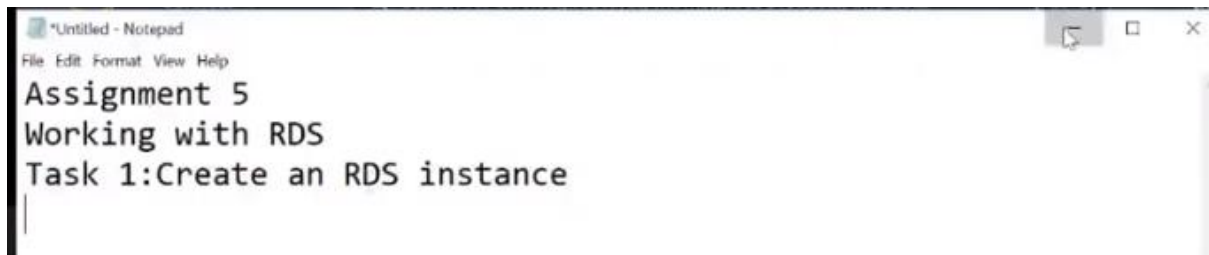


Assignments

Day 5: Assignments 4:



While creating RDS:

Add different stages of the instance.

Include snapshot of every stages i.e., what is the multi high availability you have chosen,

What is the type of storage you have chosen, what is the type of database engine you have chosen?

List the RDS instances under the RDS console as well.

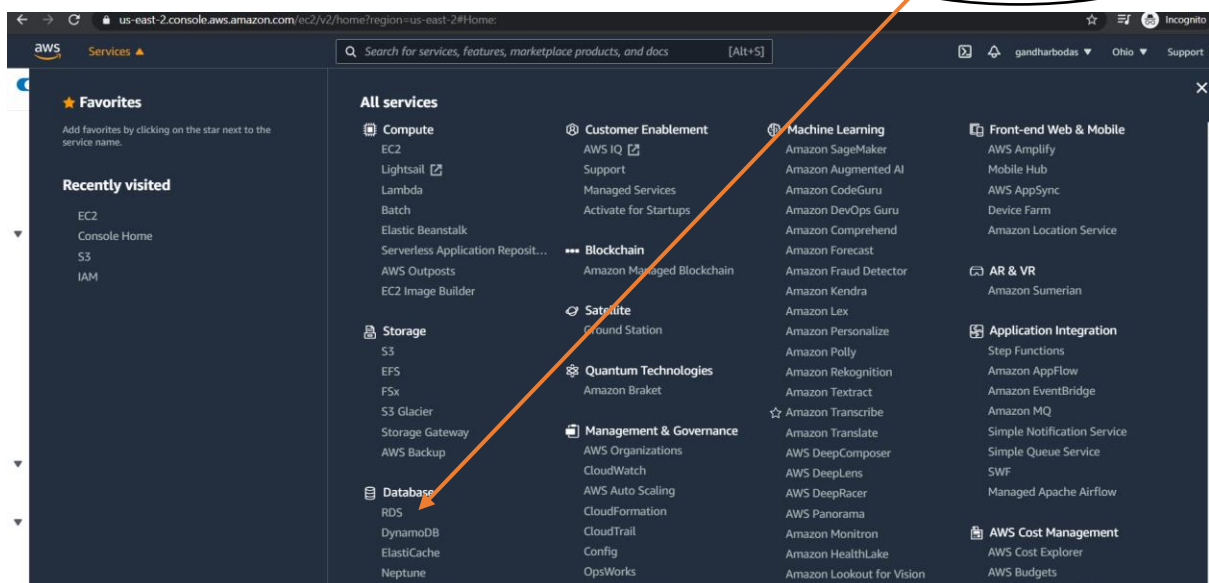
Answer:

Part 1: MySQL: Templates : Production:

