Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing capacity in the Amazon Web Services (AWS) cloud. Using Amazon EC2 eliminates your need to invest in hardware up front so you can develop and deploy applications faster. You can use Amazon EC2 to launch as many or as few virtual servers as you need, configure security and networking, and manage storage. Amazon EC2 enables you to scale up or down to handle changes in requirements or spikes in popularity, reducing your need to forecast traffic. Problem Statement: Company ABC wants to move their product to AWS. They have the following things set up right now:

1. MySQL DB

2. Website (PHP) The company wants high availability on this product, therefore wants Auto Scaling to be enabled on this website.

Steps To Solve: 1. Launch an EC2 Instance

2. Enable Auto Scaling on these instances (minimum 2)

3. Create an RDS Instance

4. Create Database & Table in RDS instance:

a. Database name: intel

b. Table name: data

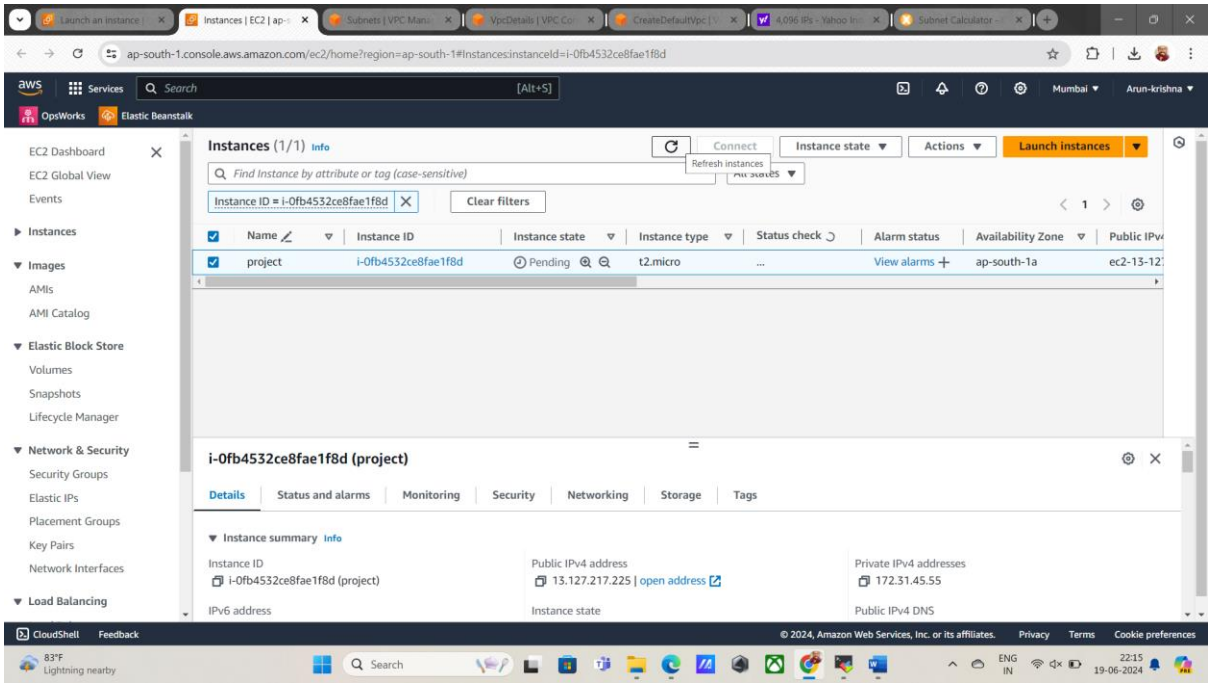
c. Database password: intel123

5. Change hostname in website

6. Allow traffic from EC2 to RDS instance

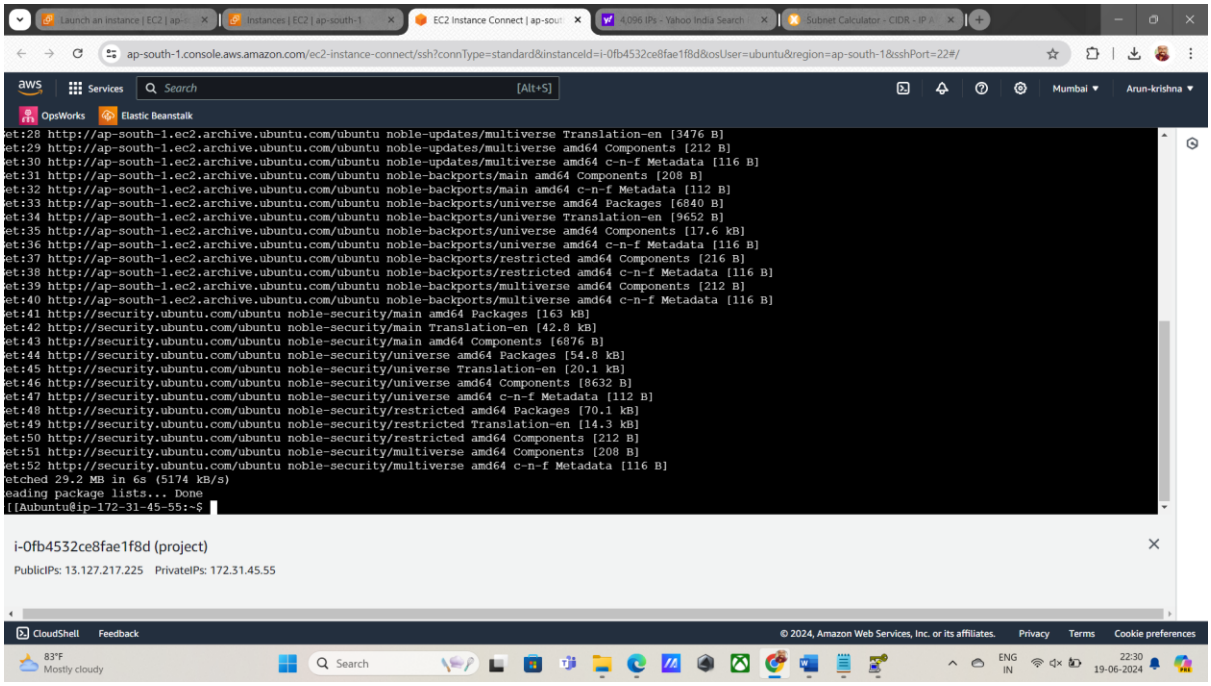
7. Allow all-traffic to EC2 instance

Create instance take ubuntu machine



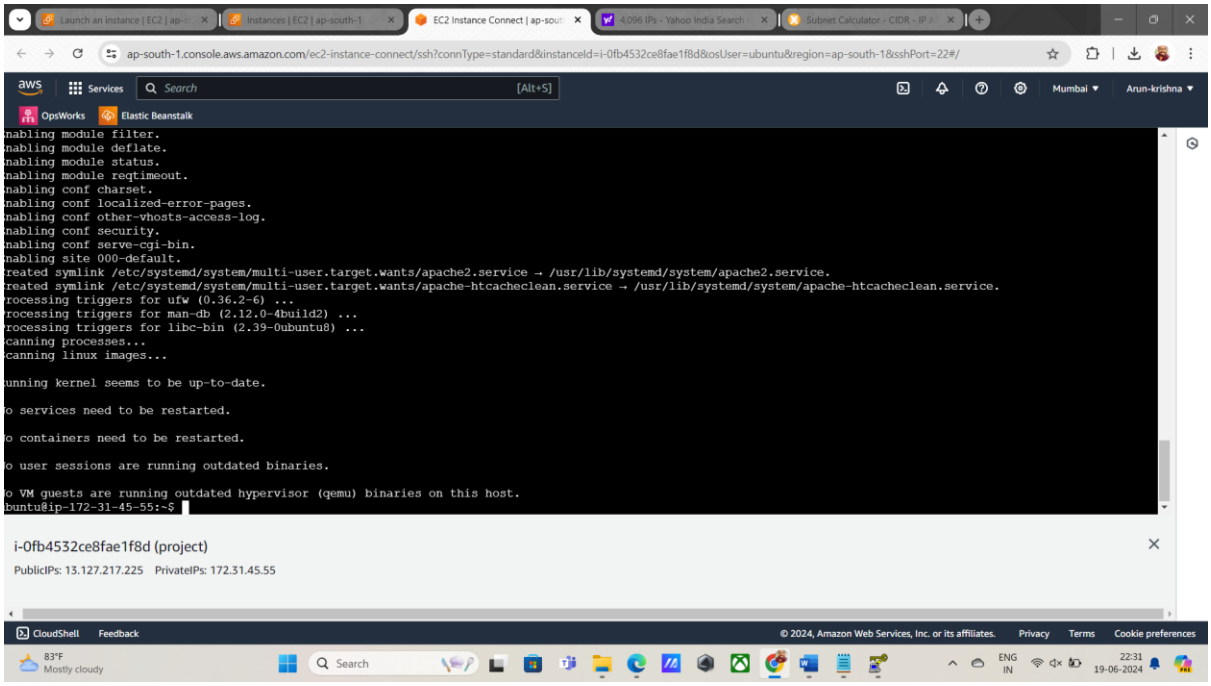
First Update your system using the command

