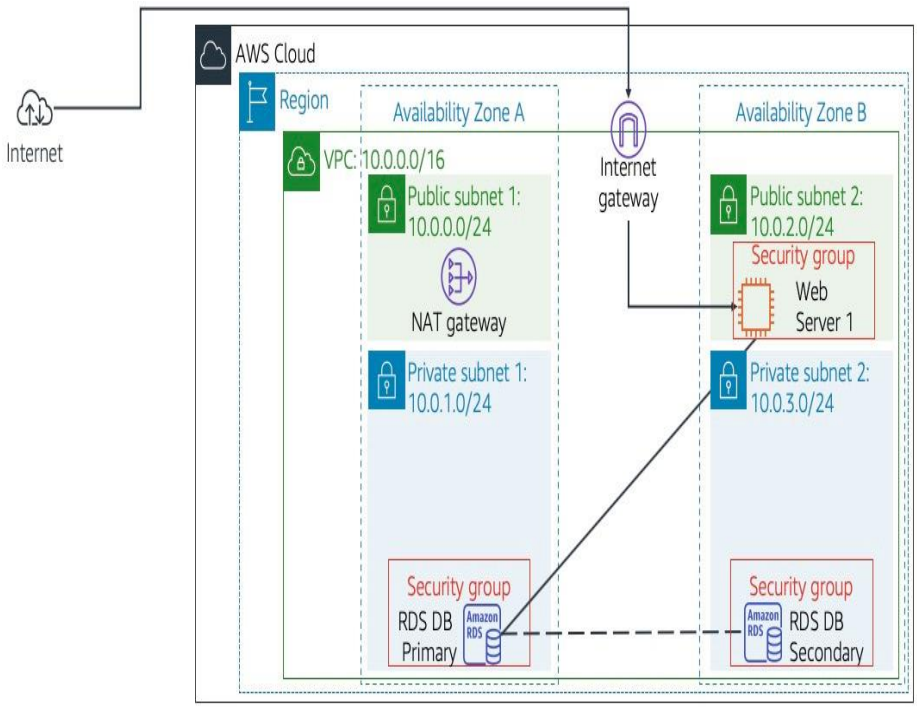
October project

New project launches
In AWS

Project : Migrating local databases to Amazon RDS

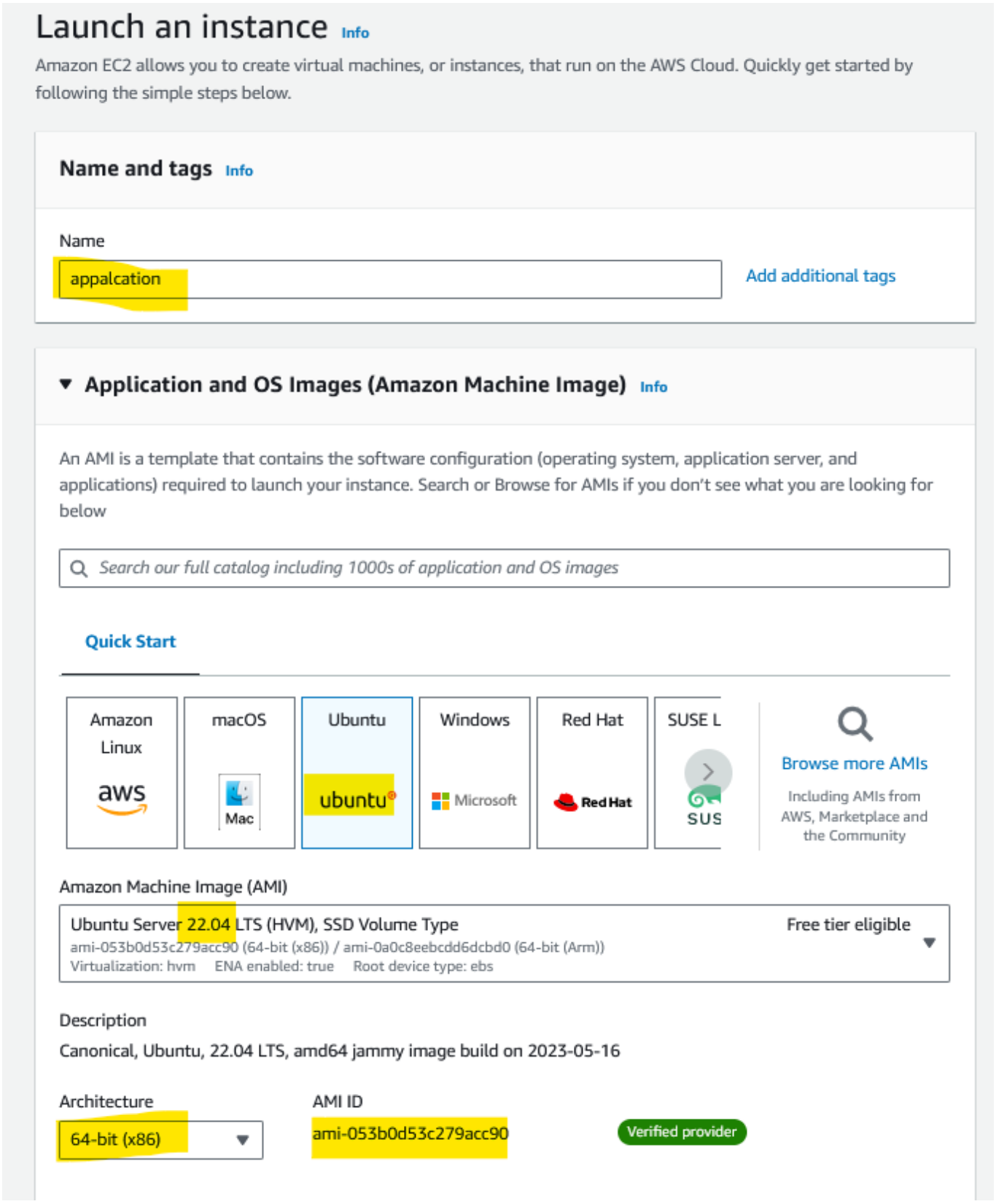
Hello, my name: Aya Rabih working! Dev-ops engineering in multinational lovely company and today we will learn Migrating local databases to Amazon RDS Architecture and Multi AZ RDS. This project it is so critical to lean it and get more info for cloud and AWS.
So, in this documentation you will find all steps you need it to create it with deep details.



