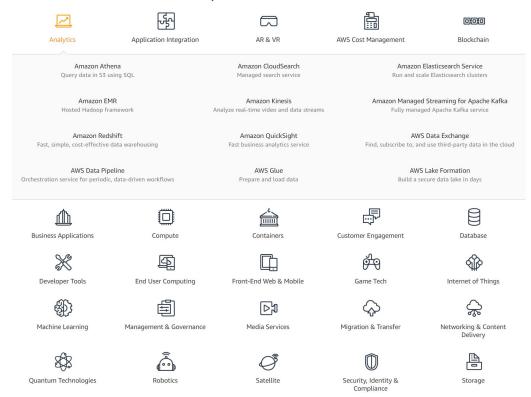
Setting up a database on AWS

Data Engineering

AWS is the biggest cloud compute provider

Explore Our Products

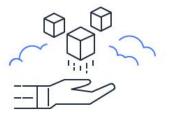


Sign up for AWS

One year Free Tier for new accounts

Explore Free Tier products with a new AWS account.

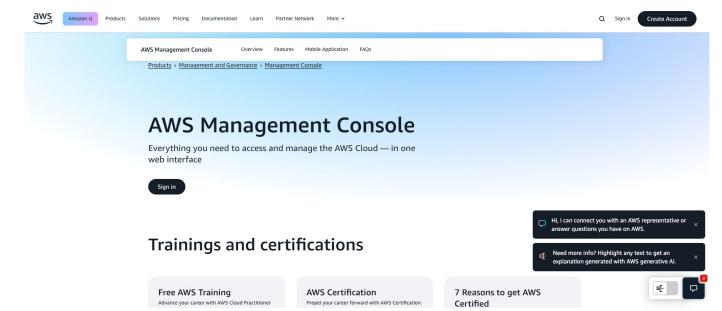
To learn more, visit aws.amazon.com/free.



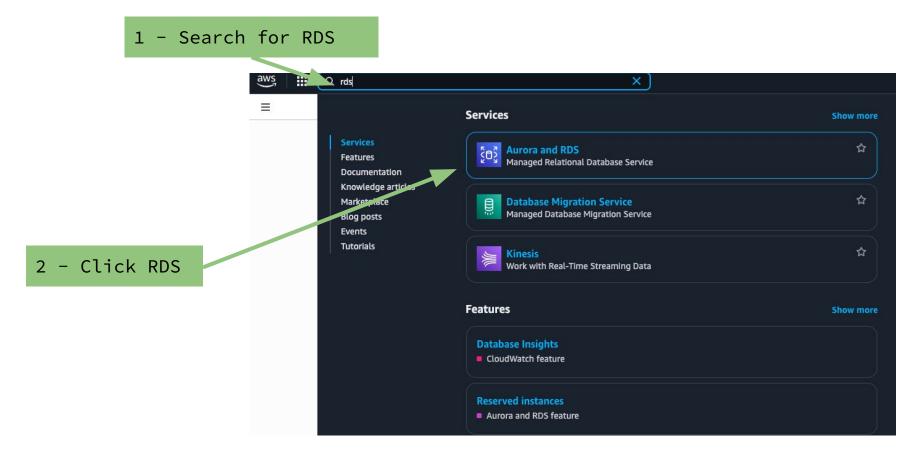
Sign up for AWS Root user email address Used for account recovery and as described in the AWS Privacy Notice [7] AWS account name Choose a name for your account. You can change this name in your account settings after you sign up. Verify email address Sign in to an existing AWS account

Signing into AWS

- https://aws.amazon.com/console/
- Sign in as a root user



Getting to RDB management console



(i) Introducing Aurora I/O-Optimized

Aurora's I/O-Optimized 🖸 is a new cluster storage configuration that offers predictable pricing for all applications and improved price-performance, with up to 4

Resources

Refresh

You are using the following Amazon RDS resources in the US East (N. Virginia) region (used/quota)

DB Instances (0/40)

Allocated storage (0 TB/100 TB)

Instances and storage include Neptune and DocumentDB. Increase DB

instances limit [2]

