-subnet-2	subnet-0026eb523803dbb3f	Available	vpc-0fad6e0031287c356 | 3tier…	192.0.1.0/24
app-subnet-1	subnet-0b956104311809506	Available	vpc-0fad6e0031287c356 | 3tier…	192.0.2.0/24

VPC > Internet gateways > igw-05d558191dcc32e2e

igw-05d558191dcc32e2e / 3tier-igw

Actions

Details Info

Internet gateway ID	State	VPC ID	Owner
igw-05d558191dcc32e2e	Attached	vpc-0fad6e0031287c356 | 3tier-vpc	905418143553

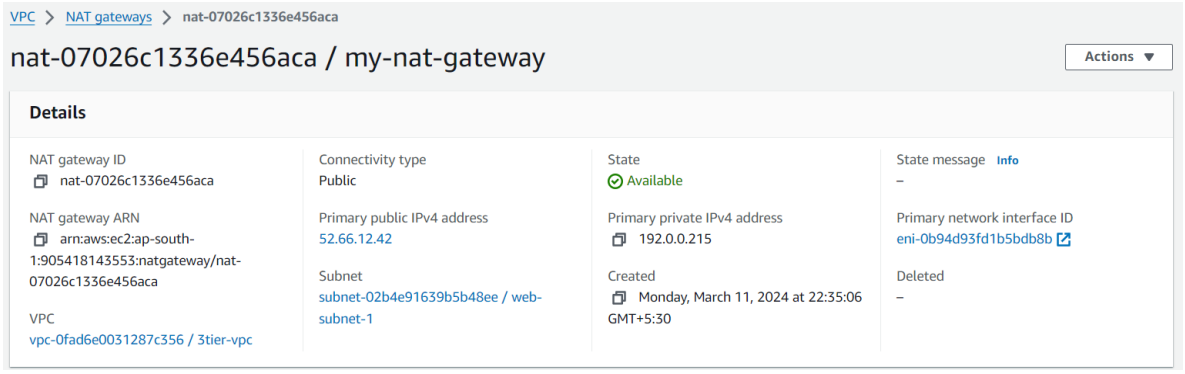
Tags

Manage tags

Search tags

1

Key	Value
Name	3tier-igw



VPC > NAT gateways > nat-07026c1336e456aca

nat-07026c1336e456aca / my-nat-gateway

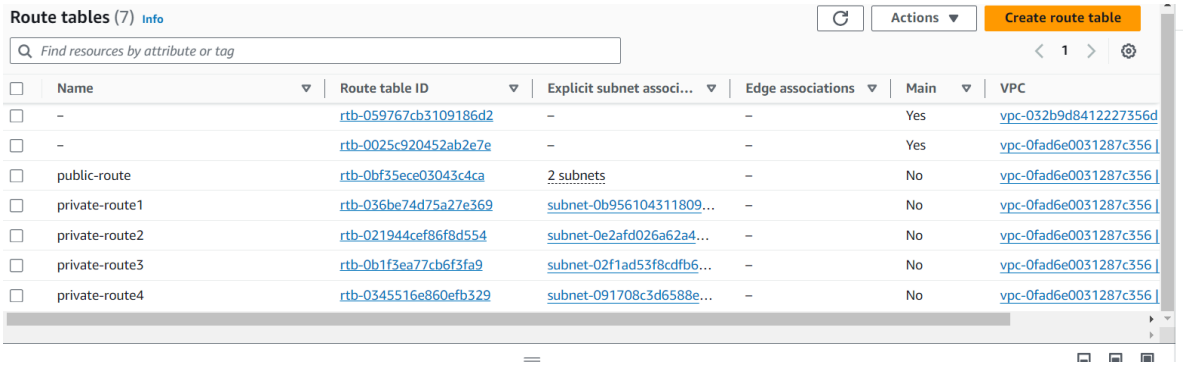
Actions

Details

NAT gateway ID	Connectivity type	State	State message
nat-07026c1336e456aca	Public	Available	–

NAT gateway ARN	Primary public IPv4 address	Primary private IPv4 address	Primary network interface ID
arn:aws:ec2:ap-south-1:905418143553:natgateway/nat-07026c1336e456aca	52.66.12.42	192.0.0.215	eni-0b94d93fd1b5bdb8b

VPC	Subnet	Created	Deleted
vpc-0fad6e0031287c356 / 3tier-vpc	subnet-02b4e91639b5b48ee / web-subnet-1	Monday, March 11, 2024 at 22:35:06 GMT+5:30	–



