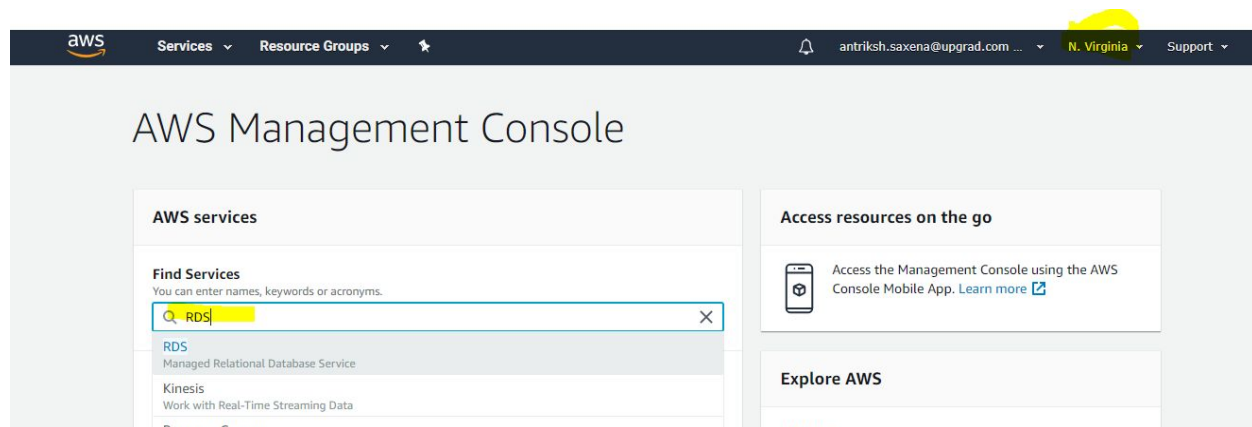


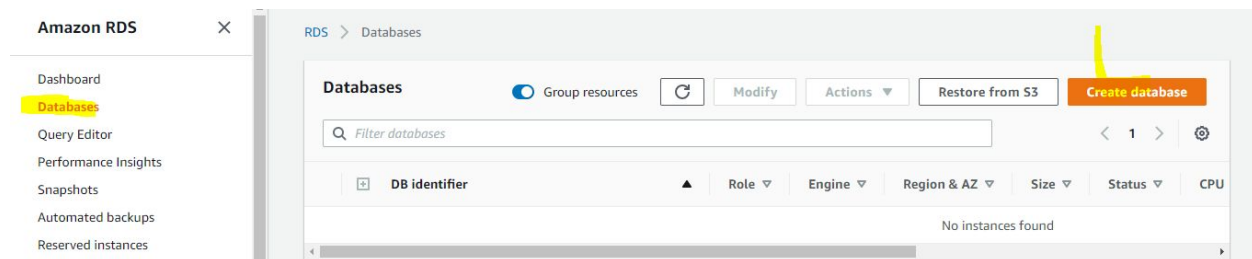


Creating an RDS instance

1. You are expected to work in the **N.Virginia** region. Initiate the process by launching the **RDS** service on the AWS console.



2. There, select **Database** and click on the option '**Create database**'.





- You must select the option **Standard Create** from the available options. Also, we will be working with the **MySQL** engine-type. You can move to the next option after selecting the mentioned options.

Create database

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](#)



Amazon Aurora



MySQL



MariaDB



- In the video, Vinod works with the 'Production' grade instance. However, you must select **Free tier** to save on cost. After this, you must provide a name for the RDS instance.

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](#)

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

upgrad-demo

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 alphanumeric characters or hyphens (1 to 15 for SQL Server). First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

▼ Credentials Settings



5. In the next step, you must provide the credentials for accessing the instance. This will restrict the unwanted access to the data stored in it.

Master username - admin (by default)

Password - admin123 (in our case)

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 alphanumeric characters or hyphens (1 to 15 for SQL Server). 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.

1 to 16 alphanumeric characters. First character must be a letter

☐ 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), " (double quote) and @ (at sign).

