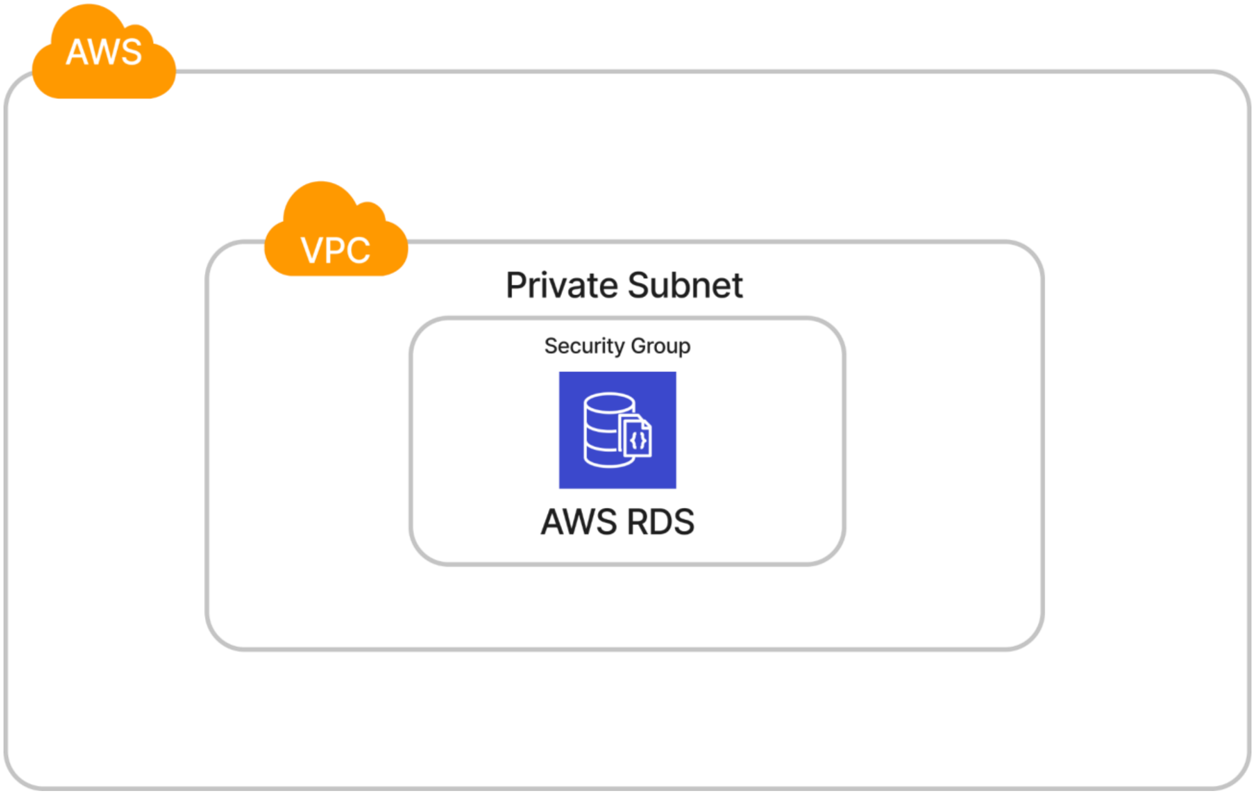
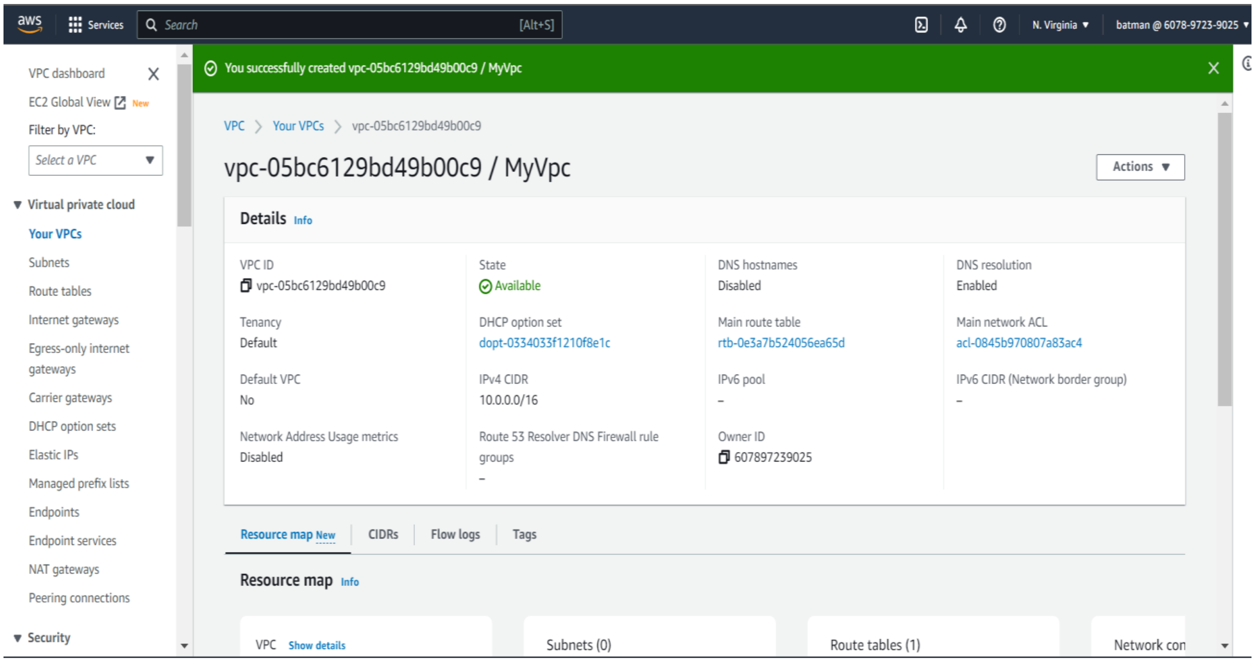
Create a VPC security group for a private DB instance



SOLUTION:

1. Creating VPC:



You successfully created vpc-05bc6129bd49b00c9 / MyVpc

VPC > Your VPCs > vpc-05bc6129bd49b00c9

vpc-05bc6129bd49b00c9 / MyVpc

Details Info

VPC ID
vpc-05bc6129bd49b00c9

State
Available

DNS hostnames
Disabled

DNS resolution
Enabled

Tenancy
Default

DHCP option set
dopt-0334033f1210f8e1c

Main route table
rtb-0e3a7b524056ea65d

Main network ACL
acl-0845b970807a83ac4

Default VPC
No

IPv4 CIDR
10.0.0.0/16

IPv6 pool
–

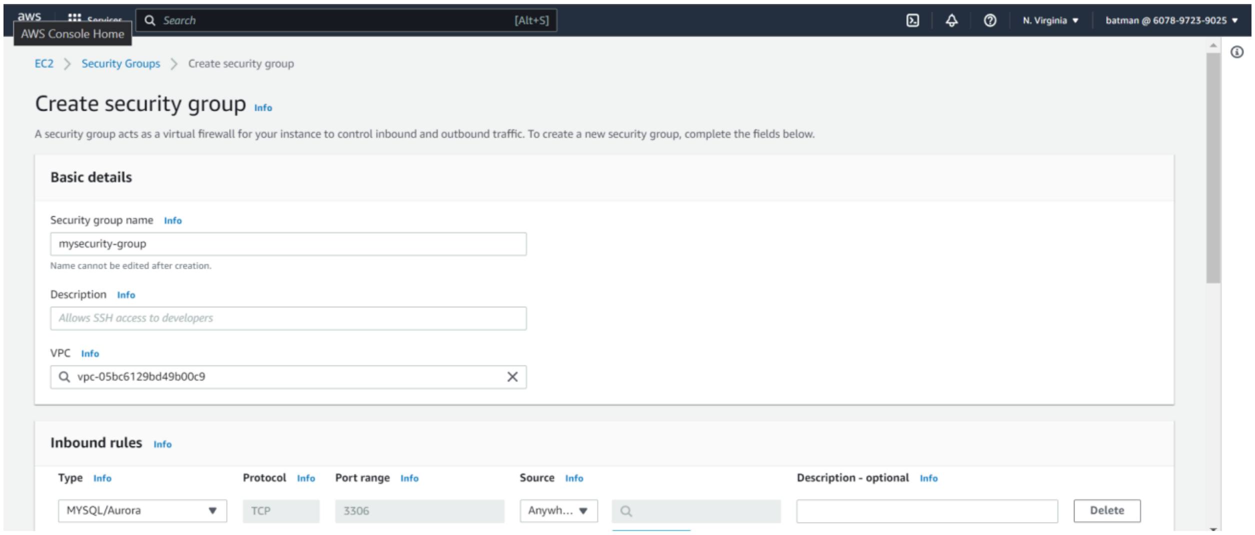
IPv6 CIDR (Network border group)
–

Network Address Usage metrics
Disabled

Route 53 Resolver DNS Firewall rule groups
–

Owner ID
607897239025

2. Creating Secuirty group:



EC2 > Security Groups > Create security group

Create security group Info

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.

