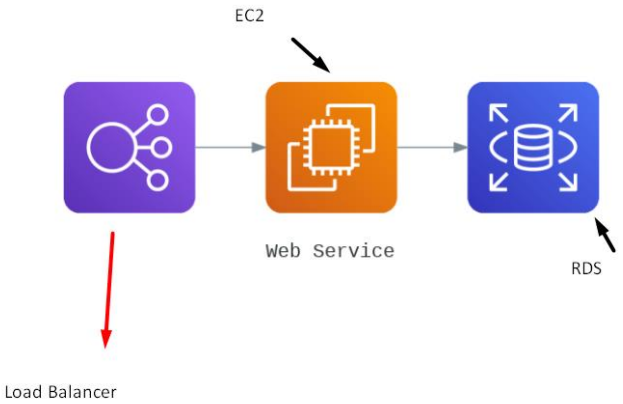
Assignment - 6

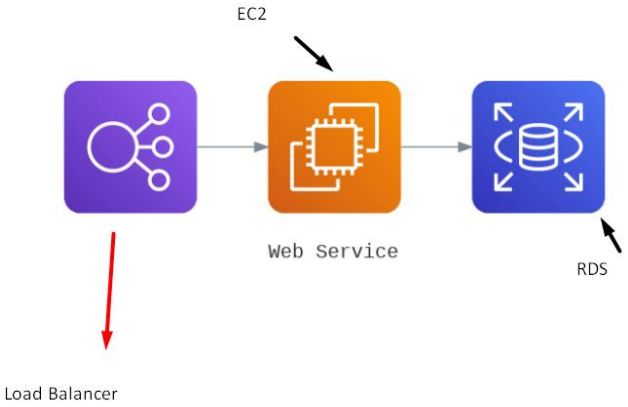
1) Explain the below AWS Architecture?



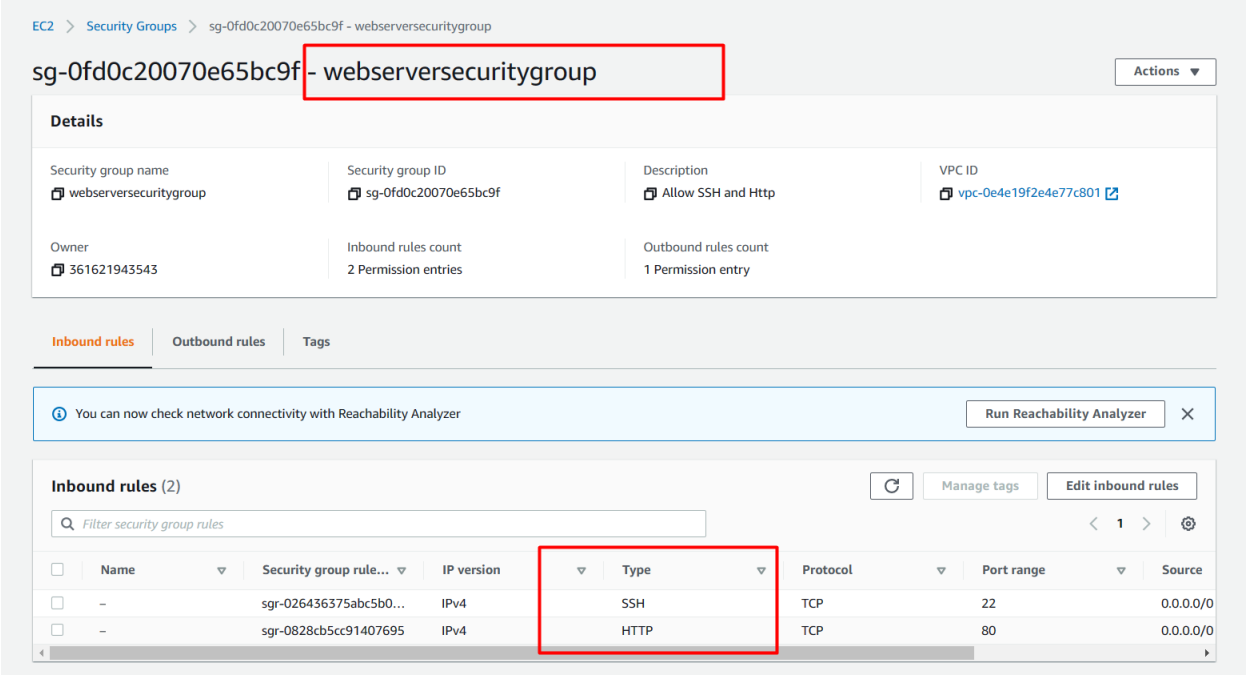
- Load balancer + EC2 + RDS
- In Amazon Web Services (AWS), a load balancer is a component that distributes incoming traffic across multiple Amazon Elastic Compute Cloud (EC2) instances. This can help improve the availability and fault tolerance of your application.
- Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides resizable compute capacity in the cloud. It allows you to launch virtual servers, called Amazon Elastic Compute Cloud (EC2) instances, which can be used to host applications and services.
- Amazon Relational Database Service (RDS) is a managed database service offered by Amazon Web Services (AWS) that makes it easy to set up, operate, and scale a relational database in the cloud. RDS supports a number of database engines, including MySQL
- Here's an example architecture that uses a load balancer in combination with EC2 instances and a database:
  - ✓ Client devices send requests to the load balancer over the internet.
  - ✓ The load balancer receives the request and distributes it to one of the available EC2 instances.
  - ✓ The EC2 instance processes the request and retrieves any necessary data from the database.
  - ✓ The EC2 instance sends a response back to the client device through the load balancer.
  - ✓ In this architecture, the load balancer acts as a single point of contact for clients and distributes incoming traffic among the EC2 instances. This can help ensure that the application is able to handle a large number of requests and improve the overall performance and reliability of the system.
  - ✓ The database can be any type of database, such as a MySQL database or a NoSQL database like Amazon DynamoDB. It is used to store data that the EC2 instances need to access in order to fulfil client requests.