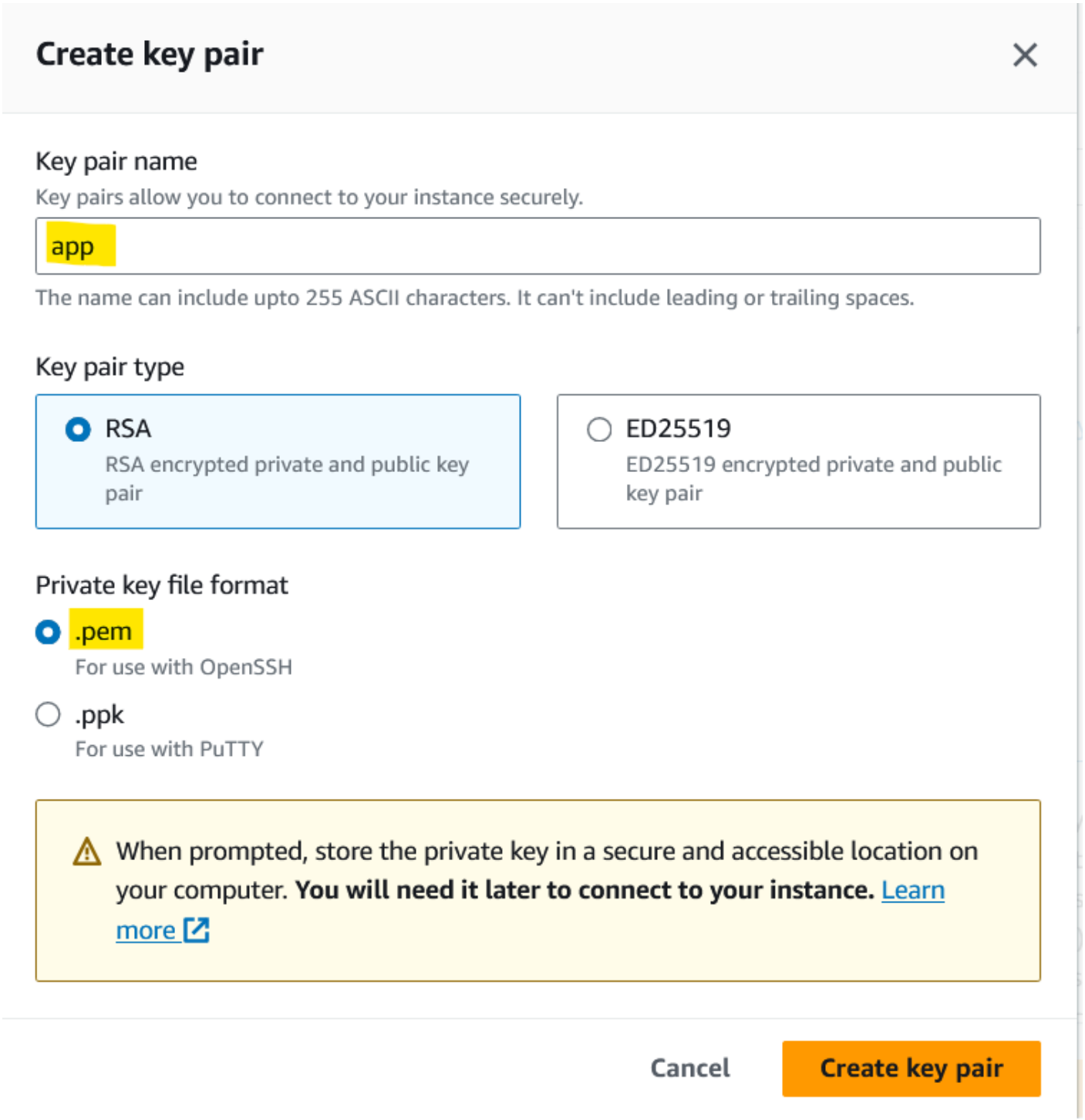
Create by Aya Rabih

LinkedIn GitHub

Create: ec2 instance named application



create your key pair and save it necessary to complete your project



before you launch the instance.

Key pair name - *required*

app

Create new key pair

Network settings Info

VPC - *required* Info

vpc-0b99cf48dedf48e03 (app-vpc)
10.0.0.0/24

Subnet Info

subnet-0ce09e7de29469515 subnet-app
VPC: vpc-0b99cf48dedf48e03 Owner: 038601000160 Availability Zone: us-east-1a
IP addresses available: 11 CIDR: 10.0.0.0/28

Create new subnet

Auto-assign public IP Info

Disable

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*

sg-app

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 ._-:/()#,@[]+=&;{}!$*

Description - *required* Info

launch-wizard-1 created 2023-10-05T12:19:16.692Z

Inbound Security Group Rules

Security group rule 1 (TCP, 22, 0.0.0.0/0)

Remove

Type Info: ssh

Protocol Info: TCP

Port range Info: 22

Source type Info: Anywhere

Source Info: Add CIDR, prefix list or security

0.0.0.0/0

Description - *optional* Info: e.g. SSH for admin desktop

Add security group rule

Advanced network configuration

Configure storage Info

Advanced

1x 8 GiB gp2 Root volume (Not encrypted)

Summary

Number of instances Info: 1

Software Image (AMI)
Canonical, Ubuntu, 22.04 LTS, ...read more
ami-053b0d53c279acc90

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

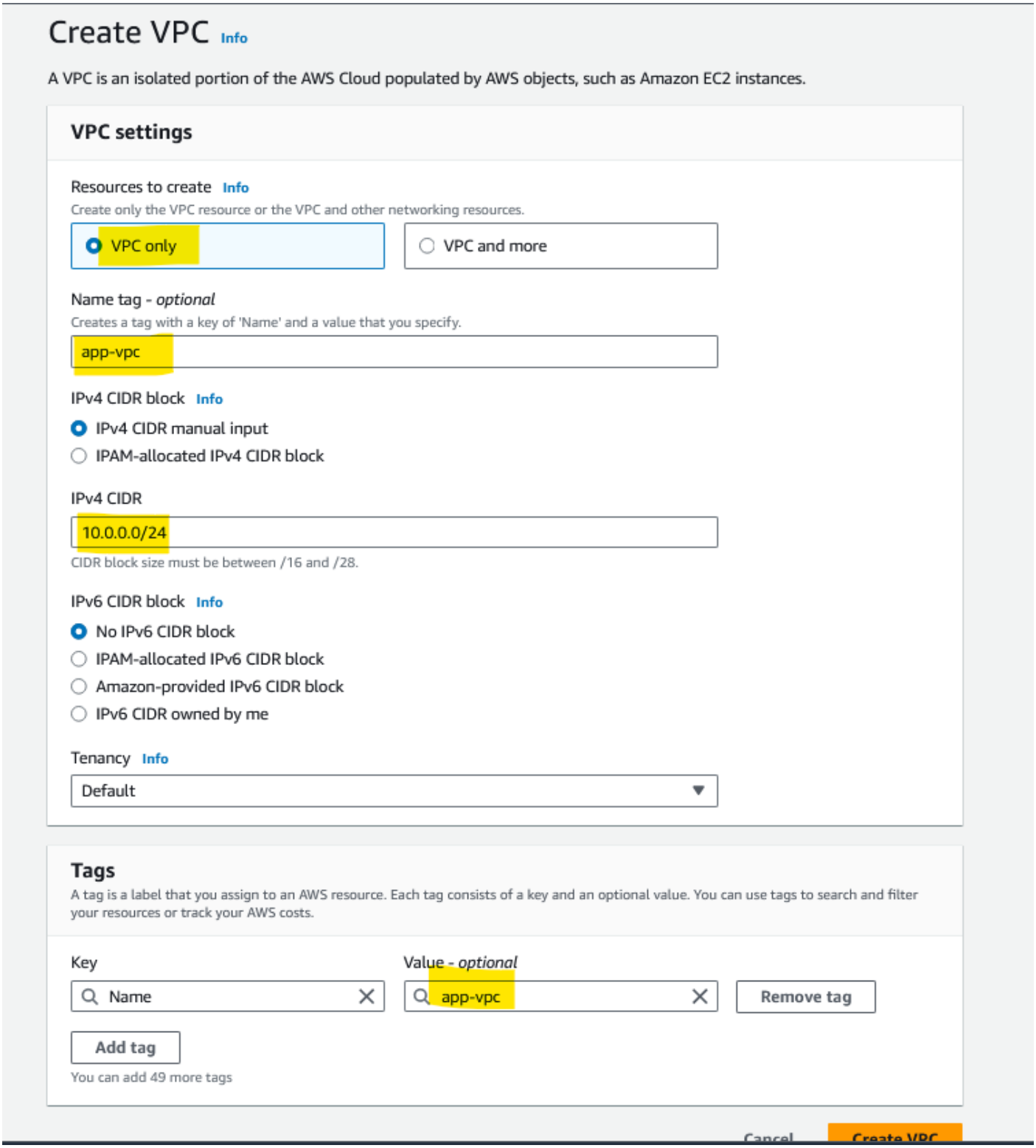
Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million IOs, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel