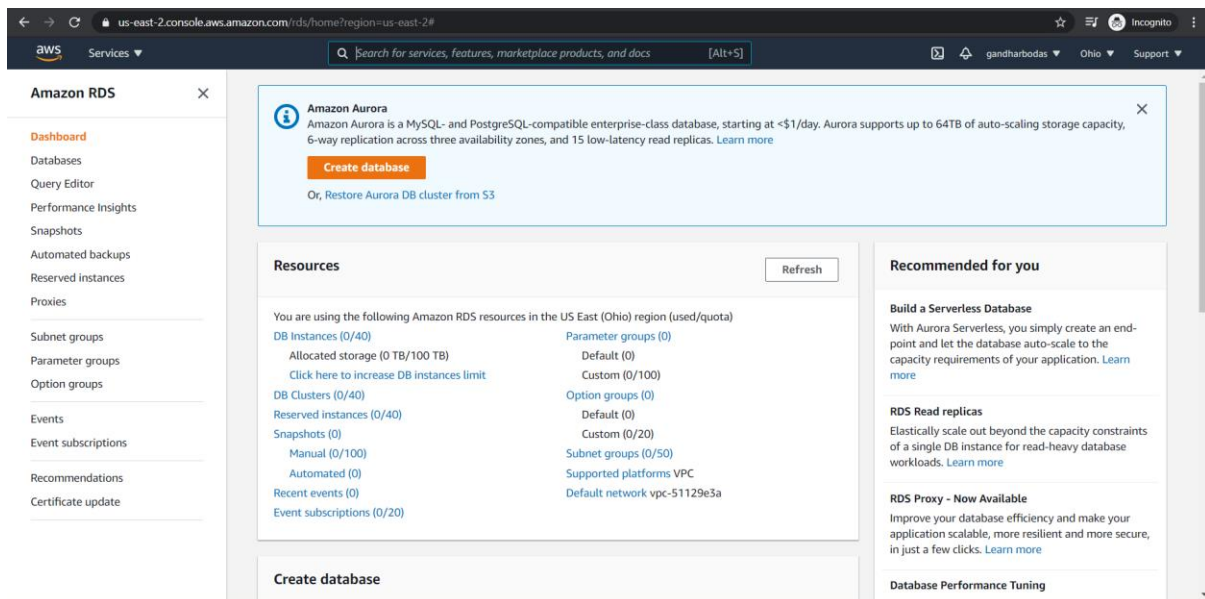
Step 1: *Create an RDS Database and Instance*

Go to the Services--→Database: RDS

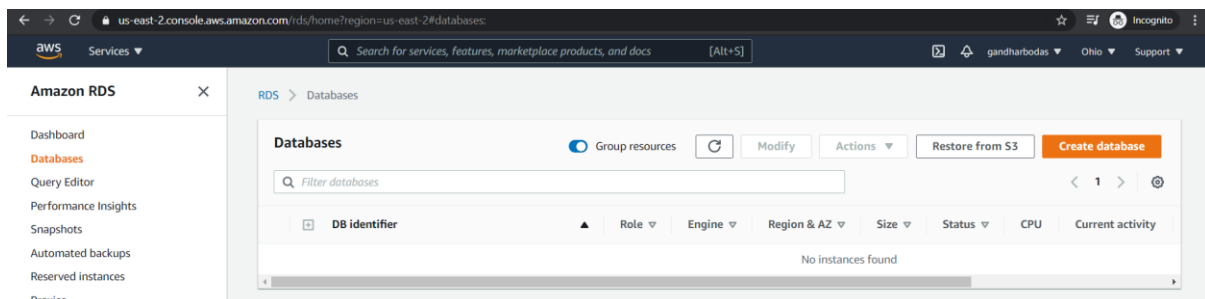
Select Database:
RDS



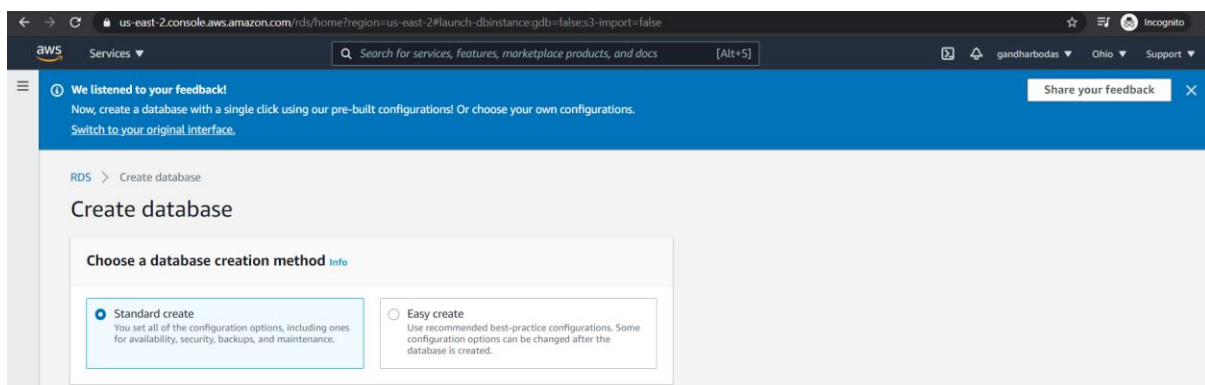
Now you will be able to see the Amazon RDS page as below. Click on Database which is on left hand side:



After click on “Database” option you can able to see the below page:




Now click on “Create database” button and see the below page:





☰


Engine options


Engine type [Info](#)


☒ Amazon Aurora


☐ MySQL


☐ MariaDB


☐ PostgreSQL


☐ Oracle


☐ Microsoft SQL Server


Edition

☒ Amazon Aurora with MySQL compatibility

☐ Amazon Aurora with PostgreSQL compatibility

Capacity type [Info](#)

☒ Provisioned
You provision and manage the server instance sizes.