Basic details

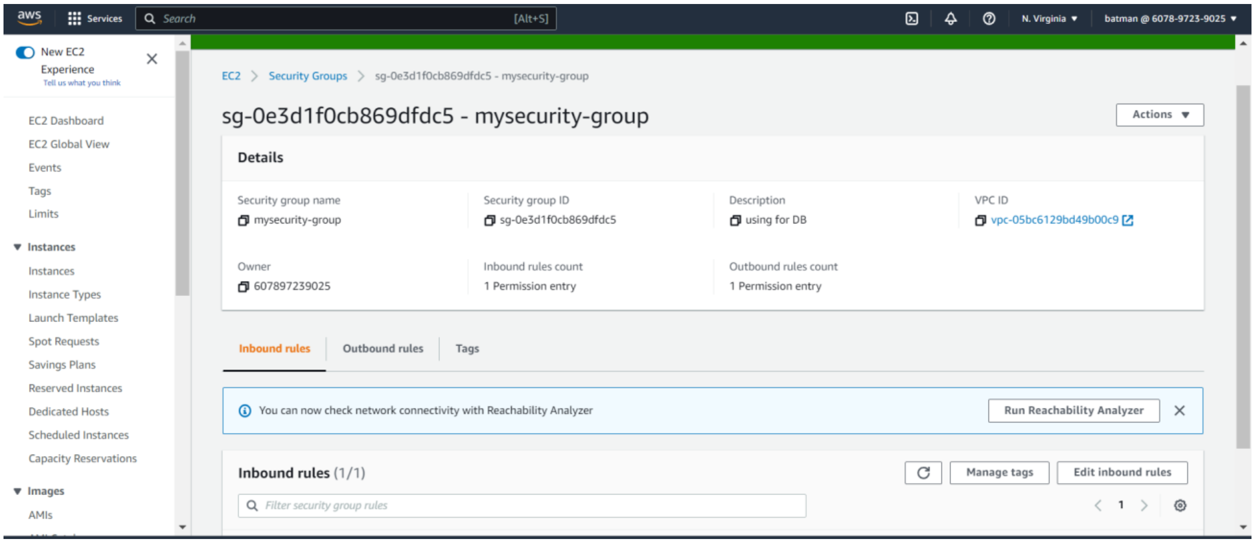
Security group name Info
mysecurity-group
Name cannot be edited after creation.

Description Info
Allows SSH access to developers

VPC Info
vpc-05bc6129bd49b00c9

Inbound rules Info

Type	Protocol	Port range	Source		Description - optional	
MYSQL/Aurora	TCP	3306	Anywh...			Delete



EC2 > Security Groups > sg-0e3d1f0cb869dfdc5 - mysecurity-group

sg-0e3d1f0cb869dfdc5 - mysecurity-group

Details

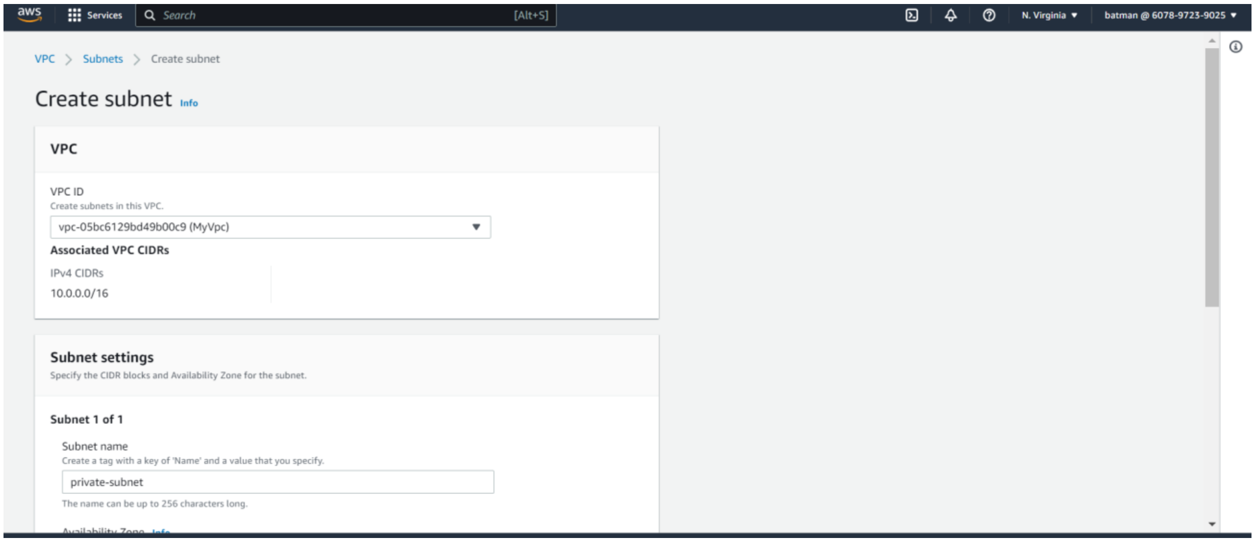
Security group name	Security group ID	Description	VPC ID
mysecurity-group	sg-0e3d1f0cb869dfdc5	using for DB	vpc-05bc6129bd49b00c9
Owner	Inbound rules count	Outbound rules count	
607897239025	1 Permission entry	1 Permission entry	

You can now check network connectivity with Reachability Analyzer

Inbound rules (1/1)

Filter security group rules

3. Adding the private subnet:



Create subnet Info

VPC

VPC ID
Create subnets in this VPC.
vpc-05bc6129bd49b00c9 (MyVpc)

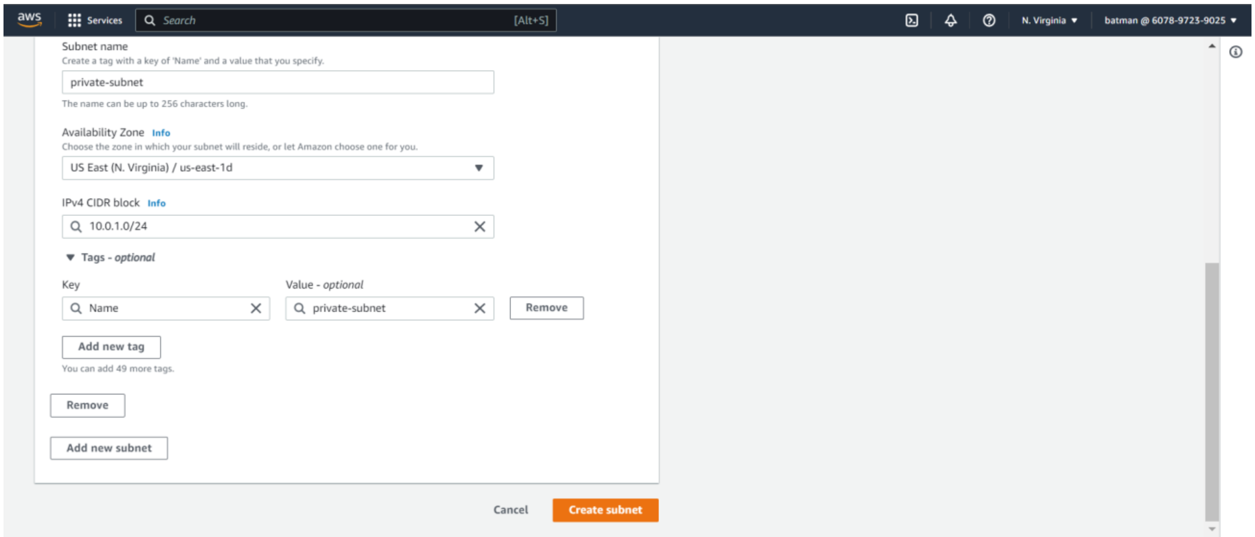
Associated VPC CIDRs

IPv4 CIDRs
10.0.0.0/16

Subnet settings
Specify the CIDR blocks and Availability Zone for the subnet.

