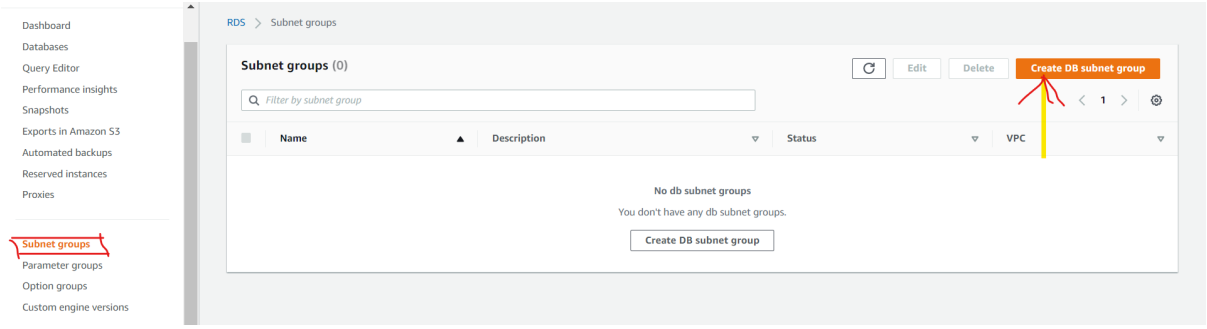
Creating RDS instance (mysql database)

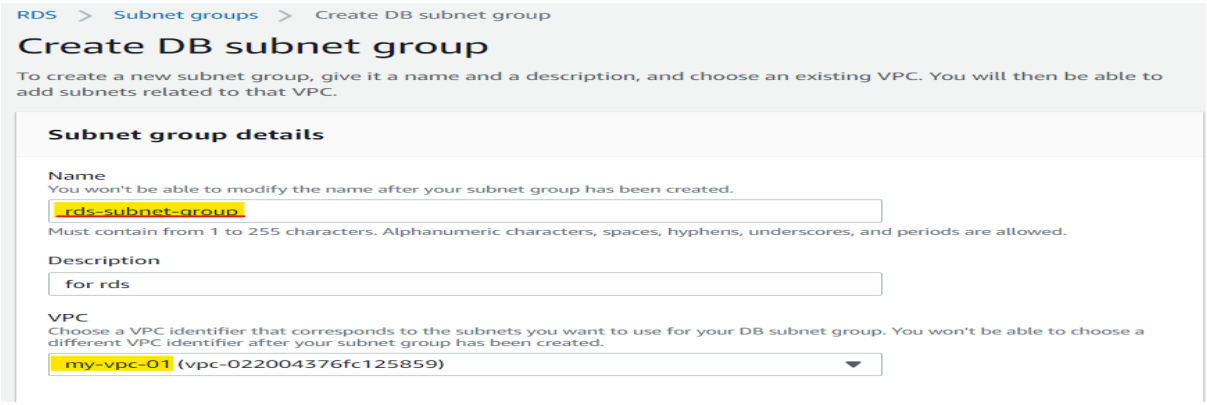
>>> The prerequisite for rds creation is subnet group

1.Create subnet group

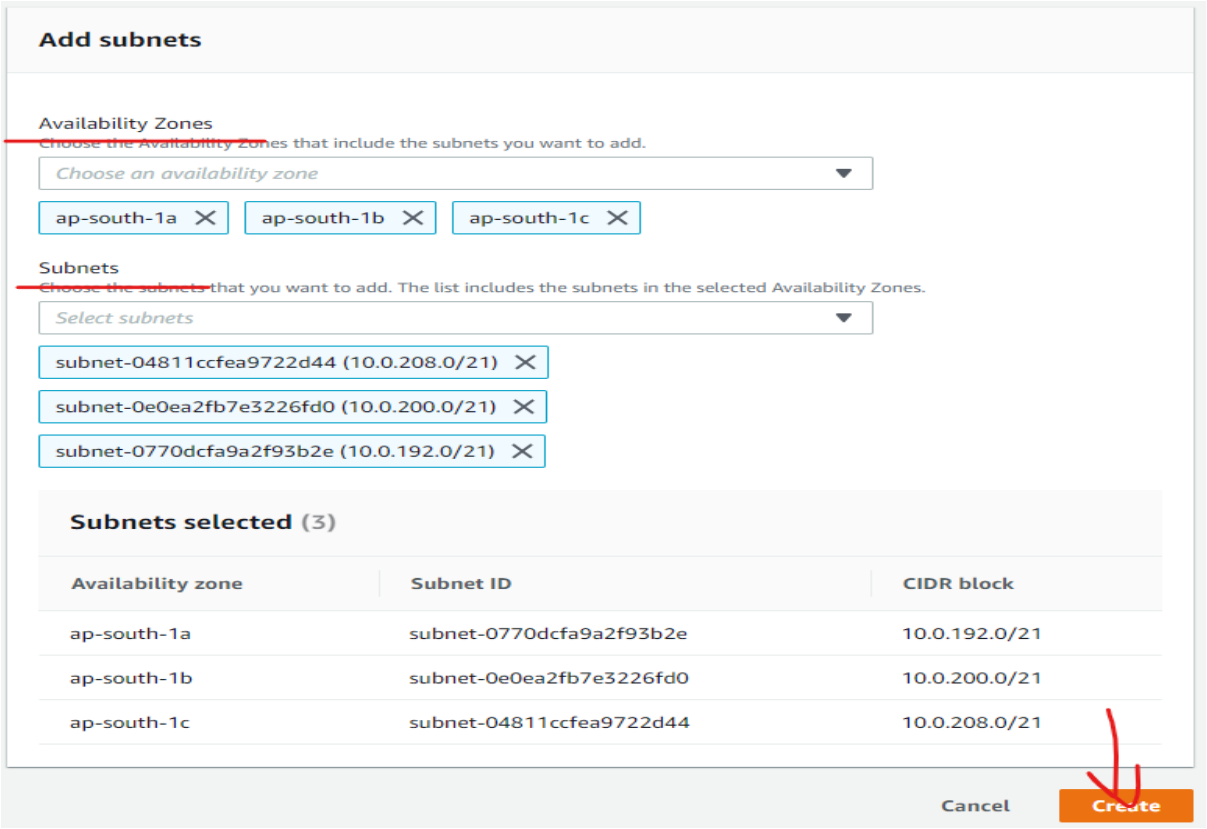
a. Goto rds service and goto subnet group in the left side of the navigation pane and click on create db subnet group