- Overall, this architecture allows you to build scalable and highly available applications using AWS services.

2) Implement the same in the AWS (only do a proper connection between service)

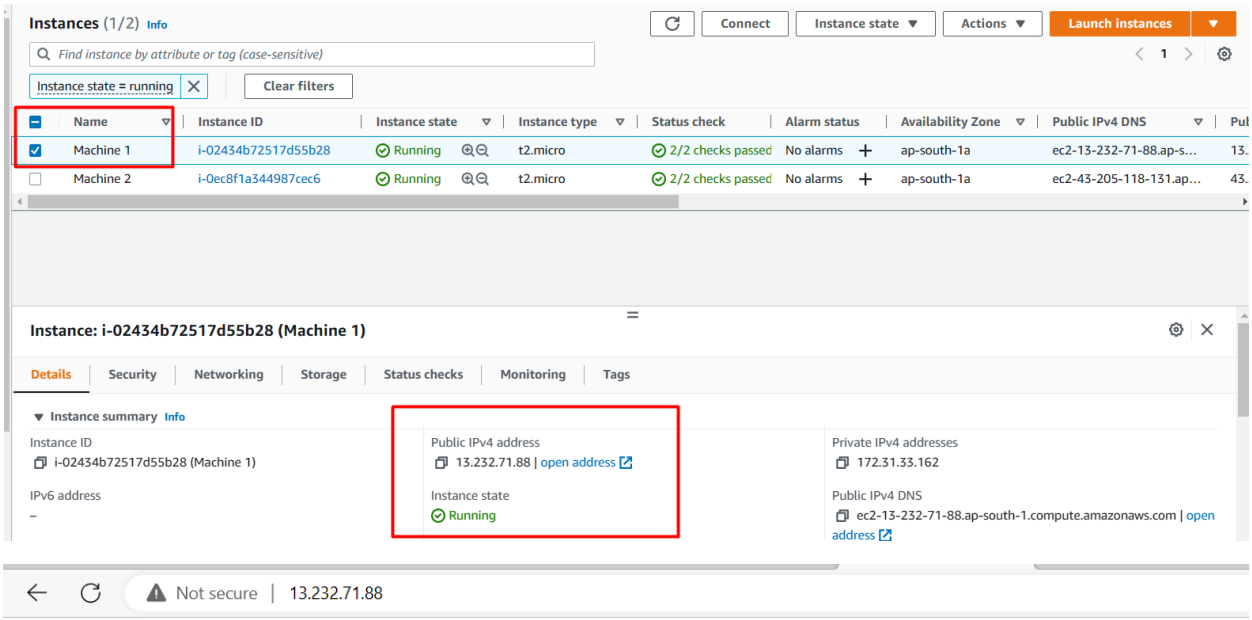


I. Create a Security Group for SSH and HTTP



II. Create two ec2 machine with webserver to verify the load balancer is working correctly or not

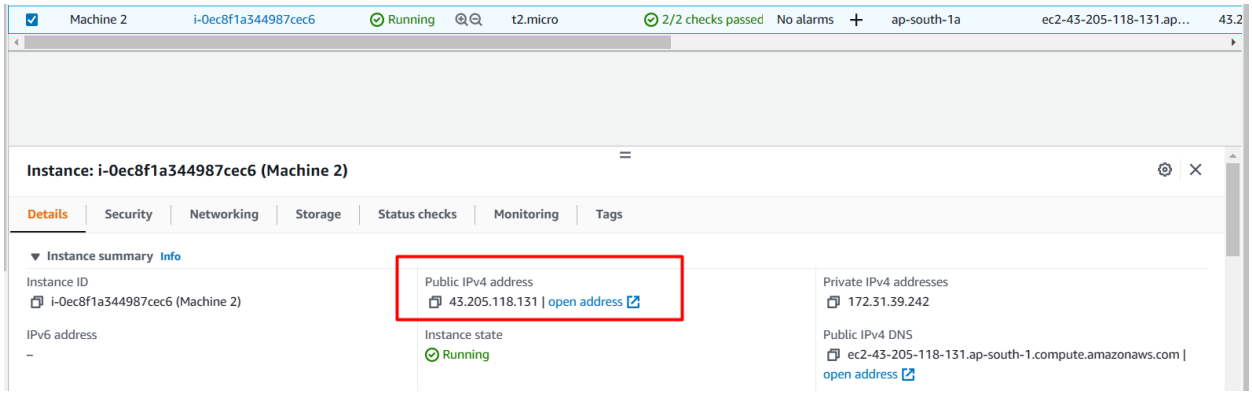
