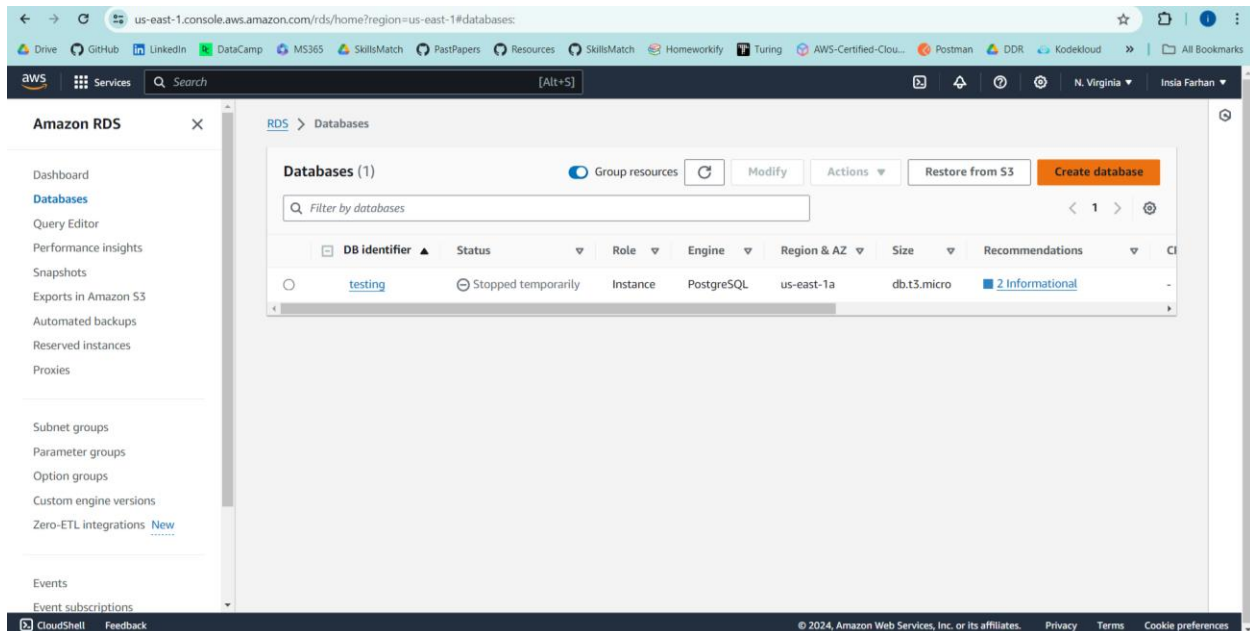
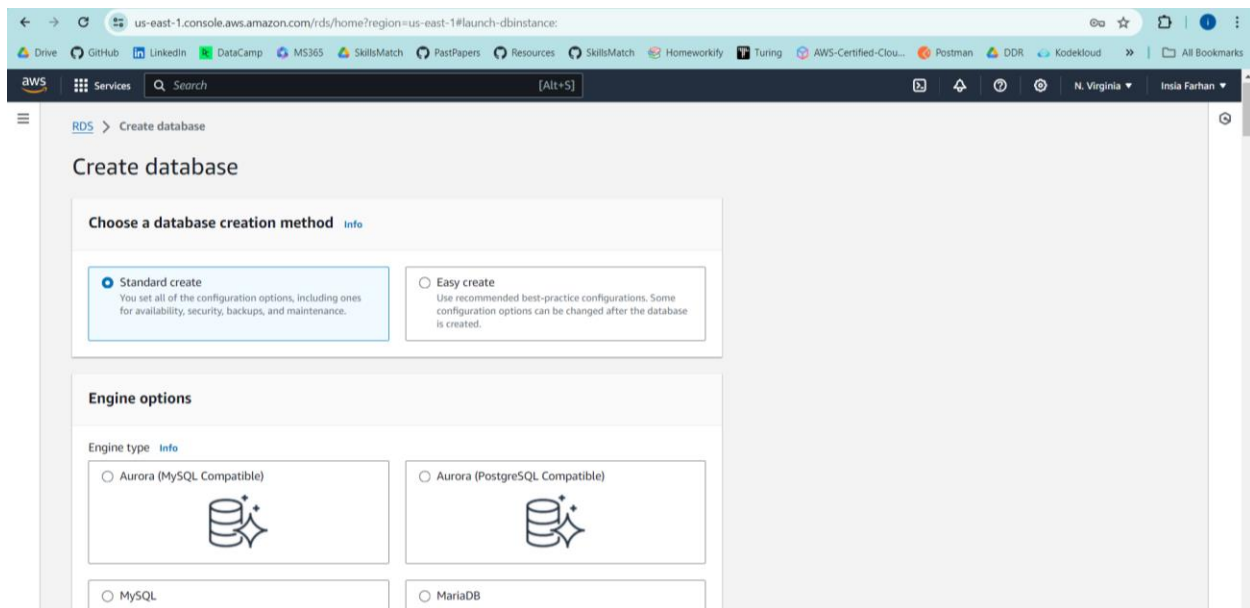