DB Clusters (0/40)

Reserved instances (0/40)

Snapshots (0)

Click on DB

instances

Manual

DB Cluster (0/100)

DB Instance (0/100)

Automated

DB Cluster (0)

DB Instance (0)

Recent events (0)

Event subscriptions (0/20)

Parameter groups (0)

Default (0)

Custom (0/100)

Option groups (0)

Default (0)

Custom (0/20)

Subnet groups (0/50)

Supported platforms <a>I™ VPC

Default network vpc-04d2f88f80b5ff52b

Create a database

Amazon Relational Database Service (RDS) makes it easy to set up, operate, and scale a relational database in the cloud.

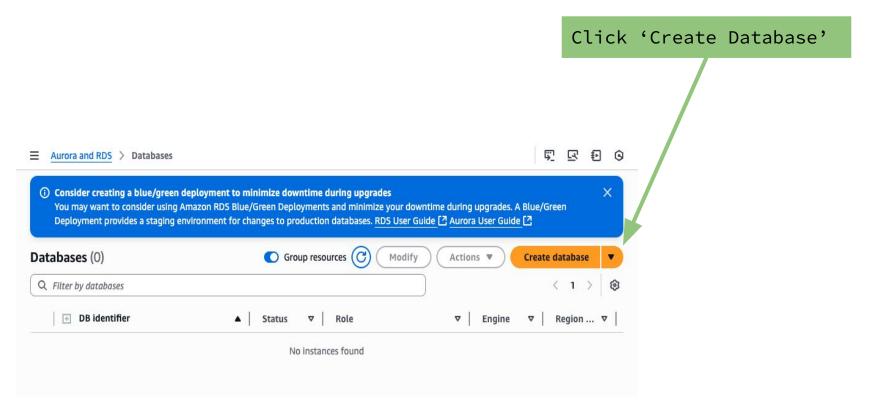
Create a database

Note: your DB instances will launch in the US East (N. Virginia) region

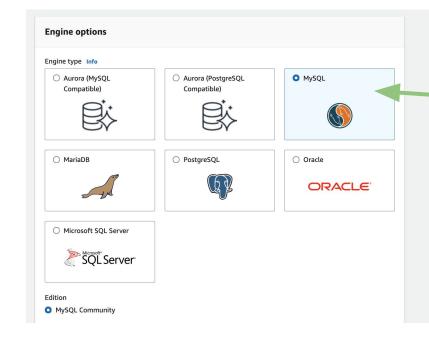
You can use a backup from Amazon S3 to restore and create a new Aurora MySQL and MySQL database.

Restore from S3

Creating a database



Click 'Standard Create'





- Now we need to give it a name, password, username, etc
- Also select how much compute resources to use
- Really really important to follow directions

Click 'Free tier'

Free tier

Use RDS Free Tier to develop

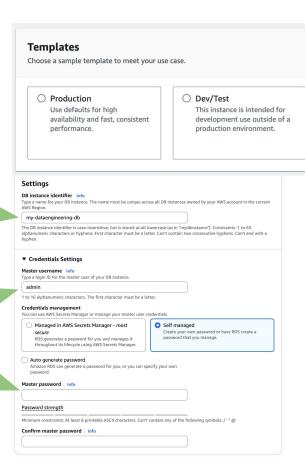
new applications, test existing

applications, or gain hands-on experience with Amazon RDS.

Create instance id.

NOTE: This is just the name in the console, not for accessing

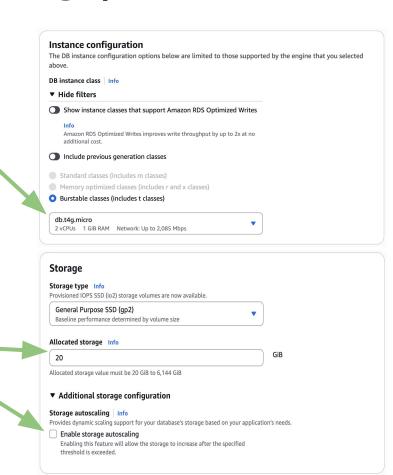
Create username and password.
NOTE: You'll need these credentials to access db from python.