Route tables (7) Info

Actions | Create route table

Find resources by attribute or tag

1

Name	Route table ID	Explicit subnet associ…	Edge associations	Main	VPC
–	rtb-059767cb3109186d2	–	–	Yes	vpc-032b9d8412227356d
–	rtb-0025c920452ab2e7e	–	–	Yes	vpc-0fad6e0031287c356 |
public-route	rtb-0bf35ece03043c4ca	2 subnets	–	No	vpc-0fad6e0031287c356 |
private-route1	rtb-036be74d75a27e369	subnet-0b956104311809…	–	No	vpc-0fad6e0031287c356 |
private-route2	rtb-021944cef86f8d554	subnet-0e2afd026a62a4…	–	No	vpc-0fad6e0031287c356 |
private-route3	rtb-0b1f3ea77cb6f3fa9	subnet-02f1ad53f8cdfb6…	–	No	vpc-0fad6e0031287c356 |
private-route4	rtb-0345516e860efb329	subnet-091708c3d6588e…	–	No	vpc-0fad6e0031287c356 |

EC2:

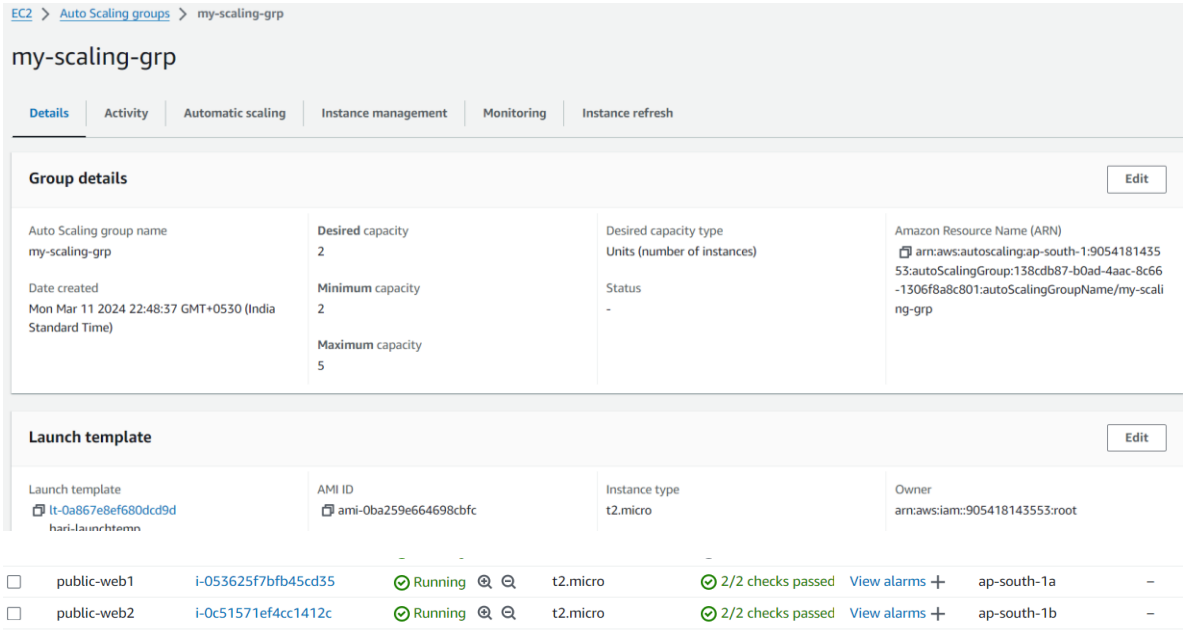
web-tier:

- create a launch template

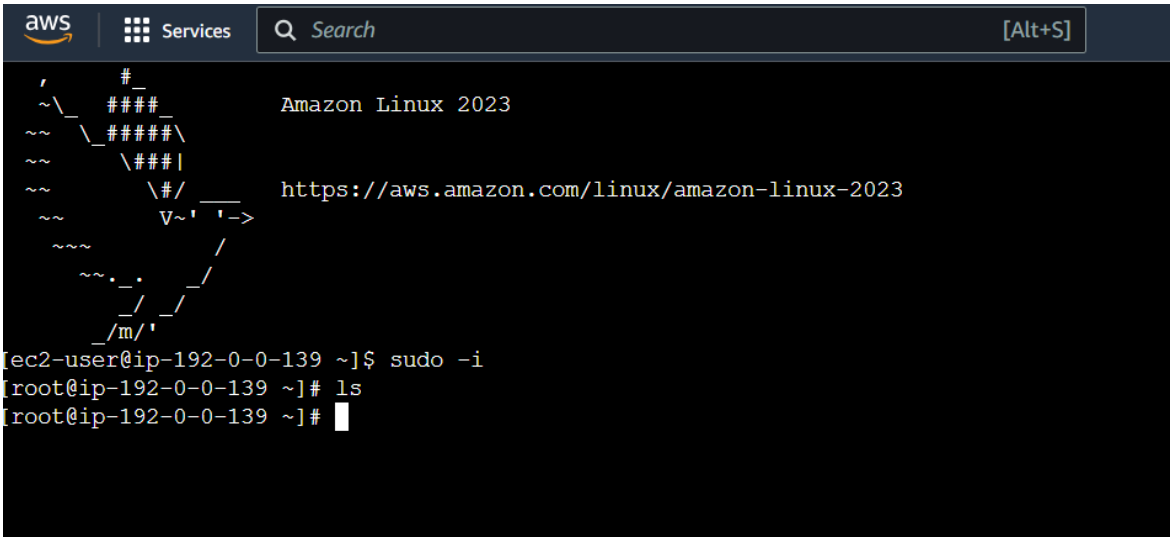
1. AMI: Amazon 2 Linux
2. Instance type: t2.micro (1GB – Free Tier)
3. A new or existing key pair
4. Create a new security group and add inbound rules (SSH & HTTP)

- Create auto -scaling groups with following settings

1. Attach the created template
2. Select the 3tier-vpc along with two public subnets
3. Create a new application load balancer

