

RDS AND DYNAMO DB

RDS – RELATIONAL DATABASE SERVICE

Database – collection of data called database, saves user information.

Structured

Unstructured

S3 can store both datas

company

Name

Employee id

Mobile no

Dob

Qualification

Address

Role

Team

Email

Adhar card

Bank ac

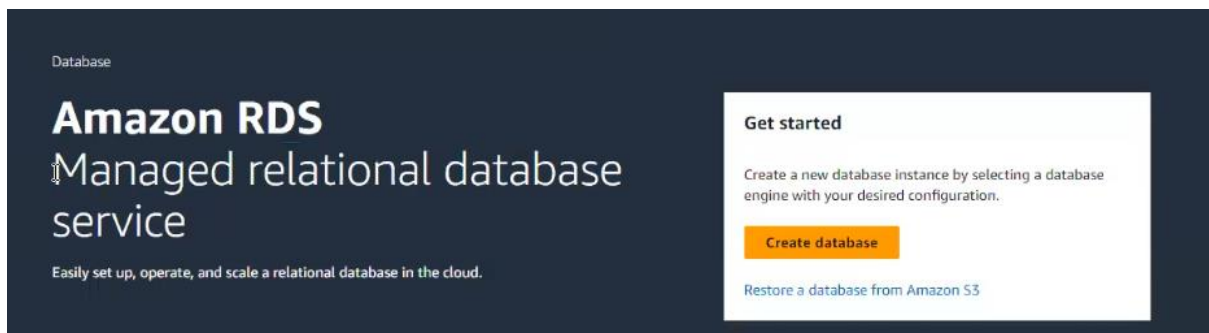
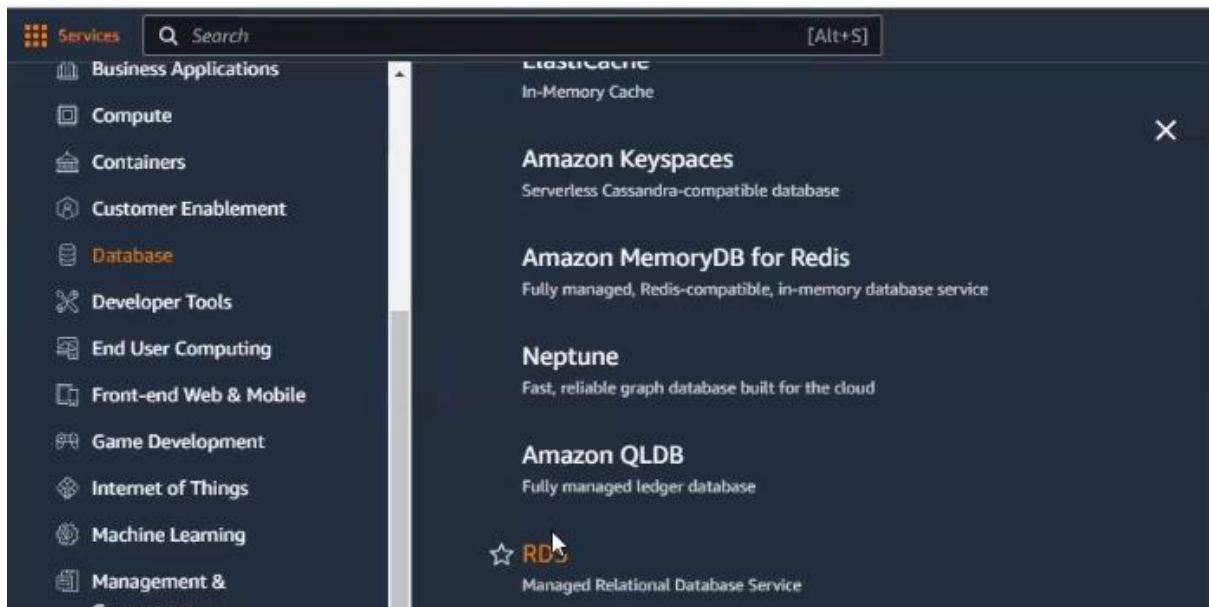
Structured database – sql - RDS