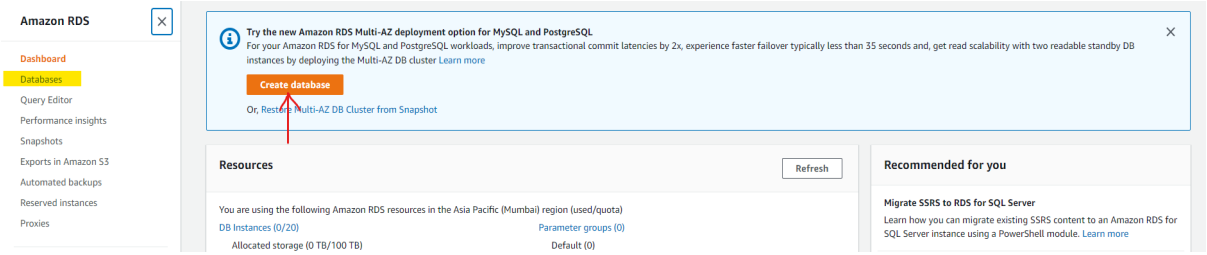
b. Give name for subnet group and select the custom vpc



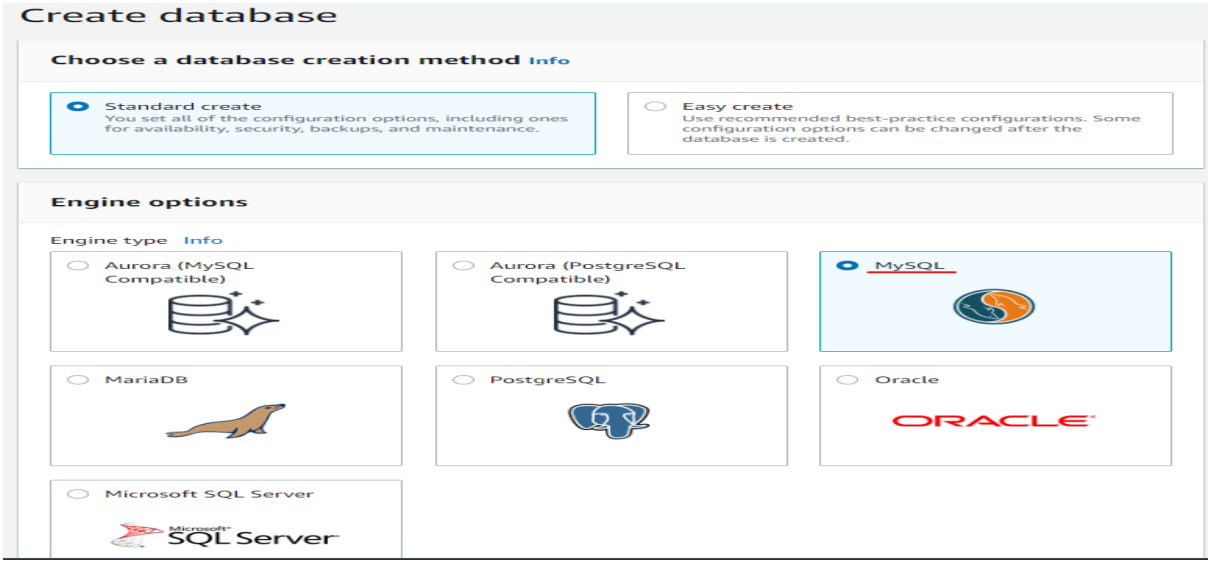
c. Select the az and data subnets and then click on create