☐ Serverless
You specify the minimum and maximum amount of resources needed, and Aurora scales the capacity based on database load. This is a good option for intermittent or unpredictable workloads.

In this let's go with the below details: Select options as below:

Database creation method: "Standard create"

RDS > Create database

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: MySQL.


Edition: MySQL Community


Version: MySQL 8.0.20


Engine options


Engine type [Info](#)


☐ Amazon Aurora


☒ MySQL


☐ MariaDB



☐ PostgreSQL


☐ Oracle


☐ Microsoft SQL Server


Edition

☒ MySQL Community

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

Version

MySQL 8.0.20 ▼

Templates: Production.

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: database-new

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.

database-new

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: admin

Master password : admin

Confirm password: admin

▼ Credentials Settings

Master username [Info](#)

Type a login ID for the master user of your DB instance.

admin

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), '(single quote), "(double quote) and @ (at sign).

Confirm password [Info](#)

.....

DB instance class: Standard classes (includes m classes)

DB instance class

DB instance class [Info](#)

Choose a DB instance class that meets your processing power and memory requirements. The DB instance class options below are limited to those supported by the engine you selected above.

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

db.m6g.large
2 vCPUs 8 GiB RAM Network: 4,750 Mbps ▼

[i](#) New instance classes are available for specific engine versions. [Info](#)

☐ Include previous generation classes

Storage:

Storage type: Provisioned IOPS (SSD)

Allocated storage: 100 GB

Provisional IOPS: 3000 IOPS

Storage autoscaling Info:

Tick check box “Enable storage autoscaling” and

Maximum storage threshold: 1000 GiB.

Storage

Storage type [Info](#)

Provisioned IOPS (SSD) ▼

Allocated storage

100

GiB

Minimum: 100 GiB, Maximum: 65,536 GiB

Provisioned IOPS [Info](#)

3000

IOPS

Minimum: 1,000 IOPS, Maximum: 80,000 IOPS

[i](#) Your actual IOPS might vary from the amount that you provisioned based on your database workload and instance type. [Learn more](#) [↗](#)

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 once the specified threshold is exceeded.

Maximum storage threshold [Info](#)

Charges will apply when your database autoscales to the specified threshold

1000

GiB

Minimum: 101 GiB, Maximum: 65,536 GiB

Availability & durability:

Multi-AZ deployment: Do not create a standby instance

Availability & durability

Multi-AZ deployment [Info](#)

☐ Create a standby instance (recommended for production usage)
Creates a standby in a different Availability Zone (AZ) to provide data redundancy, eliminate I/O freezes, and minimize latency spikes during system backups.

☒ Do not create a standby instance


Connectivity:

Virtual private cloud (VPC)Info: Default VPC (vpc-51129e3a)

Subnet group: default

Public access: No


VPC security group: Keep as it is. Nothing changed.

Connectivity 

Virtual private cloud (VPC) [Info](#)
VPC that defines the virtual networking environment for this DB instance.

Default VPC (vpc-51129e3a) ▼

Only VPCs with a corresponding DB subnet group are listed.

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

Subnet group [Info](#)
DB subnet group that defines which subnets and IP ranges the DB instance can use in the VPC you selected.

default ▼

Public access [Info](#)

☐ Yes
Amazon EC2 instances and devices outside the VPC can connect to your database. Choose one or more VPC security groups that specify which EC2 instances and devices inside the VPC can connect to the database.

☒ No
RDS will not assign a public IP address to the database. Only Amazon EC2 instances and devices inside the VPC can connect to your database.

VPC security group

Choose a VPC security group to allow access to your database. Ensure 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 VPC security groups



default



Availability Zone [Info](#)

No preference



► Additional configuration

Database authentication: Keep as it is. Nothing changed.

