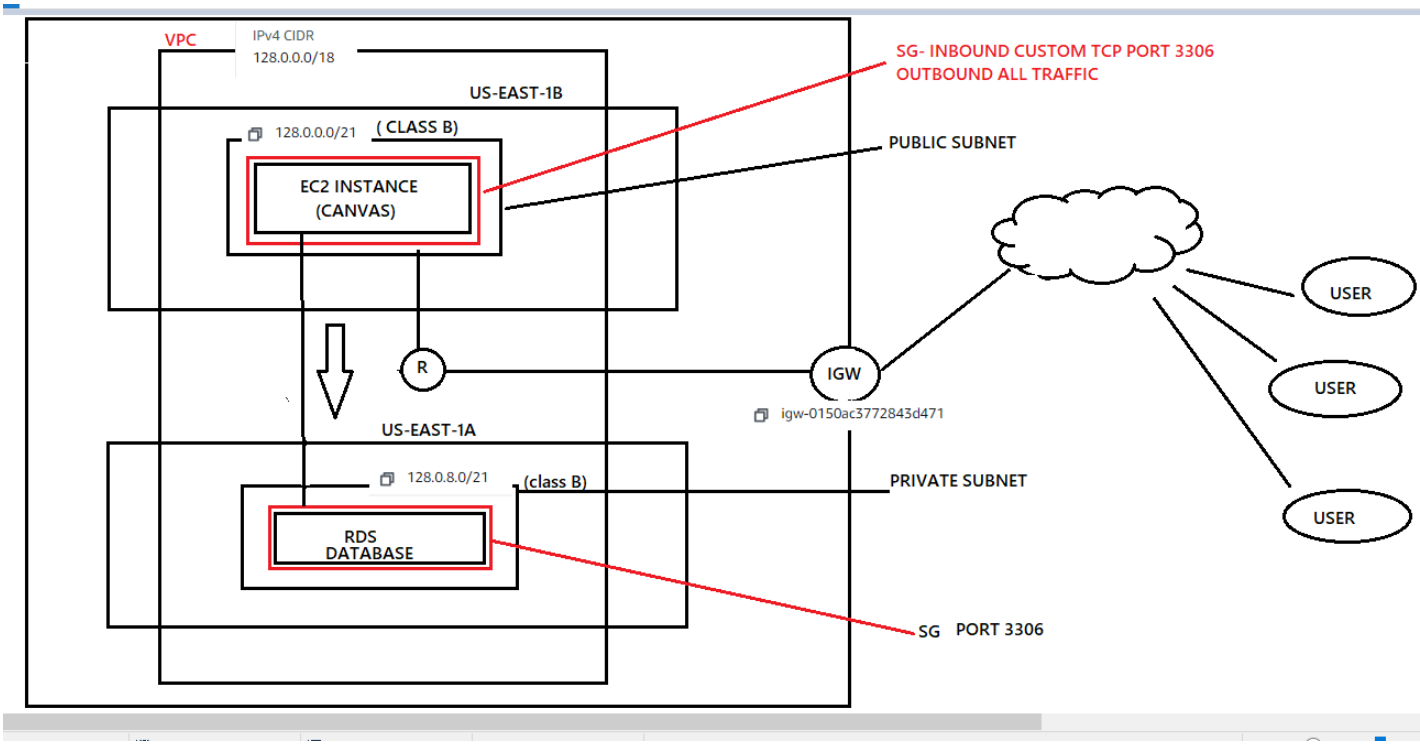
NAME-VICKY SHARMA

PRATICAL- RDS

AIM- CONCEPT OF RDS (RELATIONAL DATABASE SERVICE)

ARCHITECTURE:-



STEPS -1

CREATE AN VPC

VPC > Your VPCs > Create VPC

Create VPC Info

A VPC is an isolated portion of the AWS Cloud populated by AWS objects, such as Amazon EC2 instances.

VPC settings

Resources to create Info

Create only the VPC resource or the VPC and other networking resources.

- (•) VPC only
- ( ) VPC and more

Name tag - *optional*

Creates a tag with a key of 'Name' and a value that you specify.

my-vpc-01

IPv4 CIDR block Info

- (•) IPv4 CIDR manual input
- ( ) IPAM-allocated IPv4 CIDR block

IPv4 CIDR

10.0.0.0/24

CIDR block size must be between /16 and /28.

IPv6 CIDR block Info

Resources to create Info

Create only the VPC resource or the VPC and other networking resources.

- (•) VPC only
- ( ) VPC and more

Name tag - *optional*

Creates a tag with a key of 'Name' and a value that you specify.