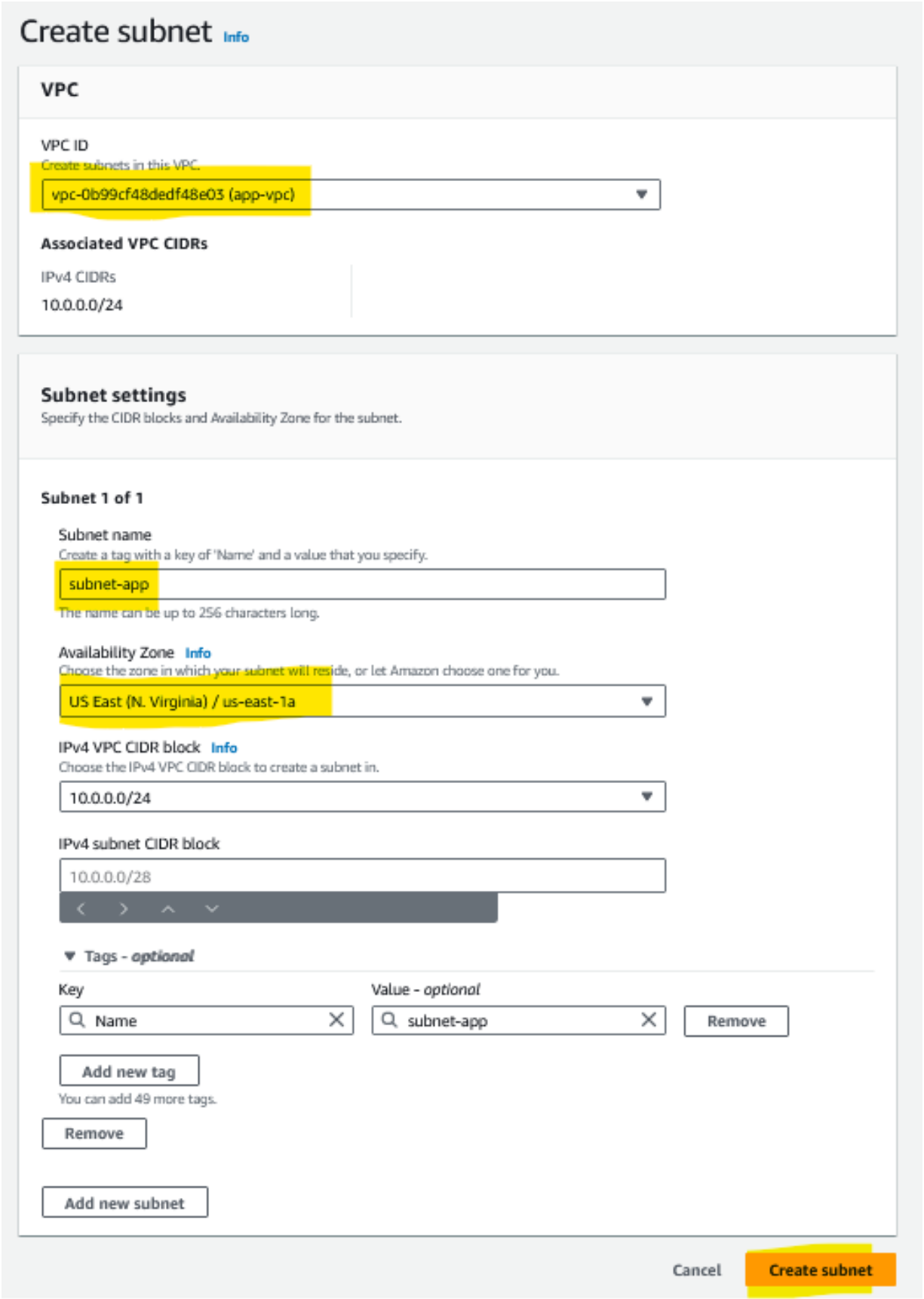
Launch instance

Review commands

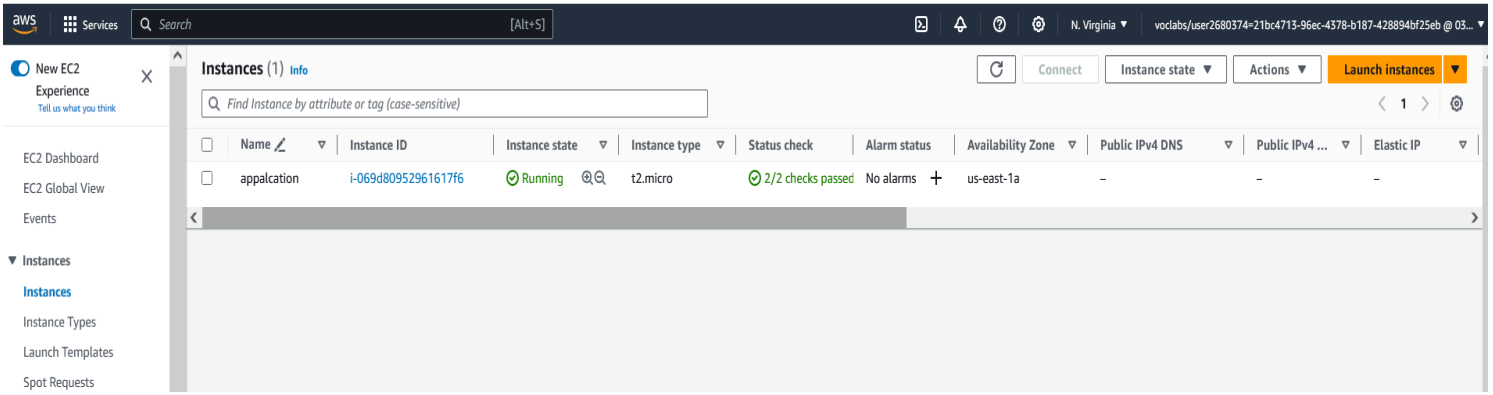
Create VPC with your app this VPC we will use it when we will create database