Select your instance size - use 'db.t4g.micro'
Should be the default

Minimum storage is 20gb (the default).

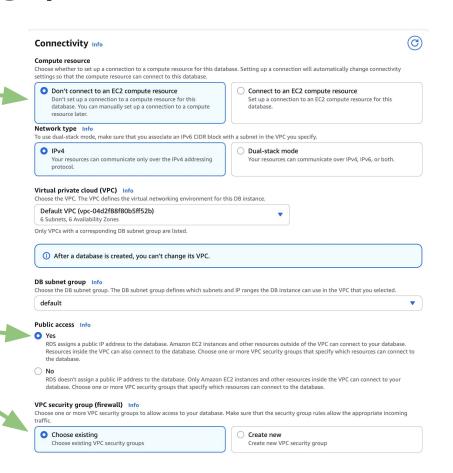
Deselect autoscaling box (it's checked here... uncheck it!).



Don't connect to an EC2 compute resource

CRITICAL - Change
'Public access' to Yes.

CRITICAL - Leave 'VPC
security group' as
'Choose existing.'
We'll modify that later.



Expand 'Additional configuration'

Choose one or more options	<u> </u>
default X	
Availability Zone Info	
No preference	•
RDS Proxy RDS Proxy is a fully managed, highly available datal	ase proxy that improves application scalability, resiliency, and security.
7 a	
Create an RDS Proxy Info RDS automatically creates an IAM role and a Se Amazon RDS Proxy pricing [7].	rets Manager secret for the proxy. RDS Proxy has additional costs. For more information, see
RDS automatically creates an IAM role and a Se Amazon RDS Proxy pricing [2]. Certificate authority - optional Info Using a server certificate provides an extra layer of	ecurity by validating that the connection is being made to an Amazon database. It does so by
RDS automatically creates an IAM role and a Se Amazon RDS Proxy pricing . Certificate authority - optional Info	ecurity by validating that the connection is being made to an Amazon database. It does so by
RDS automatically creates an IAM role and a Se Amazon RDS Proxy pricing [2]. Certificate authority - optional Info Joing a server certificate provides an extra layer of thecking the server certificate that is automatically rds-ca-rsa2048-g1 (default)	ecurity by validating that the connection is being made to an Amazon database. It does so by stalled on all databases that you provision.
RDS automatically creates an IAM role and a Se Amazon RDS Proxy pricing [2]. Certificate authority - optional Info Josing a server certificate provides an extra layer of rhecking the server certificate that is automatically rds-ca-rsa2048-g1 (default) Expiry: May 25, 2061 f you don't select a certificate authority, RDS choose the control of the co	ecurity by validating that the connection is being made to an Amazon database. It does so by stalled on all databases that you provision.
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You can see the port is set to 3306 - the standard for MySQL

CRITICAL - Make sure
'Password authentication'
is selected

Database authentication

Database authentication options Info

Password authentication

Authenticates using database passwords.

O Password and IAM database authentication

Authenticates using the database password and user credentials through AWS IAM users and roles.

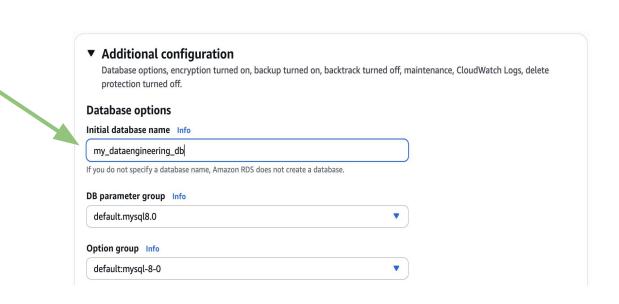
O Password and Kerberos authentication

Choose a directory in which you want to allow authorized users to authenticate with this DB instance using Kerberos Authentication.

CRITICAL - Name your
database. This is
needed for AWS to create
it and for you to access
it.

I'm calling this
'my_dataengineering_db'

All other options you can just leave as the default



CRITICAL - Costs should
show free

CRITICAL - It is
important that you run
only one database

Click 'Create 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, db.t3.micro or db.t4g.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. [2]

(1) 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

W0000!