Confirm password [Info](#)



6. Next, you must select the instance-type. As part of the process here, you must not change any information. However, you must verify the following:
- Instance type: **db.t2.micro**
 - Storage type: **General Purpose (SSD)**
 - Allocated storage: **20**

☒ Burstable classes (includes t classes)

db.t2.micro

1 vCPUs 1 GiB RAM Not EBS Optimized

☐ Include previous generation classes

Storage

Storage type [Info](#)

General Purpose (SSD)

Allocated storage

20

GiB

(Minimum: 20 GiB, Maximum: 16384 GiB) Higher allocated storage [may improve](#) IOPS performance.



- Next, you must keep the default settings and move to 'Additional configuration'. This section gives you the option to create a database inside the RDS instance. You can fill the initial database name as **mlc_test** for demo purposes.

In case you skip this step, you must launch the MySQL server to connect the database which requires SQL knowledge.

Database authentication

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 (not available for this version)
Choose a directory in which you want to allow authorized users to authenticate with this DB instance using Kerberos Authentication.

▼ **Additional configuration**

Database options, backup enabled, backtrack disabled, Enhanced Monitoring disabled, maintenance, CloudWatch Logs, delete protection disabled

Database options

Initial database name [Info](#)



8. After you have implemented all the steps, you can scroll down to the bottom of the screen and click on **Create database**.

Deletion protection

☐ Enable deletion protection
Protects the database from being deleted accidentally. While this option is enabled, you can't delete the database.

Estimated monthly costs

The Amazon RDS Free Tier is available to you for 12 months. Each calendar month, the free tier will allow you to use the Amazon RDS resources listed below for free:

- 750 hrs of Amazon RDS in a Single-AZ db.t2.micro Instance.
- 20 GB of General Purpose Storage (SSD).
- 20 GB for automated backup storage and any user-initiated DB Snapshots.

[Learn more about AWS Free Tier.](#)

When your free usage expires or if your application use exceeds the free usage tiers, you simply pay standard, pay-as-you-go service rates as described in the [Amazon RDS Pricing page.](#)

You are responsible for ensuring that you have all of the necessary rights for any third-party products or services that you use with AWS services.

Cancel **Create database**

Your RDS instance will be ready. You can verify it on the RDS service page under the Databases section.

Amazon RDS

- Dashboard
- Databases**
- Query Editor
- Performance Insights
- Snapshots
- Automated backups
- Reserved instances
- Proxies
- Subnet groups

Creating database upgrad-demo.
Your database might take a few minutes to launch.

View credential details

RDS > Databases

Databases ☒ Group resources

	DB identifier	Role	Engine	Region & AZ	Size	Status
<input type="radio"/>	upgrad-demo	Instance	MySQL Community	-	db.t2.micro	<input type="button" value="Info"/>

In a few minutes, the status will be updated to **Available**.



Connecting to an RDS instance

Similar to the EC2 instance, you must update the IP address under the Security Groups to access the RDS instance. Let's see how to do that.

1. Click on the security group link under the Security section.

The screenshot displays the AWS Management Console interface for an RDS instance. The top navigation bar includes tabs for 'Connectivity & security', 'Monitoring', 'Logs & events', 'Configuration', 'Maintenance & backups', and 'Tags'. The 'Connectivity & security' tab is active, showing three main sections: 'Endpoint & port', 'Networking', and 'Security'. In the 'Endpoint & port' section, the 'Endpoint' is 'upgrad-demo.cqyf8aiqvb7.us-east-1.rds.amazonaws.com' and the 'Port' is '3306'. In the 'Networking' section, the 'Availability zone' is 'us-east-1d', the 'VPC' is 'vpc-a1a1d2db', and the 'Subnet group' is 'default-vpc-a1a1d2db'. In the 'Security' section, the 'VPC security groups' list shows 'default (sg-9d9007c1)' as '(active)'. Other security settings include 'Public accessibility' set to 'No' and 'Certificate authority' set to 'rds-ca-2019'.