1. Log in your AWS account and open RDS, via search bar. Click on the Create database button in the upper right corner.



2. Click on Standard create.



3. Choose PostgreSQL as per project details.

The image shows two screenshots of the AWS Management Console during the RDS instance creation process.

First Screenshot: Engine Selection

- The browser address bar shows: `us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#launch-dbinstance:`
- The console displays the 'Engine' selection screen.
- Four database engines are shown as selectable options: PostgreSQL (selected), Oracle, Microsoft SQL Server, and IBM Db2.
- Below the engine selection, there is a section for 'Engine version' with a dropdown menu set to 'PostgreSQL 16.2-R2'.
- There is a checkbox for 'Enable RDS Extended Support' which is currently unchecked.

Second Screenshot: Templates Selection

- The browser address bar shows: `us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#launch-dbinstance:`
- The console displays the 'Templates' section.
- Three templates are shown: 'Production', 'Dev/Test', and 'Free tier' (selected).
- Below the templates, there is a section for 'Availability and durability' with a dropdown menu set to 'Multi-AZ DB Cluster'.
- There is a checkbox for 'Enable RDS Extended Support' which is currently unchecked.

4. Click on Self managed for custom password generation.

The screenshot shows the 'Settings' page in the AWS Management Console for creating a new RDS DB instance. The 'DB instance identifier' is set to 'skillsmatch'. Under 'Credentials Settings', the 'Master username' is 'postgres'. In the 'Credentials management' section, the 'Self managed' option is selected, indicating that the user will create their own password. The 'Auto generate password' option is unchecked. The 'Master password' field is visible at the bottom.

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.
skillsmatch

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.
postgres

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](#)

5. Use db type according to your project size.

The screenshot shows the 'Instance configuration' page in the AWS Management Console. The 'DB instance class' is set to 'db.t3.micro', which is highlighted as a 'Burstable class'. The page also shows options for 'Standard classes' and 'Memory optimized classes'. The 'Include previous generation classes' checkbox is checked.

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](#)

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

☒ **Include previous generation classes**

☐ Standard classes (includes m 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

us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#launch-dbinstance:

DriveGitHubLinkedInDataCampMS365SkillsMatchPastPapersResourcesSkillsMatchHomeworkifyTuringAWS-Certified-Clou...PostmanDDRKodekloudAll Bookmarks

awsServicesSearch[Alt+S]

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

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.

us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#launch-dbinstance:

DriveGitHubLinkedInDataCampMS365SkillsMatchPastPapersResourcesSkillsMatchHomeworkifyTuringAWS-Certified-Clou...PostmanDDRKodekloudAll Bookmarks

awsServicesSearch[Alt+S]

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.

Virtual private cloud (VPC) [Info](#)

Choose the VPC. The VPC defines the virtual networking environment for this DB instance.

Default VPC (vpc-07434f0ceebb6f14c)
6 Subnets, 6 Availability Zones

Only VPCs with a corresponding DB subnet group are listed.

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.

default-vpc-07434f0ceebb6f14c
6 Subnets, 6 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.