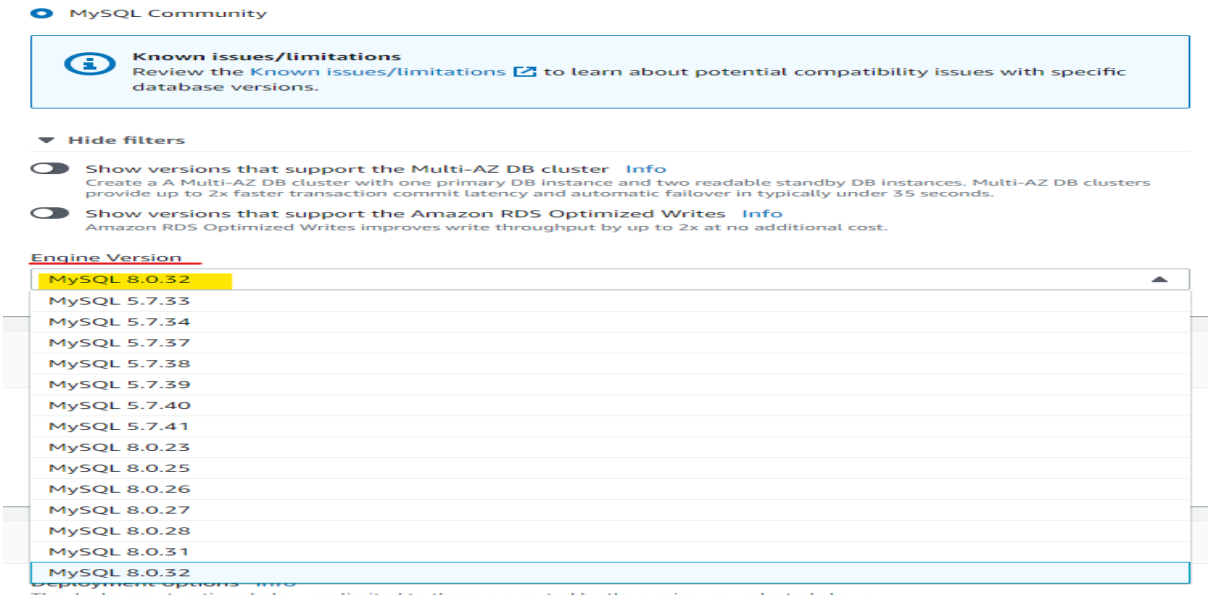
2.Goto the rds service and click on create database



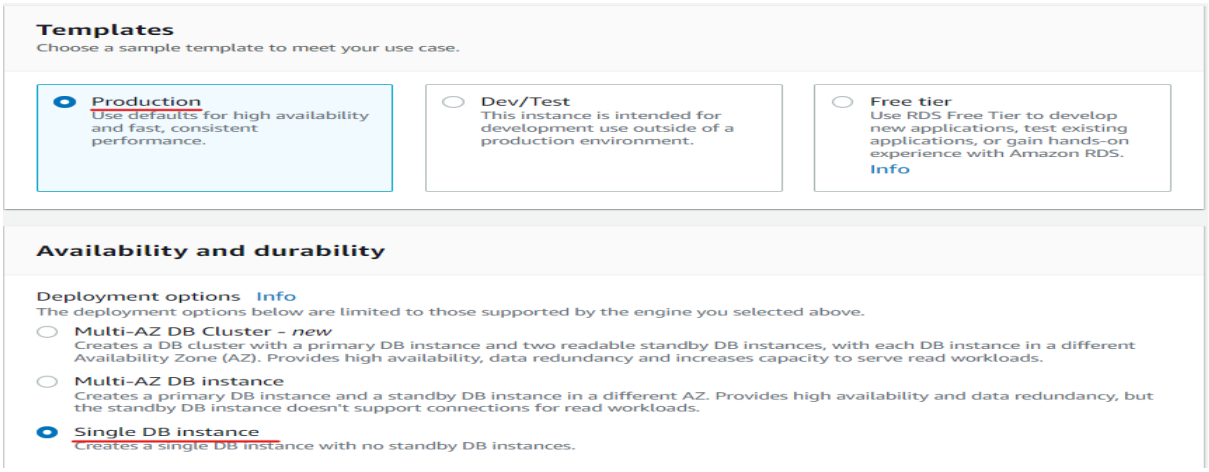
a. Select the database(now i am going with mysql)