Subnet 1 of 1

Subnet name
Create a tag with a key of 'Name' and a value that you specify.
private-subnet
The name can be up to 256 characters long.



Subnet name
Create a tag with a key of 'Name' and a value that you specify.
private-subnet
The name can be up to 256 characters long.

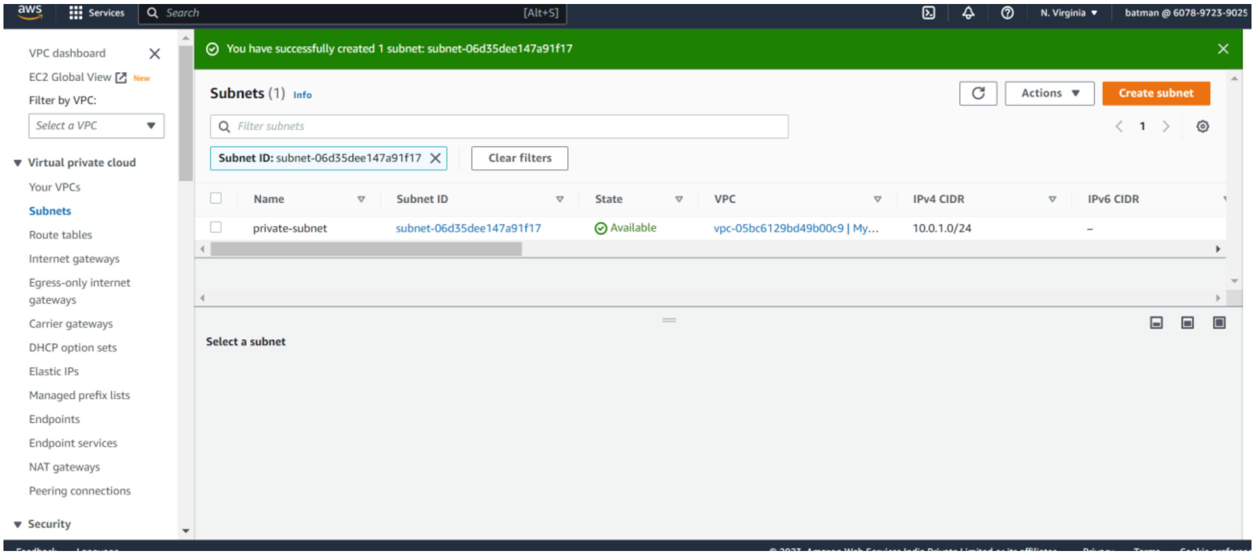
Availability Zone Info
Choose the zone in which your subnet will reside, or let Amazon choose one for you.
US East (N. Virginia) / us-east-1d

IPv4 CIDR block Info
10.0.1.0/24

Tags - *optional*

Key	Value - *optional*
Name	private-subnet

You can add 49 more tags.



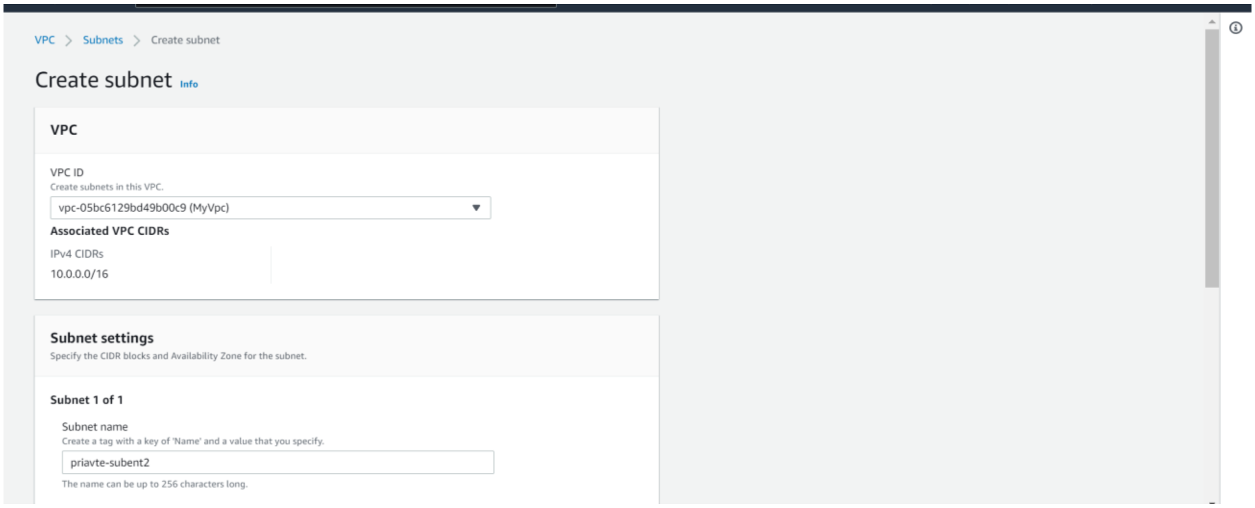
You have successfully created 1 subnet: subnet-06d35dee147a91f17

Subnets (1) Info

Subnet ID: subnet-06d35dee147a91f17

Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR
private-subnet	subnet-06d35dee147a91f17	Available	vpc-05bc6129bd49b00c9 | My...	10.0.1.0/24	–

Select a subnet



Create subnet Info

VPC

VPC ID
Create subnets in this VPC.
vpc-05bc6129bd49b00c9 (MyVpc)

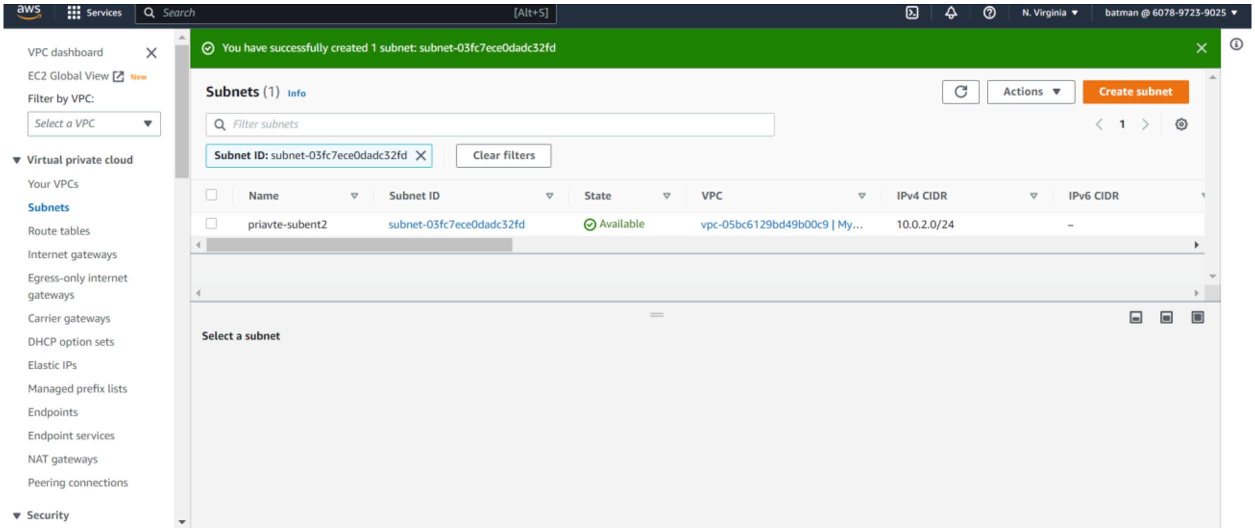
Associated VPC CIDRs

IPv4 CIDRs
10.0.0.0/16

Subnet settings
Specify the CIDR blocks and Availability Zone for the subnet.