VPC

IPv4 CIDR block Info

- (•) IPv4 CIDR manual input
- ( ) IPAM-allocated IPv4 CIDR block

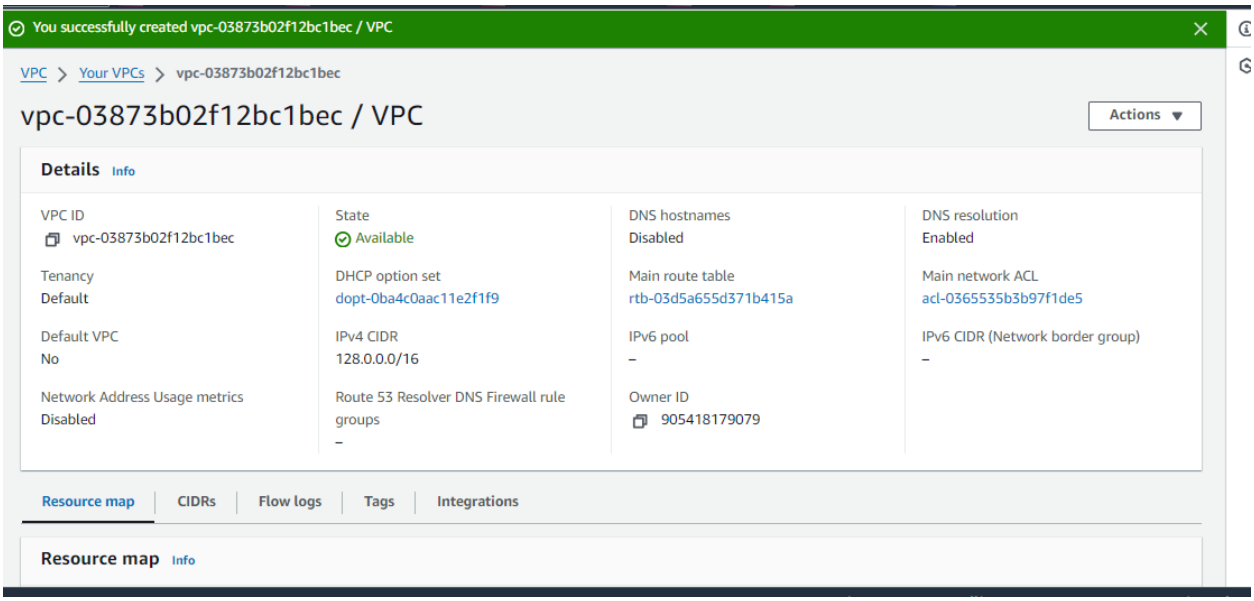
IPv4 CIDR

128.0.0.0/16

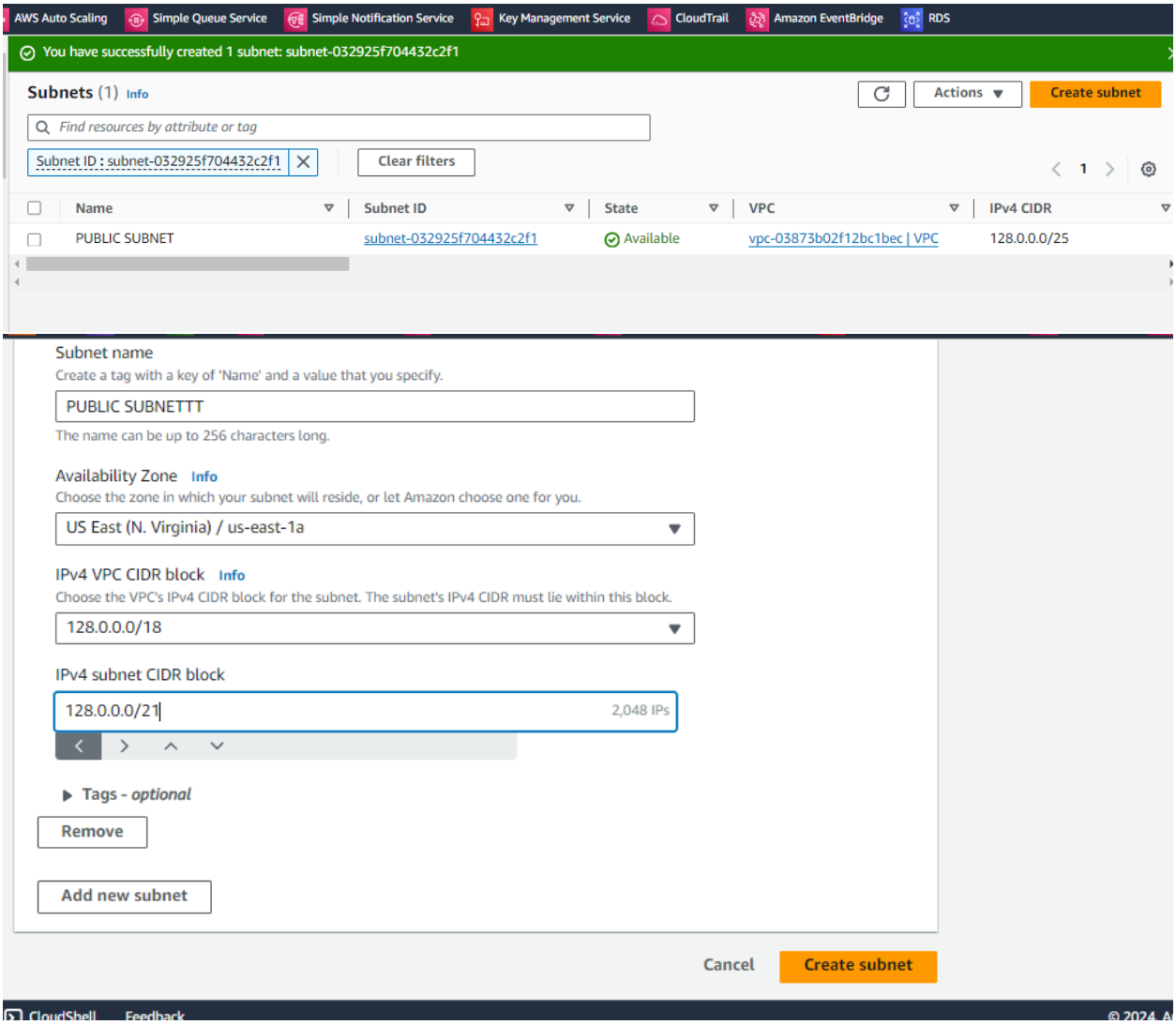
CIDR block size must be between /16 and /28.

IPv6 CIDR block Info

- (•) No IPv6 CIDR block
- ( ) IPAM-allocated IPv6 CIDR block
- ( ) Amazon-provided IPv6 CIDR block
- ( ) IPv6 CIDR owned by me



STEP-2NOW CREATE TWO SUBNET OF CLASS B AND TWO ROUTE TABLE AND ATTACH WIITH THEM


AWS Auto Scaling
Simple Queue Service
Simple Notification Service
Key Management Service
CloudTrail
Amazon EventBridge
RDS
You have successfully created 1 subnet: subnet-032925f704432c2f1
Subnets (1) Info
Actions
Create subnet
Find resources by attribute or tag
Subnet ID : subnet-032925f704432c2f1
Clear filters
Name
Subnet ID
State
VPC
IPv4 CIDR
PUBLIC SUBNET
subnet-032925f704432c2f1
Available
vpc-03873b02f12bc1bec | VPC
128.0.0.0/25
Subnet name
Create a tag with a key of 'Name' and a value that you specify.
PUBLIC SUBNETTT
The name can be up to 256 characters long.
Availability Zone Info
Choose the zone in which your subnet will reside, or let Amazon choose one for you.
US East (N. Virginia) / us-east-1a
IPv4 VPC CIDR block Info
Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.
128.0.0.0/18
IPv4 subnet CIDR block
128.0.0.0/21
2,048 IPs
Tags - optional
Remove
Add new subnet
Cancel
Create subnet
CloudShell
Feedback

Create a tag with a key of 'Name' and a value that you specify.