sudo apt-get update



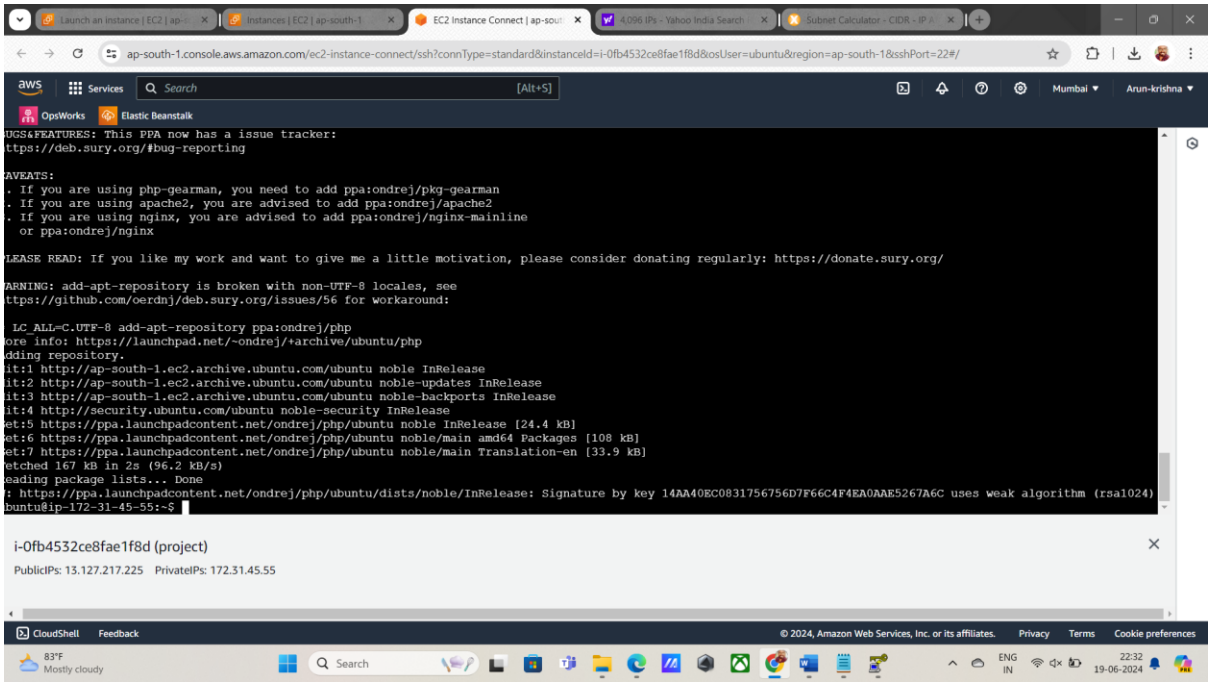
Then use this command to install Apache2

sudo apt-get install apache2



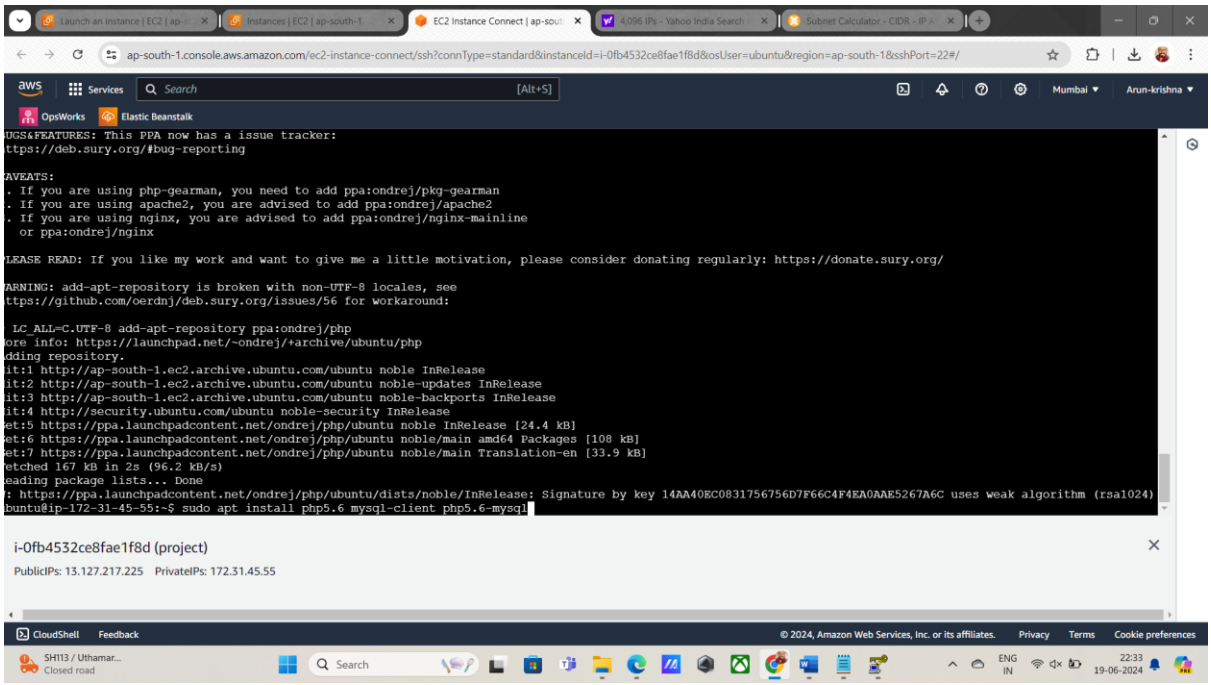
Then install php-mysql using the following command

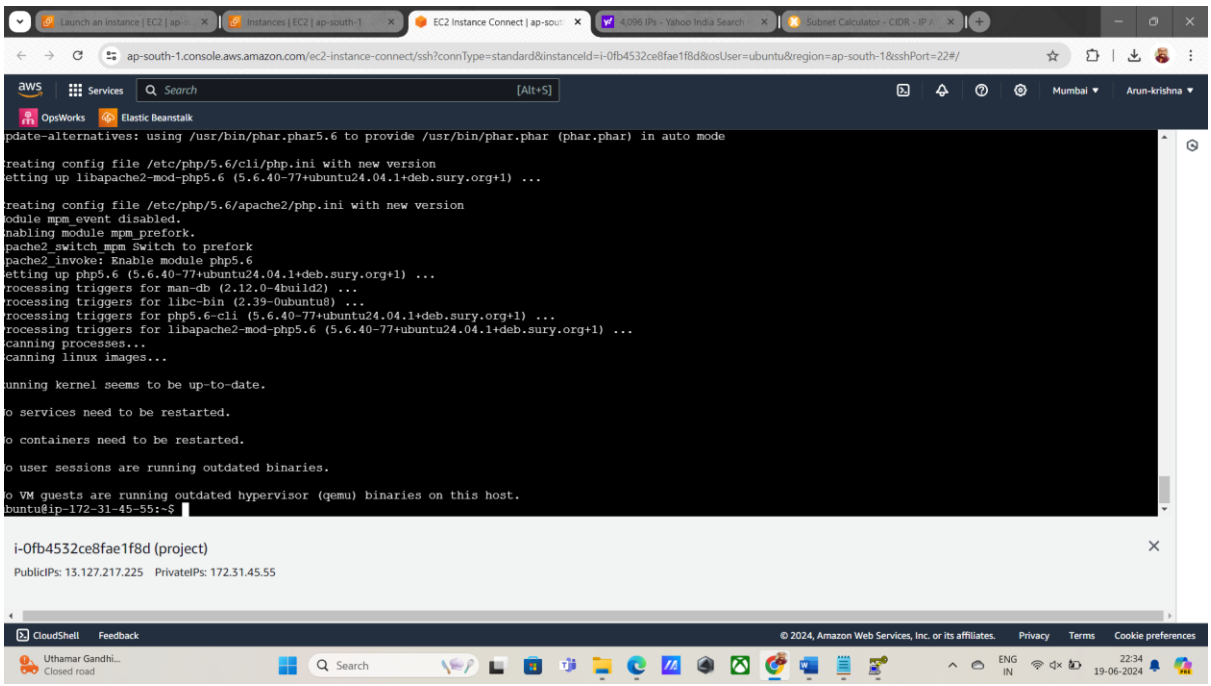
sudo add-apt-repository -y ppa:ondrej/php