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, encryption enabled, backup enabled, backtrack disabled, Performance Insights enabled, Enhanced Monitoring enabled, maintenance, CloudWatch Logs, delete protection enabled

Estimated monthly costs

DB instance	110.96 USD
Storage	12.50 USD
Provisioned IOPS	300.00 USD
Total	423.46 USD

This billing estimate is based on on-demand usage as described in [Amazon RDS Pricing](#). Estimate does not include costs for backup storage, IOs (if applicable), or data transfer.

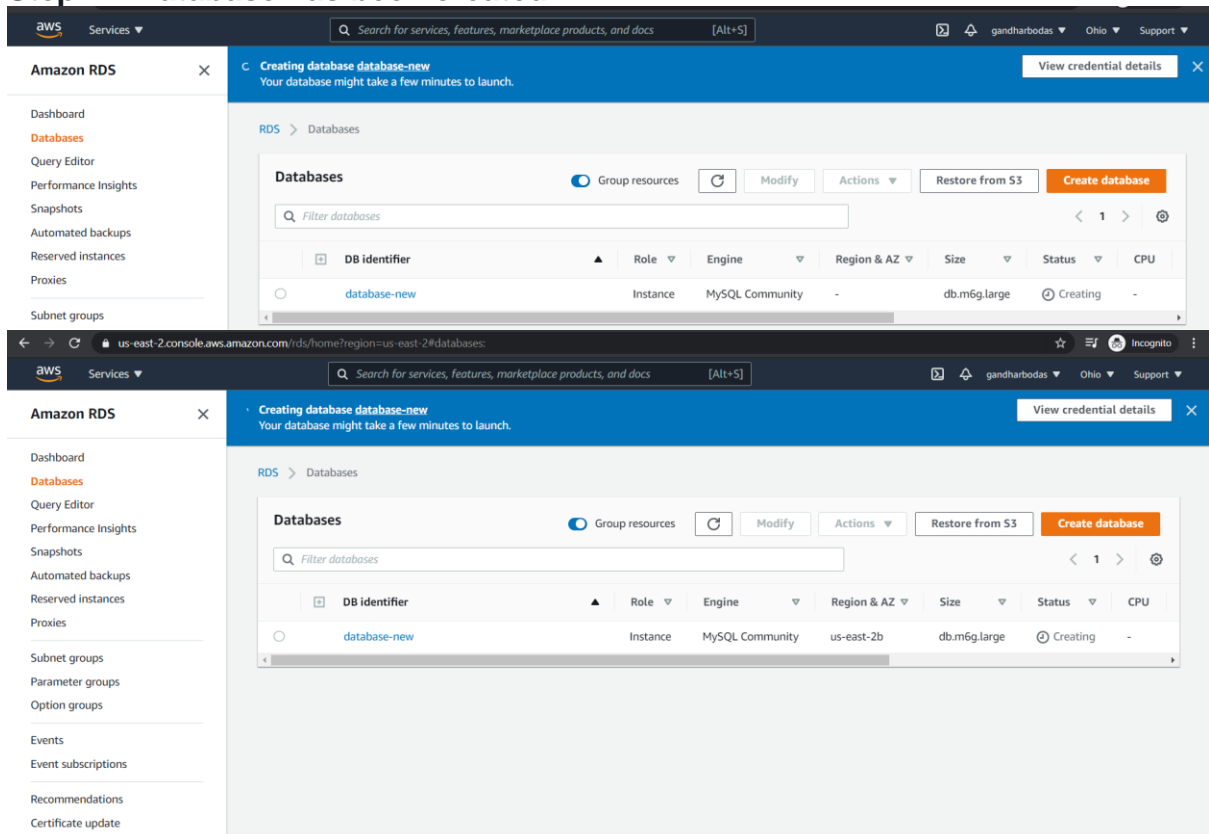
Estimate your monthly costs for the DB Instance using the [AWS Simple Monthly Calculator](#).

 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

Once done these all settings clicked on “Create database button”

Step :2 *Database has been created*



The screenshot shows the AWS Management Console interface for creating a new Amazon RDS database. The main content area displays a table of databases with the following columns: DB identifier, Role, Engine, Region & AZ, Size, Status, and CPU. The table contains one entry: 'database-new' with a status of 'Creating'. The left sidebar shows the navigation menu with 'Databases' selected. The top navigation bar shows the user's name 'gandharbadas' and the region 'Ohio'. The page title is 'Creating database database-new' and it includes a 'View credential details' link.

Part 1: MySQL: Templates : Free Tier:

RDS > Create database

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



☐ PostgreSQL



☐ Oracle



☐ Microsoft SQL Server



Edition

☒ MySQL Community



Known issues/limitations

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

Version

MySQL 8.0.20

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 across all DB instances owned by your AWS account in the current AWS Region.