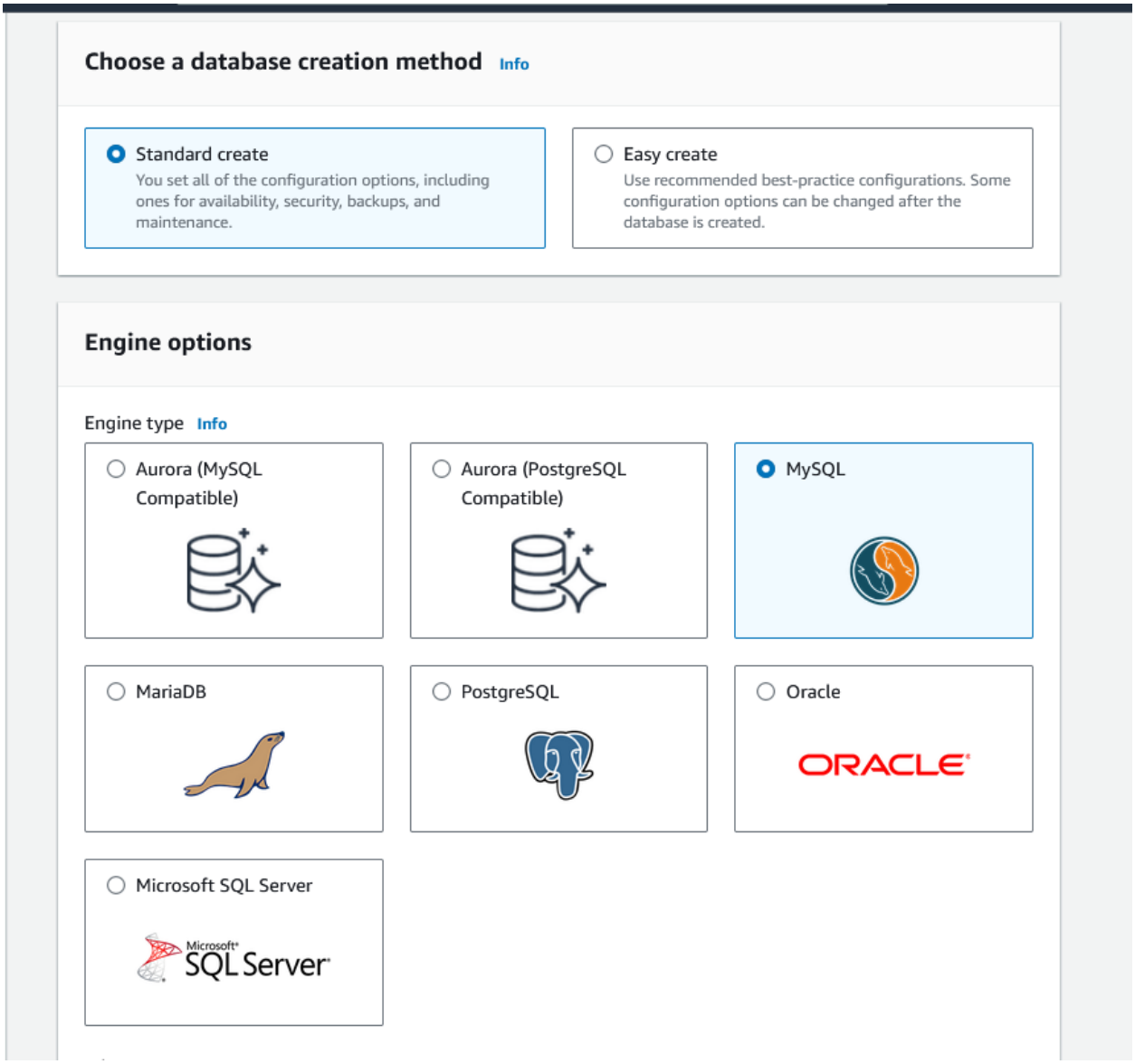
Now we will create subnet



After you lunch your instance for your web server



Now we will create our RDS database MySQL



Hide filters

Show versions that support the Multi-AZ DB cluster Info
Create a A Multi-AZ DB cluster with one primary DB instance and two readable standby DB instances. Multi-AZ DB clusters provide up to 2x faster transaction commit latency and automatic failover in typically under 35 seconds.

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

MySQL 8.0.33

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

Availability and durability

Deployment options Info
The deployment options below are limited to those supported by the engine you selected above.

- Single DB instance
  Creates a single DB instance with no standby DB instances.
- Multi-AZ DB instance
  Creates a primary DB instance and a standby DB instance in a different AZ. Provides high availability and data redundancy, but the standby DB instance doesn't support connections for read workloads.
- Multi-AZ DB Cluster - *new*
  Creates a DB cluster with a primary DB instance and two readable standby DB instances, with each DB instance in a different

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.

app-db

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

☐ Auto generate a password
Amazon RDS can generate a password for you, or you can specify your own password.