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.

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

Existing VPC security groups

Choose one or more options

default X

Availability Zone [Info](#)

No preference

RDS Proxy

RDS Proxy is a fully managed, highly available database proxy that improves application scalability, resiliency, and security.

Create an RDS Proxy [Info](#)

RDS automatically creates an IAM role and a Secrets Manager secret for the proxy. RDS Proxy has additional costs. For more information, see Amazon RDS Proxy pricing

us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#launch-dbinstance:

DriveGitHubLinkedInDataCampMS365SkillsMatchPastPapersResourcesSkillsMatchHomeworkifyTuringAWS-Certified-Clou...PostmanDDRKodekloudAll Bookmarks

awsServicesSearch[Alt+S]

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.

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

Existing VPC security groups

Choose one or more options

default X

Availability Zone [Info](#)

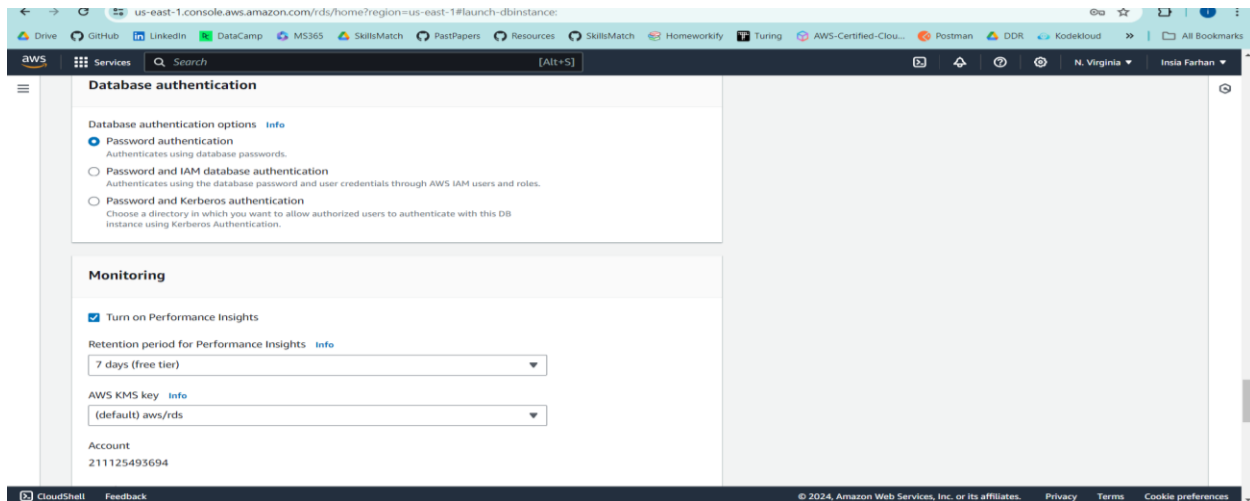
No preference

RDS Proxy

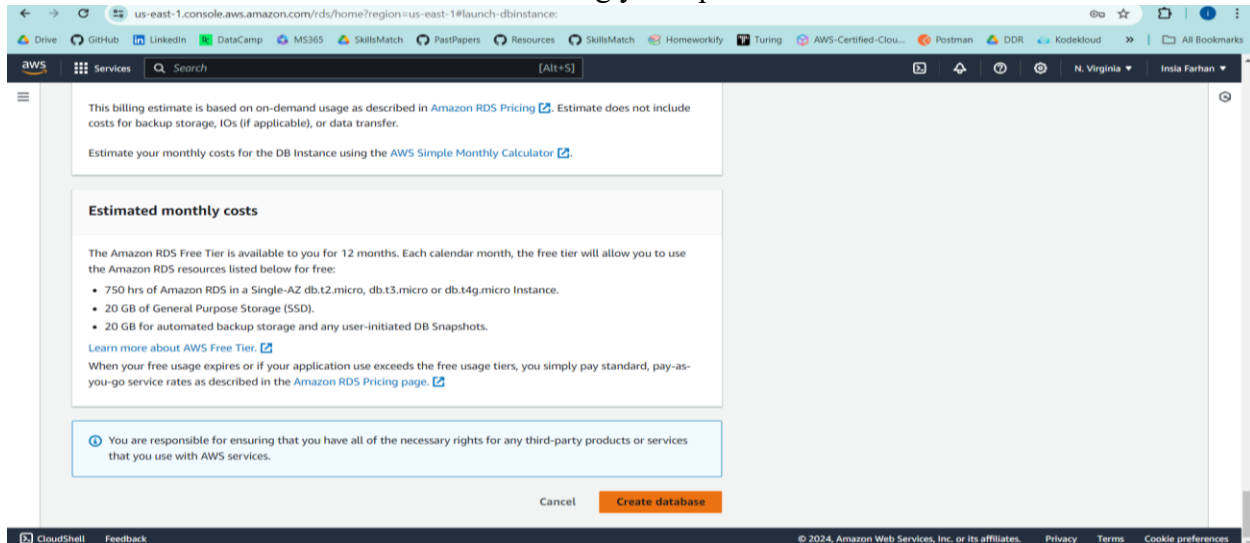
RDS Proxy is a fully managed, highly available database proxy that improves application scalability, resiliency, and security.

Create an RDS Proxy [Info](#)

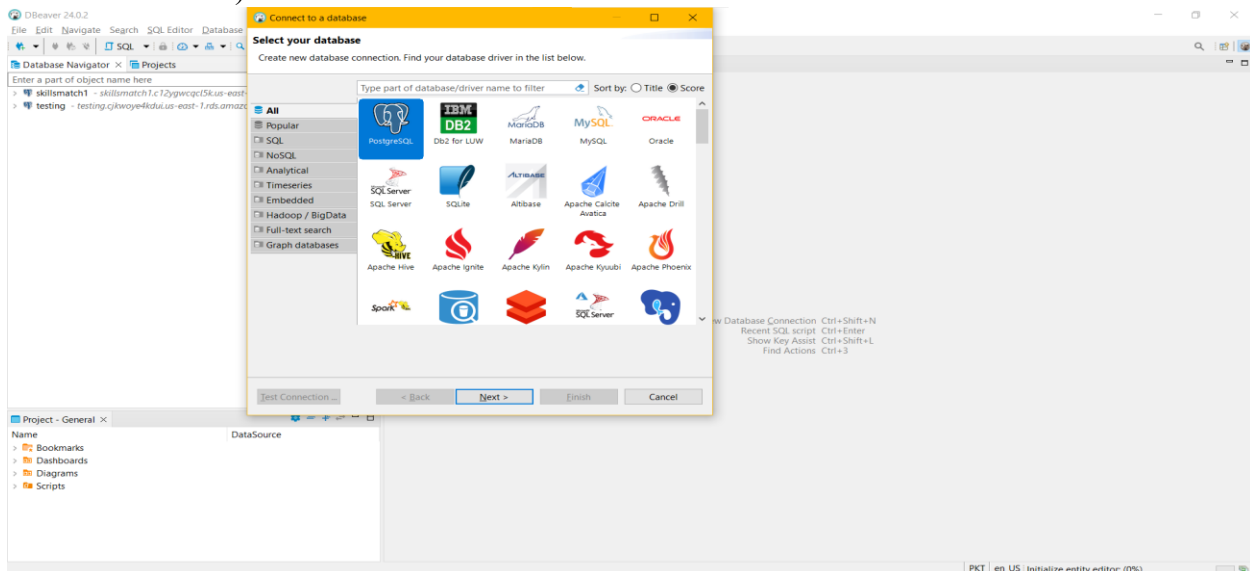
RDS automatically creates an IAM role and a Secrets Manager secret for the proxy. RDS Proxy has additional costs. For more information, see Amazon RDS Proxy pricing