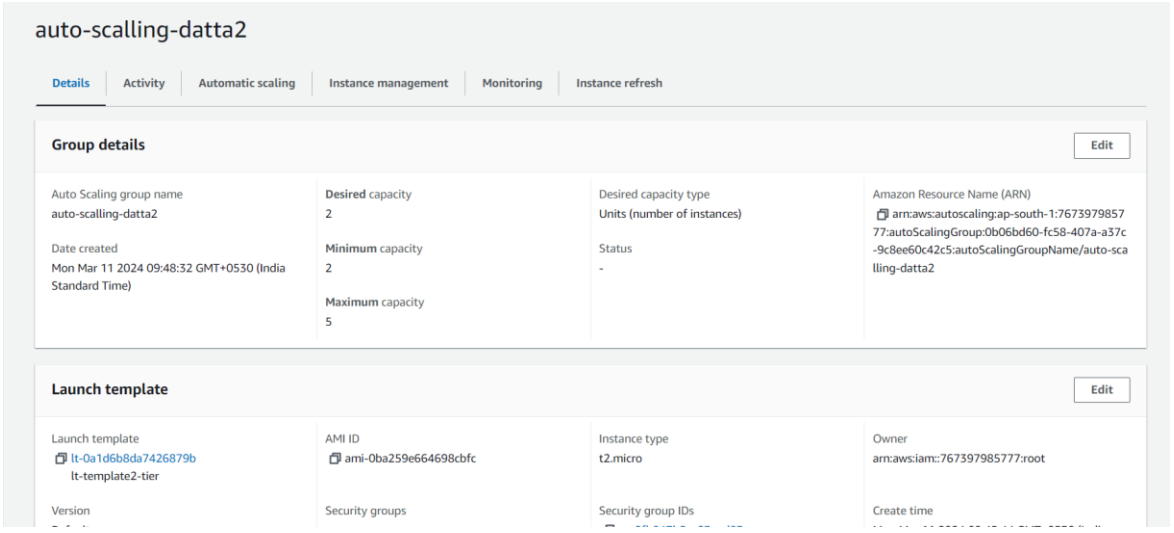


- Now, Lets launch the SSh to see if the application is working

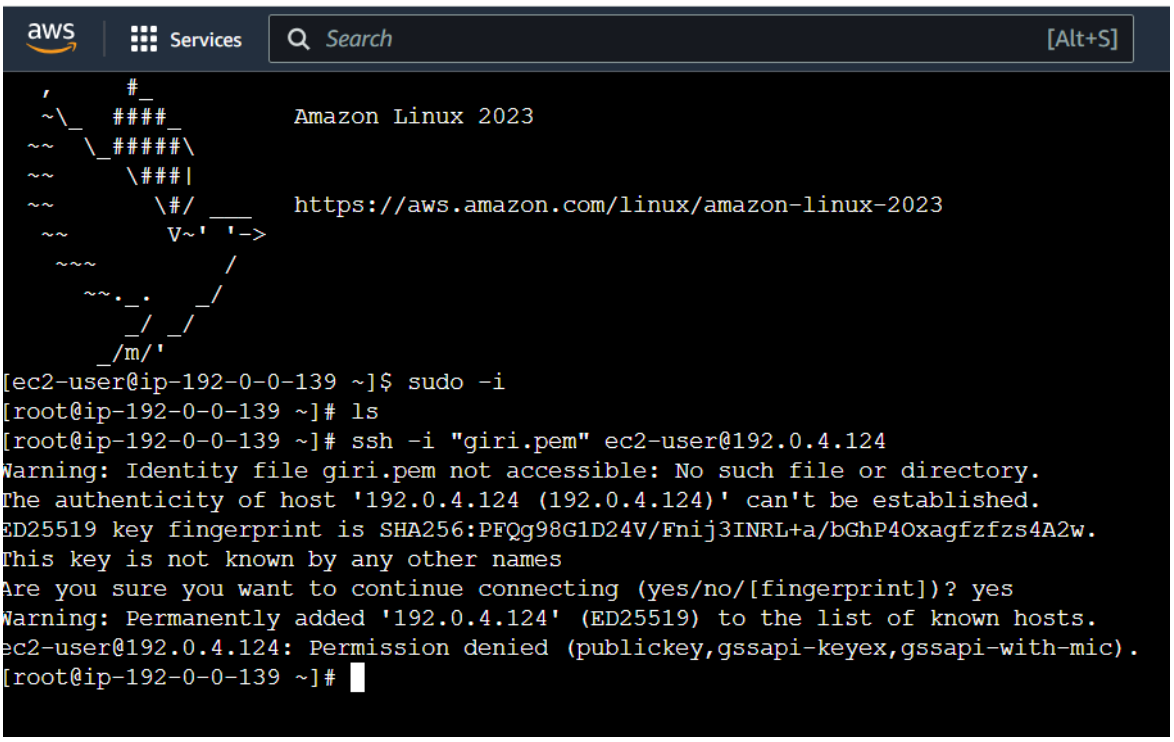


App-tier:

- create a launch template
- An auto scaling to dynamically provision Ec2
- An application Load Balancer to route the traffic from web tier

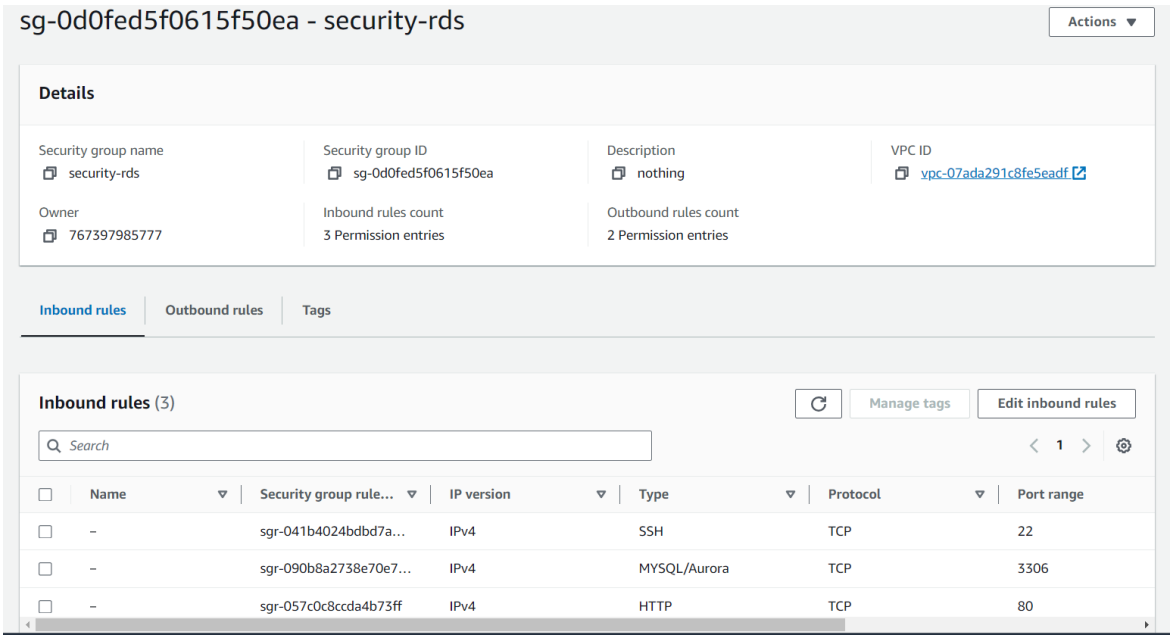


- Now connect to the public instance and connect using .pem to the private instance