Master password Info

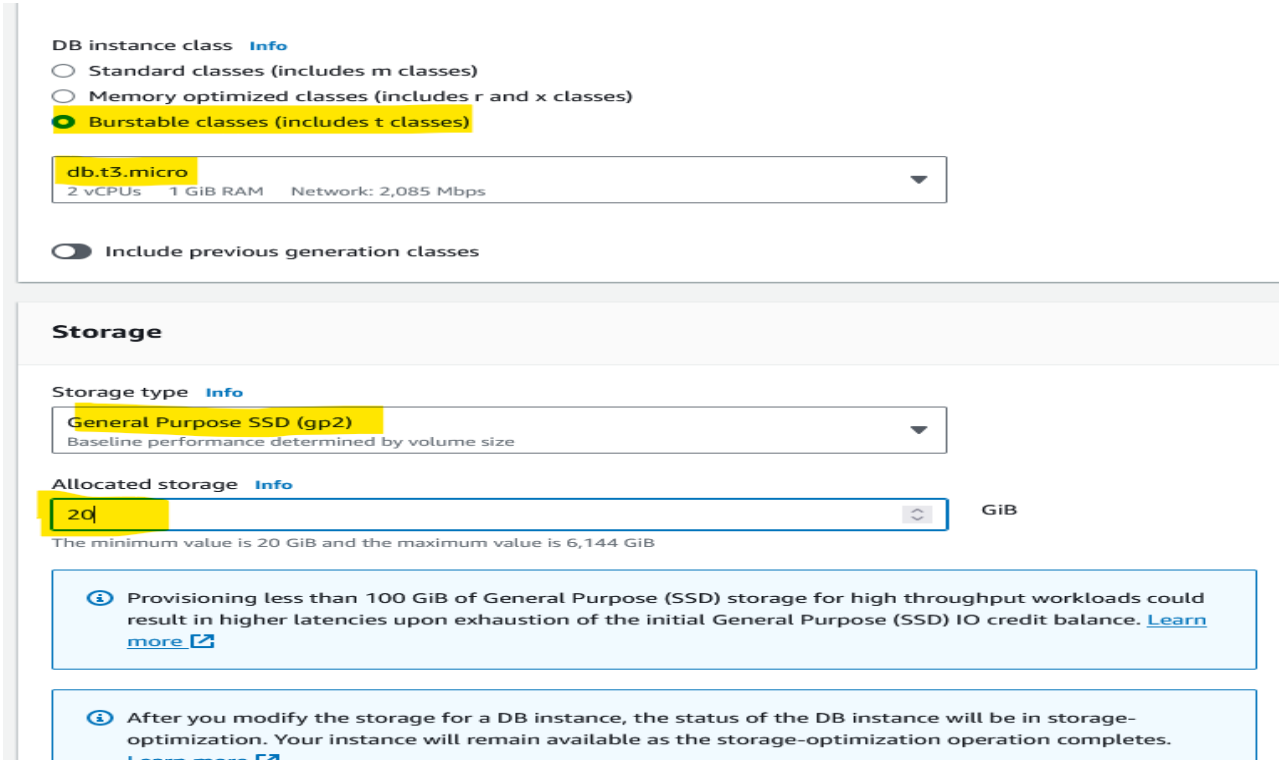
••••••••••

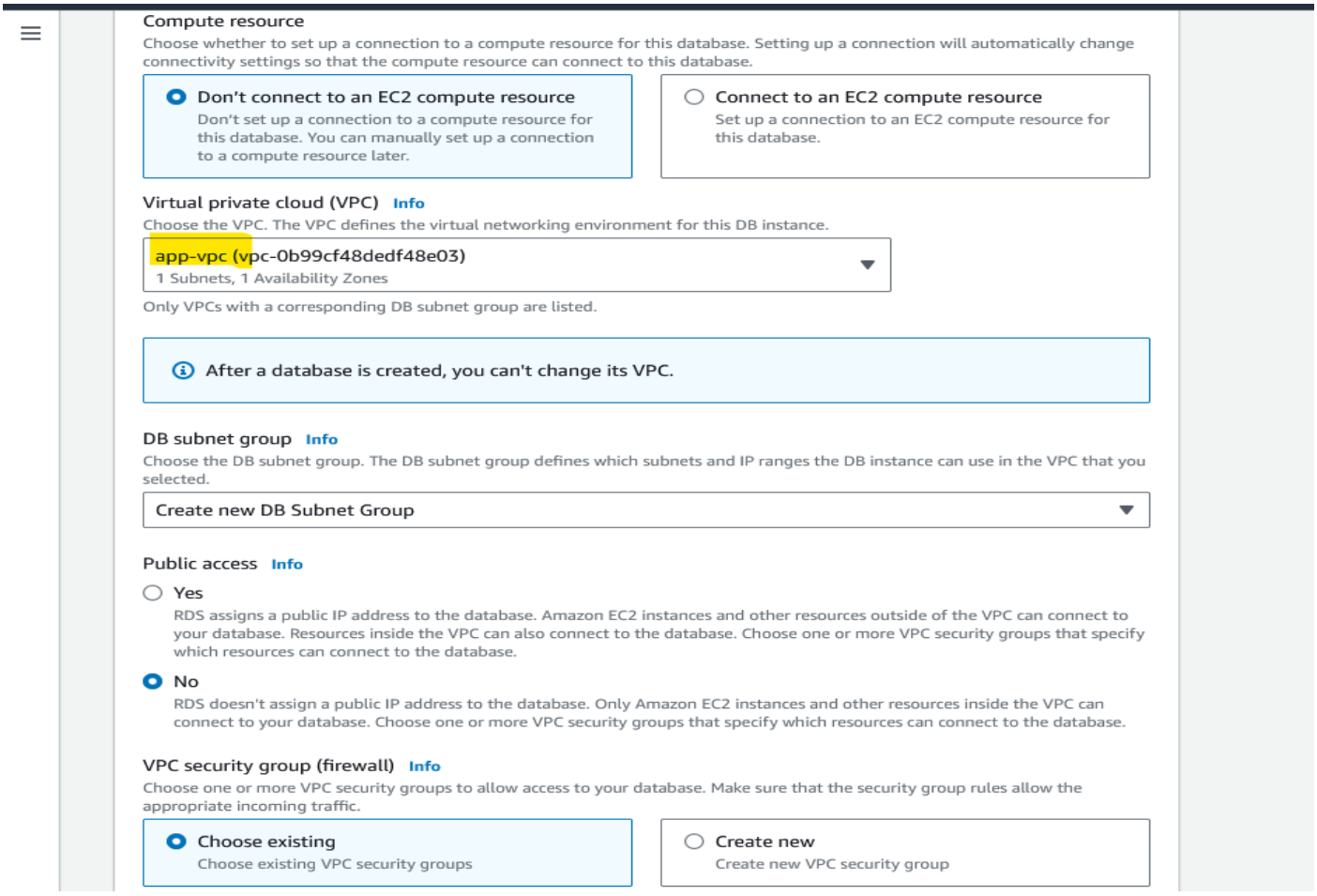
Constraints: At least 8 printable ASCII characters. Can't contain any of the following: / (slash), '(single quote), "(double quote) and @ (at sign).

Confirm master password Info

••••••••••

We will create it using burstable classes dbt3.micro





Database authentication options Info

- (●) Password authentication
  Authenticates using database passwords.
- ( ) Password and IAM database authentication
  Authenticates using the database password and user credentials through AWS IAM users and roles.
- ( ) Password and Kerberos authentication
  Choose a directory in which you want to allow authorized users to authenticate with this DB instance using Kerberos Authentication.

Monitoring

Monitoring

- [ ] Enable Enhanced monitoring
  Enabling Enhanced monitoring metrics are useful when you want to see how different processes or threads use the CPU.

▼ Additional configuration

Database options, encryption turned on, backup turned off, backtrack turned off, maintenance, CloudWatch Logs, delete protection turned off.