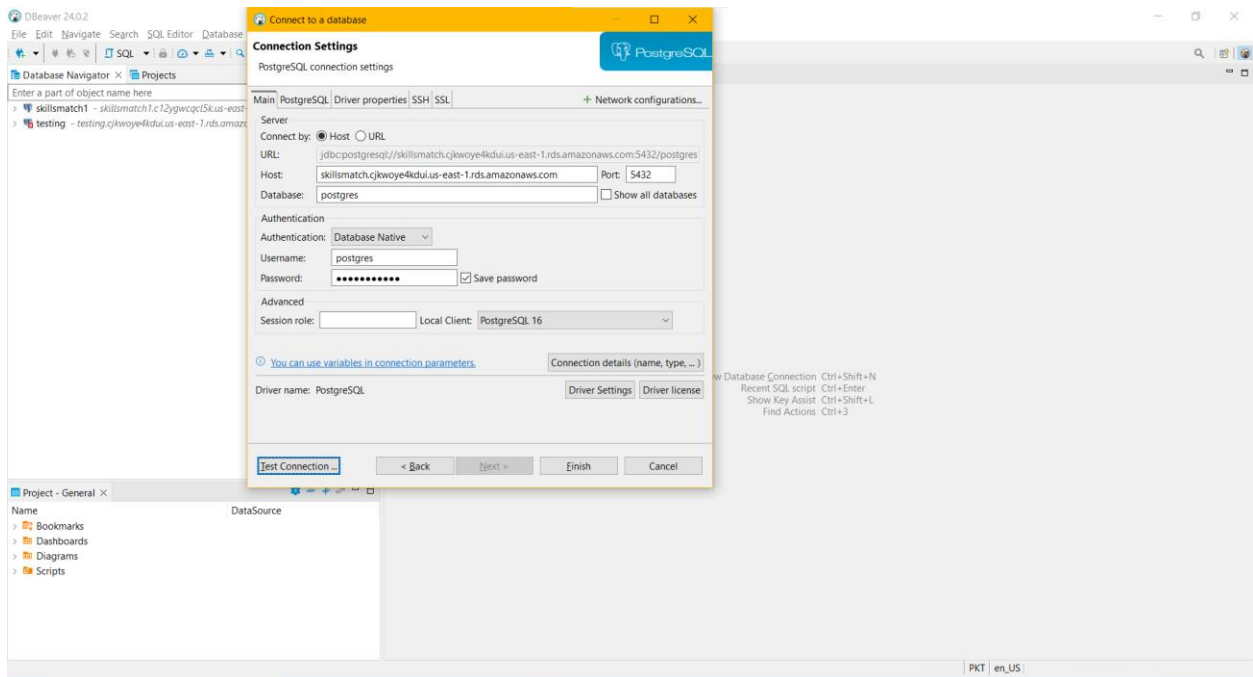
6. Click on Create database after choosing your specifications.



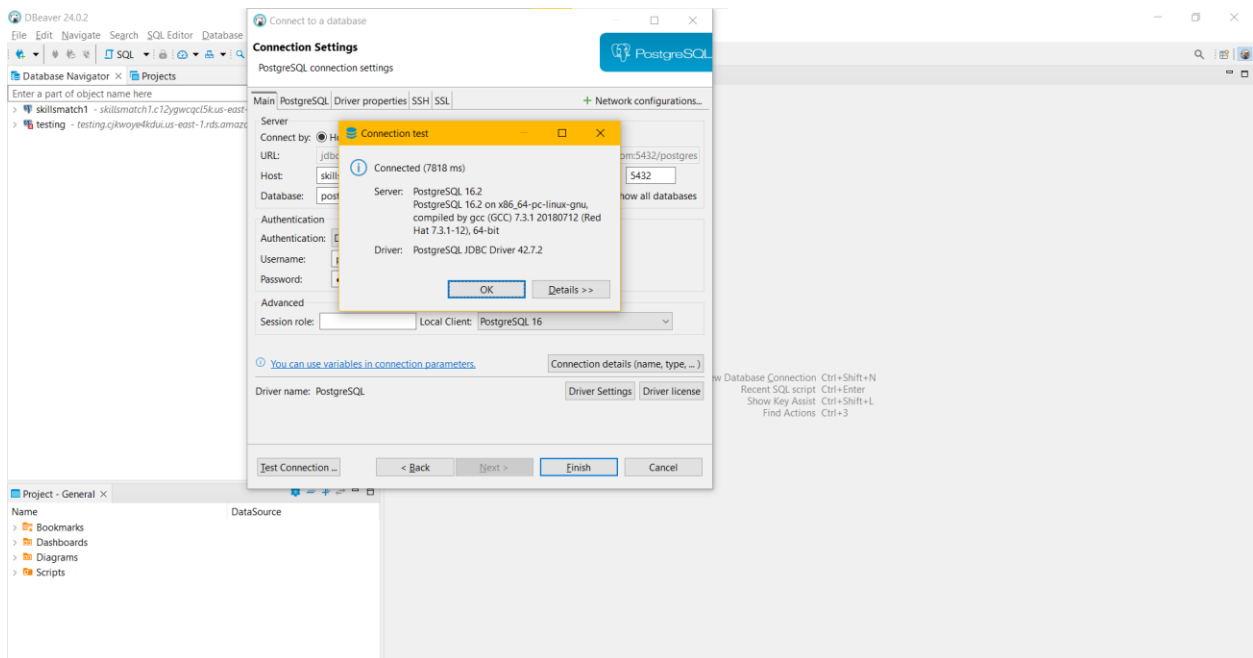
7. Open DBeaver and and choose New Connection (icon below the File button, in the upper left corner).