It'll take a bit to create.

Good time to make sure you have your credentials written down

Creating database my-dataengineering-db
Your database might take a few minutes to launch. You can use settings from my-dataengineering-db to simplify configuration of suggested database add-ons while we

[4 Aurora and RDS > Databases You can see now I have my new db. Databases (1) Group resources (C Create database Actions ▼ Q Filter by databases DB identifier Region ... ▼ my-dataengineering-db Creating Instance MySQL Co... db.t4g.micro us-east-1a

finish creating your DB for you.

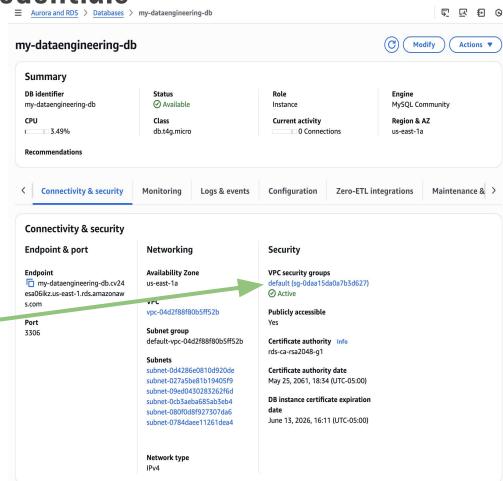
Need to change our security credentials

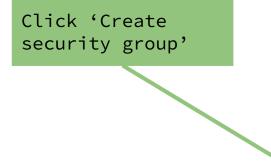
- Our database is up and running. Now we just need to change our security credentials to let any ip address with the password access it.
- If you don't change this you won't be able to connect to your database for homework and quiz.
- Seriously, you must do this step

Modifying security credentials

If you click on the database from the console it'll take you to the console for the individual database

To modify your security group click the link under 'VPC security groups'



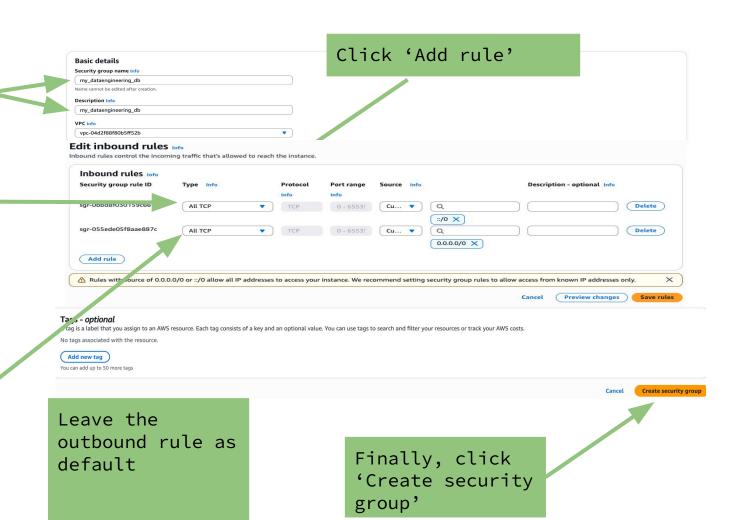




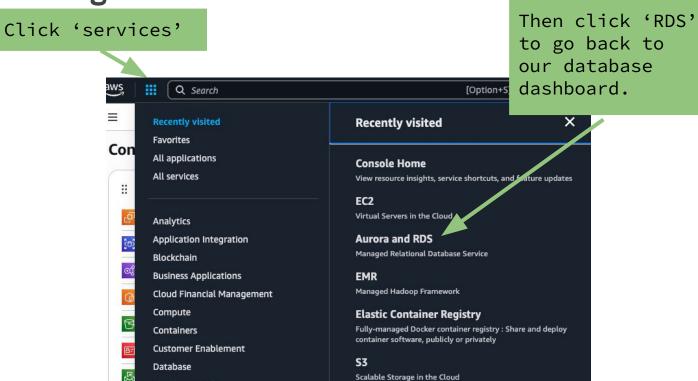
Choose a name and description

First rule will already be there. Change it to 'All TCP' and 'Anywhere-IPv4'