Unstructured database – NoSQL - dynamo DB

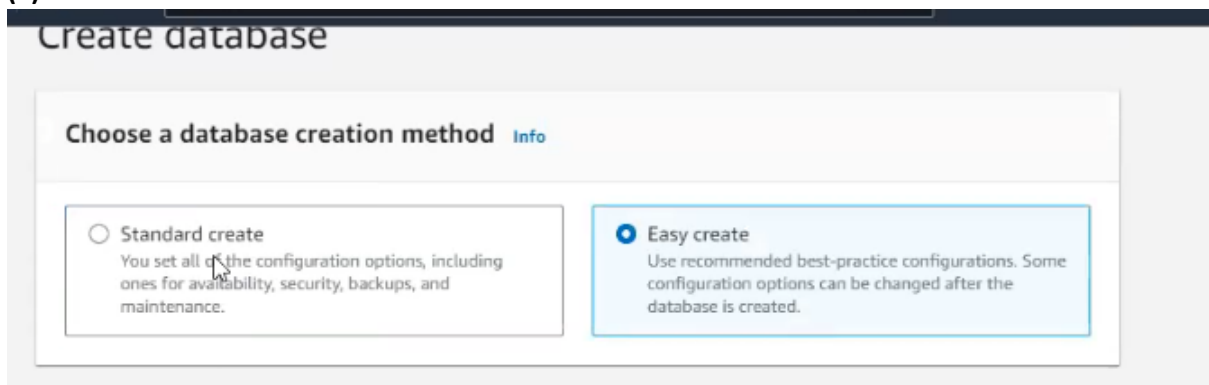
Database = Tables – rows and columns

RDS 6 engines

Amazon aurora, mysql, ms sql, maria db, oracle, posg sql










(*) standard create



(*) engine type – MySQL


Engine type [Info](#)

<input checked="" type="radio"/> Aurora (MySQL Compatible) 	<input type="radio"/> Aurora (PostgreSQL Compatible) 	<input type="radio"/> MySQL 
<input type="radio"/> MariaDB 	<input type="radio"/> PostgreSQL 	<input type="radio"/> Oracle 
<input type="radio"/> Microsoft SQL Server 		

(*) community free

Edition

☒ MySQL Community

 **Known issues/limitations**

Review the [Known issues/limitations](#) to learn about potential compatibility issues with specific database versions.

Engine Version

MySQL 8.0.32 ▼

☐ 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 - new

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.

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.

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.

1 to 16 alphanumeric characters. 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.

[Info](#) 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](#)

(*) instance configuration

Instance configuration

The DB instance configuration options below are limited to those supported by the engine that you selected above.



Amazon RDS Optimized Writes - *new* [Info](#)



Show instance classes that support Amazon RDS Optimized Writes

DB instance class [Info](#)

- ☐ Standard classes (includes m classes)
- ☐ Memory optimized classes (includes r and x classes)
- ☒ Burstable classes (includes t classes)

db.t3.micro

2 vCPU

1 GiB RAM

Network: 2,085 Mbps

db.t3.micro

☐ Include previous generation classes

Storage type [Info](#)

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

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

1000

GiB

The minimum value is 22 GiB and the maximum value is 6,144 GiB

(*) connectivity

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-041d925d8f7012bda)