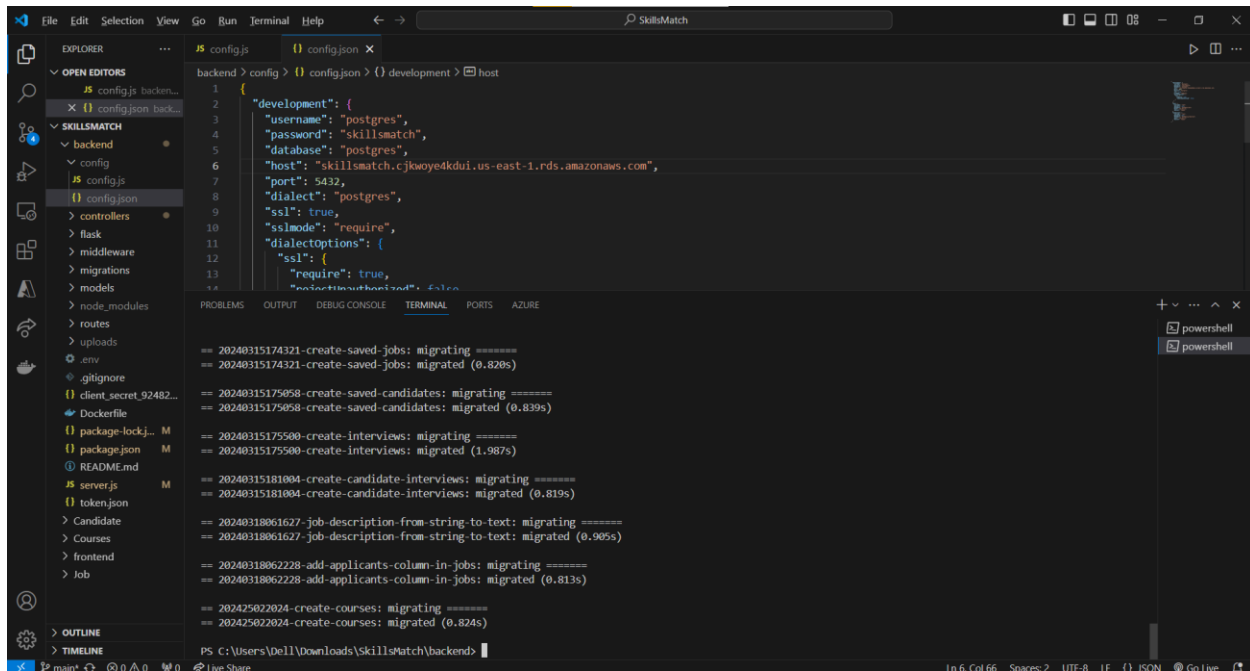
8. Fill in your RDS configurations and Test the connection.