2. Click on the **Inbound rules** from the available options.

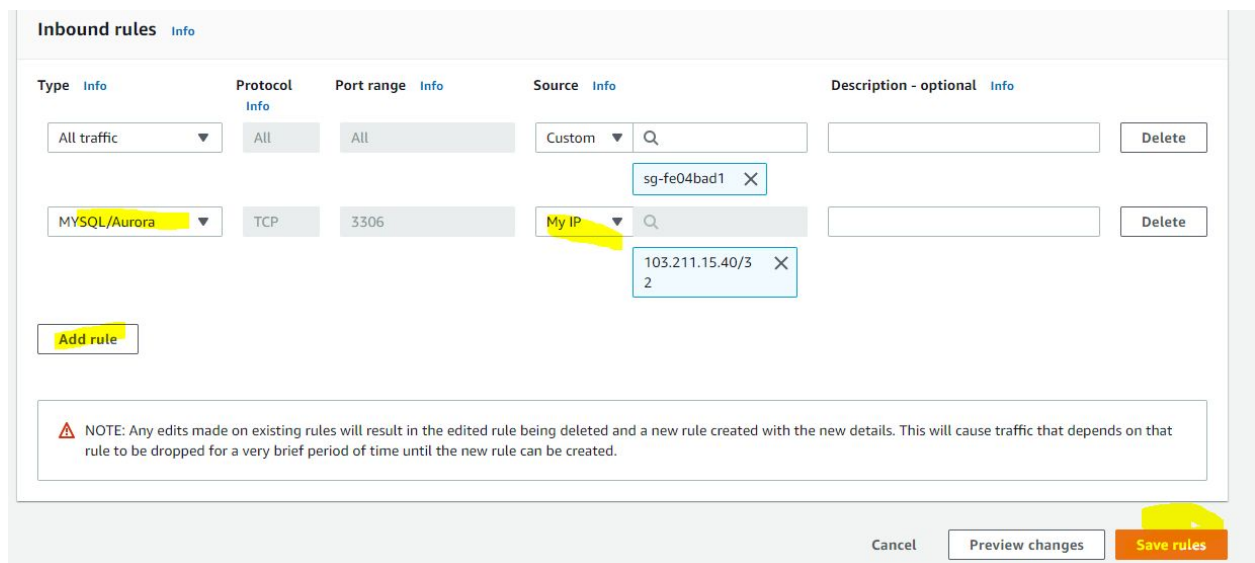
The screenshot shows the 'Security Groups (1/1)' page in the AWS Management Console. At the top, there's a search bar with 'Filter security groups' and a 'Create security group' button. Below the search bar, a table lists the security groups. The first row is selected, showing 'sg-9d9007c1' as the 'Security group ID', 'default' as the 'Security group name', 'vpc-a1a1d2db' as the 'VPC ID', 'default VPC security gr...' as the 'Description', and '3833252640' as the 'Owner'. Below the table, the 'sg-9d9007c1 - default' security group is expanded, and the 'Inbound rules' tab is selected, showing a list of inbound rules.



- You must provide access to the 3306 port to the required IP address every time before you want to access the database. Click on **Edit Inbound rules**.



- Click on **Add rules > Mysql Aurora**. Here, if you want to access the database from your local machine, you must select **My IP**. In case you want to access the RDS instance from an EC2 instance, you must provide the IP address of the EC2 instance. For now, we will select MY IP. Click on **Save rules**.



Now, you will be able to access the RDS instance from your local machine. You will learn how to do that in the next module.



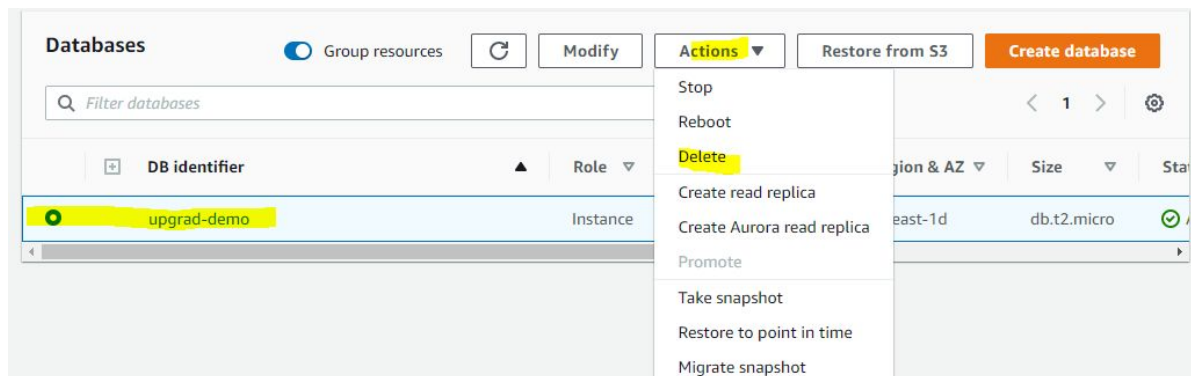
Deleting RDS Instance

Delete the RDS instance immediately otherwise your budget will get exhausted.