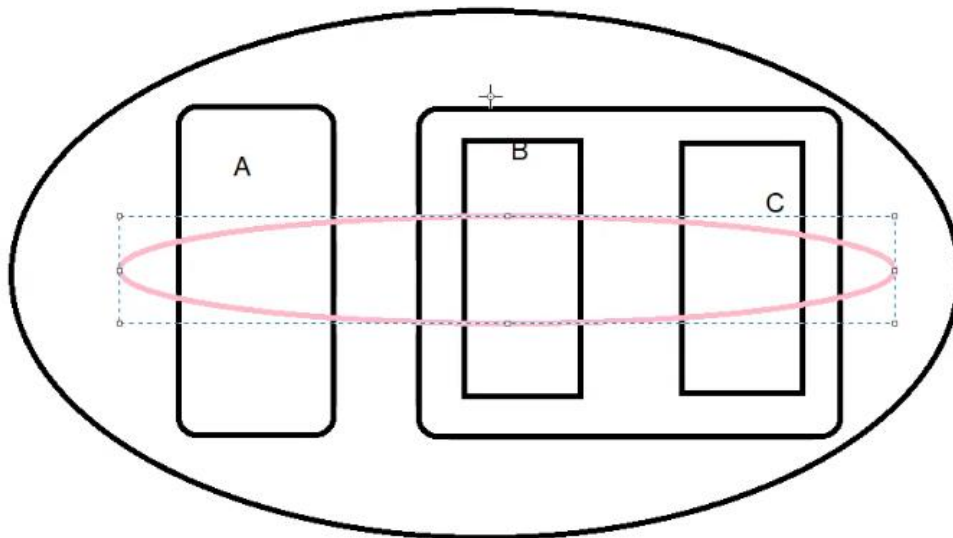
3 Subnets, 3 Availability Zones

Only VPCs with a corresponding DB subnet group are listed.



After a database is created, you can't change its VPC.

Before creating a database we need to create subnet grouping



Create subnet group

RDS > Subnet groups

Subnet groups (1) Refresh Edit Delete Create DB subnet group

<input type="checkbox"/>	Name	Description	Status	VPC
<input type="checkbox"/>	my-sub-grp	my-sub-grp	Complete	vpc-041d925d8f7012bda

(*)

Create name and description

Create DB subnet group

To create a new subnet group, give it a name and a description, and choose an existing VPC. You will then be able to add subnets related to that VPC.

Subnet group details

Name

You won't be able to modify the name after your subnet group has been created.

Must contain from 1 to 255 characters. Alphanumeric characters, spaces, hyphens, underscores, and periods are allowed.

Description

VPC

Choose a VPC identifier that corresponds to the subnets you want to use for your DB subnet group. You won't be able to choose a different VPC identifier after your subnet group has been created.

default (vpc-041d925d8f7012bda) ▼

(*) select all availability zone

Add subnets

Availability Zones

Choose the Availability Zones that include the subnets you want to add.

Choose an availability zone ▲

☒ eu-west-2a

☒ eu-west-2b

☒ eu-west-2c

Choose the subnets that you want to add. The list includes the subnets in the selected Availability Zones.

Subnets

Choose the subnets that you want to add. The list includes the subnets in the selected Availability Zones.

Select subnets ▲

☒ eu-west-2c

☒ subnet-0cb0e25fbd5dd9bb8 (172.31.0.0/20)

☒ eu-west-2a

☒ subnet-086e39008494a1c5c (172.31.16.0/20)

☒ eu-west-2b

☒ subnet-0469bfb1b164931e5 (172.31.32.0/20)

Zones.

(*) create

Subnets selected (3)

Availability zone	Subnet ID	CIDR block
eu-west-2c	subnet-0cb0e25fbd5dd9bb8	172.31.0.0/20
eu-west-2a	subnet-086e39008494a1c5c	172.31.16.0/20
eu-west-2b	subnet-0469bfb1b164931e5	172.31.32.0/20

CancelCreate

Rds conti

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.

my-sub-grp

3 Subnets, 3 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. 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.

(*) create security group

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

Q |

- ☐ launch-wizard-20
- ☐ launch-wizard-29
- ☐ launch-wizard-6
- ☐ launch-wizard-2
- ☐ launch-wizard-22
- ☐ launch-wizard-16
- ☒ DEFAULT-1
- ☐ launch-wizard-36
- ☐ launch-wizard-33

Using server certificates provides an extra layer of security by validating that the connection is being made to an Amazon database. It does so by checking the server certificate that is automatically installed on all databases that you provision.