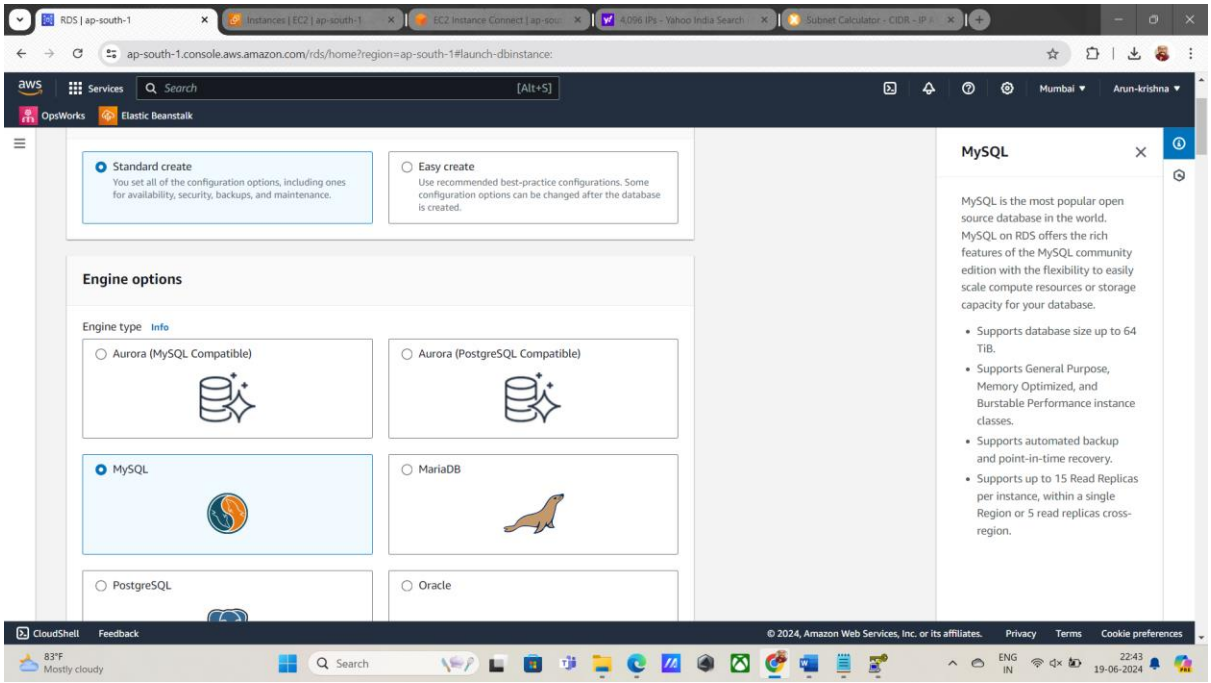
sudo apt install php5.6 mysql-client php5.6-mysqli

Now everything is updated in your system





Create DATABASE by using Mysql


RDS | ap-south-1
ap-south-1.console.aws.amazon.com/rds/home?region=ap-south-1#launch-dbinstance:
Services
Search
[Alt+S]
Mumbai
Arun-krishna
OpsWorks
Elastic Beanstalk
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
PostgreSQL
Oracle
MySQL
MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.
Supports database size up to 64 TiB.
Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
Supports automated backup and point-in-time recovery.
Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.
CloudShell
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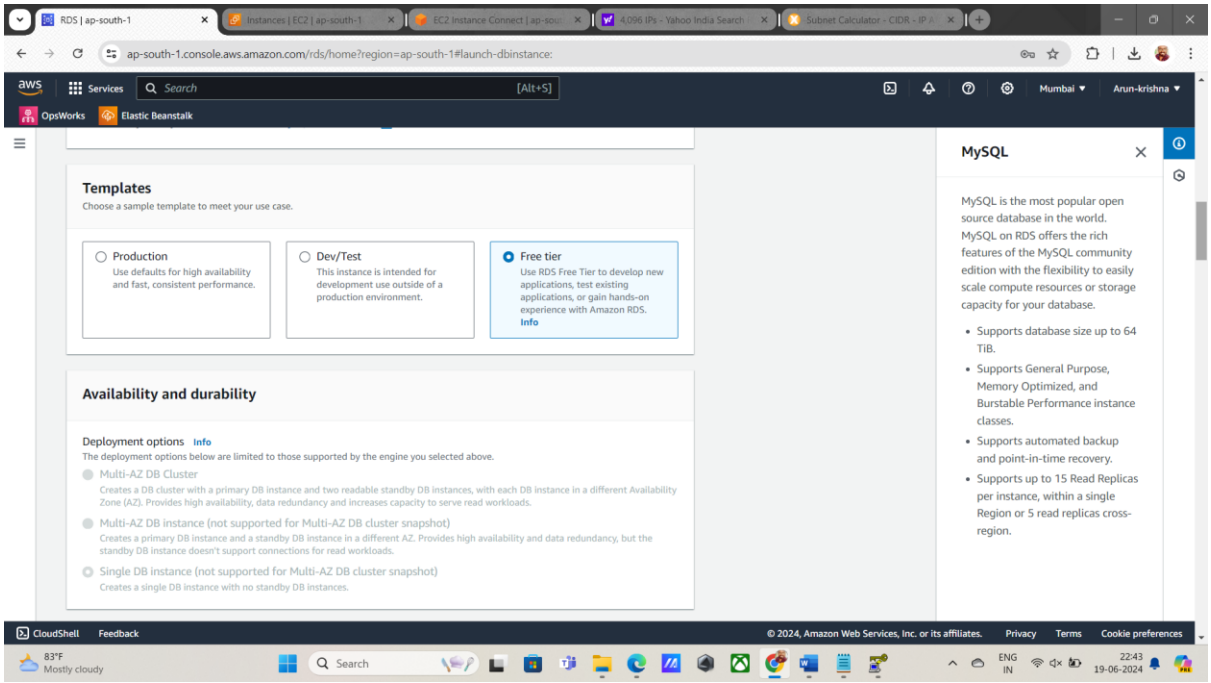
83°F
Mostly cloudy
Search
ENG
IN
22:43
19-06-2024