Change second rule to 'All TCP' and 'Anywhere-IPv6'



Developer Tools



Again, we can see I have a DB instance running. Click on 'DB Instances'

Resources

You are using the following Amazon RDS resources in the US East (N. Virginia) region (used/quota)

DB Instances (1/40) Parameter groups (1) Allocated storage (0.02 TB/100 TB) Default (1) Instances and storage include Neptune and Custom (0/100) DocumentDB. Increase DB instances limit [2] Option groups (1) DB Clusters (0/40) Default (1) Reserved instances (0/40) Custom (0/20) Snapshots (2) Manual DB Cluster (0/100) DB Instance (0/100)

Automated

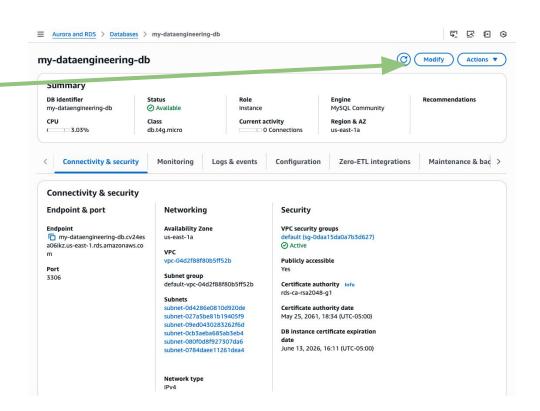
Recent events (10) Event subscriptions (0/20)

DB Cluster (0) DB Instance (2) Subnet groups (1/50) Supported platforms [2] VPC Default network vpc-04d2f88f80b5ff52b Refresh

Once there click on our hw database again.



Click 'Modify'

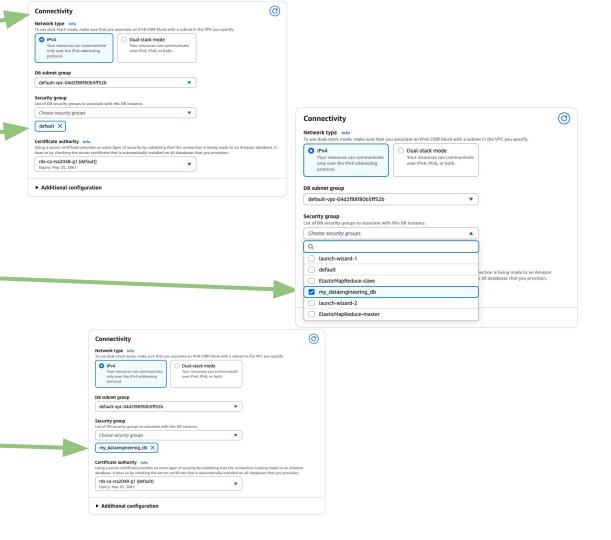


Scroll down to 'Connectivity'

Click the 'X' to delete the default security group

Click the pull-down menu and select the security group you just created

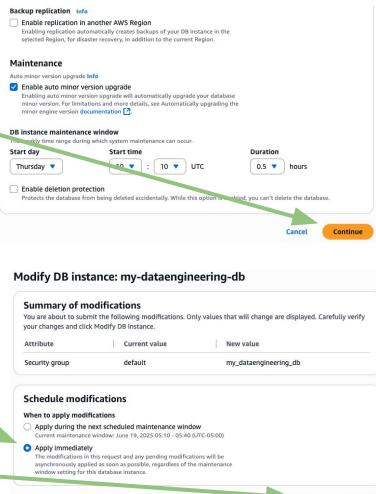
If everything is right, you should now only have a box with your security group name here



Scroll down to the bottom and click 'Continue'

Choose 'Apply immediately'

Click 'Modify DB instance'



el (



Modify DB instance

Now you need to copy your endpoint.

This is the last part we need to connect. We already have the database name, password, username, and port! Wait until the status updates to 'Available' (you might need to refresh your browser)