Subnet 1 of 1

Subnet name
Create a tag with a key of 'Name' and a value that you specify.
priavte-subent2
The name can be up to 256 characters long.



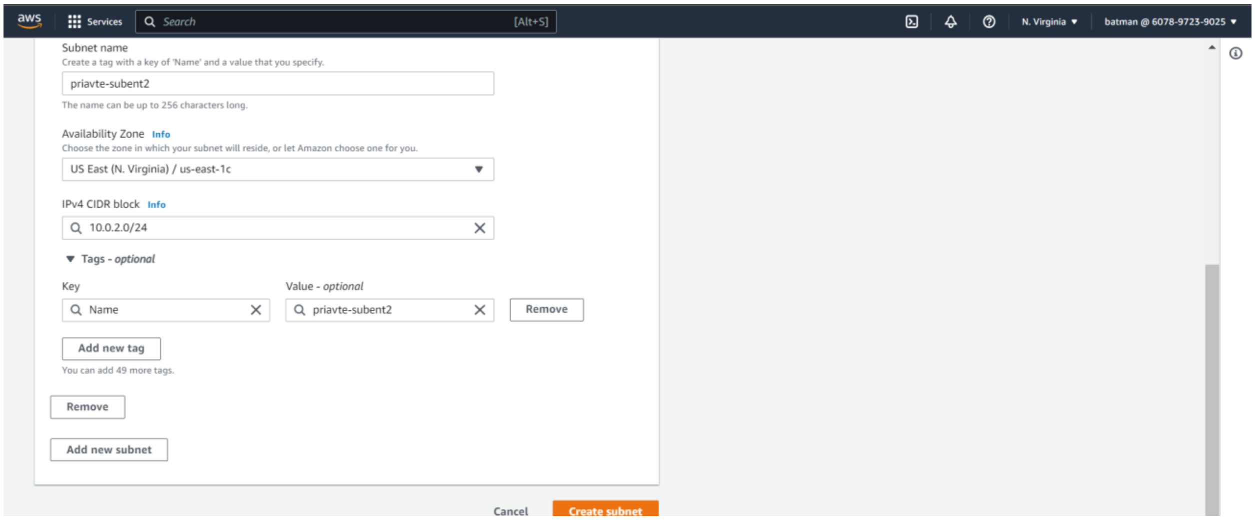
You have successfully created 1 subnet: subnet-03fc7ece0dadc32fd

Subnets (1) Info

Subnet ID: subnet-03fc7ece0dadc32fd

Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR
priavte-subent2	subnet-03fc7ece0dadc32fd	Available	vpc-05bc6129bd49b00c9 | My...	10.0.2.0/24	–

Select a subnet



Subnet name
Create a tag with a key of 'Name' and a value that you specify.
priavte-subent2
The name can be up to 256 characters long.

Availability Zone Info
Choose the zone in which your subnet will reside, or let Amazon choose one for you.
US East (N. Virginia) / us-east-1c

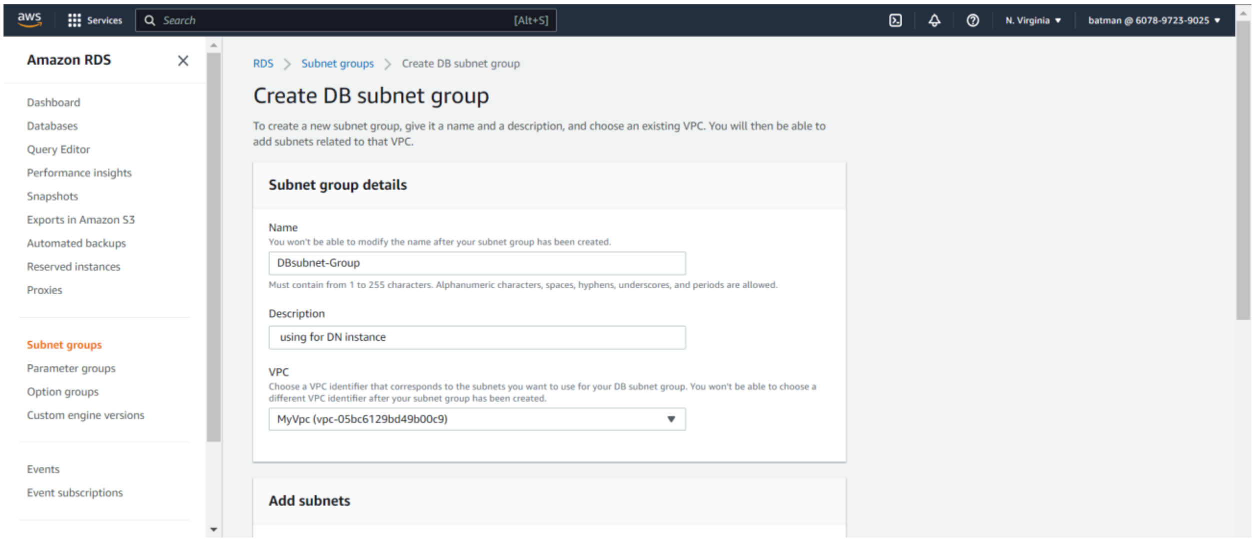
IPv4 CIDR block Info
10.0.2.0/24

Tags - *optional*

Key	Value - *optional*
Name	priavte-subent2

You can add 49 more tags.

4. Creating DB subnet group:



RDS > Subnet groups > Create DB subnet group

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.

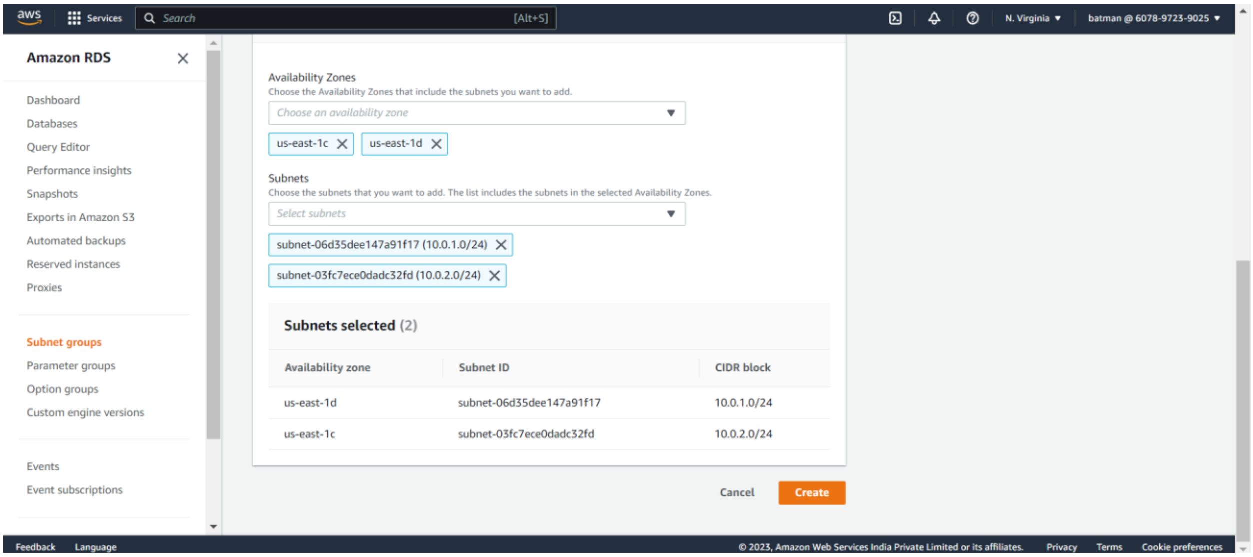
Subnet group details

Name
You won't be able to modify the name after your subnet group has been created.
DBsubnet-Group
Must contain from 1 to 255 characters. Alphanumeric characters, spaces, hyphens, underscores, and periods are allowed.