PRIAVTE SUBNEET

The name can be up to 256 characters long.

Availability Zone Info

Choose the zone in which your subnet will reside, or let Amazon choose one for you.

US East (N. Virginia) / us-east-1b

IPv4 VPC CIDR block Info

Choose the VPC's IPv4 CIDR block for the subnet. The subnet's IPv4 CIDR must lie within this block.

128.0.0.0/18

IPv4 subnet CIDR block

128.0.8.0/21 2,048 IPs

▼ Tags - *optional*

Key	Value - *optional*	
Name	PRIAVTE SUBNEET	Remove

Route table settings

Name - *optional*

Create a tag with a key of 'Name' and a value that you specify.

PUBLIC ROUTE

VPC

The VPC to use for this route table.

vpc-0a0964d8d09b2745c (MYVPC)

Tags

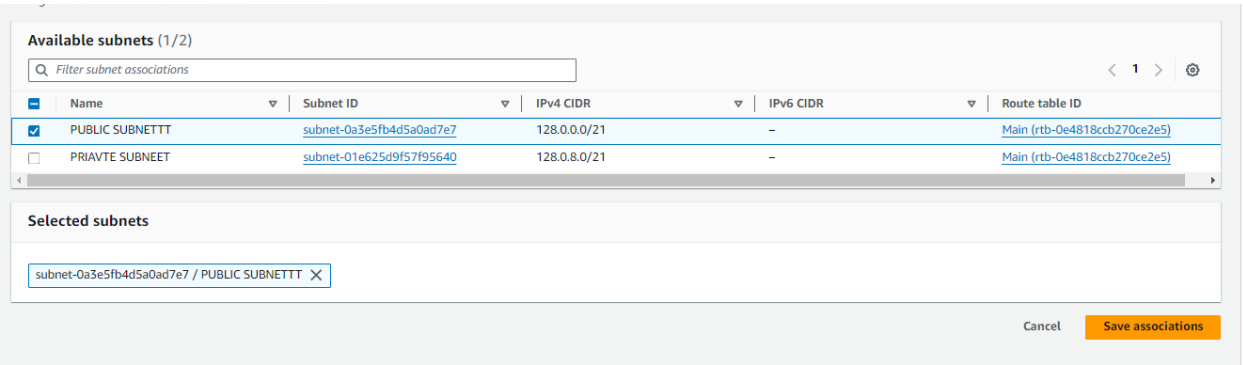
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

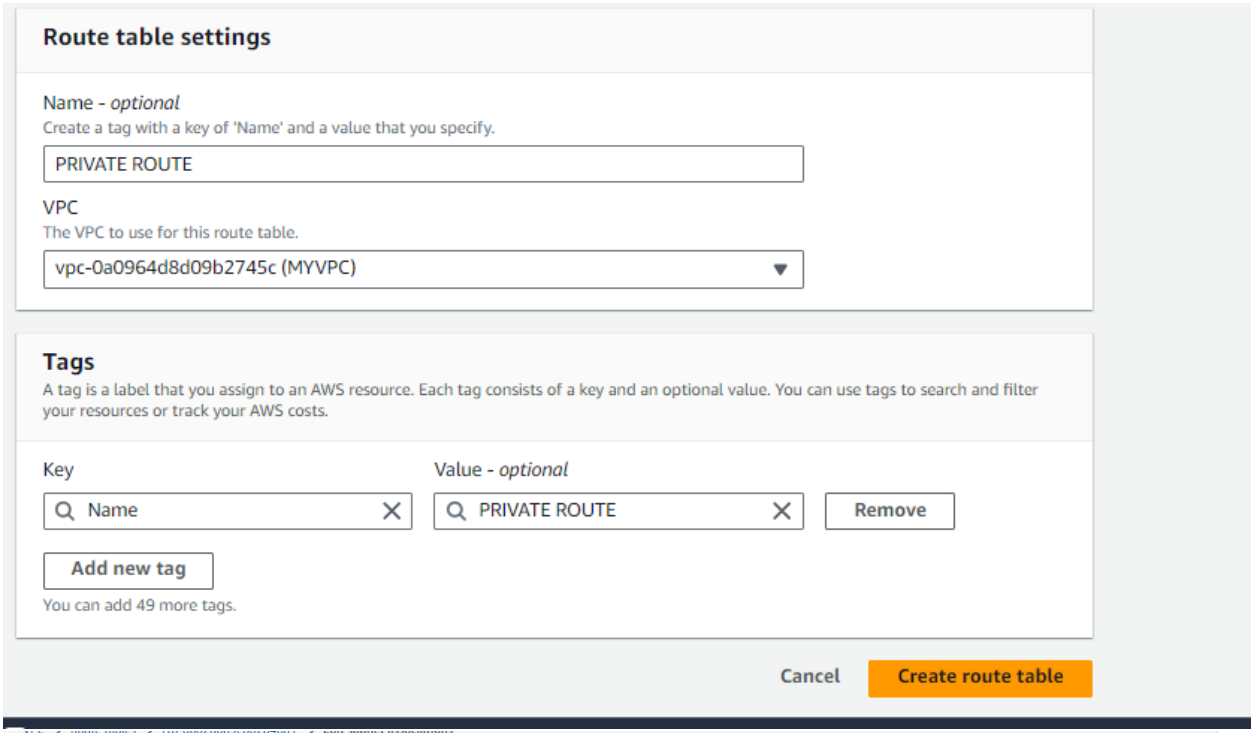
Key	Value - *optional*	
Name	PUBLIC ROUTE	Remove