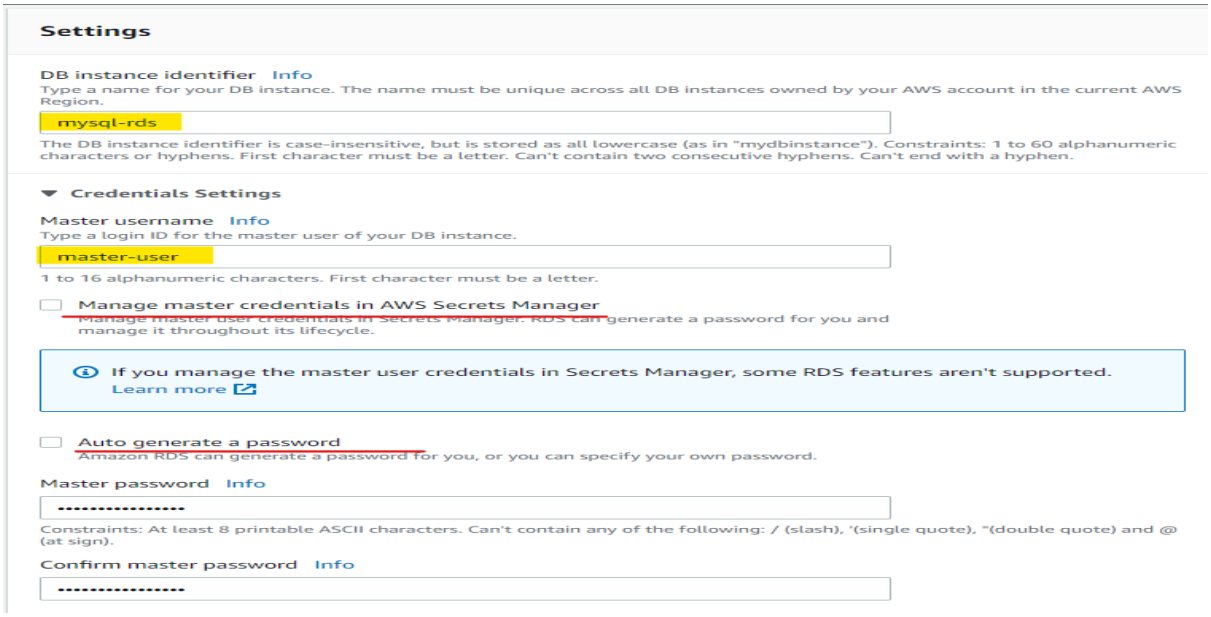
b. Choose the version. Always go with the latest version



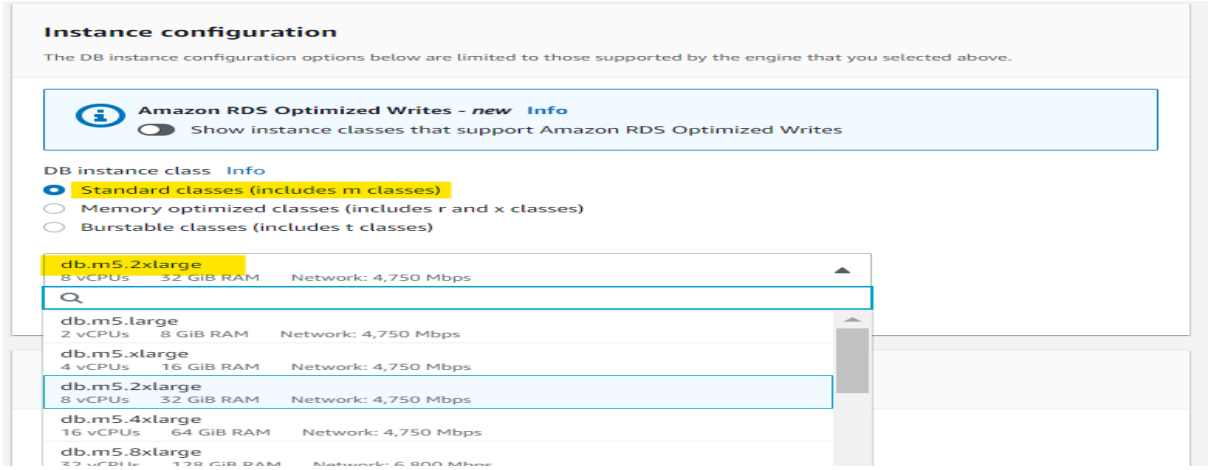
c. Select the production in the templates and single db instance for cost optimization. If u go multi-az db cluster or multi-az db instance,db instances may create across the zones so u may get a lot of charge because rds is a highly chargeable component in the aws because of storage. So for now go with single db instance which will create in a single instance



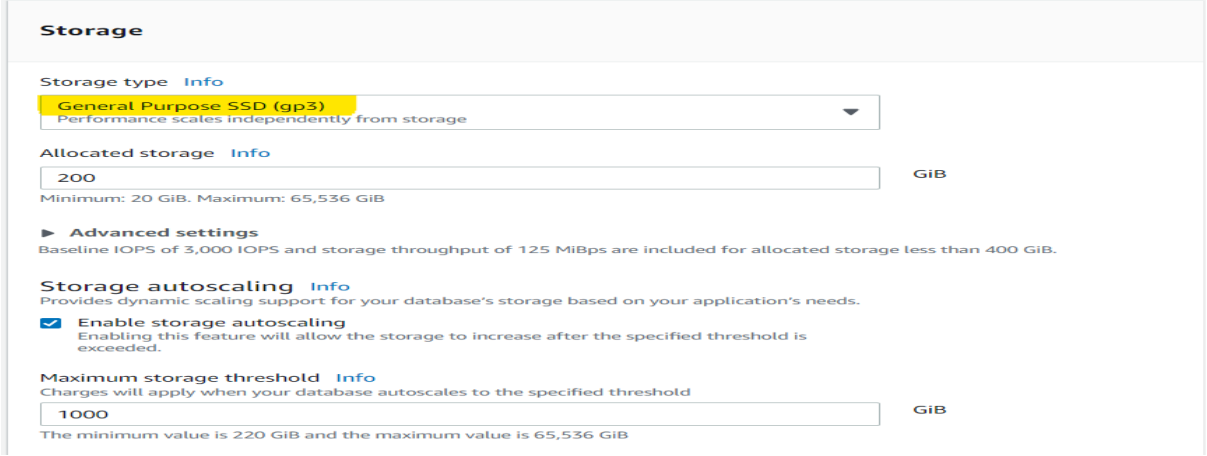
d. In the settings options choose a name for ur database and by default aws will give u a user called master user give a name it or u can go with default,if u want to store the credentials of master user u can enable manage master credentials in aws secrets manager. It will store master credentials (for don't choose it) and if you want to go with the auto password enable auto generate a password.It will give a password after the creation of rds. Here i'm going with the custom password.