Description
using for DN instance

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.
MyVpc (vpc-05bc6129bd49b00c9)

Add subnets



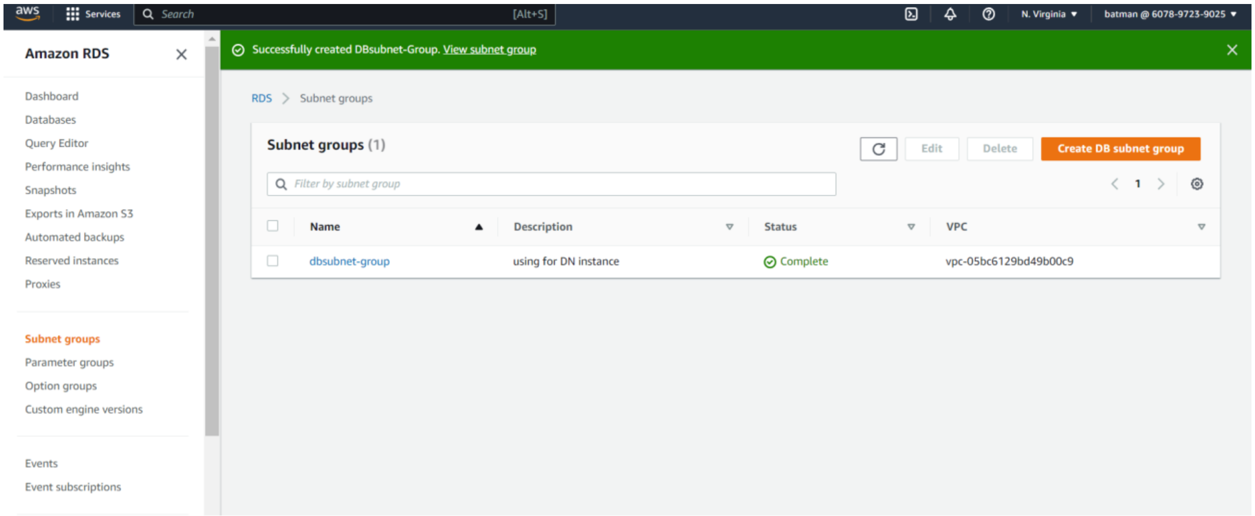
Availability Zones
Choose the Availability Zones that include the subnets you want to add.
Choose an availability zone
us-east-1c ✕ us-east-1d ✕

Subnets
Choose the subnets that you want to add. The list includes the subnets in the selected Availability Zones.
Select subnets
subnet-06d35dee147a91f17 (10.0.1.0/24) ✕
subnet-03fc7ece0dadc32fd (10.0.2.0/24) ✕

Subnets selected (2)

Availability zone	Subnet ID	CIDR block
us-east-1d	subnet-06d35dee147a91f17	10.0.1.0/24
us-east-1c	subnet-03fc7ece0dadc32fd	10.0.2.0/24

Cancel | Create



Successfully created DBsubnet-Group. View subnet group

RDS > Subnet groups

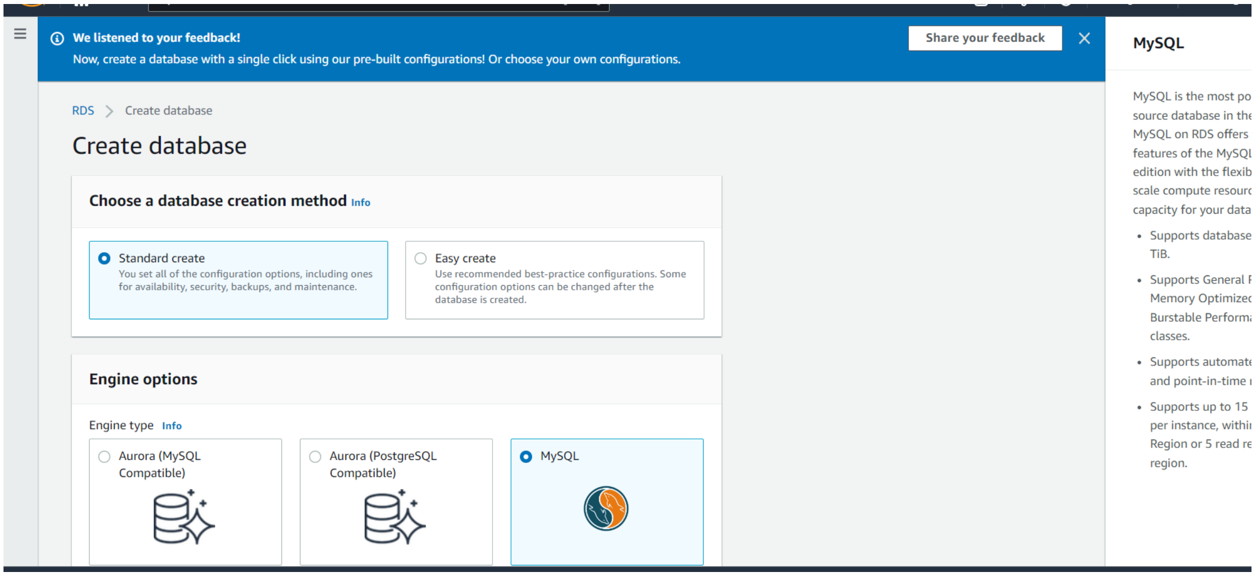
Subnet groups (1)

Edit | Delete | Create DB subnet group

Filter by subnet group

	Name	Description	Status	VPC
□	dbsubnet-group	using for DN instance	✓ Complete	vpc-05bc6129bd49b00c9

5. Creating RDS and assign it to private subnet:



We listened to your feedback!

Now, create a database with a single click using our pre-built configurations! Or choose your own configurations.

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

○ Aurora (MySQL Compatible)

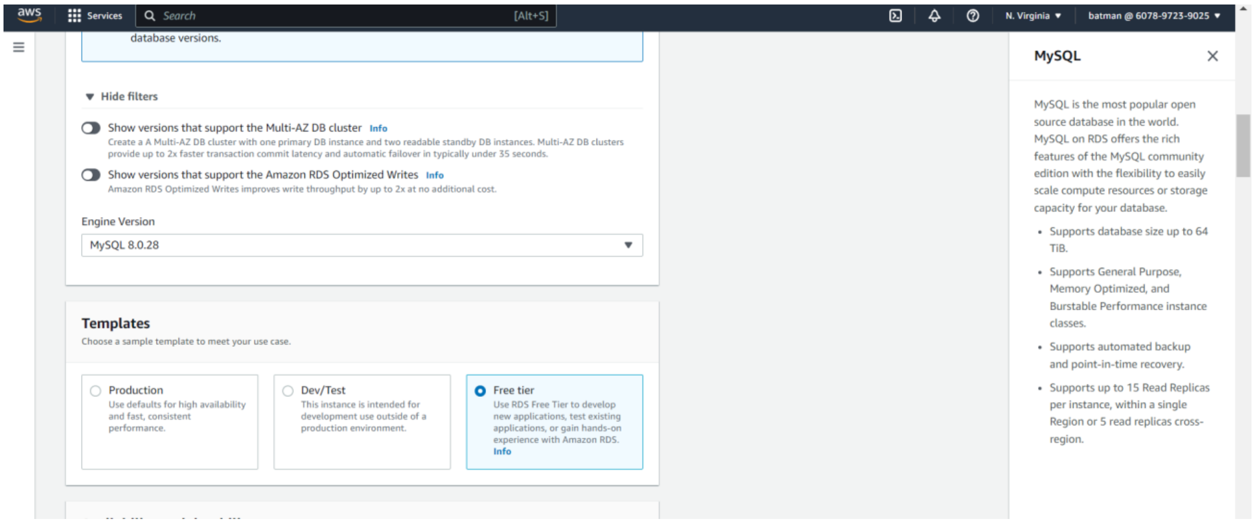
○ Aurora (PostgreSQL Compatible)

● MySQL

MySQL

MySQL is the most po
source database in the
MySQL on RDS offers
features of the MySQL
edition with the flexib
scale compute resourc
capacity for your data

- Supports database
TiB.
- Supports General F
Memory Optimizec
Burstable Performa
classes.
- Supports automate
and point-in-time r
- Supports up to 15
per instance, withi
Region or 5 read re
region.



database versions.