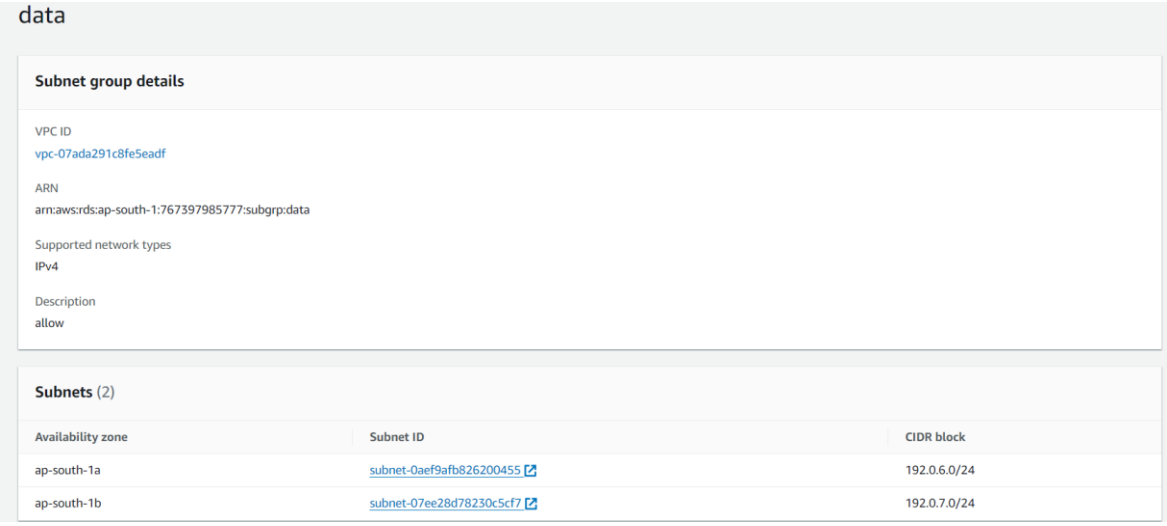


Data-tier:

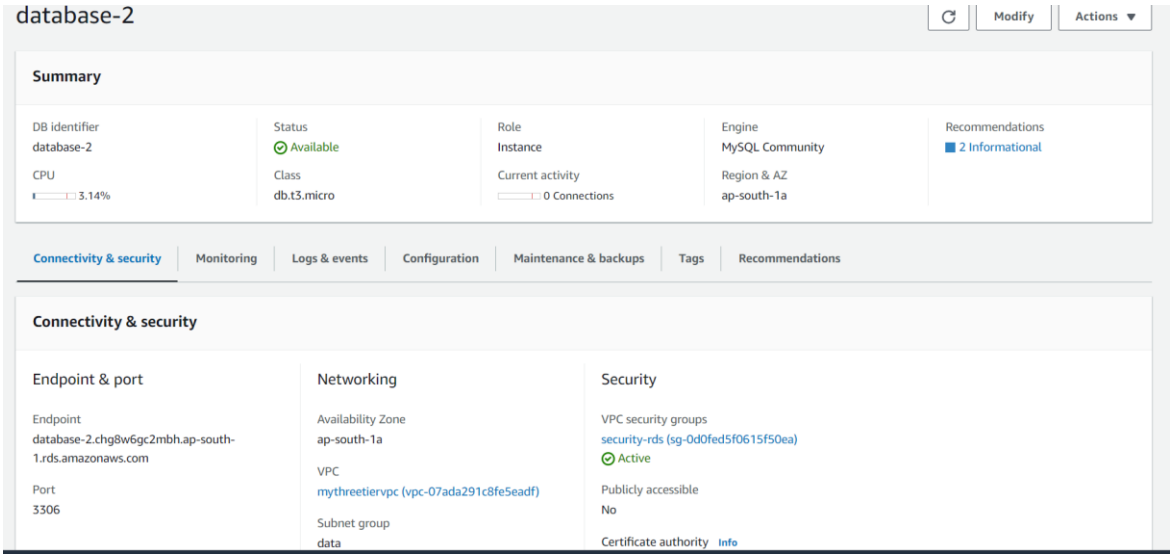
- Create a security group add inbound and outbound rules for mysql/Arora



- Create database subnet groups by attaching the 2 private subnets which are in different availability zones in RDS and attach the 3tier-vpc



- Now, create RDS DataBase



- Connect to the database

1. 1. Connect to the server
2. 2. Install mysql

3. 3. And enter command mysql -h YOUR_DB_ENDPOINT -P 3306 -u YOUR_DB_USERNAME -p in these command instead of your_dB_endpoint we should enter our database endpoint and also edit username as well after that enter password that you have given while creating a relational database.