Certificate authority - optional [Info](#)

Using a server certificate provides an extra layer of security by validating that the connection is being made to an Amazon database. It does so by checking the server certificate that is automatically installed on all databases that you provision.

rds-ca-2019 (default)

If you don't select a certificate authority, RDS chooses one for you.

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

▼ Additional configuration

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

Database options

Initial database name [Info](#)

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

DB parameter group [Info](#)

Option group [Info](#)

(*) enable automated backup

Backup

☒ Enable automated backups

Creates a point-in-time snapshot of your database



Please note that automated backups are currently supported for InnoDB storage engine only.
If you are using MyISAM, refer to details [here](#).

Backup retention period [Info](#)

The number of days (1-35) for which automatic backups are kept.



days

Backup window [Info](#)

The daily time range (in UTC) during which RDS takes automated backups.

☐ Choose a window

☒ No preference

☒ Copy tags to snapshots

Encryption

☐ Enable encryption

Choose to encrypt the given instance. Master key IDs and aliases appear in the list after they have been created using the AWS Key Management Service console. [Info](#)

Log exports


Select the log types to publish to Amazon CloudWatch Logs

- ☐ Audit log
- ☐ Error log
- ☐ General log
- ☐ Slow query log

IAM role

The following service-linked role is used for publishing logs to CloudWatch Logs.

RDS service-linked role


 Ensure that general, slow query, and audit logs are turned on. Error logs are enabled by default. [Learn more](#)


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.](#) 

 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

(*) create an ec2 instance Linux machine

▼ Network settings [Info](#)

Edit

Network [Info](#)

vpc-041d925d8f7012bda | default

Subnet [Info](#)

No preference (Default subnet in any availability zone)

Auto-assign public IP [Info](#)

Enable

instance.

☐ Create security group

☒ Select existing security group

Security groups [Info](#)

Select security groups

☐ launch-wizard-35
VPC: vpc-041d925d8f7012bda

☐ NFS
VPC: vpc-041d925d8f7012bda

☒ ALL TCP
VPC: vpc-041d925d8f7012bda

☐ launch-wizard-9
VPC: vpc-041d925d8f7012bda

☐ launch-wizard-3
VPC: vpc-041d925d8f7012bda

☐ launch-wizard-15
VPC: vpc-041d925d8f7012bda

☐ launch-wizard-19
VPC: vpc-041d925d8f7012bda

sg-09aa5a84f9bb6d1dc

sg-0ebf69be600af605f

sg-08c36f0233ca36bd2

sg-04231bf935dfad331

sg-0ee608ff349a8b21e

sg-04651dfa9e393f2fb

sg-0d653139d78567d0e

Compare security group rules

Advanced

or Magnetic storage X

Edit

Cancel

Launch instance

Review commands

(*) connect using putty – white color

Successfully created database database-1

You can use settings from database-1 to simplify configuration of [suggested database add-ons](#) while we finish creating your DB for you.

How was your experience creating an Amazon RDS database? [Provide feedback](#)

RDS > Databases

Consider creating a Blue/Green Deployment to minimize downtime during upgrades
 You may want to consider using Amazon RDS Blue/Green Deployments and minimize your downtime during upgrades. A Blue/Green Deployment provides a staging environment for changes to production databases. [RDS User Guide](#) [Aurora User Guide](#)

Databases ☒ Group resources

Filter by databases

DB identifier	Role	Engine	Region & AZ	Size	Status
database-1	Instance	MySQL Community	eu-west-2a	db.t3.micro	Available

Copy the endpoint in the database

```
root@ip-172-31-42-145:~
[root@ip-172-31-42-145 ~]# mysql --version
-bash: mysql: command not found
[root@ip-172-31-42-145 ~]# yum install mysql -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Resolving Dependencies
--> Running transaction check
---> Package mariadb.x86_64 1:5.5.68-1.amzn2 will be installed
```