RDS | ap-south-1
ap-south-1.console.aws.amazon.com/rds/home?region=ap-south-1#launch-dbinstance:
Services
Search
[Alt+S]
Mumbai
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OpsWorks
Elastic Beanstalk
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.
Multi-AZ DB Cluster
Creates a DB cluster with a primary DB instance and two readable standby DB instances, with each DB instance in a different Availability Zone (AZ). Provides high availability, data redundancy and increases capacity to serve read workloads.
Multi-AZ DB instance (not supported for Multi-AZ DB cluster snapshot)
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.
Single DB instance (not supported for Multi-AZ DB cluster snapshot)
Creates a single DB instance with no standby DB instances.
MySQL
MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.
Supports database size up to 64 TiB.
Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
Supports automated backup and point-in-time recovery.
Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.
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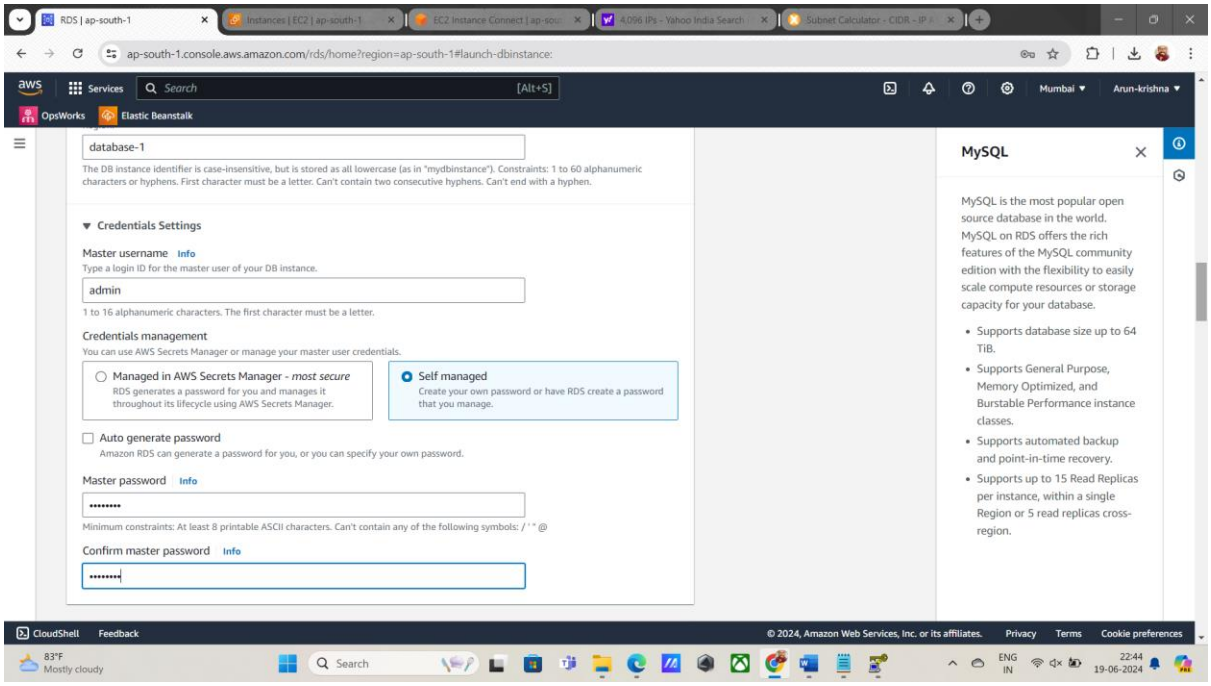
RDS | ap-south-1
ap-south-1.console.aws.amazon.com/rds/home?region=ap-south-1#launch-dbinstance:
Services
Search
[Alt+S]
Mumbai
Arun-krishna
OpsWorks
Elastic Beanstalk
database-1
The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 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.
Credentials management
You can use AWS Secrets Manager or manage your master user credentials.
Managed in AWS Secrets Manager - most secure
RDS generates a password for you and manages it throughout its lifecycle using AWS Secrets Manager.
Self managed
Create your own password or have RDS create a password that you manage.
Auto generate password
Amazon RDS can generate a password for you, or you can specify your own password.
Master password Info
Minimum constraints: At least 8 printable ASCII characters. Can't contain any of the following symbols: / ' " @
Confirm master password Info
MySQL
MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.
Supports database size up to 64 TiB.
Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
Supports automated backup and point-in-time recovery.
Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.
CloudShell
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Cookie preferences
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Mostly cloudy
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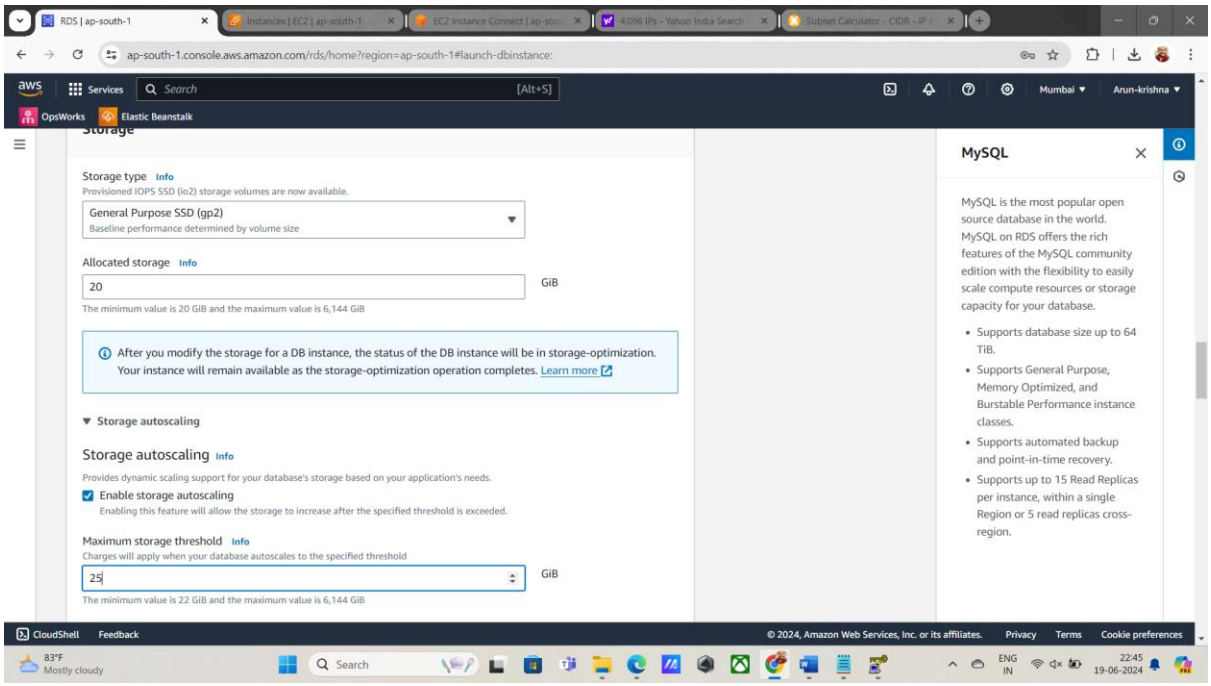
22:44
19-06-2024