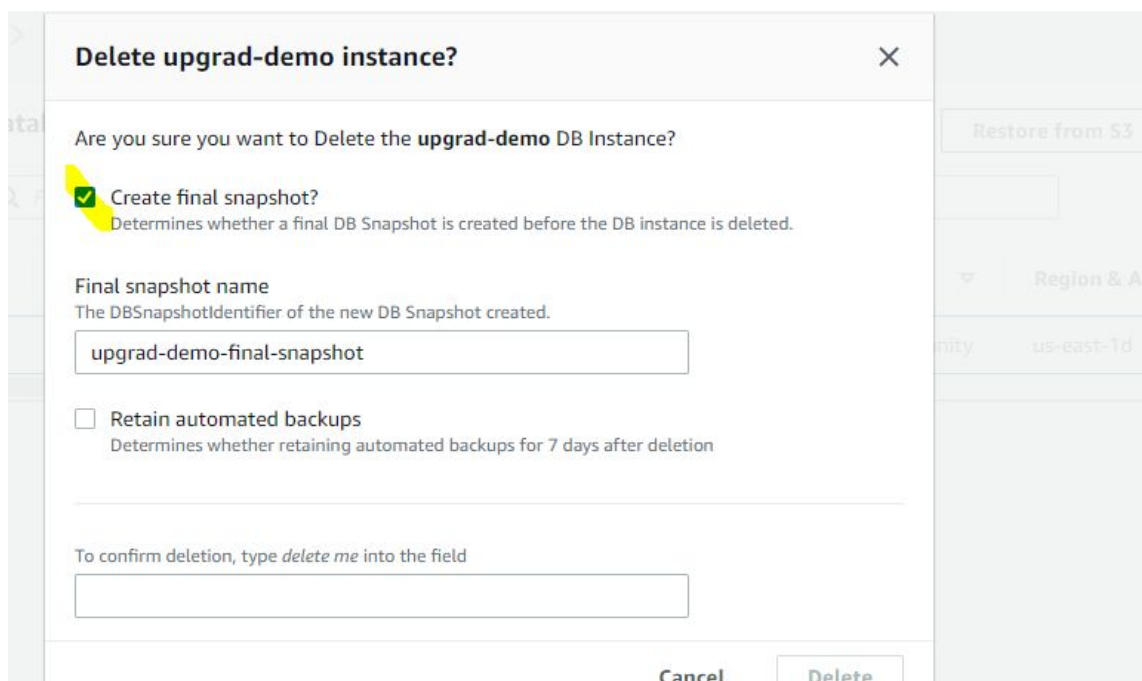
One common misconception about the RDS instance is that it is free. Though it's free tier, it costs ~0.5\$ every day if you aren't terminating it.

Terminate the RDS instance or RDS snapshot if it is available in your account and ensure the DB Instances count and Snapshots count are 0.

1. Go to **Actions** dropdown.



2. Uncheck **Create final snapshot**.





Delete upgrad-demo instance?

Are you sure you want to Delete the **upgrad-demo** DB Instance?

☐ Create final snapshot?
Determines whether a final DB Snapshot is created before the DB instance is deleted.

☐ Retain automated backups
Determines whether retaining automated backups for 7 days after deletion

☒ I acknowledge that upon instance deletion, automated backups, including system snapshots and point-in-time recovery, will no longer be available.

To confirm deletion, type *delete me* into the field

delete me

⚠ We strongly recommend taking a final snapshot before instance deletion since after your instance is deleted, automated backups will no longer be available.

Cancel Delete

4. Refresh the status.

Deleting DB instance upgrad-demo.

RDS > Databases

Databases

☒ Group resources

Refresh Modify Actions Restore from S3 Create database

& AZ

Size

Status

CPU

Current activity

Maintenance

VPC

Multi-AZ

db.t2.micro

Deleting

1.50%

0 Connections

none

vpc-a1a1d2db

No

Note: Don't create multiple RDS instances in your account. Pls stop the RDS instance or delete it if you are not using it in future.