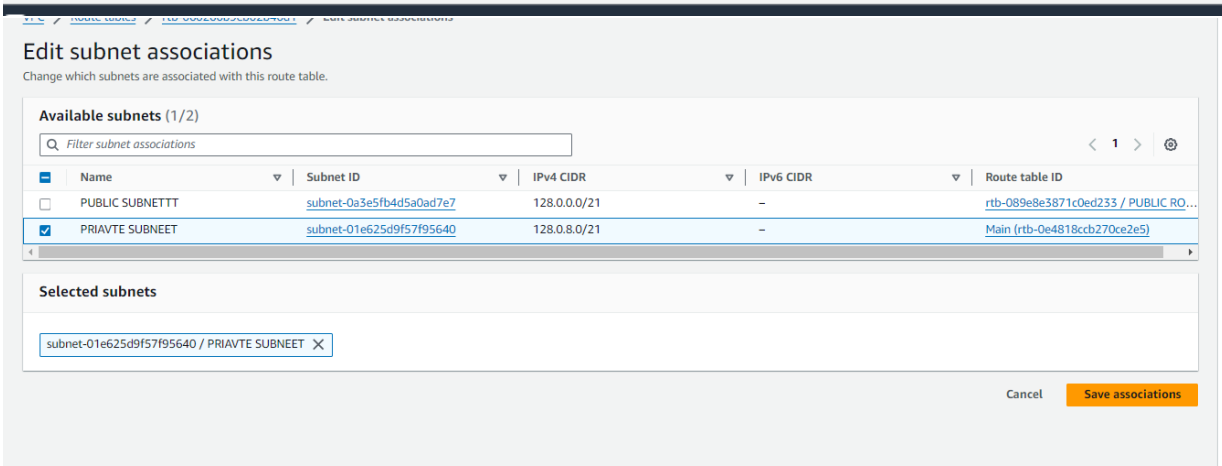
Add new tag

You can add 49 more tags.

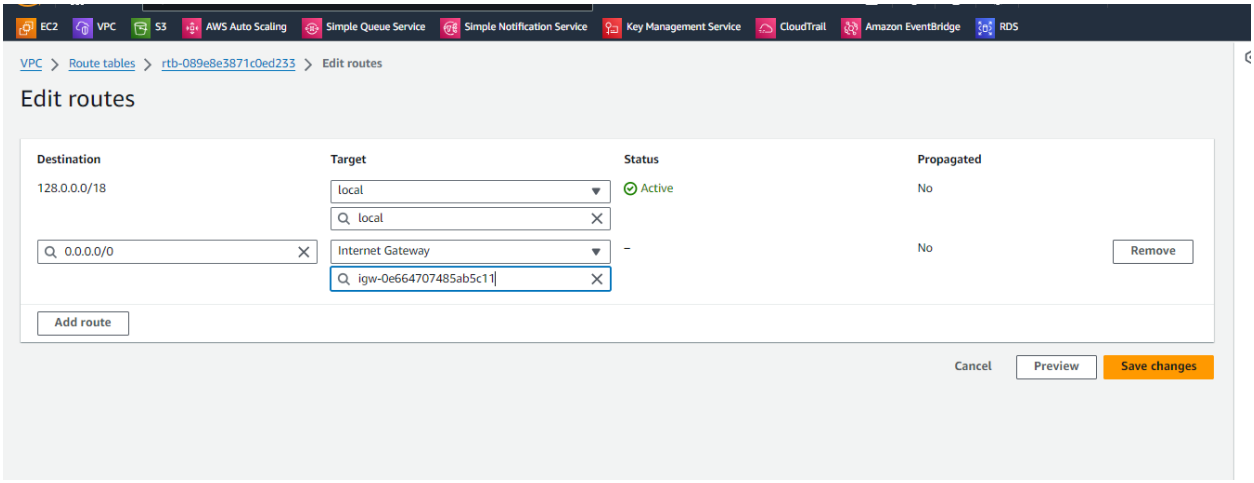
Cancel Create route table



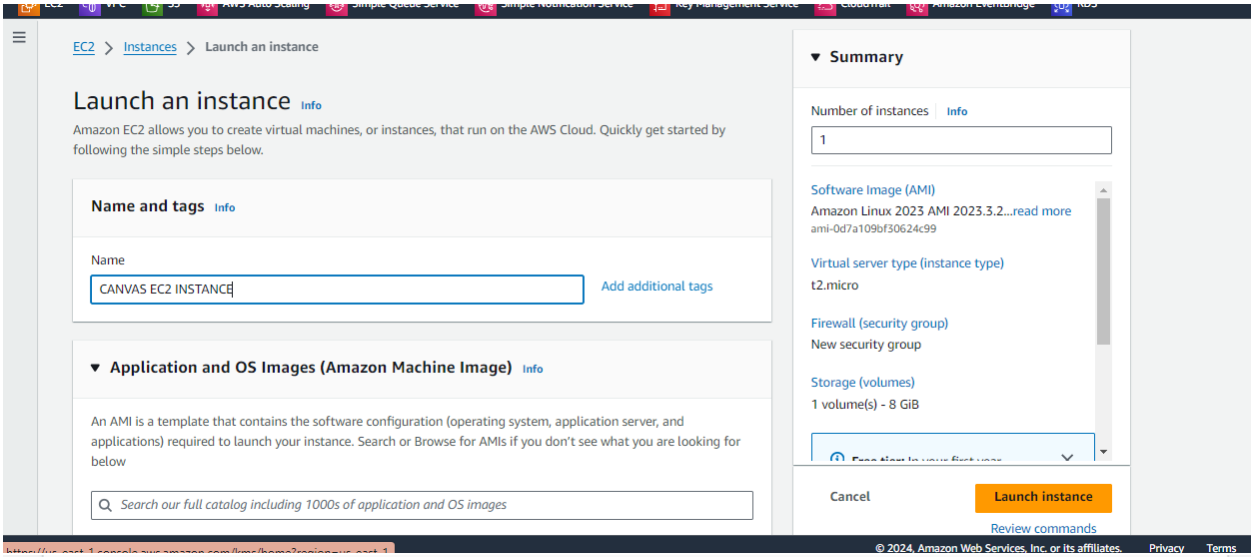




STEP 3- ATTACH INTERNET GATEWAY TO PUBLIC SUBNET



STEP4- CREATE TWO INSTANCE WHICH IS EC2 INSRTANCE AND RDS DATABSE



VPC - *required* Info

vpc-0a0964d8d09b2745c (MYVPC)
128.0.0.0/18

Subnet Info

subnet-0a3e5fb4d5a0ad7e7 PUBLIC SUBNETTT
VPC: vpc-0a0964d8d09b2745c Owner: 905418179079
Availability Zone: us-east-1a IP addresses available: 2043 CIDR: 128.0.0.0/21)