▼ Hide filters

Show versions that support the Multi-AZ DB cluster Info
Create a A Multi-AZ DB cluster with one primary DB instance and two readable standby DB instances. Multi-AZ DB clusters provide up to 2x faster transaction commit latency and automatic failover in typically under 35 seconds.

Show versions that support the Amazon RDS Optimized Writes Info
Amazon RDS Optimized Writes improves write throughput by up to 2x at no additional cost.

Engine Version

MySQL 8.0.28 ▼

Templates

Choose a sample template to meet your use case.

○ Production
Use defaults for high availability and fast, consistent performance.

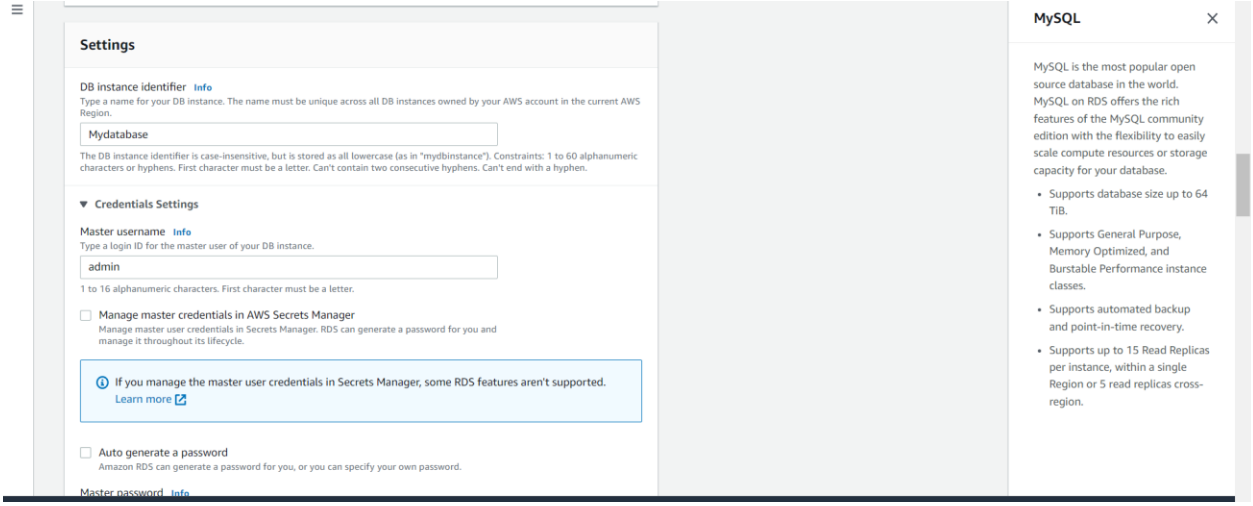
○ Dev/Test
This instance is intended for development use outside of a production environment.

● Free tier
Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS.
Info

MySQL

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.



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.

Mydatabase

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.

admin

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.

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

MySQL

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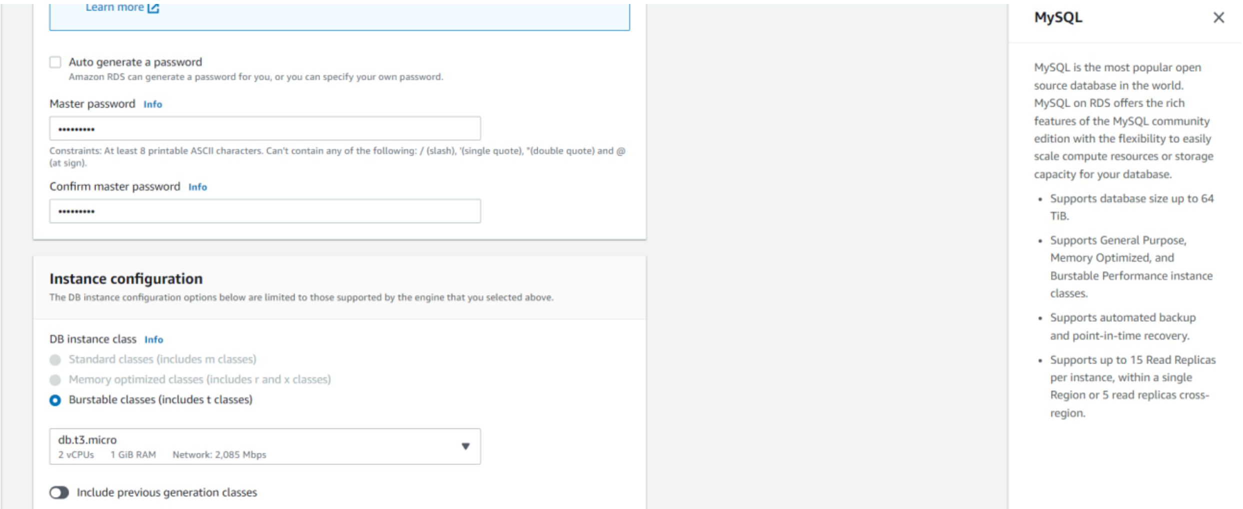

Learn more

☐ 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

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

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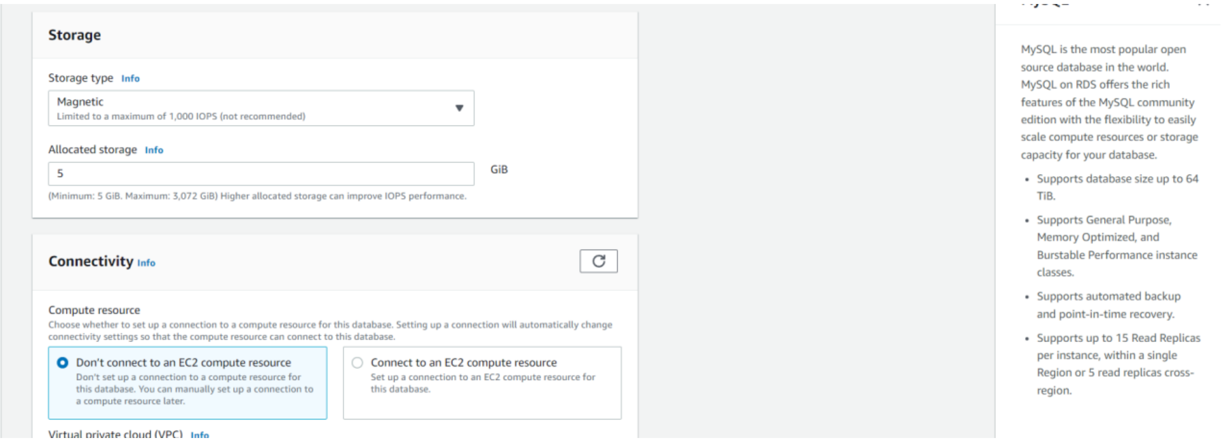


Storage

Storage type Info

Magnetic
Limited to a maximum of 1,000 IOPS (not recommended)

Allocated storage Info

5 GiB

(Minimum: 5 GiB. Maximum: 3,072 GiB) Higher allocated storage can improve IOPS performance.

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.