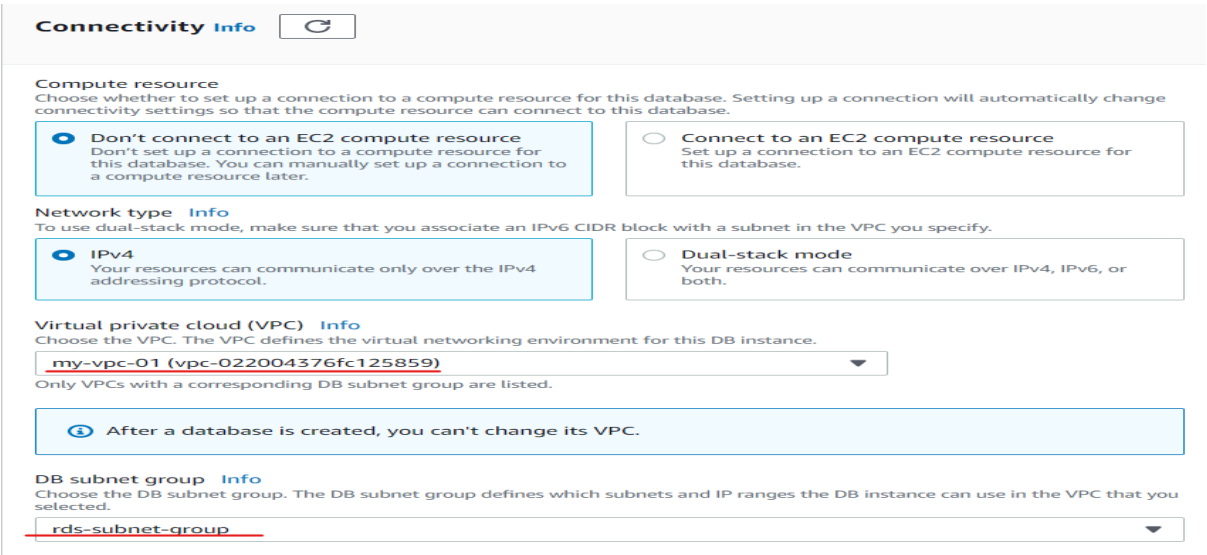
e. Select the instance type

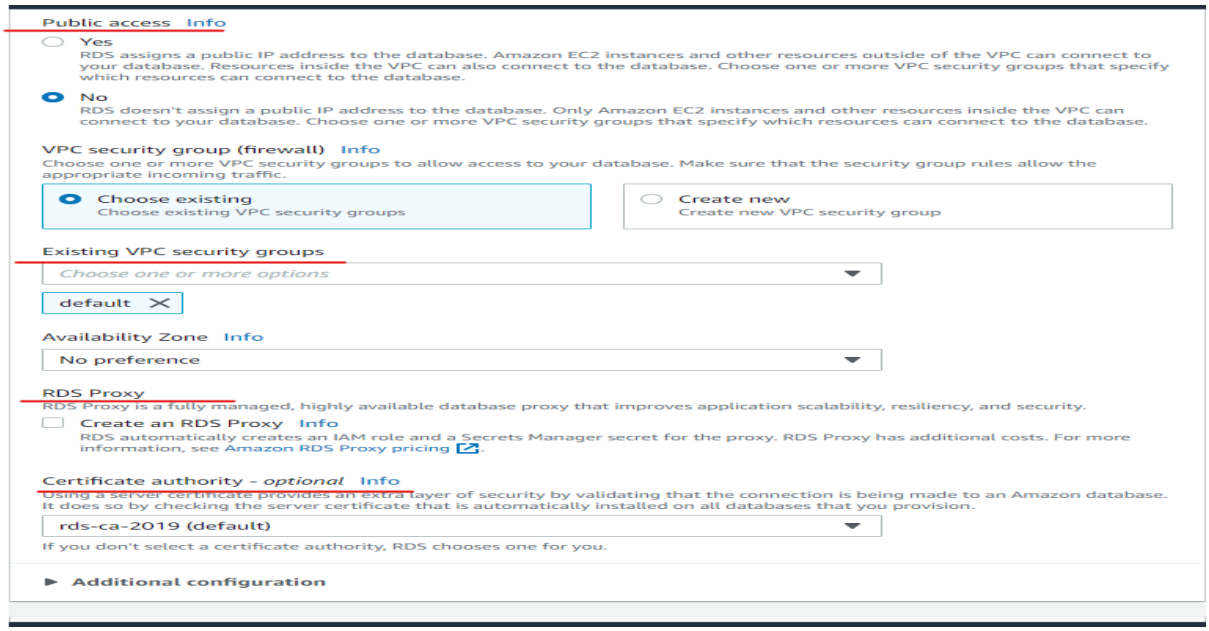


f. In the storage select the storage type like instance ebs volume types it will have types choose any one and enable autoscaling so that if the selected consumed it will allocate extra data automatically