Create new subnet

Auto-assign public IP Info

Enable

Firewall (security groups) Info

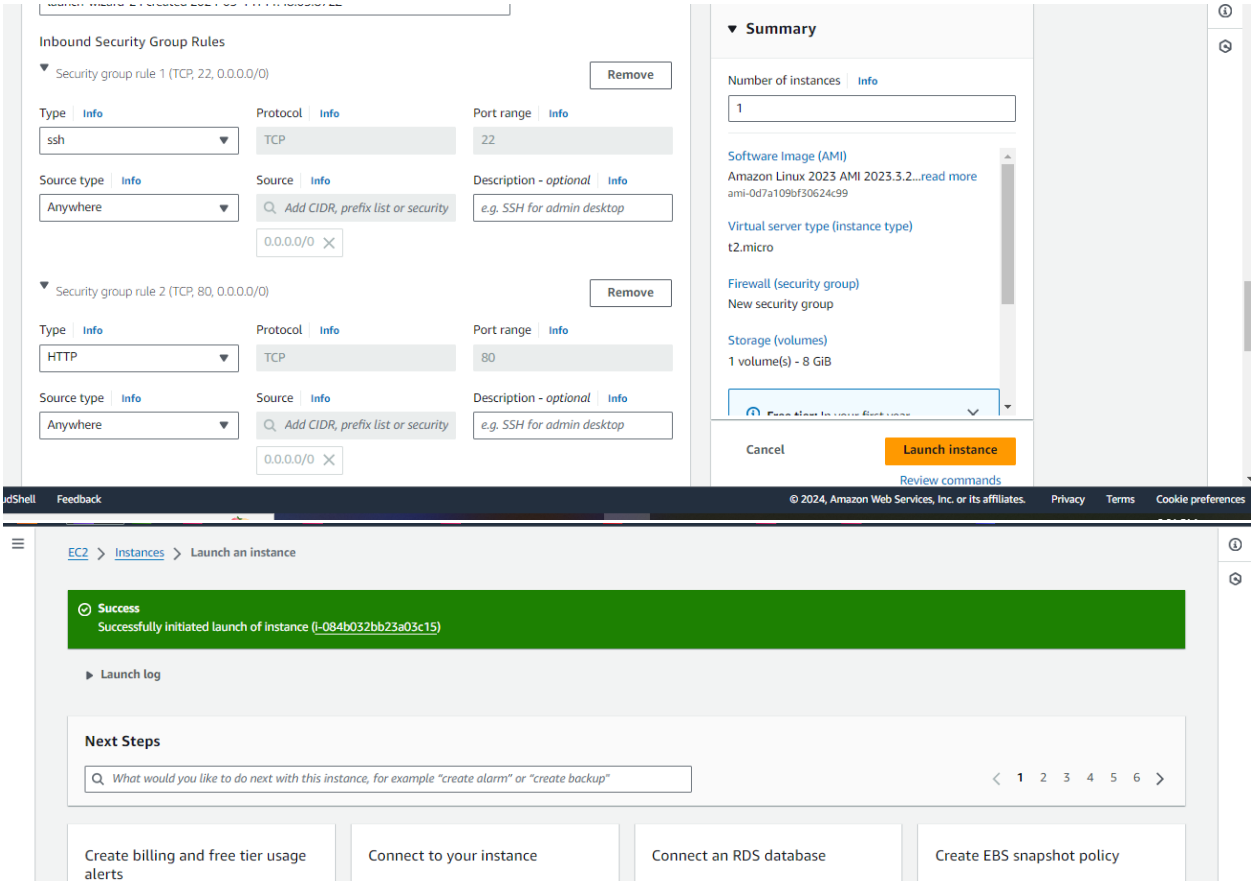
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