Machine 1



Welcome to first acrh. of the combined service of ec2+loadblancer+rds

Machine 1

Machine 2

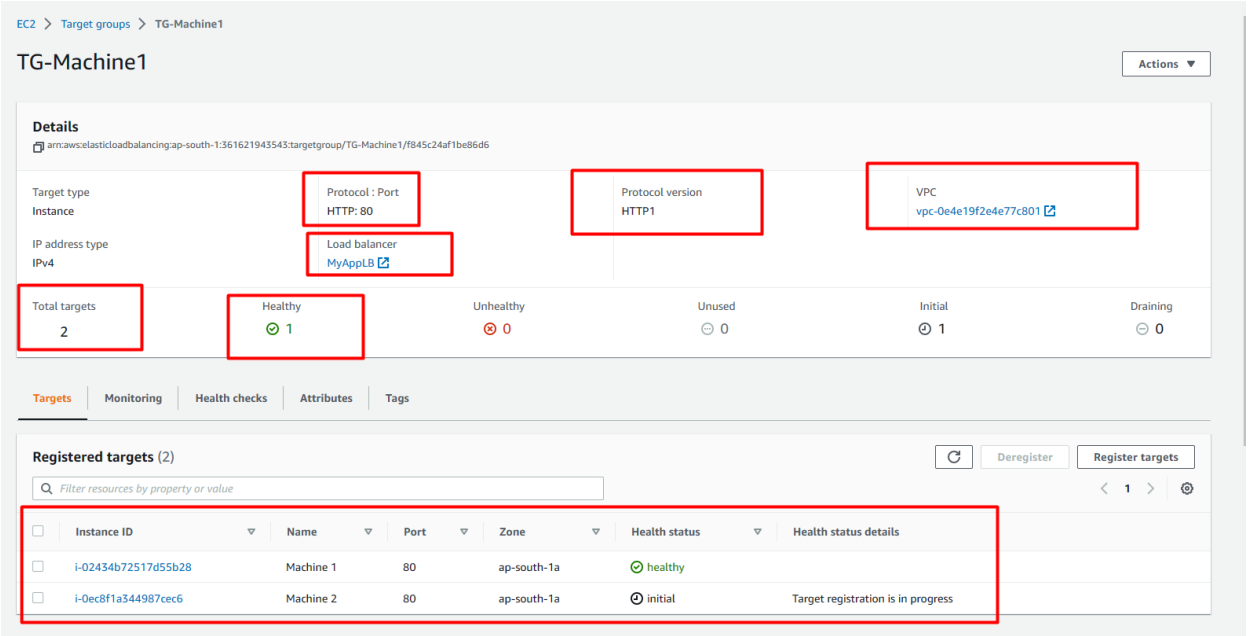


Welcome to first acrh. of the combined service of ec2+loadblancer+rds

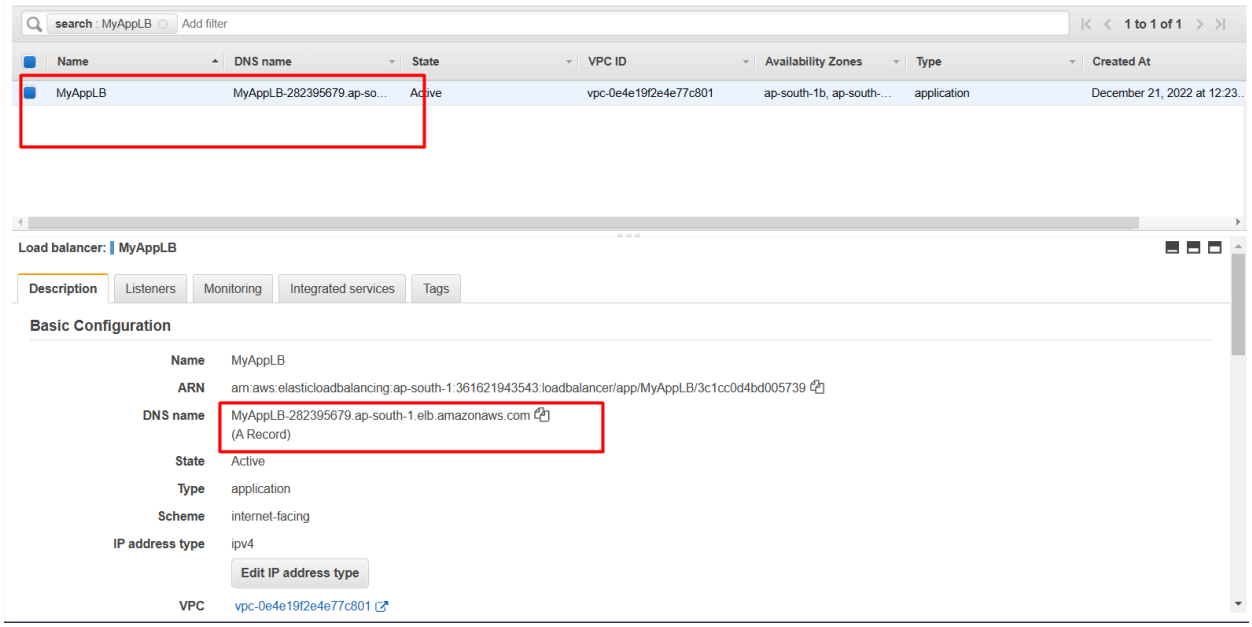
Machine 2

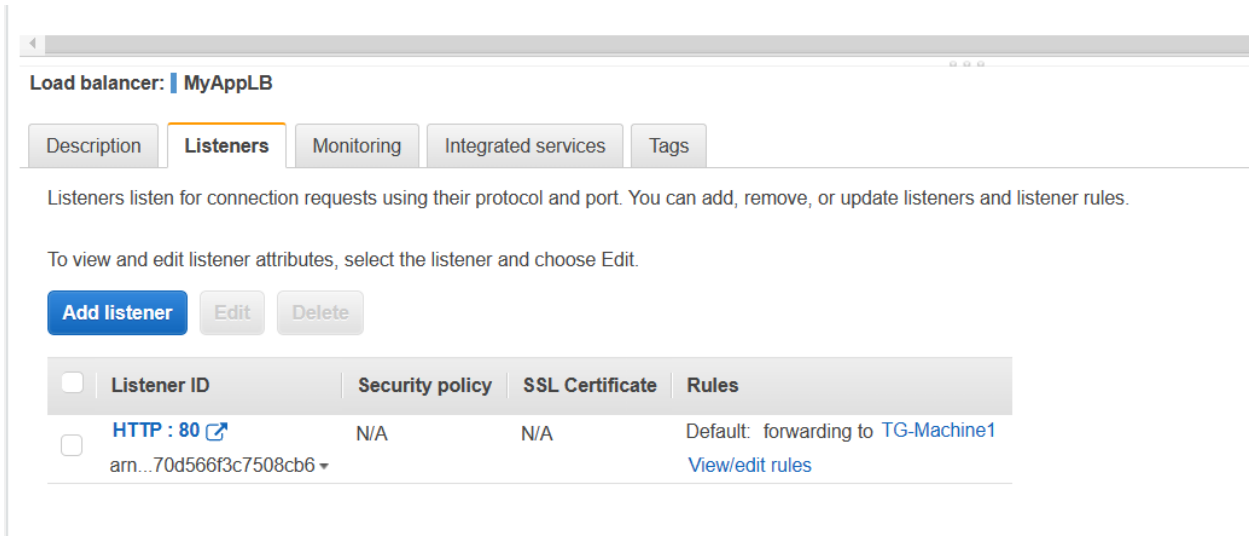
III. Create a Target Group

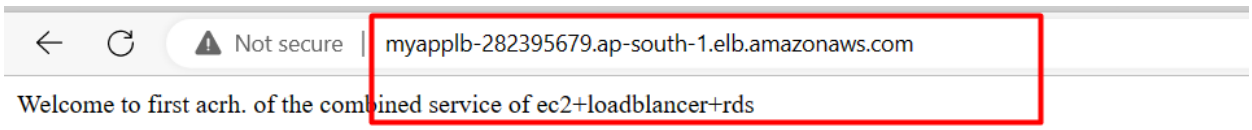
- ✓ Creating a target group in Amazon Web Services (AWS) allows you to route traffic to one or more Amazon Elastic Compute Cloud (EC2) instances.
- ✓ When you create a target group, you specify the protocol and port that you want to use to route traffic to your instances.
- ✓ You can then register your instances with the target group and use it as the destination for traffic in your Amazon Elastic Load Balancer or Application Load Balancer.