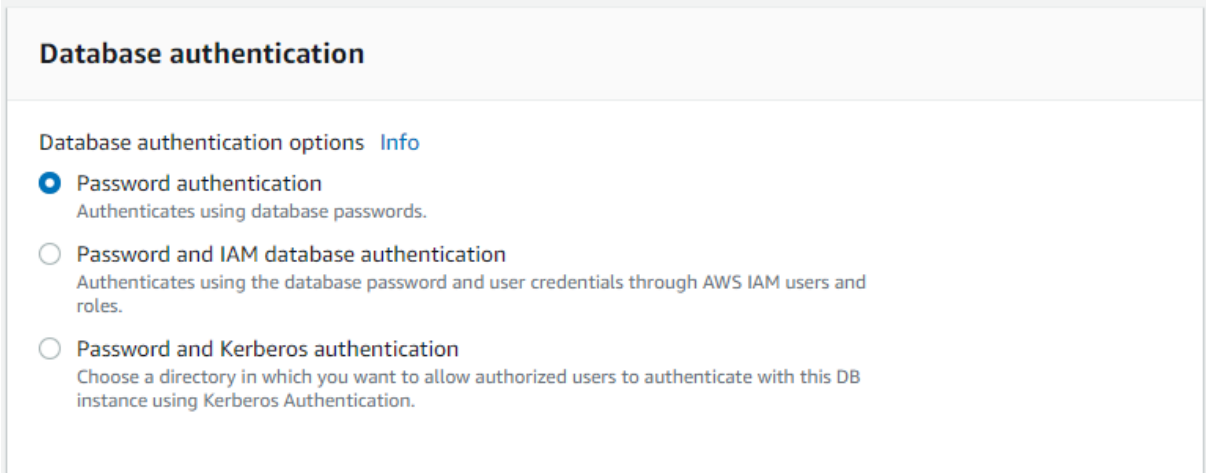
g. In the connectivity section go with manual connection to ec2 and select the custom vpc and automatically subnet group will come



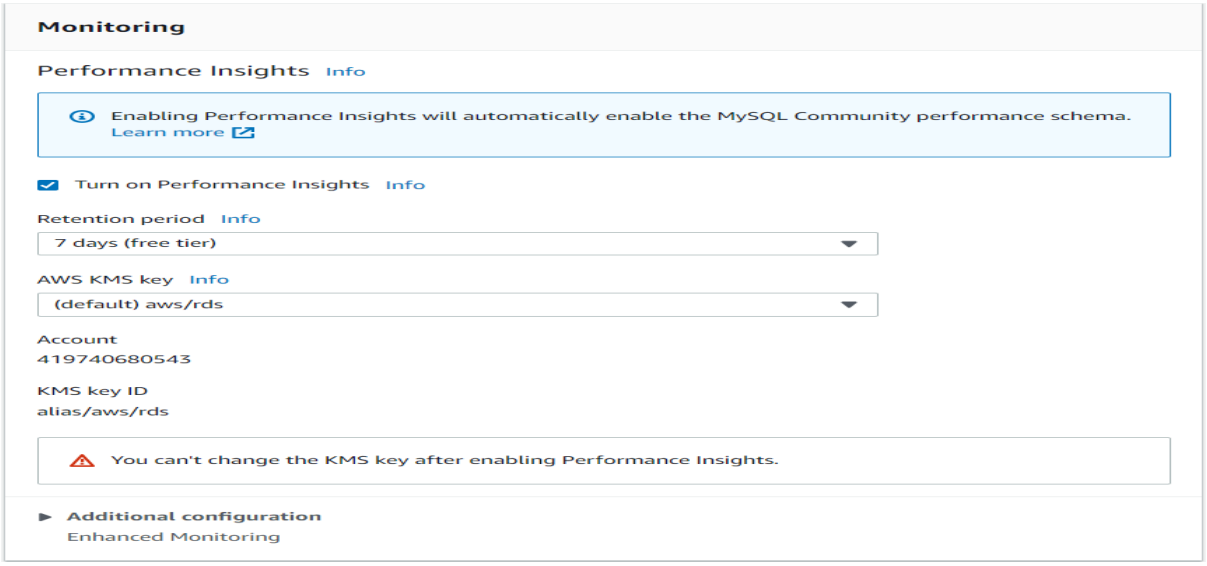


Never allow rds to public and sg will be able to modify later also so for now go with default sg