- (●) Create security group
- ( ) Select existing security group

Security group name - *required*

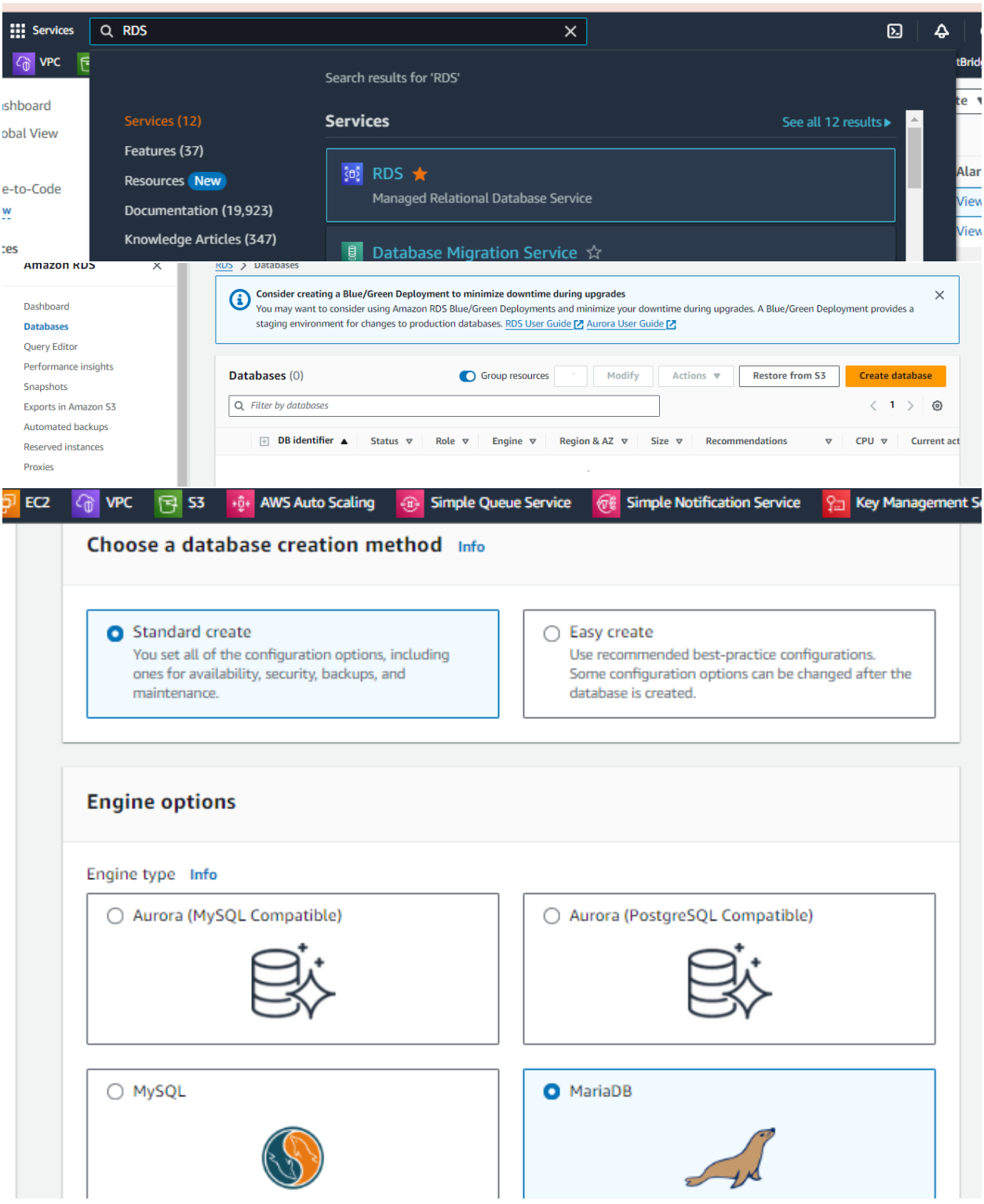
launch-wizard-24

This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and ._-:/()#,@[]+=&;{}!$*



STEP-5

NOW CREATE RDS DATABASE


Services
RDS
VPC
Search results for 'RDS'
Services (12)
Features (37)
Resources New
Documentation (19,923)
Knowledge Articles (347)
Services
See all 12 results
RDS
Managed Relational Database Service
Database Migration Service
Amazon RDS
Dashboard
Databases
Query Editor
Performance insights
Snapshots
Exports in Amazon S3
Automated backups
Reserved instances
Proxies
Consider creating a Blue/Green Deployment to minimize downtime during upgrades
You may want to consider using Amazon RDS Blue/Green Deployments and minimize your downtime during upgrades. A Blue/Green Deployment provides a staging environment for changes to production databases. RDS User Guide Aurora User Guide
Databases (0)
Group resources
Modify
Actions
Restore from S3
Create database
Filter by databases
DB identifier
Status
Role
Engine
Region & AZ
Size
Recommendations
CPU
EC2
VPC
S3
AWS Auto Scaling
Simple Queue Service
Simple Notification Service
Key Management
Choose a database creation method Info
Standard create
You set all of the configuration options, including ones for availability, security, backups, and maintenance.
Easy create
Use recommended best-practice configurations. Some configuration options can be changed after the database is created.
Engine options
Engine type Info
Aurora (MySQL Compatible)
Aurora (PostgreSQL Compatible)
MySQL
MariaDB

View the engine versions that support the following database features.

▼ Hide filters

Show versions that support the Amazon RDS Optimized Writes Info
Amazon RDS Optimized Writes improves write throughput by up to 2x at no additional cost.

Engine Version

MariaDB 10.11.6

Templates

Choose a sample template to meet your use case.

- Production
  Use defaults for high availability and fast, consistent performance.
- Dev/Test
  This instance is intended for development use outside of a production environment.
- Free tier
  Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS. Info

Settings

DB instance identifier Info

Settings

DB instance identifier Info

Type a name for your DB instance. The name must be unique across all DB instances owned by your AWS account in the current AWS Region.

database-1

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 alphanumeric characters or hyphens. First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

▼ Credentials Settings

Master username Info

Type a login ID for the master user of your DB instance.

admin

1 to 16 alphanumeric characters. The first character must be a letter.

☐ Manage master credentials in AWS Secrets Manager
Manage master user credentials in Secrets Manager. RDS can generate a password for you and manage it throughout its lifecycle.

If you manage the master user credentials in Secrets Manager, some RDS features aren't supported.
Learn more

Master password Info

••••••••

Constraints: At least 8 printable ASCII characters. Can't contain any of the following: / (slash), '(single quote), "(double quote) and @ (at sign).

Confirm master password Info

••••••••

Instance configuration

The DB instance configuration options below are limited to those supported by the engine that you selected above.

DB instance class Info

▼ Hide filters

Show instance classes that support Amazon RDS Optimized Writes Info

Amazon RDS Optimized Writes improves write throughput by up to 2x at no additional cost.

Include previous generation classes

Standard classes (includes m classes)

Memory optimized classes (includes r and x classes)

Burstable classes (includes t classes)

Memory optimized classes (includes r and x classes)

Burstable classes (includes t classes)

db.t3.micro
2 vCPUs 1 GiB RAM Network: 2,085 Mbps

Storage

Storage type Info

Provisioned IOPS SSD (io2) storage volumes are now available.

General Purpose SSD (gp2)
Baseline performance determined by volume size

Allocated storage Info

20 GiB

The minimum value is 20 GiB and the maximum value is 6,144 GiB

After you modify the storage for a DB instance, the status of the DB instance will be in storage-optimization. Your instance will remain available as the storage-optimization operation completes.
Learn more

Connectivity Info

Compute resource

Choose whether to set up a connection to a compute resource for this database. Setting up a connection will automatically change connectivity settings so that the compute resource can connect to this database.