Database options

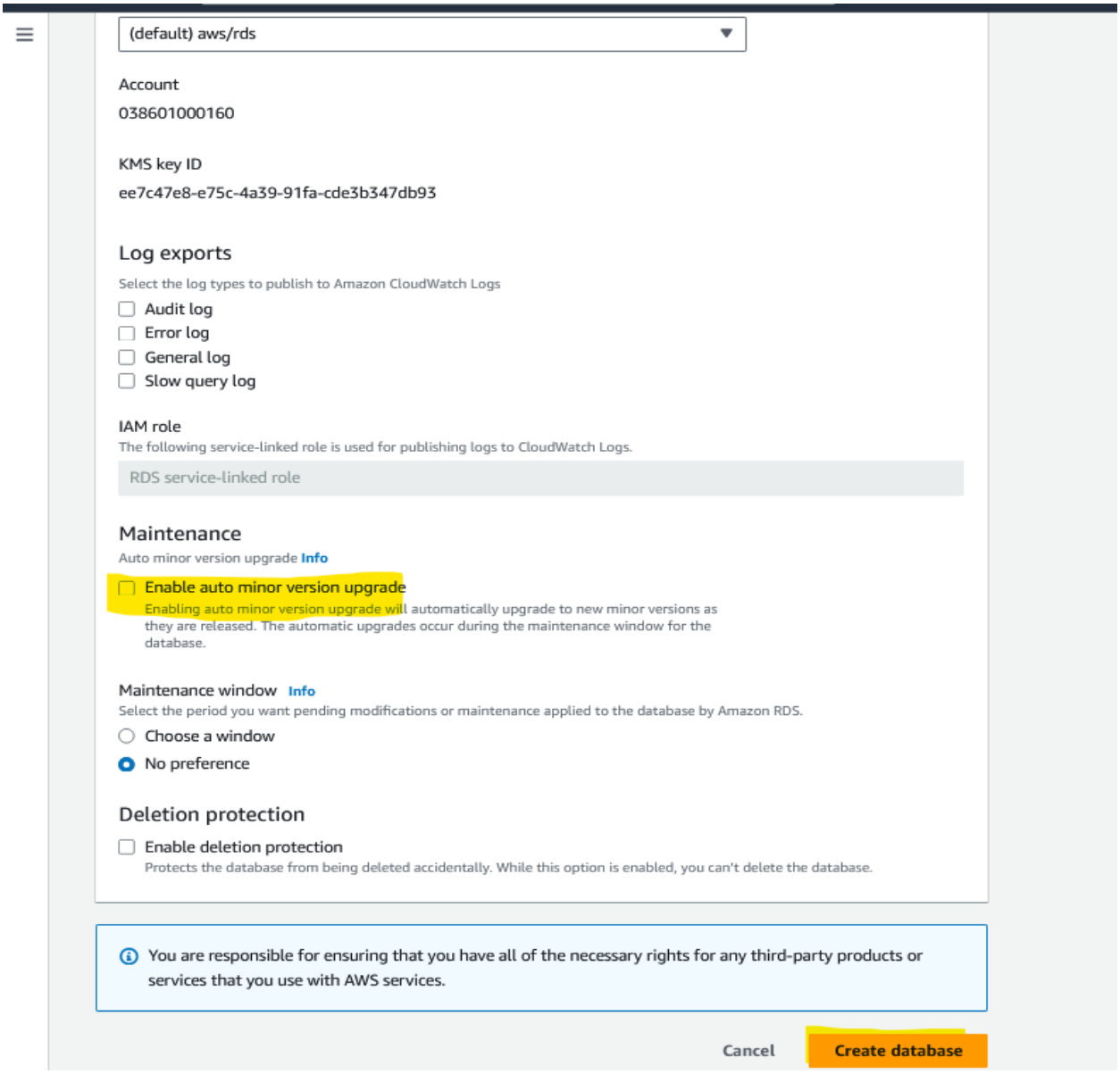
Initial database name Info

app

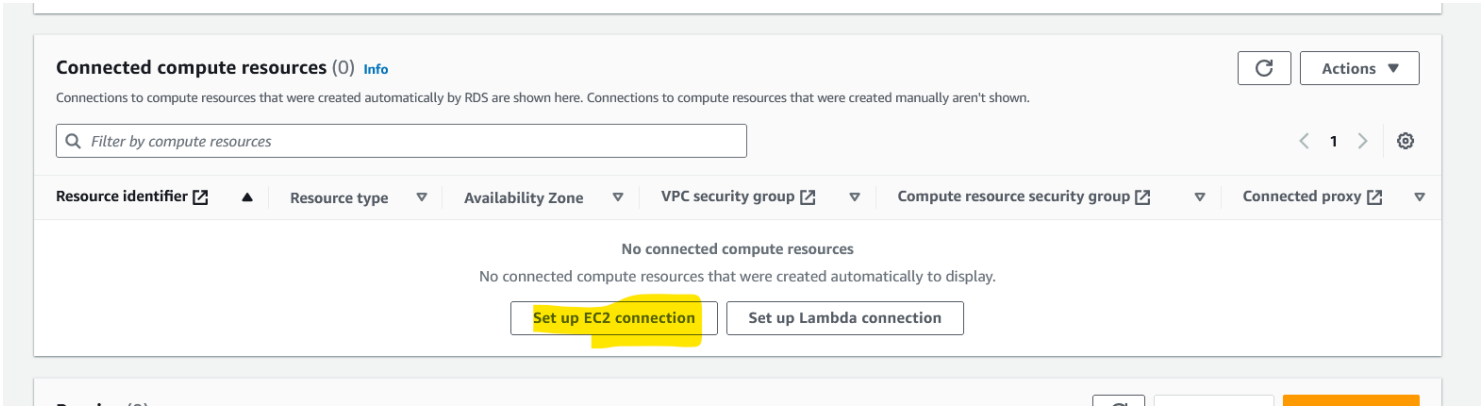
If you do not specify a database name, Amazon RDS does not create a database.