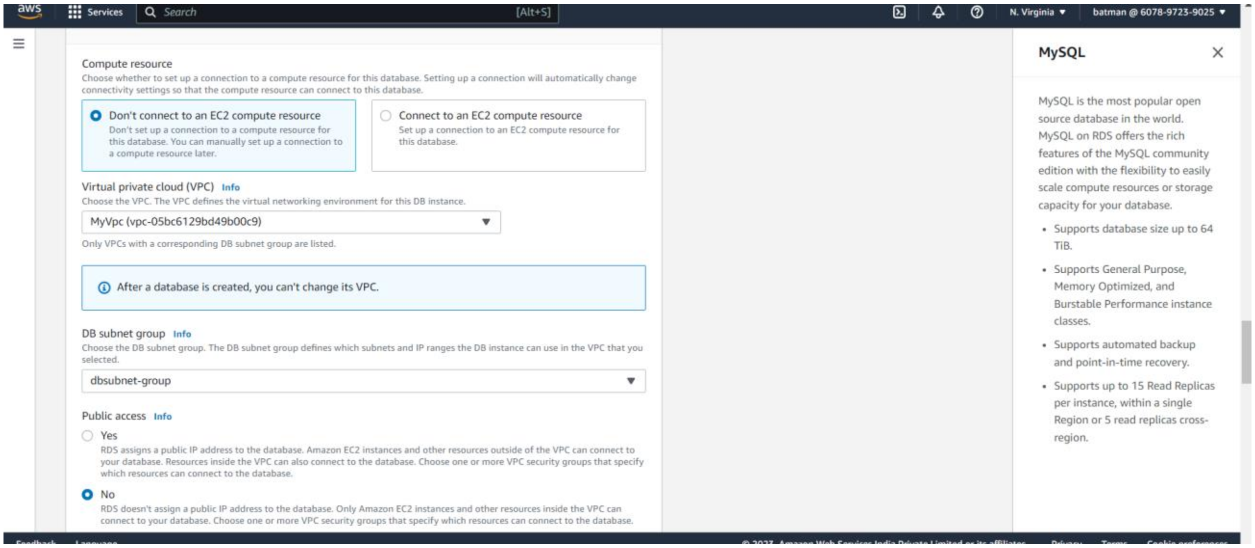
● Don't connect to an EC2 compute resource
Don't set up a connection to a compute resource for this database. You can manually set up a connection to a compute resource later.

○ Connect to an EC2 compute resource
Set up a connection to an EC2 compute resource for this database.

Virtual private cloud (VPC) Info

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.



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.

MyVpc (vpc-05bc6129bd49b00c9)

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.

dbsubnet-group

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.

MySQL

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

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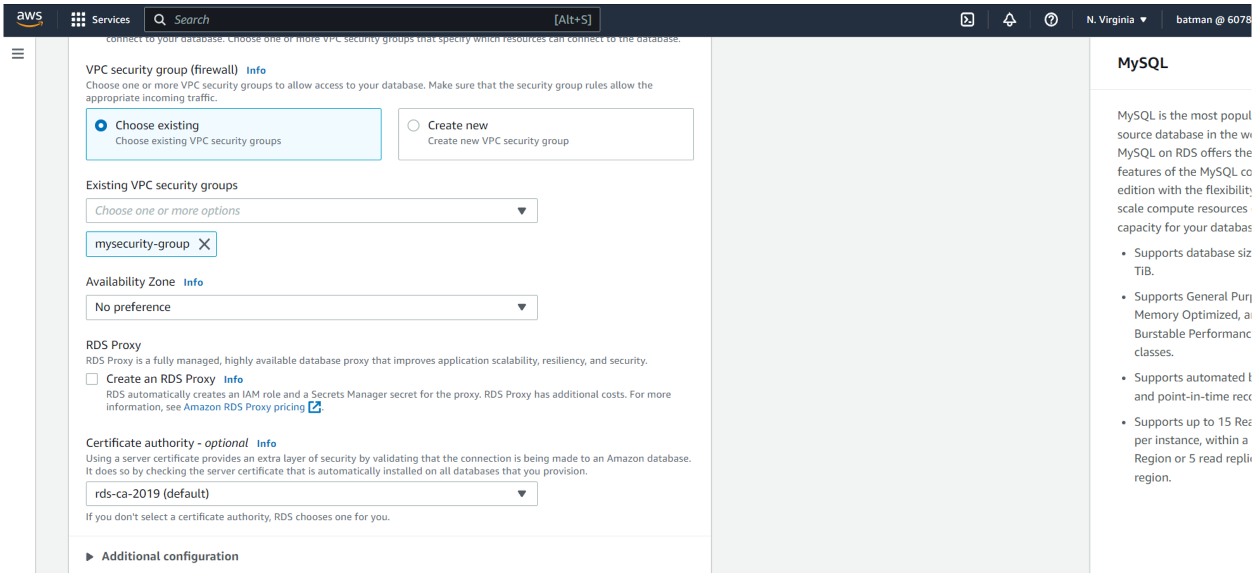
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.



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 ▾

mysecurity-group ✕

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.

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) ▾

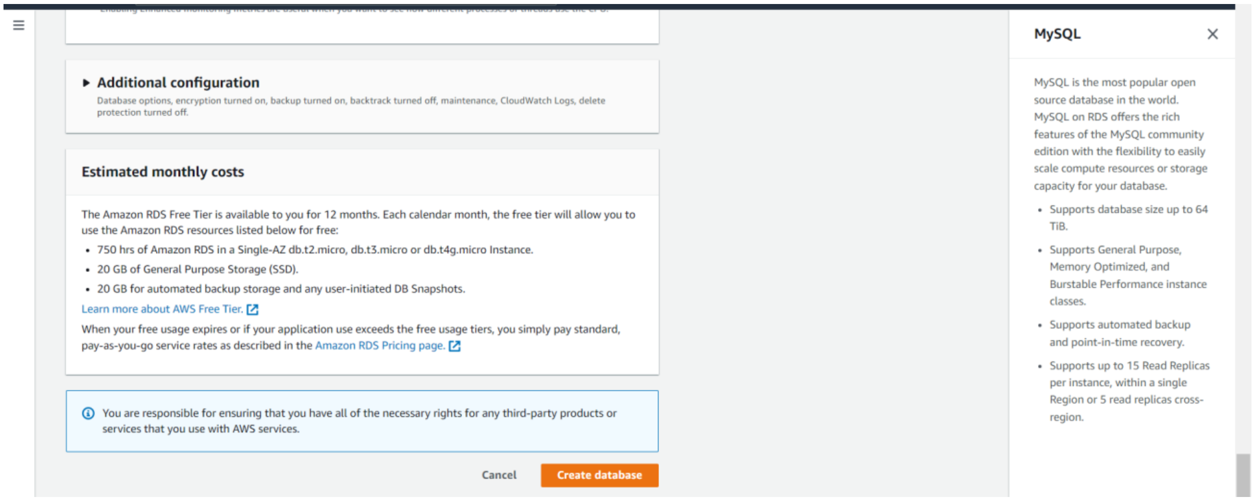
If you don't select a certificate authority, RDS chooses one for you.

▶ Additional configuration

MySQL

MySQL is the most popul
source database in the w
MySQL on RDS offers the
features of the MySQL co
edition with the flexibilit
scale compute resources
capacity for your databas

- Supports database siz TiB.
- Supports General Pur Memory Optimized, a Burstable Performanc classes.
- Supports automated b and point-in-time rec
- Supports up to 15 Rea per instance, within a Region or 5 read repli region.



Enabling Enhanced monitoring metrics are useful when you want to see how different processes or threads use the CPU.

▶ **Additional configuration**

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

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.