IV. Create a Load balancer

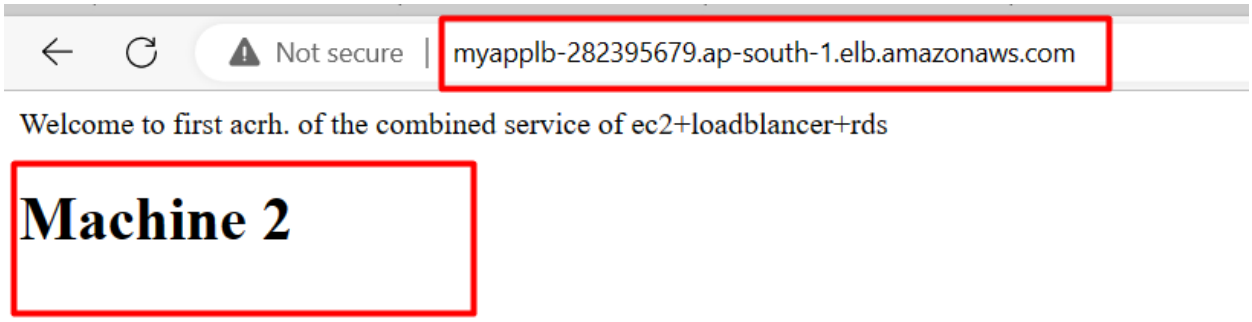




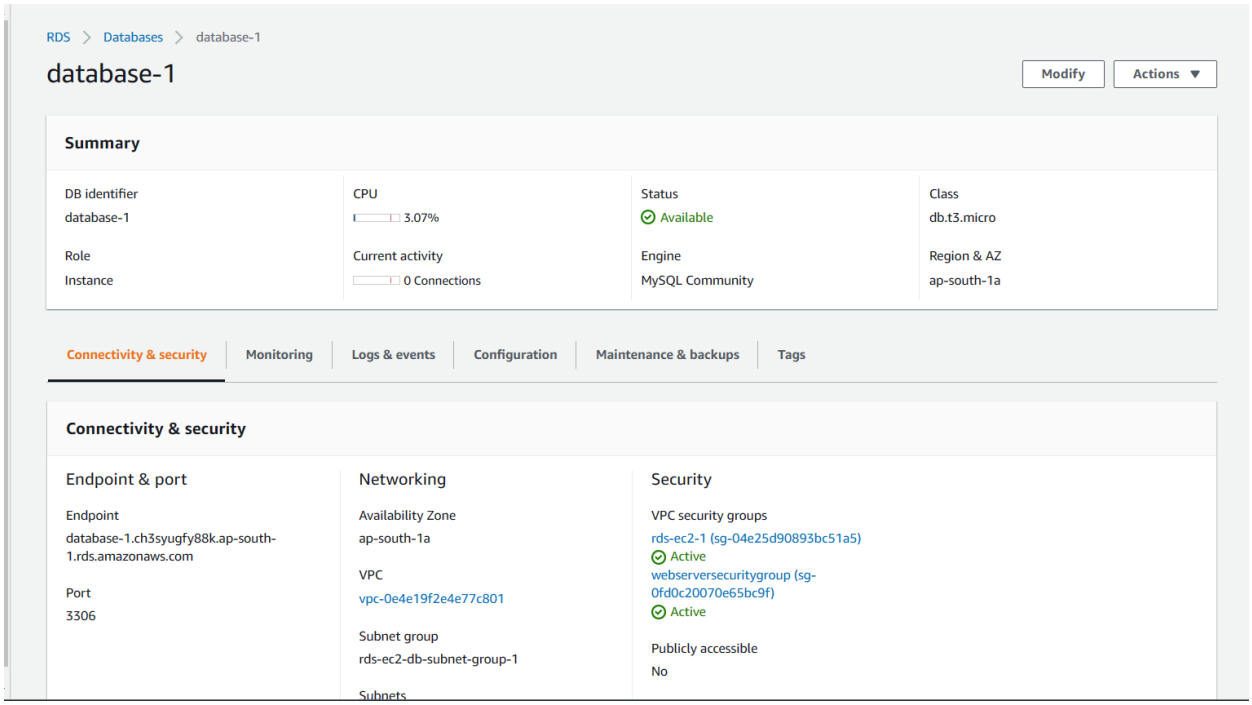