RDS | ap-south-1
ap-south-1.console.aws.amazon.com/rds/home?region=ap-south-1#launch-dbinstance:
Services
Search
[Alt+S]
Mumbai
Arun-krishna
OpsWorks
Elastic Beanstalk
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
Storage autoscaling
Storage autoscaling Info
Provides dynamic scaling support for your database's storage based on your application's needs.
Enable storage autoscaling
Enabling this feature will allow the storage to increase after the specified threshold is exceeded.
Maximum storage threshold Info
Charges will apply when your database autoscales to the specified threshold
25
GiB
The minimum value is 22 GiB and the maximum value is 6,144 GiB
MySQL
MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.
Supports database size up to 64 TiB.
Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
Supports automated backup and point-in-time recovery.
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CloudShell
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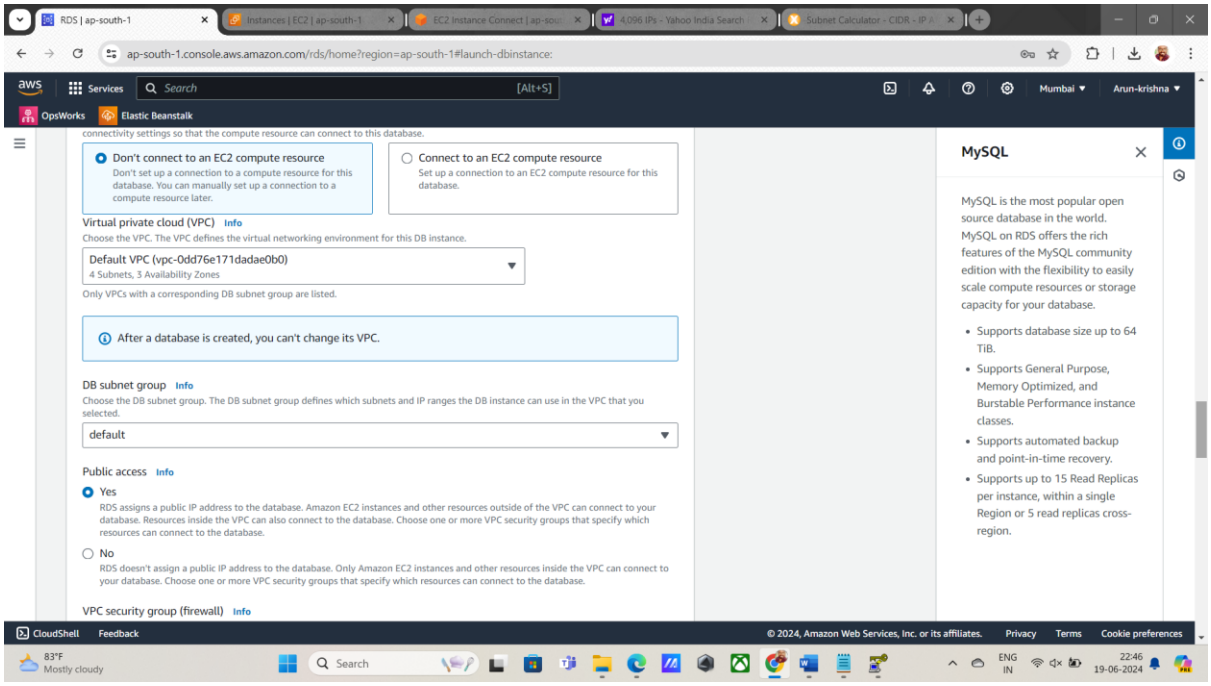
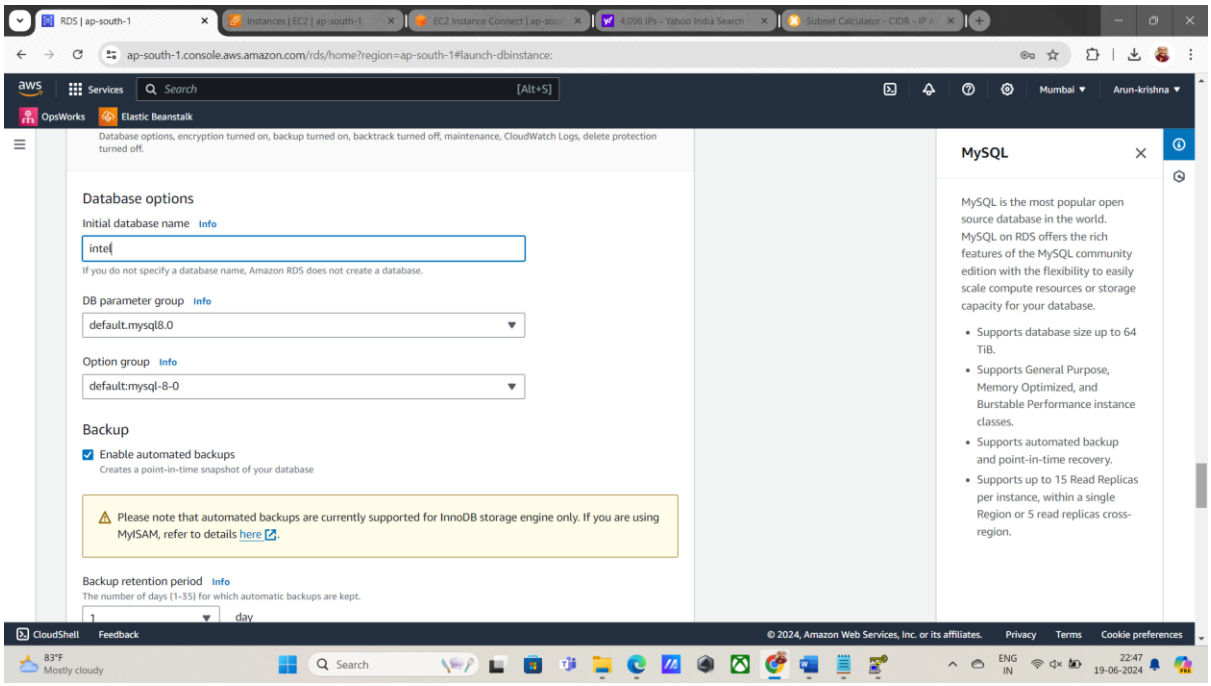
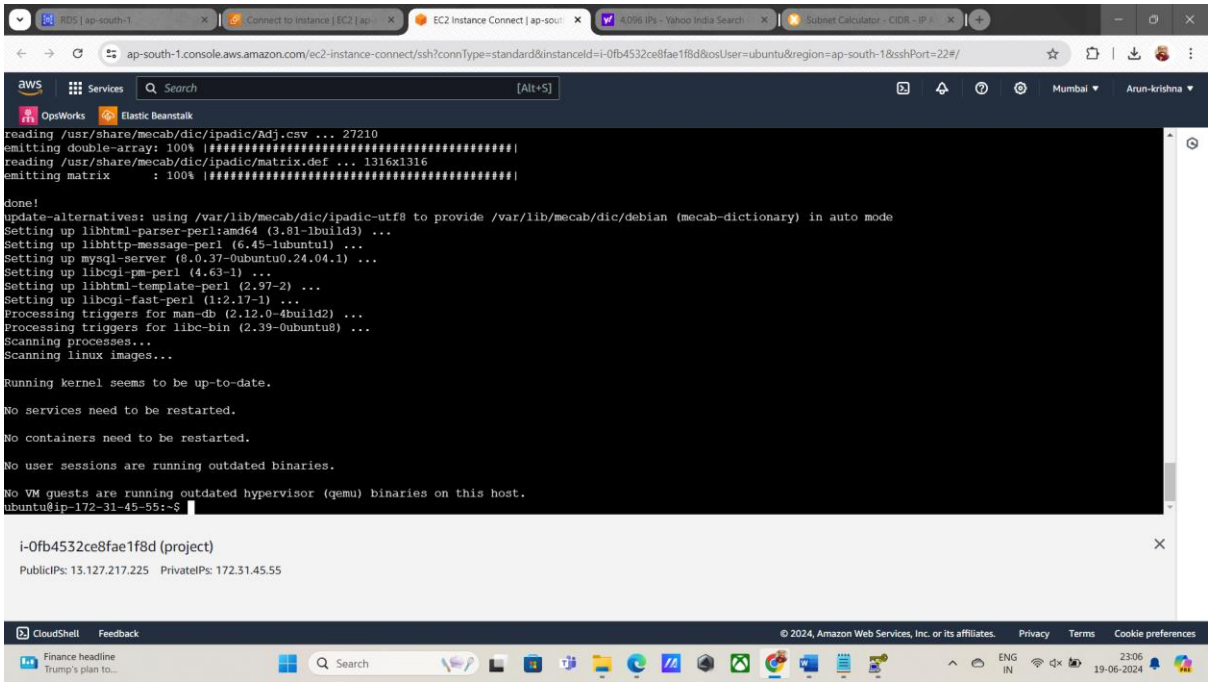
Cookie preferences
83°F
Mostly cloudy
Search
ENG
IN
22:45
19-06-2024





Now install mysql by using command:

sudo apt install mysql-server



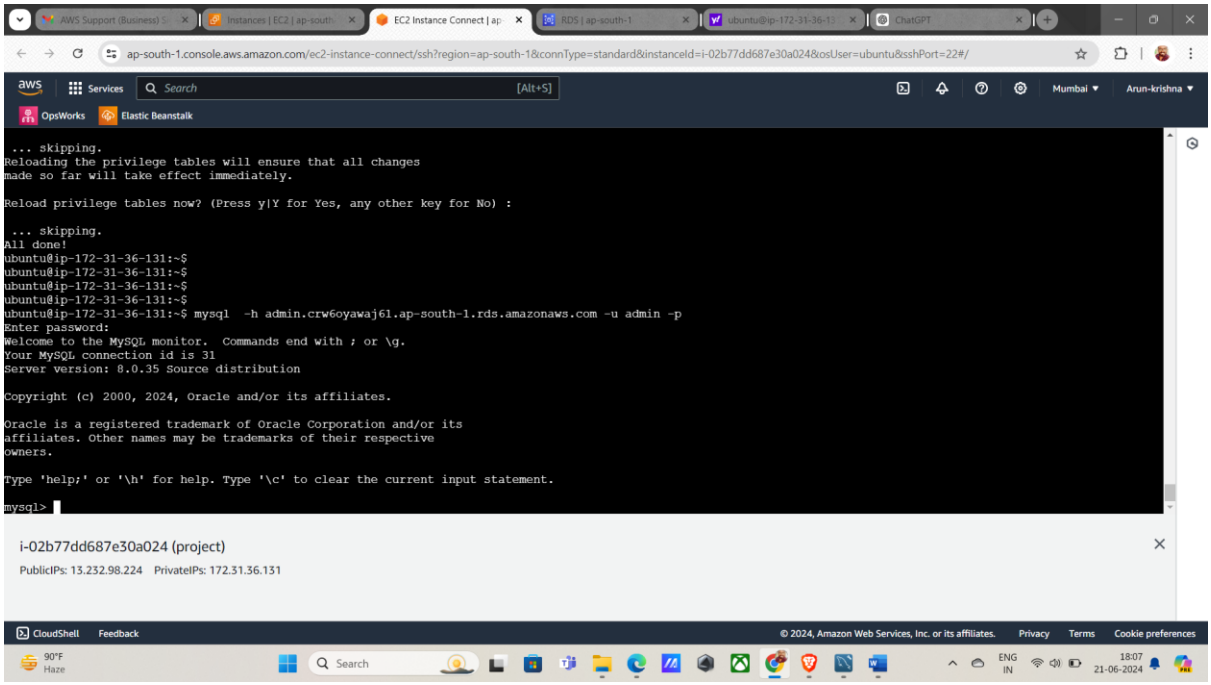
mysql -h Hostname -u username -p

mysql -h database-1.crw6oyawaj61.ap-south-1.rds.amazonaws.com -u intel -p

NOTE:

o In place of hostname, make sure to use your Endpoint from RDS

o Username which you created



To check the entry in database used following commands to see database-----

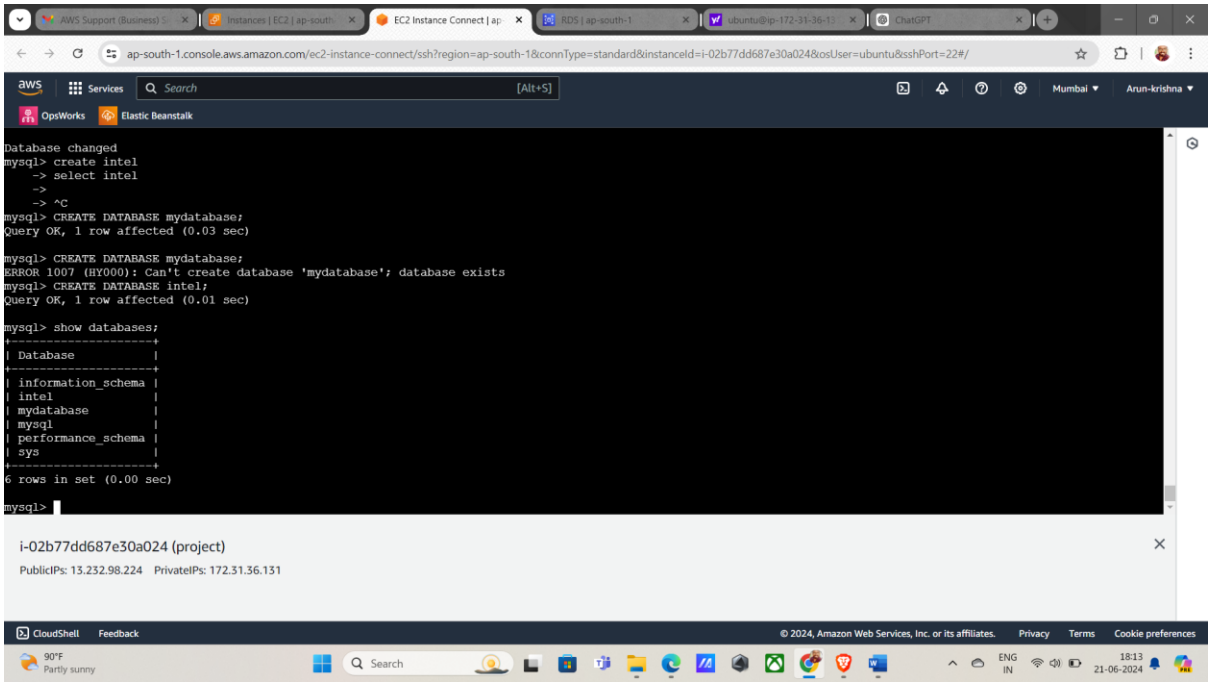
show databases ;

to select database----

- use databasename ;

to see tables or data

select * from data;



Syntax of creating table

CREATE TABLE table_name

(column1 datatype,

column2 datatype, ...

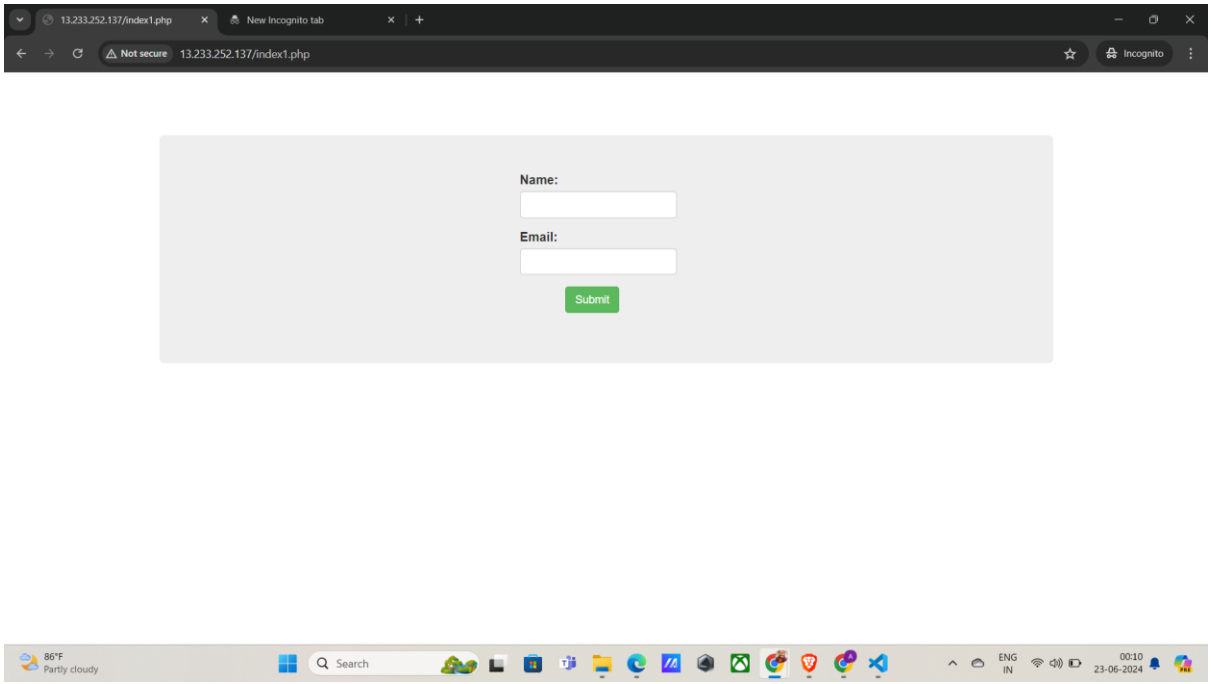
);

……..