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 (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.

admin

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), '(single quote), "(double quote) and @ (at sign).

Confirm password [Info](#)

.....

DB instance class

DB instance class [Info](#)

Choose a DB instance class that meets your processing power and memory requirements. The DB instance class options below are limited to those supported by the engine you selected above.

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

db.t2.micro

1 vCPUs 1 GiB RAM Not EBS Optimized



New instance classes are available for specific engine versions. [Info](#)

☐ Include previous generation classes

Storage

Storage type [Info](#)

Provisioned IOPS (SSD)



Allocated storage

100

GiB

Minimum: 100 GiB, Maximum: 16,384 GiB

Provisioned IOPS [Info](#)

3000



IOPS

Minimum: 1,000 IOPS, Maximum: 80,000 IOPS

Your actual IOPS might vary from the amount that you provisioned based on your database workload and instance type. [Learn more](#)

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 once the specified threshold is exceeded.

Maximum storage threshold [Info](#)

Charges will apply when your database autoscales to the specified threshold

1000

GiB

Minimum: 101 GiB, Maximum: 16,384 GiB

Availability & durability

Multi-AZ deployment [Info](#)

- ☐ Create a standby instance (recommended for production usage)
Creates a standby in a different Availability Zone (AZ) to provide data redundancy, eliminate I/O freezes, and minimize latency spikes during system backups.
- ☒ Do not create a standby instance

Connectivity



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

VPC that defines the virtual networking environment for this DB instance.

Default VPC (vpc-51129e3a) ▼

Only VPCs with a corresponding DB subnet group are listed.

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

Subnet group [Info](#)

DB subnet group that defines which subnets and IP ranges the DB instance can use in the VPC you selected.

default-vpc-51129e3a ▼

Public access [Info](#)

- ☐ Yes
Amazon EC2 instances and devices outside the VPC can connect to your database. Choose one or more VPC security groups that specify which EC2 instances and devices inside the VPC can connect to the database.
- ☒ No
RDS will not assign a public IP address to the database. Only Amazon EC2 instances and devices inside the VPC can connect to your database.

VPC security group

Choose a VPC security group to allow access to your database. Ensure 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 VPC security groups ▼

default ✕

Availability Zone [Info](#)

No preference ▼

► Additional configuration

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


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:

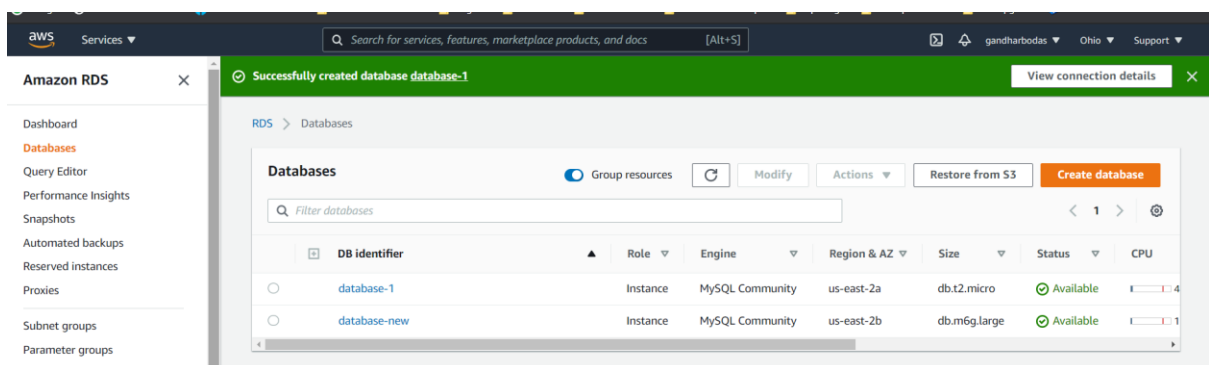
- 750 hrs of Amazon RDS in a Single-AZ db.t2.micro Instance.
- 20 GB of General Purpose Storage (SSD).
- 20 GB for automated backup storage and any user-initiated DB Snapshots.

[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.

Total: 2 Instances has been created:



The screenshot shows the AWS Management Console for Amazon RDS. A green banner at the top indicates 'Successfully created database database-1'. The left sidebar shows the navigation menu with 'Databases' selected. The main content area displays a table of databases:

DB identifier	Role	Engine	Region & AZ	Size	Status	CPU
database-1	Instance	MySQL Community	us-east-2a	db.t2.micro	Available	4
database-new	Instance	MySQL Community	us-east-2b	db.m6g.large	Available	1

END