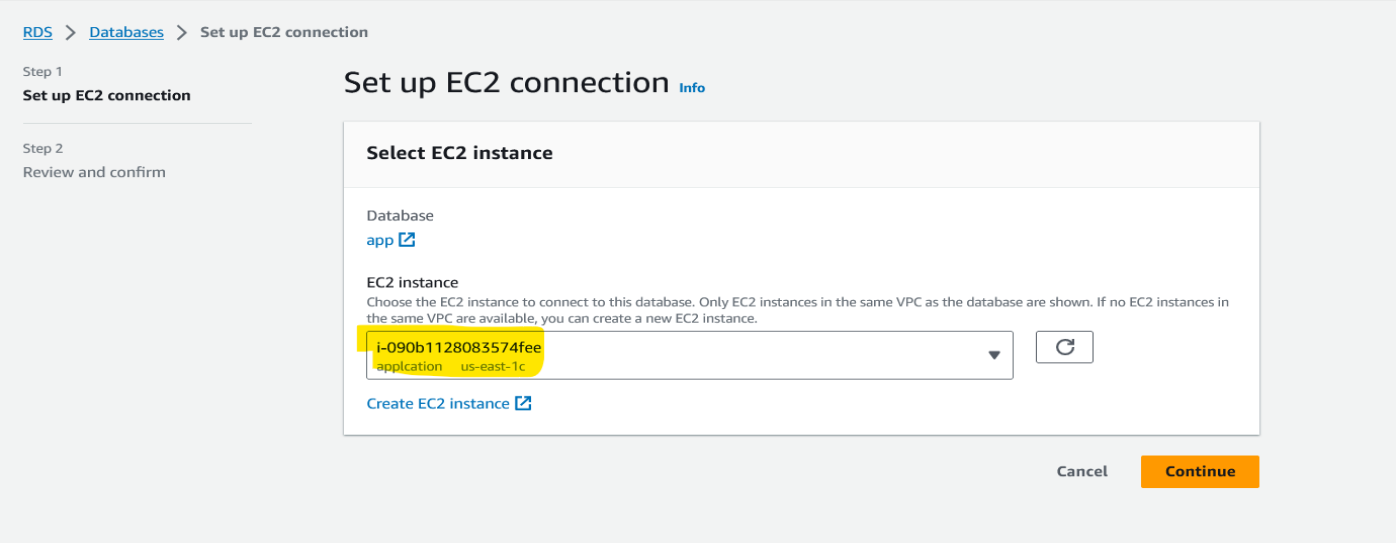
DB parameter group Info

default.mysql8.0 ▼

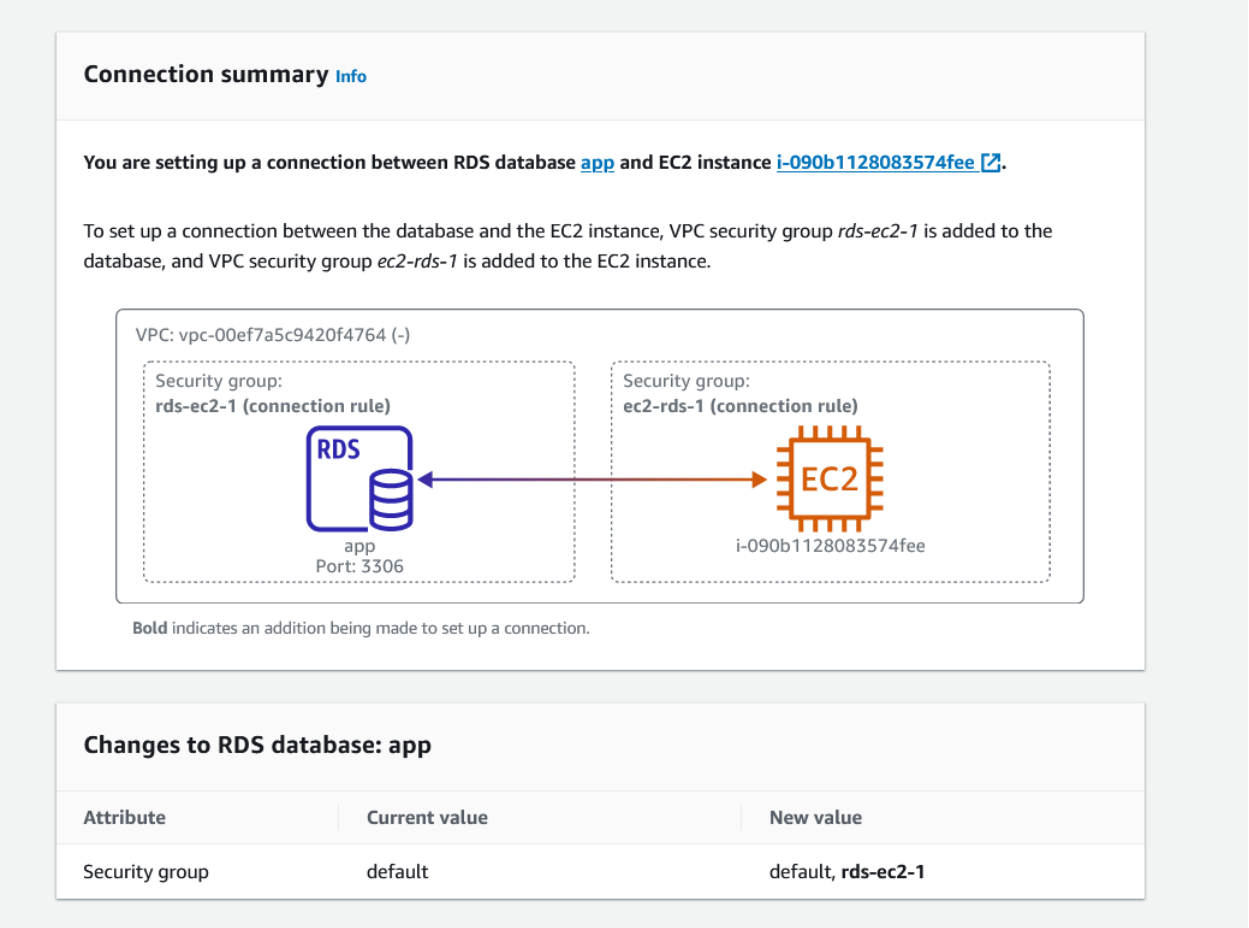


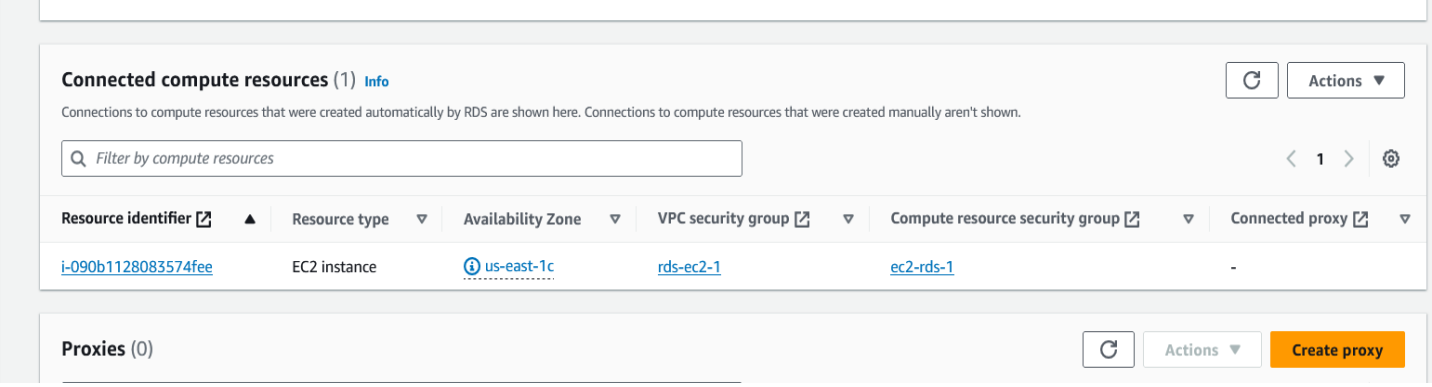
Now we will attach our instance to connect with database.





After you create it will send you pop to make sure that you want to attach your database with your ec2