Paste endpoint

```
[root@ip-172-31-42-145 ~]# mysql --version
mysql Ver 15.1 Distrib 5.5.68-MariaDB, for Linux (x86_64) using readline 5.1
[root@ip-172-31-42-145 ~]# mysql -h database-1.cgo3ou9qmrar.eu-west-2.rds.amazonaws.com
```

```
root@ip-172-31-42-145:~
[root@ip-172-31-42-145 ~]# mysql --version
mysql Ver 15.1 Distrib 5.5.68-MariaDB, for Linux (x86_64) using readline 5.1
[root@ip-172-31-42-145 ~]# mysql -h database-1.cgo3ou9qmrar.eu-west-2.rds.amazonaws.com -P 3306 -u admin -p
Enter password:
```

Queries:

1.yum update

2. yum install mysql -y

3.mysql -h (end point) -P (port no) -u (user name) -p (password)

4. show databases;

5.create database authours;

6.use authours;

7.create table authour (id int,name varchar(25),email varchar (26));

8.insert into authour (id,name,email) values('111',"samuvel","samuvel@gmail.com");

insert into authour (id,name,email) values('222',"janathul","janathul@gmail.com");

insert into authour (id,name,email) values('333',"priya","priya@gmail.com");

9. select * from authour;

10. alter table authour rename users;

11. select * from users;

12. alter table users add column address varchar(100);

13. update users set id='777' where id='111';

14. delete from users where id='777';

15. drop database greensdb;

RDS > [Databases](#) > Create replica: database-1

Create read replica

You are creating a replica DB instance from a source DB instance. This new DB instance will have the source DB instance's DB security groups and DB parameter groups.



Cancel

Create read replica

database-1

Role: Instance

DB instance identifier

DB instance identifier. This is the unique key that identifies a DB instance. This parameter is stored as a lowercase string (example, mydbinstance).

read

Instance configuration

The DB instance configuration options below are limited to those supported by the engine that you selected above.

DB instance class [Info](#)

- ☐ 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

☐ Include previous generation classes

Connectivity

Network type [Info](#)

To use dual-stack mode, make sure that you associate an IPv6 CIDR block with a subnet in the VPC you specify.

☒ **IPv4**
Your resources can communicate only over the IPv4 addressing protocol.

☐ **Dual-stack mode**
Your resources can communicate over IPv4, IPv6, or both.

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.

my-sub-grp

Public access

☐ **Publicly accessible**
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.

☒ **Not publicly accessible**
No IP address is assigned to the DB instance. EC2 instances and devices outside the VPC can't connect.