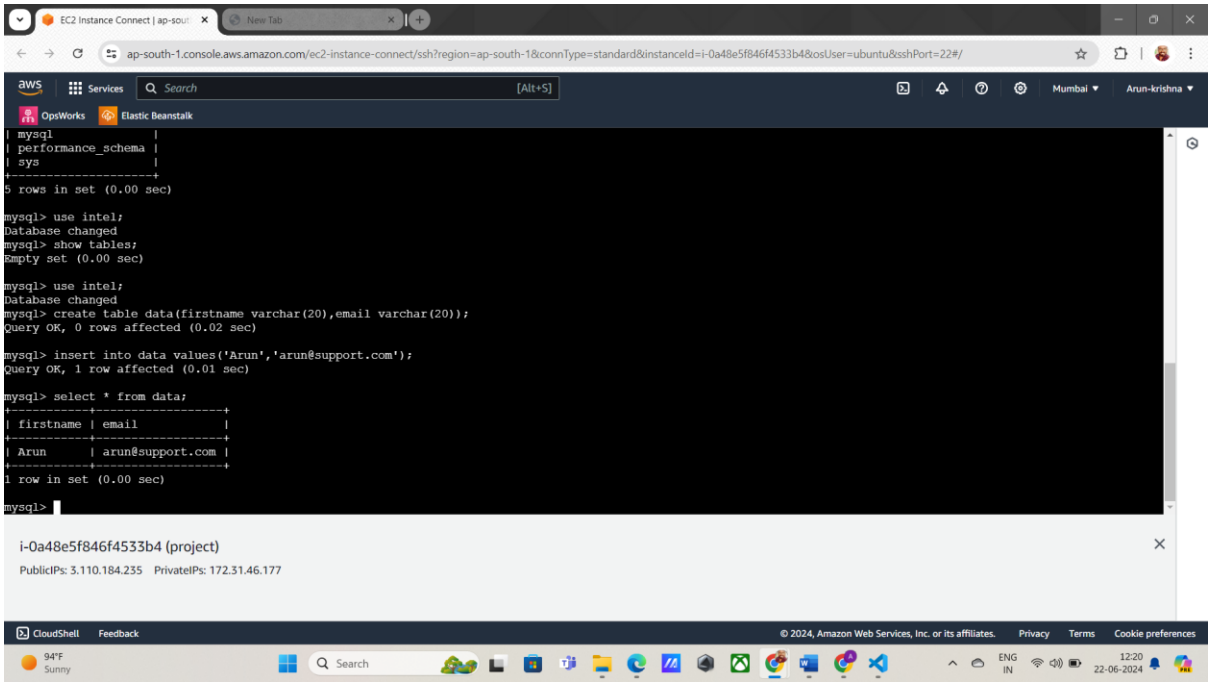
Create table

intel.data (firstname varchar(30) not null,

Email varchar(30) not null };


13.233.252.137/index1.php
New Incognito tab
Not secure
13.233.252.137/index1.php
Incognito
Name:
Email:
Submit

86°F
Partly cloudy
Search
ENG
IN
00:10
23-06-2024


EC2 Instance Connect | ap-sout
New Tab
ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=ap-south-1&connType=standard&instanceId=i-0a48e5f846f4533b4&osUser=ubuntu&sshPort=22#/
Services
Search
[Alt+S]
Mumbai
Arun-krishna
OpsWorks
Elastic Beanstalk
| mysql |
| performance_schema |
| sys |
5 rows in set (0.00 sec)
mysql> use intel;
Database changed
mysql> show tables;
Empty set (0.00 sec)
mysql> use intel;
Database changed
mysql> create table data(firstname varchar(20),email varchar(20));
Query OK, 0 rows affected (0.02 sec)
mysql> insert into data values('Arun','arun@support.com');
Query OK, 1 row affected (0.01 sec)
mysql> select * from data;
| firstname | email |
| Arun | arun@support.com |
1 row in set (0.00 sec)
mysql>
i-0a48e5f846f4533b4 (project)
PublicIPs: 3.110.184.235 PrivateIPs: 172.31.46.177
CloudShell
Feedback
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Terms
Cookie preferences
94°F
Sunny
Search
ENG
IN
12:20
22-06-2024

I don’t have to buy money to domain name but I give the explanation in the steps:

- Log into your GoDaddy account.

- Go to the "My Products" section and select "Manage DNS" for your domain.

- **Edit DNS Settings:**

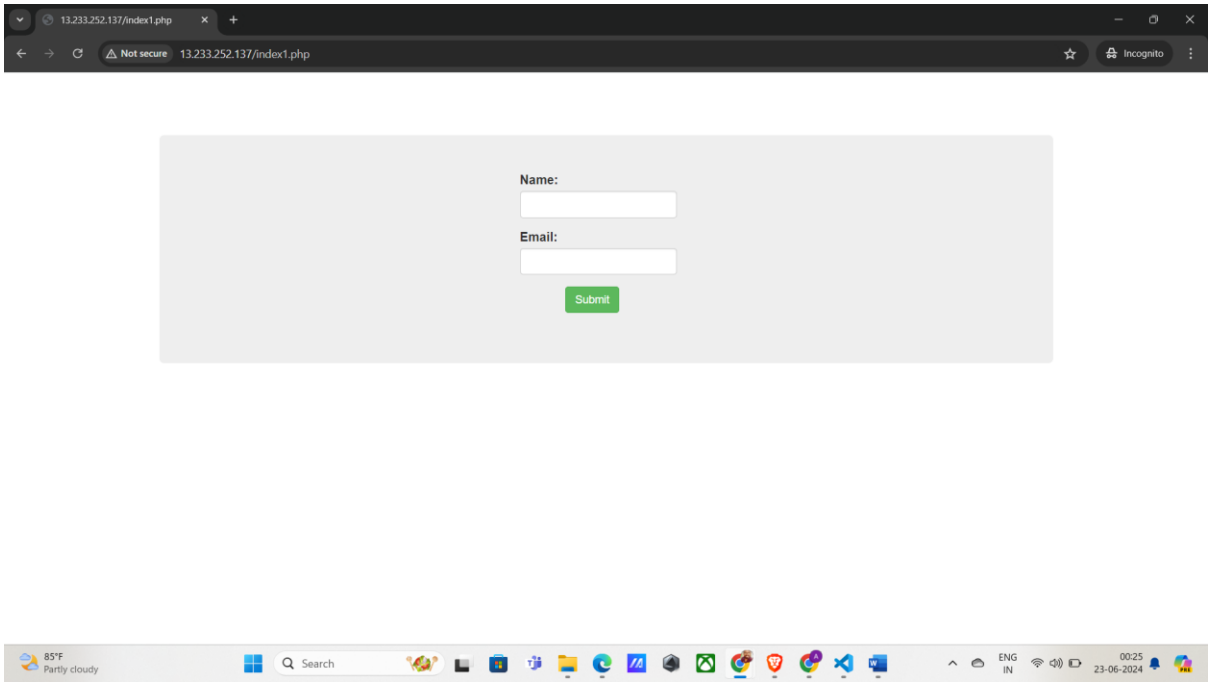
  - In the DNS management section, you will need to update the A record.
  - Find the A record section and edit it.

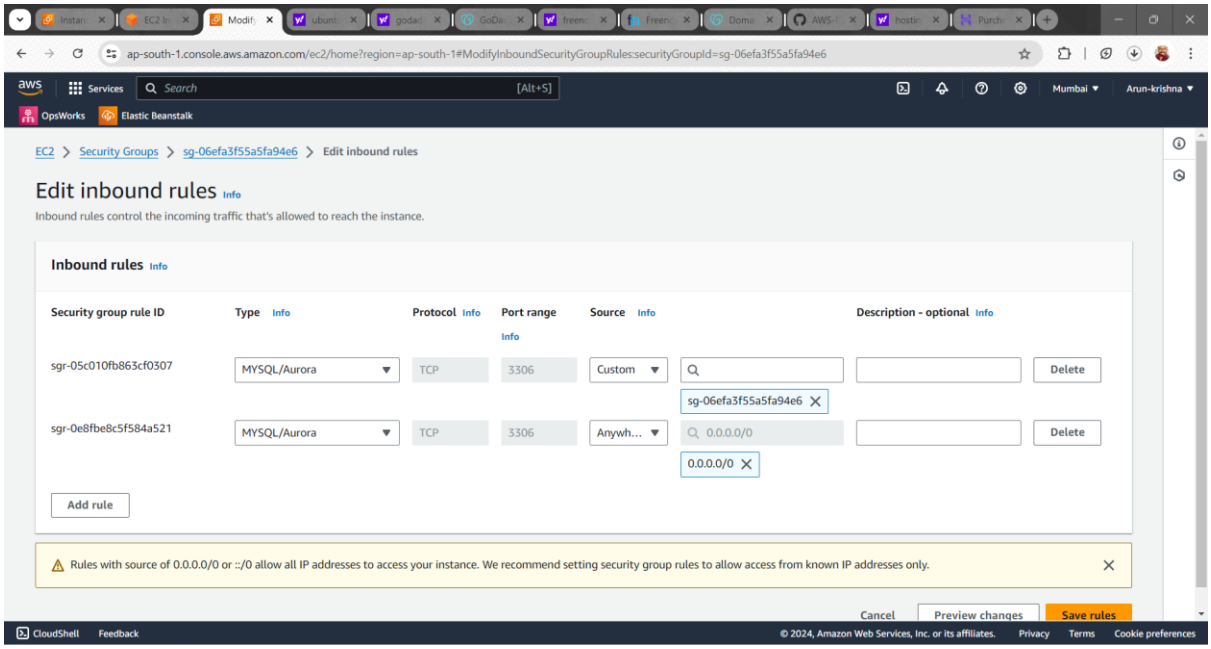
- **Link to EC2 Instance:**

  - In the "Points to" field of the A record, enter the public IP address of your EC2 instance.
  - Save the changes.