9. On success of the connection, click on Finish.



10. Open your code editor, replace the database configurations with RDS configurations and run your migrations.



The screenshot shows the VS Code interface with the `config.json` file open in the editor. The file contains the following configuration:

```
1 {
2   "development": {
3     "username": "postgres",
4     "password": "skillsmatch",
5     "database": "postgres",
6     "host": "skillsmatch.cjkw0ye4kdui.us-east-1.rds.amazonaws.com",
7     "port": 5432,
8     "dialect": "postgres",
9     "ssl": true,
10    "sslmode": "require",
11    "dialectOptions": {
12      "require": true,
13      "native": true,
14    }
15  }
16 }
```

The terminal output shows the following migration progress:

```
== 20240315174321-create-saved-jobs: migrating =====
== 20240315174321-create-saved-jobs: migrated (0.820s)

== 20240315175058-create-saved-candidates: migrating =====
== 20240315175058-create-saved-candidates: migrated (0.839s)

== 20240315175500-create-interviews: migrating =====
== 20240315175500-create-interviews: migrated (1.987s)

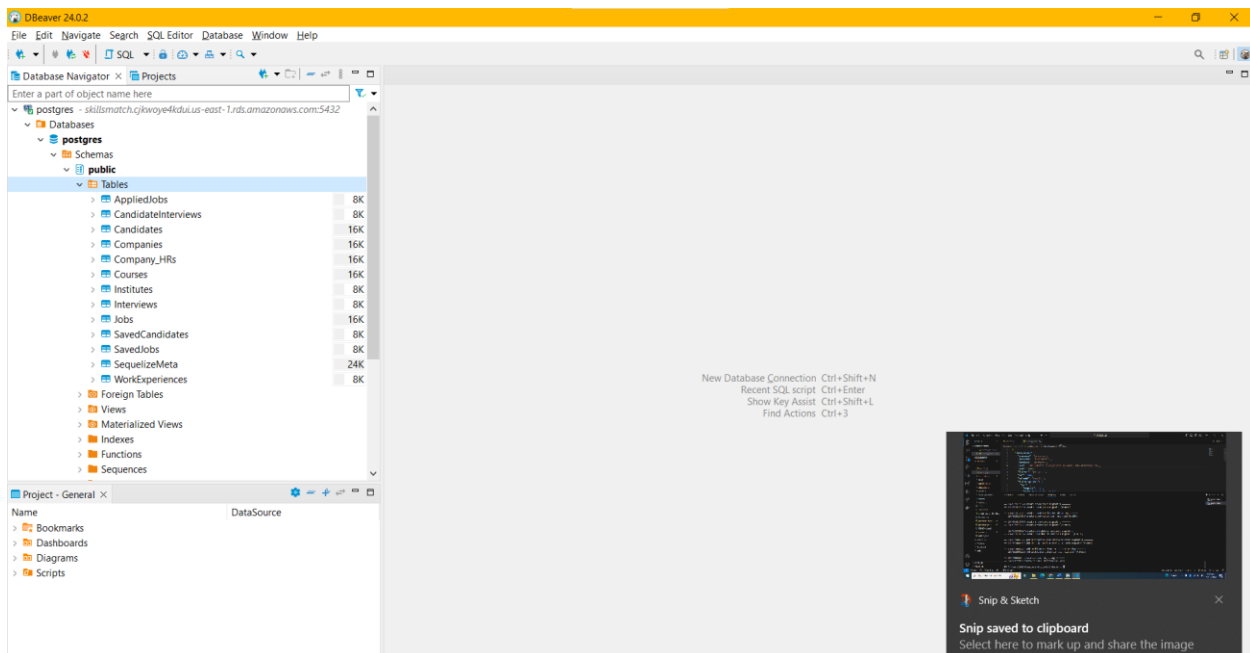
== 20240315181004-create-candidate-interviews: migrating =====
== 20240315181004-create-candidate-interviews: migrated (0.819s)

== 20240318061627-job-description-from-string-to-text: migrating =====
== 20240318061627-job-description-from-string-to-text: migrated (0.905s)

== 20240318062228-add-applicants-column-in-jobs: migrating =====
== 20240318062228-add-applicants-column-in-jobs: migrated (0.813s)

== 202425022024-create-courses: migrating =====
== 202425022024-create-courses: migrated (0.824s)
```

11. Verify your migrations output in DBeaver, by viewing the creation of tables.



12. Similarly, update database configurations in the data transfers codes and run those scripts. Data will be stored in RDS.