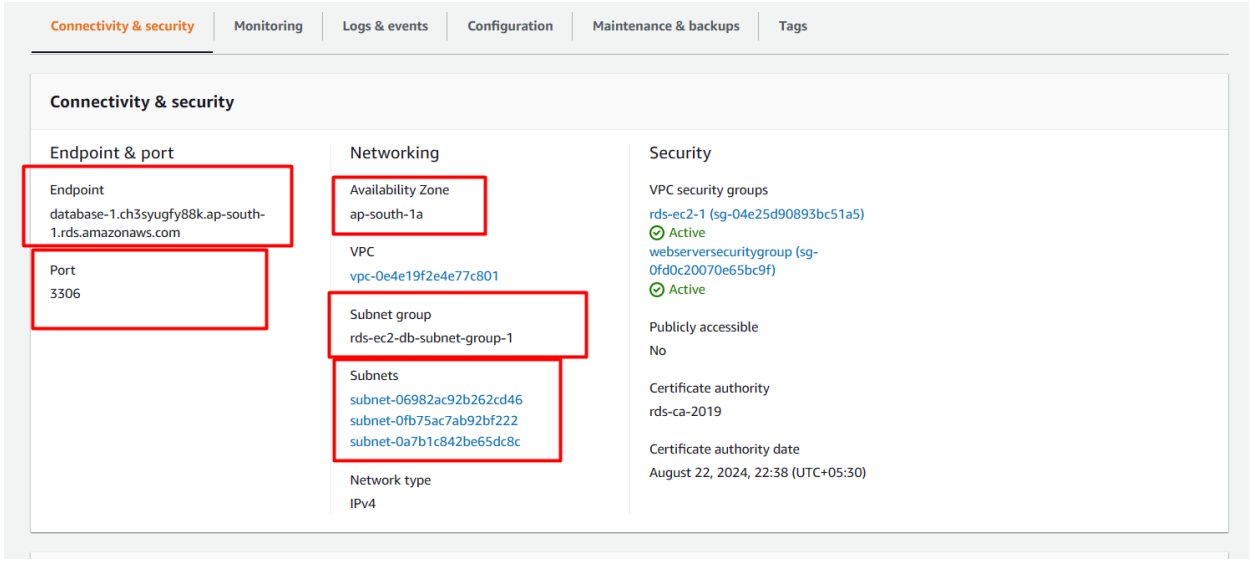
Welcome to first acrh. of the combined service of ec2+loadblancer+rds