Existing VPC security groups

Choose VPC security groups

(*) all same as database create read replica

Black machine as replica

Copy endpoint from read replica -h

```

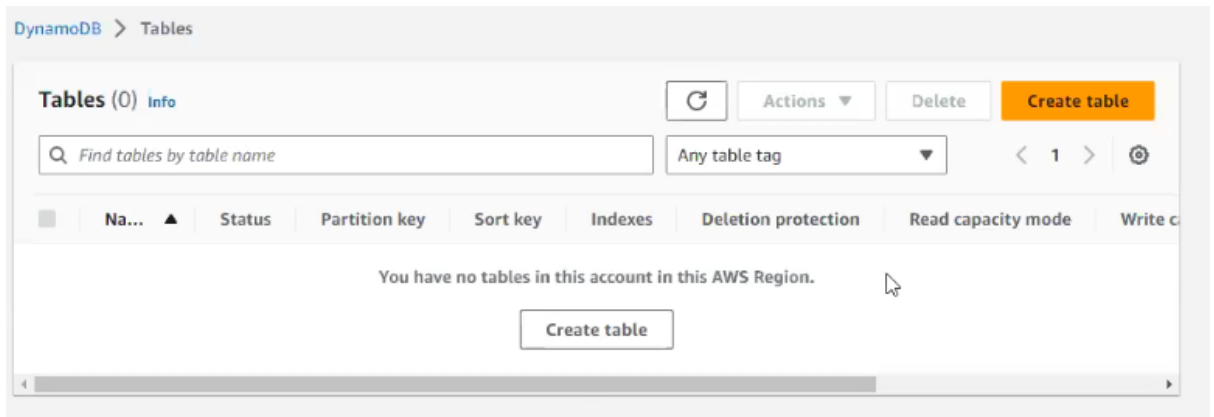
root@ip-172-31-42-145:~
login as: ec2-user
Authenticating with public key "imported-openssh-key"
Last login: Mon May  1 06:24:54 2023 from 49.205.83.147

 _ | _ | _ )
 _ | ( _ | /  Amazon Linux 2 AMI
 _ | \ _ | _ |

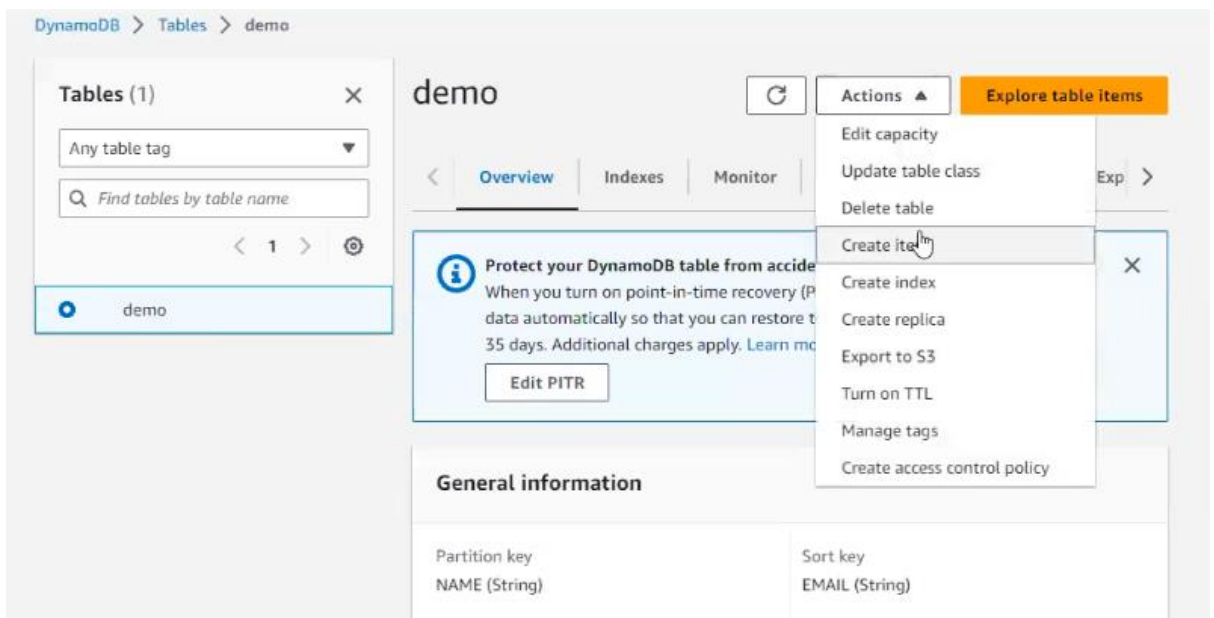
https://aws.amazon.com/amazon-linux-2/
[ec2-user@ip-172-31-42-145 ~]$ sudo -i
[root@ip-172-31-42-145 ~]# mysql -h read-replica.cgo3ou9qmrar.eu-west-2.rds.amazonaws.com -P 3306 -u admin -p
Enter password:

```

DYNAMO DB



NAME, EMAIL – CREATE TABLE



(*) create item