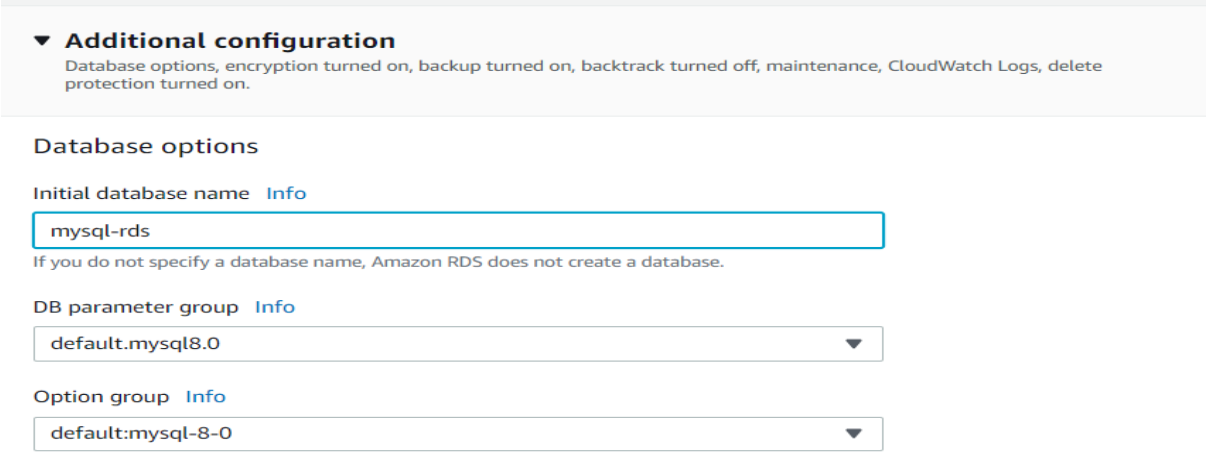
h. Go with password authentication



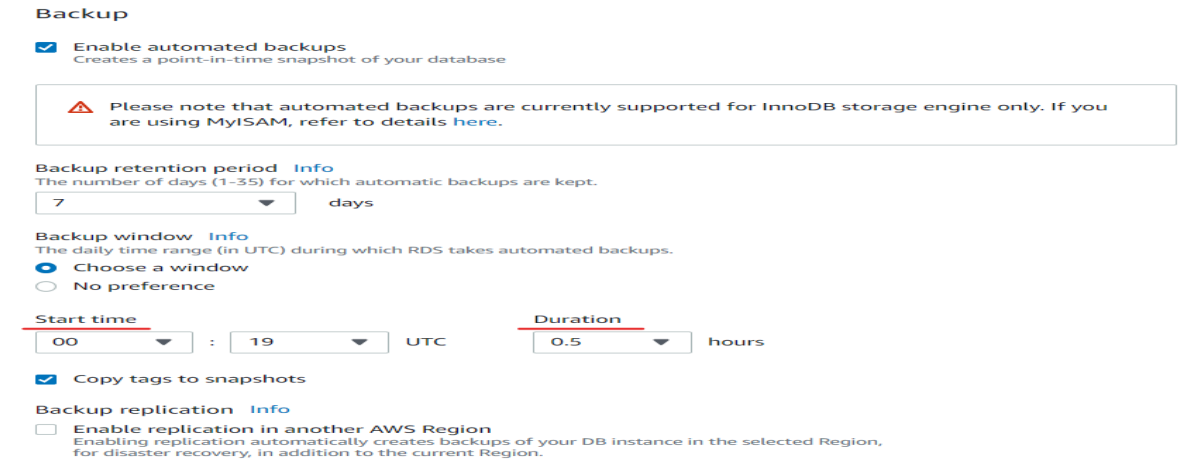
i. Monitoring ….in the retention period always go with the maximum one