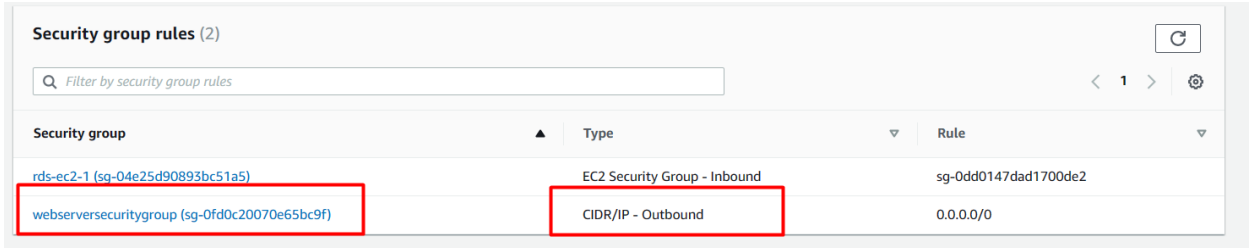
Machine 1

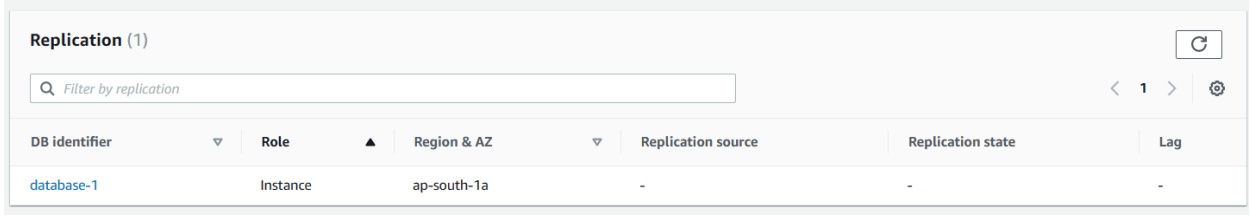


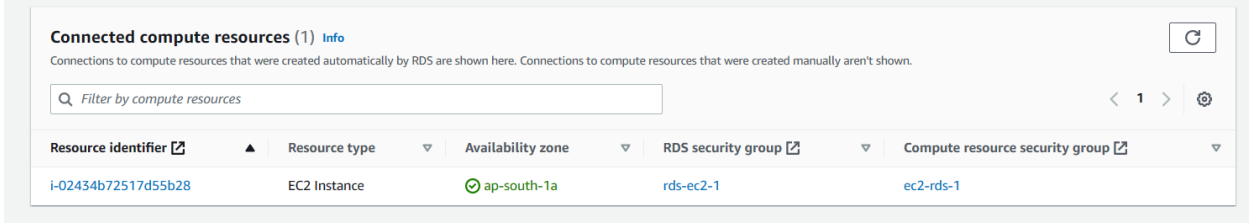
V. Created RDS with MySQL database and connected with previously created ec2.




Connectivity & security
Monitoring
Logs & events
Configuration
Maintenance & backups
Tags
Connectivity & security
Endpoint & port
Endpoint
database-1.ch3syugfy88k.ap-south-1.rds.amazonaws.com
Port
3306
Networking
Availability Zone
ap-south-1a
VPC
vpc-0e4e19f2e4e77c801
Subnet group
rds-ec2-db-subnet-group-1
Subnets
subnet-06982ac92b262cd46
subnet-0fb75ac7ab92bf222
subnet-0a7b1c842be65dc8c
Network type
IPv4
Security
VPC security groups
rds-ec2-1 (sg-04e25d90893bc51a5)
Active
webserversecuritygroup (sg-0fd0c20070e65bc9f)
Active
Publicly accessible
No
Certificate authority
rds-ca-2019
Certificate authority date
August 22, 2024, 22:38 (UTC+05:30)


Security group rules (2)
Filter by security group rules
1
Security group
Type
Rule
rds-ec2-1 (sg-04e25d90893bc51a5)
EC2 Security Group - Inbound
sg-0dd0147dad1700de2
webserversecuritygroup (sg-0fd0c20070e65bc9f)
CIDR/IP - Outbound
0.0.0.0/0


Replication (1)
Filter by replication
1
DB identifier
Role
Region & AZ
Replication source
Replication state
Lag
database-1
Instance
ap-south-1a
-
-
-


Connected compute resources (1) Info
Connections to compute resources that were created automatically by RDS are shown here. Connections to compute resources that were created manually aren't shown.
Filter by compute resources
1
Resource identifier
Resource type
Availability zone
RDS security group
Compute resource security group
i-02434b72517d55b28
EC2 Instance
ap-south-1a
rds-ec2-1
ec2-rds-1