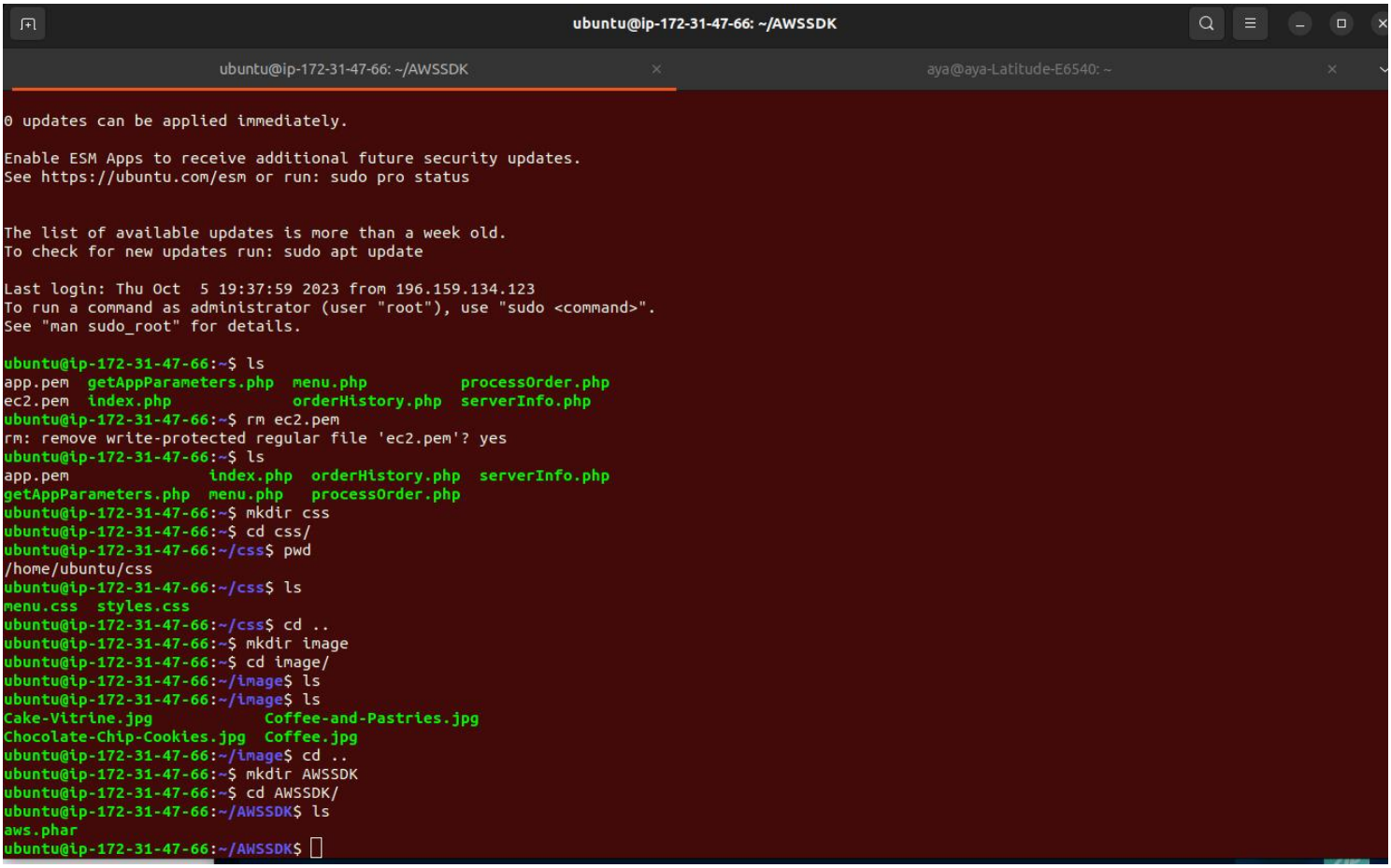




Now we will migrate our source app from local to add it in ec2 instance.

Will use command scp to migrate our files code from local to our instance
Scp -I "key pair" "path for your app in local " "connection ssh" "path in ec2 place you will add your project in it

```
aya@aya-Latitude-E6540:~/lab$ scp -i app.pem /home/aya/cafe-app/cafe/ ubuntu@ec2-23-22-212-163.compute-1.amazonaws.com:/home/ubuntu/
/home/aya/cafe-app/cafe/AWSSDK/
/home/aya/cafe-app/cafe/css/
/home/aya/cafe-app/cafe/ec2.pem
/home/aya/cafe-app/cafe/getAppParameters.php
/home/aya/cafe-app/cafe/images/
/home/aya/cafe-app/cafe/index.php
/home/aya/cafe-app/cafe/menu.php
/home/aya/cafe-app/cafe/orderHistory.php
/home/aya/cafe-app/cafe/processOrder.php
/home/aya/cafe-app/cafe/serverInfo.php
aya@aya-Latitude-E6540:~/lab$ scp -i app.pem /home/aya/cafe-app/cafe/css/ ubuntu@ec2-23-22-212-163.compute-1.amazonaws.com:/home/ubuntu/
/home/aya/cafe-app/cafe/css: not a regular file
aya@aya-Latitude-E6540:~/lab$ scp -i app.pem /home/aya/cafe-app/cafe/index.php ubuntu@ec2-23-22-212-163.compute-1.amazonaws.com:/home/ubuntu/
index.php                                     100% 3481     8.2KB/s   00:00
aya@aya-Latitude-E6540:~/lab$ scp -i app.pem /home/aya/cafe-app/cafe/menu.php ubuntu@ec2-23-22-212-163.compute-1.amazonaws.com:/home/ubuntu/
menu.php                                      100% 4991    20.4KB/s   00:00
aya@aya-Latitude-E6540:~/lab$ scp -i app.pem /home/aya/cafe-app/cafe/* ubuntu@ec2-23-22-212-163.compute-1.amazonaws.com:/home/ubuntu/
/home/aya/cafe-app/cafe/AWSSDK: not a regular file
/home/aya/cafe-app/cafe/css: not a regular file
ec2.pem                                       100% 1674     8.3KB/s   00:00
getAppParameters.php                          100% 1051     4.7KB/s   00:00
/home/aya/cafe-app/cafe/images: not a regular file
index.php                                     100% 3481    15.1KB/s   00:00
menu.php                                      100% 4991    20.1KB/s   00:00
orderHistory.php                              100% 3408    12.8KB/s   00:00
processOrder.php                              100% 3839    13.5KB/s   00:00
serverInfo.php                                100%  660     3.4KB/s   00:00
aya@aya-Latitude-E6540:~/lab$ scp -i app.pem /home/aya/cafe-app/cafe/css/* ubuntu@ec2-23-22-212-163.compute-1.amazonaws.com:/home/ubuntu/
^Z
[1]+  Stopped                 scp -i app.pem /home/aya/cafe-app/cafe/css/* ubuntu@ec2-23-22-212-163.compute-1.amazonaws.com:/home/ubuntu/
aya@aya-Latitude-E6540:~/lab$ scp -i app.pem /home/aya/cafe-app/cafe/css/* ubuntu@ec2-23-22-212-163.compute-1.amazonaws.com:/home/ubuntu/css/
menu.css                                      100% 1183     6.0KB/s   00:00
styles.css                                    100% 1319     6.3KB/s   00:00
aya@aya-Latitude-E6540:~/lab$ scp -i app.pem /home/aya/cafe-app/cafe/image/* ubuntu@ec2-23-22-212-163.compute-1.amazonaws.com:/home/ubuntu/image/
/home/aya/cafe-app/cafe/image/*: No such file or directory
aya@aya-Latitude-E6540:~/lab$ scp -i app.pem /home/aya/cafe-app/cafe/image/* ubuntu@ec2-23-22-212-163.compute-1.amazonaws.com:/home/ubuntu/image/
/home/aya/cafe-app/cafe/image/*: No such file or directory
aya@aya-Latitude-E6540:~/lab$ scp -i app.pem /home/aya/cafe-app/cafe/images/* ubuntu@ec2-23-22-212-163.compute-1.amazonaws.com:/home/ubuntu/image/
Cake-Vitrine.jpg                              100%  632KB  39.9KB/s   00:15
Chocolate-Chip-Cookies.jpg                    100%  470KB 176.0KB/s   00:02
Coffee-and-Pastries.jpg                       100%  475KB 206.5KB/s   00:02
Coffee.jpg                                    100%  617KB 260.1KB/s   00:02
Coffee-Shop.jpg                               100%  150KB 193.2KB/s   00:00
Cookies.jpg                                   100%  419KB 239.4KB/s   00:01
Croissants.jpg                                100%  344KB 252.4KB/s   00:01
Cup-of-Hot-Chocolate.jpg                      100%  309KB 239.6KB/s   00:01
default-image.jpg                             100%   92KB 177.6KB/s   00:00
Donuts.jpg                                    100%  372KB 215.9KB/s   00:01
Frank-Martha.jpg                              100%  401KB 217.8KB/s   00:01
Latte.jpg                                     100%  312KB 224.5KB/s   00:01
Muffins.jpg                                   100%  238KB 165.6KB/s   00:01
Strawberry-Blueberry-Tarts.jpg                100%  284KB 195.7KB/s   00:01
Strawberry-Tarts.jpg                          100%  468KB 198.6KB/s   00:02
aya@aya-Latitude-E6540:~/lab$
```



After migrate data and add it in instance ping for any app to make sure that your transaction fine