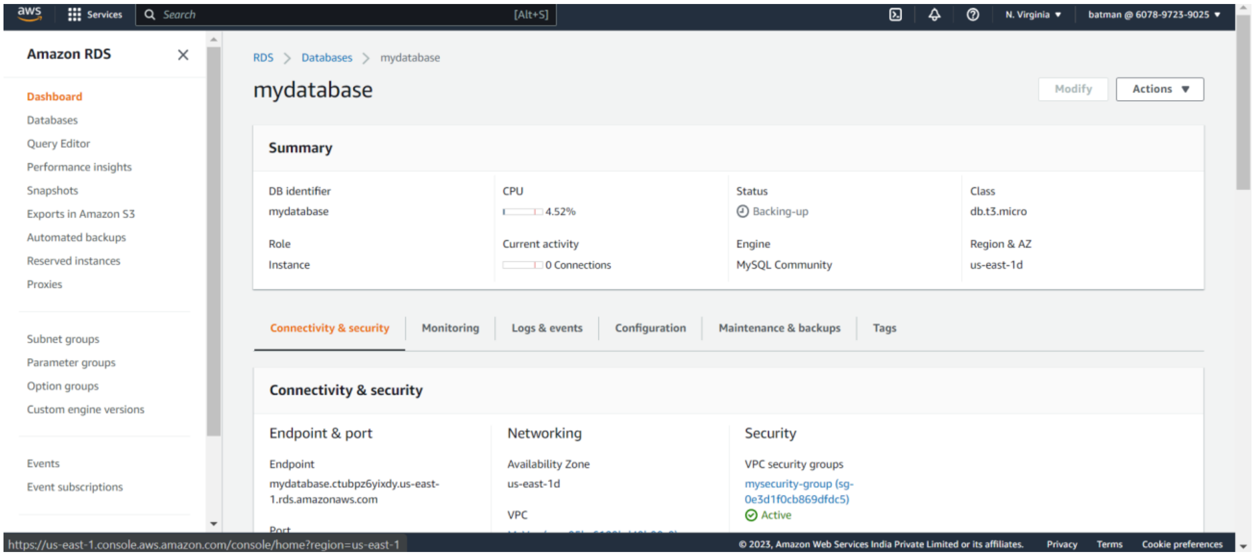
ⓘ You are responsible for ensuring that you have all of the necessary rights for any third-party products or services that you use with AWS services.

MySQL ✕

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.

- Database created in the private subnet within the VPC:



mydatabase

Summary

DB identifier	CPU	Status	Class
mydatabase	4.52%	Backing-up	db.t3.micro
Role	**Current activity**	**Engine**	**Region & AZ**
Instance	0 Connections	MySQL Community	us-east-1d

Connectivity & security

Endpoint & port

Endpoint
mydatabase.ctubpz6yixdy.us-east-1.rds.amazonaws.com

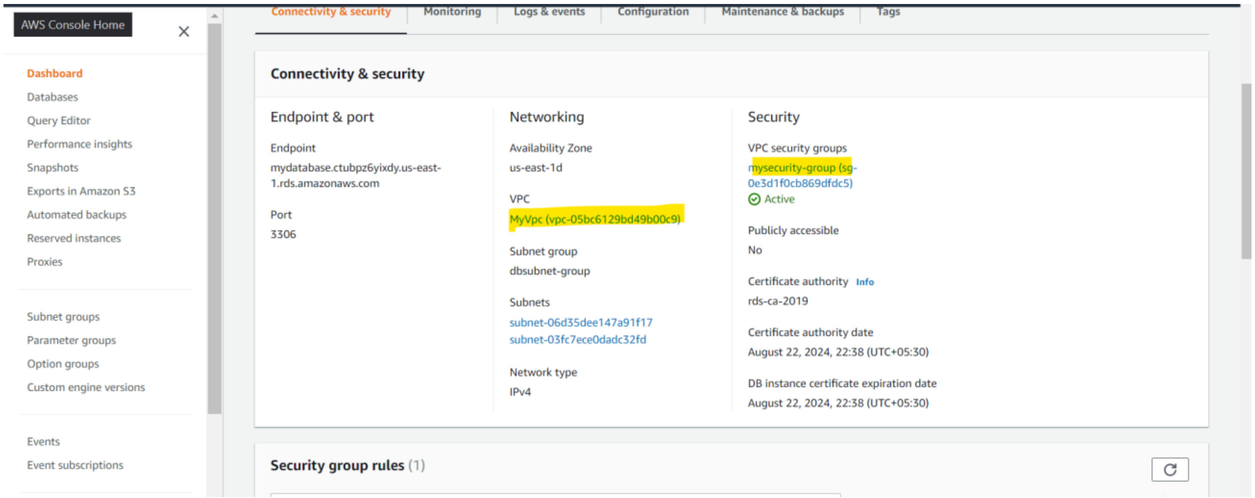
Networking

Availability Zone
us-east-1d

VPC

Security

VPC security groups
mysecurity-group (sg-0e3d1f0cb869dfdc5)
✓ Active



Connectivity & security

Endpoint & port

Endpoint
mydatabase.ctubpz6yixdy.us-east-1.rds.amazonaws.com

Port
3306

Networking

Availability Zone
us-east-1d

VPC
MyVpc (vpc-05bc6129bd49b00c9)

Subnet group
dbsubnet-group

Subnets
subnet-06d35dee147a91f17
subnet-03fc7ece0dadc32fd

Network type
IPv4

Security

VPC security groups
mysecurity-group (sg-0e3d1f0cb869dfdc5)
✓ Active

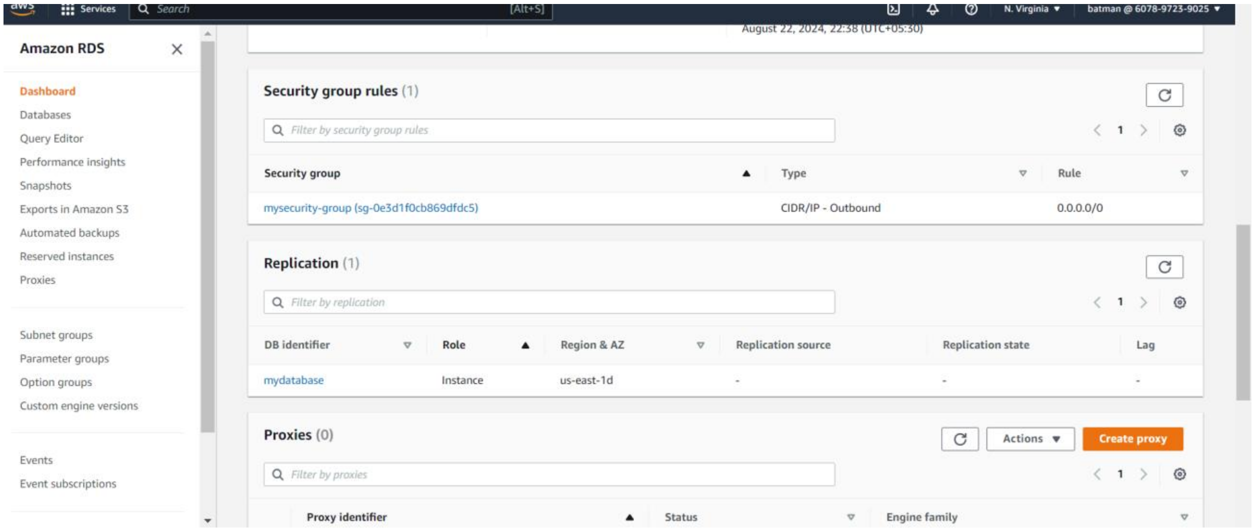
Publicly accessible
No

Certificate authority Info
rds-ca-2019

Certificate authority date
August 22, 2024, 22:38 (UTC+05:30)

DB instance certificate expiration date
August 22, 2024, 22:38 (UTC+05:30)

Security group rules (1)



August 22, 2024, 22:38 (UTC+05:30)

Security group rules (1)

Security group	Type	Rule
mysecurity-group (sg-0e3d1f0cb869dfdc5)	CIDR/IP - Outbound	0.0.0.0/0

Replication (1)

DB identifier	Role	Region & AZ	Replication source	Replication state	Lag
mydatabase	Instance	us-east-1d	-	-	-

Proxies (0)

Proxy identifier	Status	Engine family