- **Wait for DNS Propagation:**

  - DNS changes might take a few minutes to several hours to propagate worldwide.
  - After propagation, refreshing your browser should show your website hosted on the EC2 instance with the new domain name.




ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#ModifyInboundSecurityGroupRules:securityGroupId=sg-06efa3f55a5fa94e6
Services
Search
[Alt+S]
Mumbai
Arun-krishna
OpsWorks
Elastic Beanstalk
EC2 > Security Groups > sg-06efa3f55a5fa94e6 > Edit inbound rules
Edit inbound rules Info
Inbound rules control the incoming traffic that's allowed to reach the instance.
Inbound rules Info
Security group rule ID
Type Info
Protocol Info
Port range Info
Source Info
Description - optional Info
sgr-05c010fb863cf0307
MYSQL/Aurora
TCP
3306
Custom
sg-06efa3f55a5fa94e6
Delete
sgr-0e8fbe8c5f584a521
MYSQL/Aurora
TCP
3306
Anywh...
0.0.0.0/0
0.0.0.0/0
Delete
Add rule
Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.
Cancel
Preview changes
Save rules
CloudShell
Feedback
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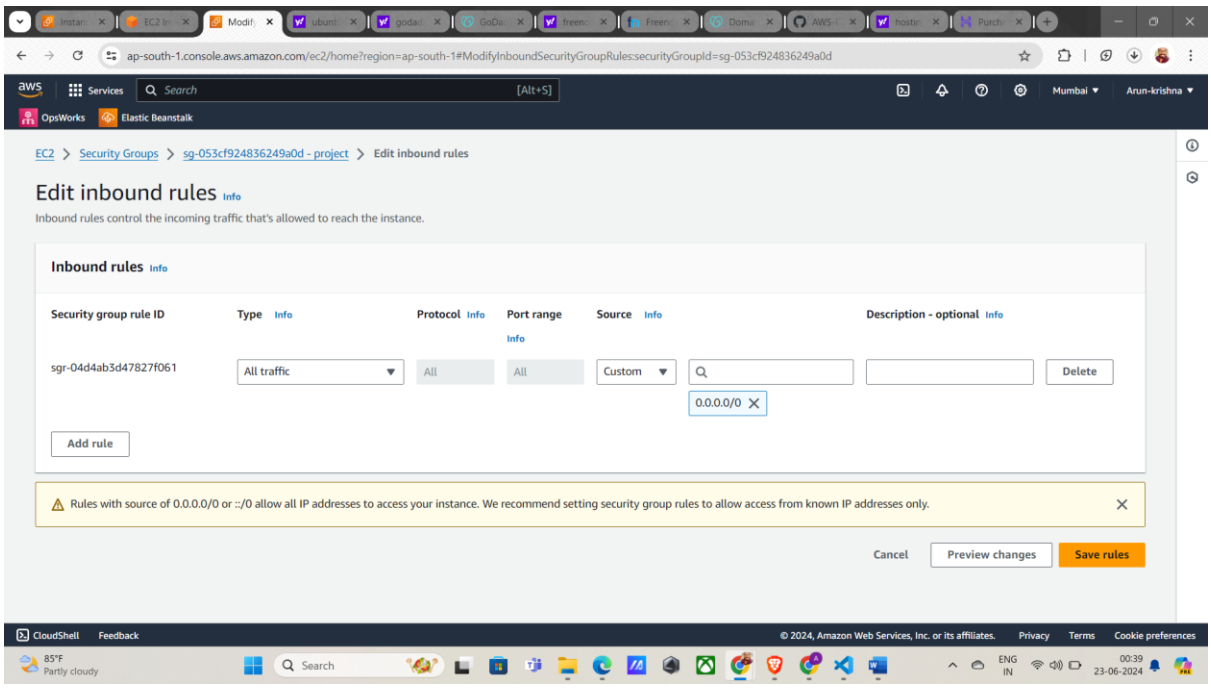
ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#ModifyInboundSecurityGroupRules:securityGroupId=sg-053cf924836249a0d
Services
Search
[Alt+S]
Mumbai
Arun-krishna
OpsWorks
Elastic Beanstalk
EC2 > Security Groups > sg-053cf924836249a0d - project > Edit inbound rules
Edit inbound rules Info
Inbound rules control the incoming traffic that's allowed to reach the instance.
Inbound rules Info
Security group rule ID
Type Info
Protocol Info
Port range Info
Source Info
Description - optional Info
sgr-04d4ab3d47827f061
All traffic
All
All
Custom
0.0.0.0/0
Delete
Add rule
Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.
Cancel
Preview changes
Save rules
CloudShell
Feedback
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Cookie preferences
85°F
Partly cloudy
Search
ENG
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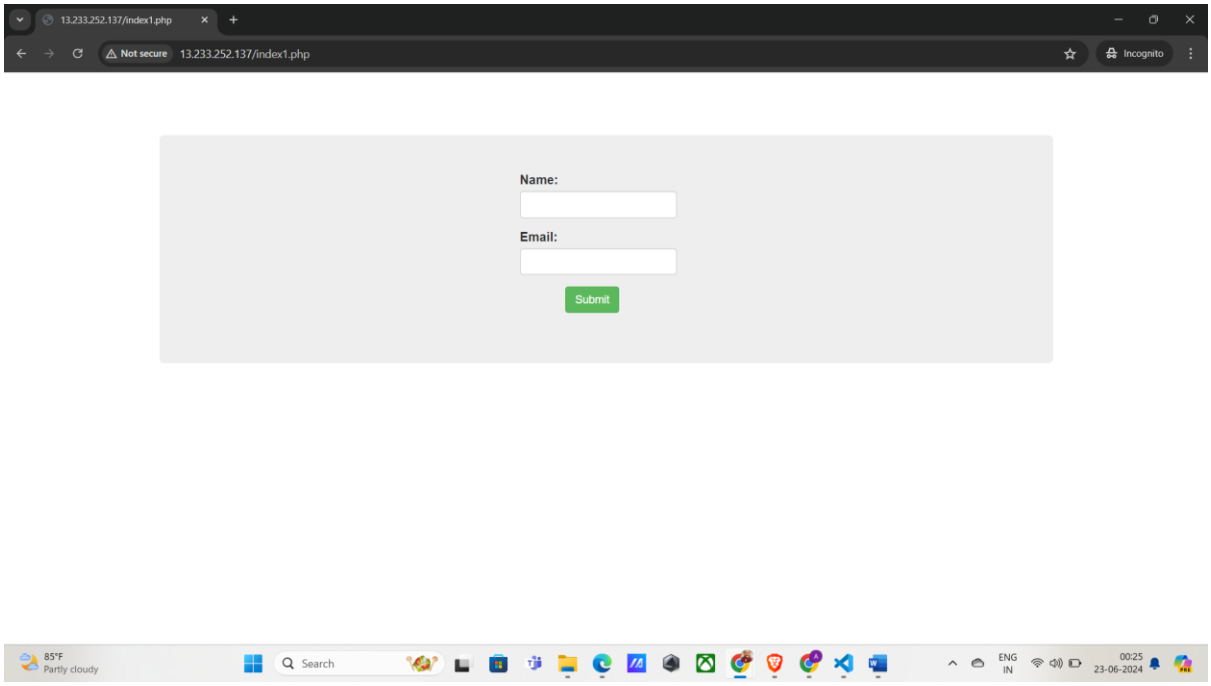
13.233.252.137/index1.php
Not secure
13.233.252.137/index1.php
Incognito
Name:
Email:
Submit
85°F
Partly cloudy
Search
ENG
IN
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23-06-2024