- ○ Don't connect to an EC2 compute resource
  Don't set up a connection to a compute resource for this database. You can manually set up a connection to a compute resource later.
- ◉ Connect to an EC2 compute resource
  Set up a connection to an EC2 compute resource for this database.

EC2 instance Info

Choose the EC2 instance to add as the compute resource for this database. A VPC security group is added to this EC2 instance. A VPC security group is also added to the database with an inbound rule that allows the EC2 instance to access the database.

i-084b032bb23a03c15
CANVAS EC2 INSTANCE

Some VPC settings can't be changed when a compute resource is added

Adding an EC2 compute resource automatically selects the VPC, DB subnet group, and public access settings for this database. To allow the EC2 instance to access the database, a VPC security group rds-ec2-X is added to the database and another called ec2-rds-X to the EC2 instance. You can remove the new security group for the database only by removing the compute resource.

After a database is created, you can't change its VPC.

DB subnet group Info

Choose the DB subnet group. The DB subnet group defines which subnets and IP ranges the DB instance can use in the VPC that you selected.

- ◉ Choose existing
  Choose existing DB subnet group
- ○ Automatic setup
  RDS creates a new subnet group for you or reuses an existing subnet group

Existing DB subnet groups

rds-ec2-db-subnet-group-1
5 Subnets, 5 Availability Zones

Public access Info

- ○ Yes
  RDS assigns a public IP address to the database. Amazon EC2 instances and other resources outside of the VPC can connect to your database. Resources inside the VPC can also connect to the database. Choose one or more VPC security groups that specify which resources can connect to the database.
- ◉ No
  RDS doesn't assign a public IP address to the database. Only Amazon EC2 instances and other resources inside the VPC can connect to your database. Choose one or more VPC security groups that specify which resources can connect to the database.

connect to your database. Choose one or more VPC security groups that specify which resources can connect to the database.

VPC security group (firewall) Info

Choose one or more VPC security groups to allow access to your database. Make sure that the security group rules allow the appropriate incoming traffic.

- ○ Choose existing
  Choose existing VPC security groups
- ◉ Create new
  Create new VPC security group

New VPC security group name

rds-sg

Amazon RDS will add a new VPC security group *rds-ec2-3* to allow connectivity with your compute resource.

us-east-1a

Certificate authority - *optional* Info

Using a server certificate provides an extra layer of security by validating that the connection is being made to an Amazon database. It does so by checking the server certificate that is automatically installed on all databases that you provision.

rds-ca-rsa2048-g1 (default)
Expiry: May 26, 2061

If you don't select a certificate authority, RDS chooses one for you.

▼ **Additional configuration**

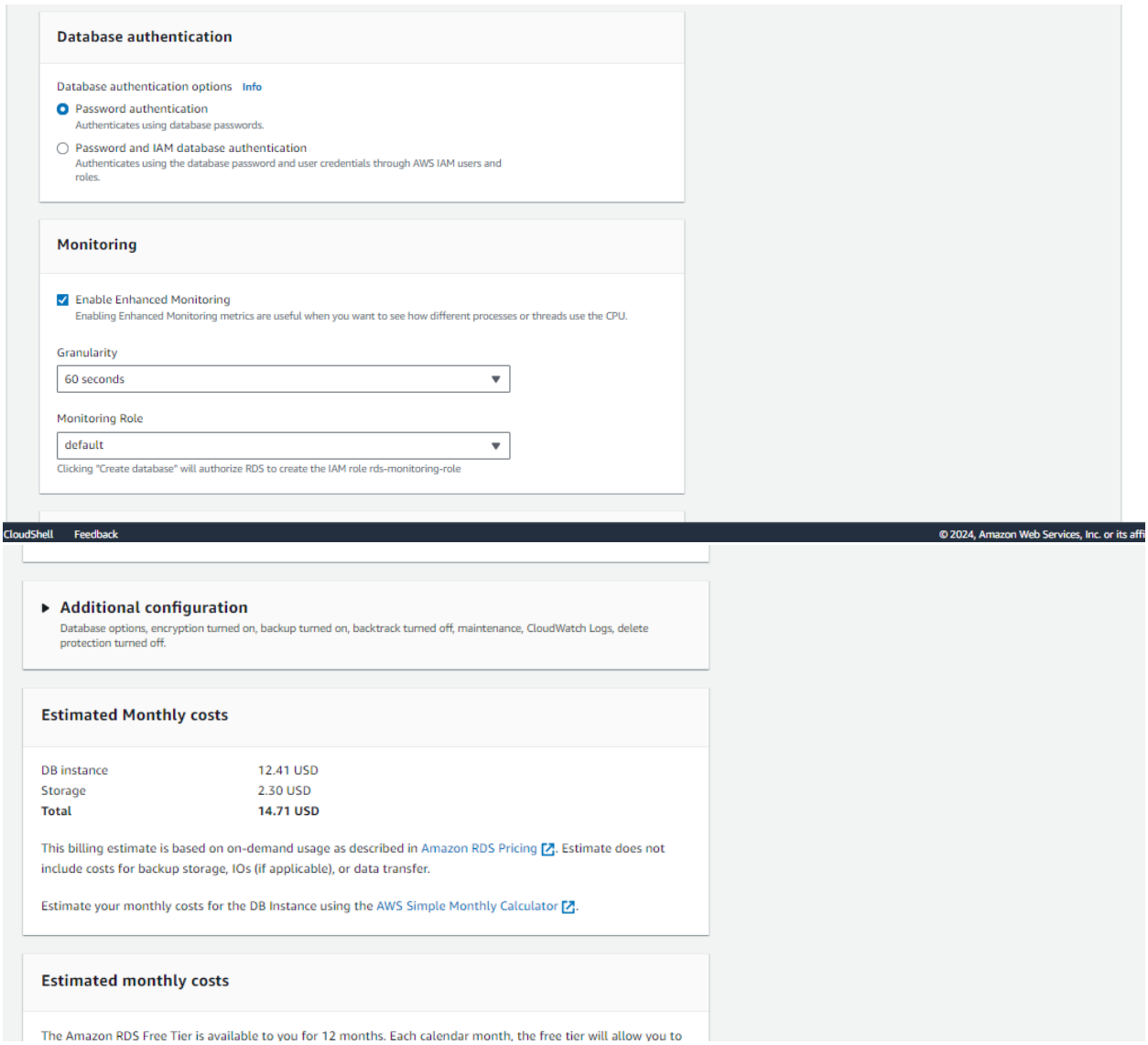
Database port Info

TCP/IP port that the database will use for application connections.