The top screenshot shows a VS Code editor with several Python files in the 'data-transfers' directory. The 'dt1.py' file is open, showing a script that connects to a PostgreSQL database using 'psycopg2', reads data from 'candidates.csv', and inserts it into the 'Candidates' table. The script uses the following connection details: database='postgres', user='postgres', password='skillsmatch', host='skillsmatch.cjkwoyek4dui.us-east-1.rds.amazonaws.com', and port='5432'. The 'dt2.py' through 'dt5.py' files follow a similar pattern, reading from 'company_hr.csv', 'courses.csv', 'jobs.csv', 'interviews.csv', and 'reviews.csv' respectively. The bottom screenshot shows the DBeaver database client connected to the 'skillsmatch' PostgreSQL instance. The 'Candidates' table is selected, displaying a list of candidates with columns: candidate_id, first_name, last_name, date_of_birth, email, and skills. The table contains 30 rows of data.

13. Make sure your RDS' security group consists of the following inbound rules.

The screenshot shows the Amazon RDS console for the 'skillsmatch' PostgreSQL instance. The 'Summary' tab is active, showing the instance is 'Available' with a 'db.t3.micro' class. The 'Connectivity & security' tab is also visible, showing the endpoint 'skillsmatch.cjkwoyek4dui.us-east-1.rds.amazonaws.com' and the VPC security group 'default (sg-0c528be18434f0bb0)' which is 'Active'. The 'Security' section shows the VPC security group is 'Active'.

us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#database-id=skillsmatch-is-cluster=false

Amazon RDS

Security group rules (3)

Filter by Security group rules

Security group	Type	Rule
default (sg-0c528be18434f0bb0)	CIDR/IP - Inbound	0.0.0.0/0
default (sg-0c528be18434f0bb0)	EC2 Security Group - Inbound	sg-0c528be18434f0bb0
default (sg-0c528be18434f0bb0)	CIDR/IP - Outbound	0.0.0.0/0

Replication (1)

Filter by Replication

DB identifier	Role	Region & AZ	Replication source	Replication state	Lag
skillsmatch	Instance	us-east-1f	-	-	-

Manage IAM roles

Add IAM roles to this instance

Choose an IAM role to add

Feature

Choose a feature to add

Add role

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#SecurityGroup:groupId=sg-0c528be18434f0bb0

EC2 > Security Groups > sg-0c528be18434f0bb0 - default

sg-0c528be18434f0bb0 - default

Actions

Details

Security group name	Security group ID	Description	VPC ID
default	sg-0c528be18434f0bb0	default VPC security group	vpc-07434f0ceebb6f14c
Owner	Inbound rules count	Outbound rules count	
211125493694	2 Permission entries	1 Permission entry	

Inbound rules

Outbound rules

Tags

Inbound rules (2)

Search

Name	Security group rule...	IP version	Type	Protocol	Port range

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#SecurityGroup:groupId=sg-0c528be18434f0bb0

EC2 > Security Groups > sg-0c528be18434f0bb0 - default

sg-0c528be18434f0bb0 - default

Actions

Details

Security group name	Security group ID	Description	VPC ID
default	sg-0c528be18434f0bb0	default VPC security group	vpc-07434f0ceebb6f14c
Owner	Inbound rules count	Outbound rules count	
211125493694	2 Permission entries	1 Permission entry	

Inbound rules

Outbound rules

Tags

Inbound rules (2)

Search

Name	Security group rule...	IP version	Type	Protocol	Port range
-	sgr-078fe684416ce084c	IPv4	PostgreSQL	TCP	5432
-	sgr-0309b21d8ced889...	-	All traffic	All	All