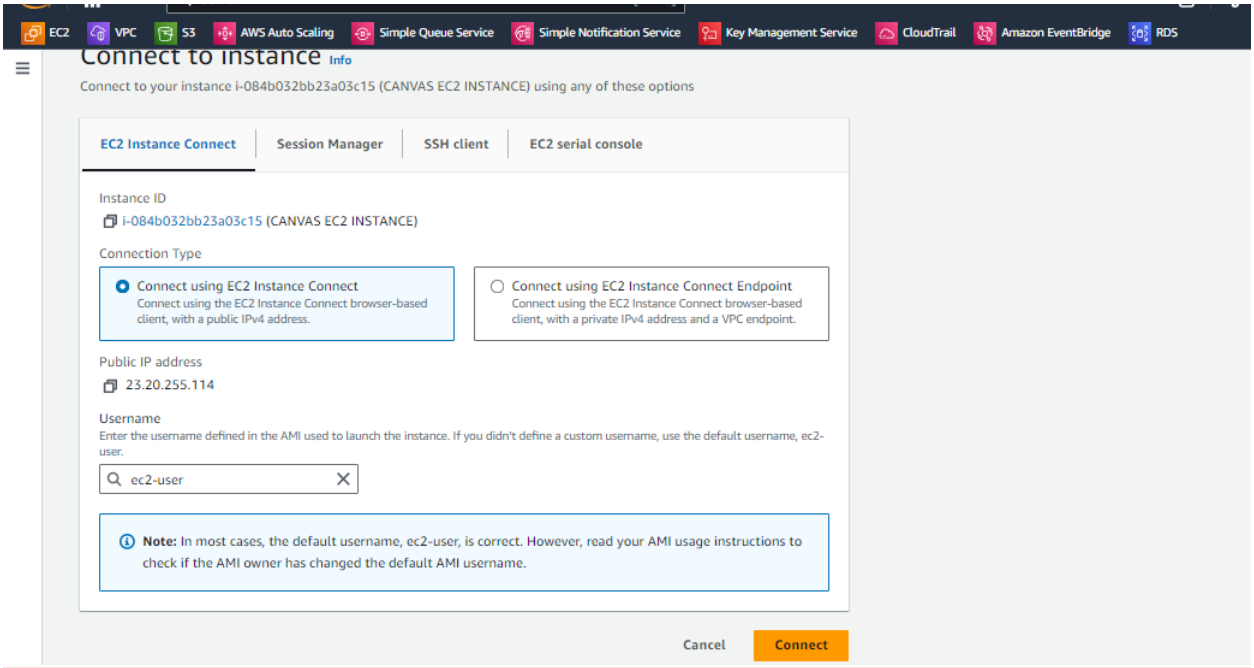
3306

Database authentication

Database authentication options Info

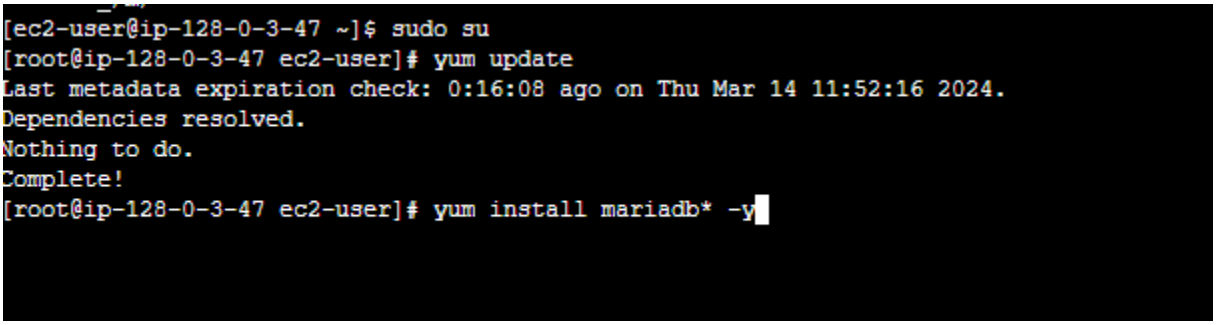


Step6- now connect to ec2 instance



CMD- SUDO SU

YUM INSTALL MARIADB* -Y



CMD-mysql –u admin –p –h (paste host id)

Endpoint

database-2.cbqawamoa5pu.us-east-1.rds.amazonaws.com

```
Complete!
[root@ip-128-0-3-47 ec2-user]# mysql -u admin -p -h database-2.cbqawamoa5pu.us-east-1.rds.amazonaws.com
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 13
Server version: 10.11.6-MariaDB managed by https://aws.amazon.com/rds/

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

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

MariaDB [(none)]>
```

SUCCESSFULLY ENTER OUR MARIA DATABASE

NOW CREATE ONE DATABASE NAME AND LETS CHECK FURTHER

```
[root@ip-128-0-3-47 ec2-user]# mysql -u admin -p -h database-2.cbqawamoa5pu.us-east-1.rds.amazonaws.com
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 21
Server version: 10.11.6-MariaDB managed by https://aws.amazon.com/rds/

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

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

MariaDB [(none)]> create database vicky;
Query OK, 1 row affected (0.001 sec)

MariaDB [(none)]>
```

```
MariaDB [(none)]> create database vicky;
Query OK, 1 row affected (0.001 sec)

MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| innodb             |
| mysql              |
| performance_schema |
| sys                |
| vicky              |
+--------------------+
6 rows in set (0.001 sec)

MariaDB [(none)]>
```