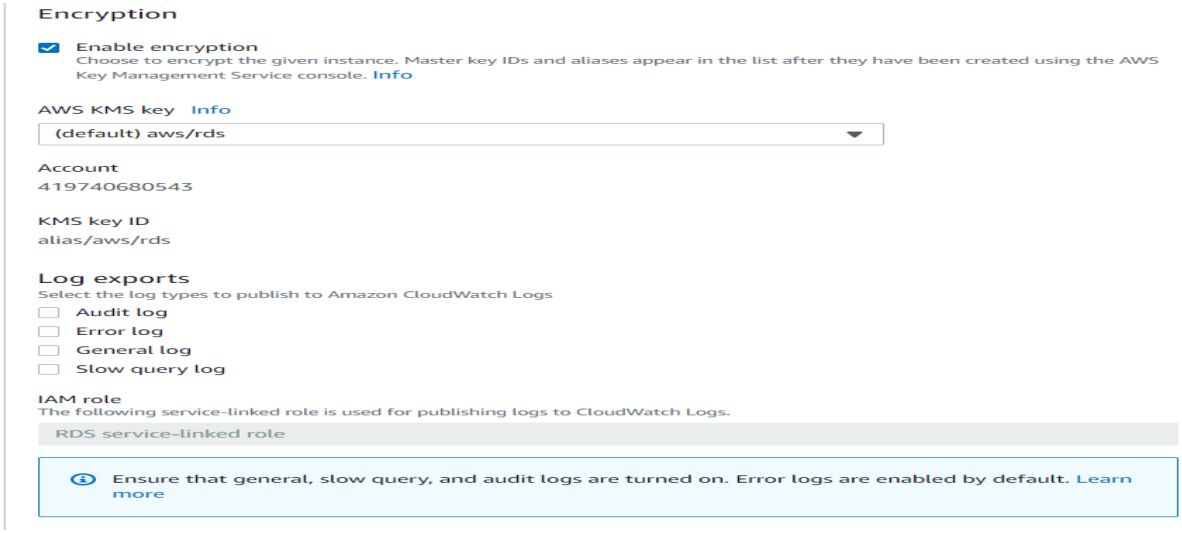
j. Give the database name

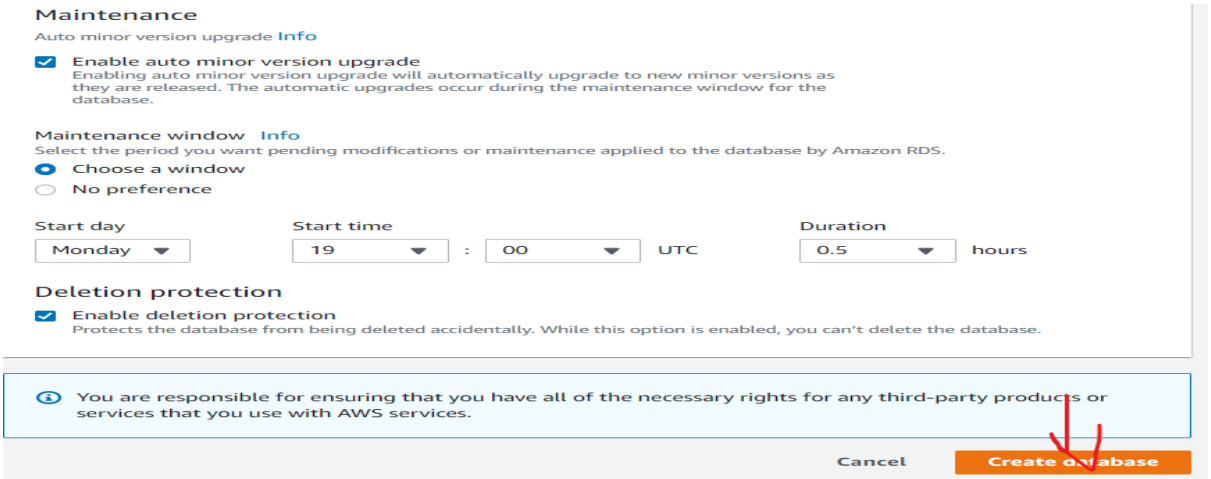


k. Backup settings set work off timings

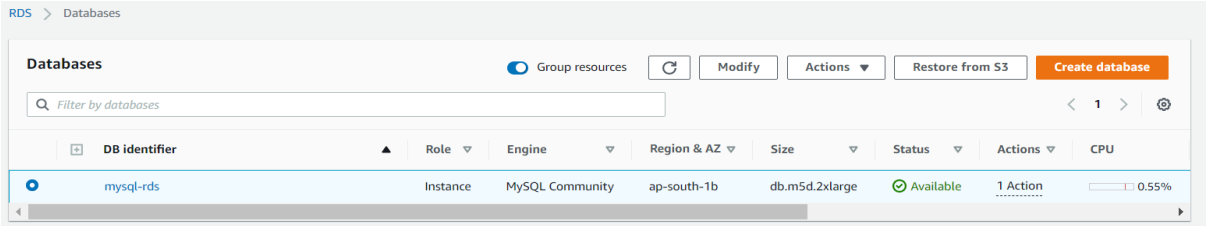


l. encryption





Now the rds is created successfully



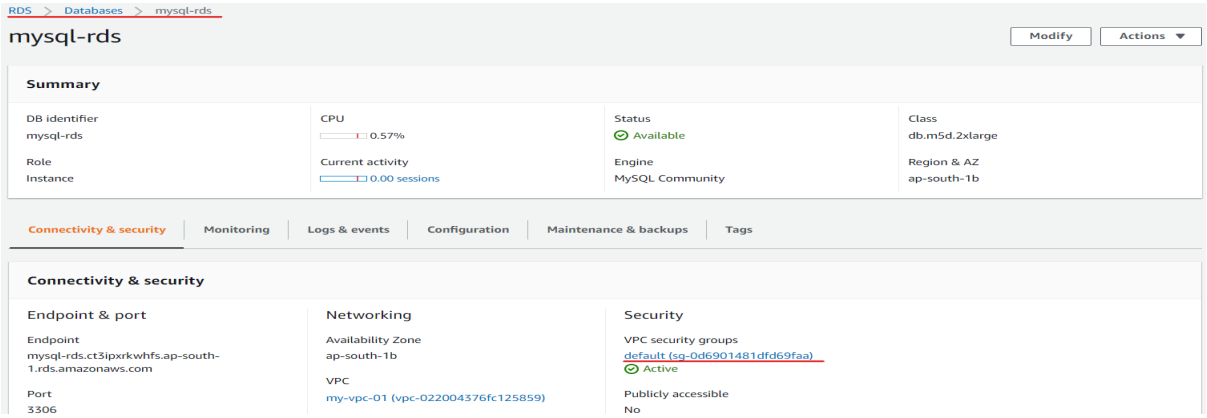
Now try to connect to rds from local

```
C:\Users\Anil>telnet mysql-rds.ct3ipxrkwhfs.ap-south-1.rds.amazonaws.com "3306"
Connecting To mysql-rds.ct3ipxrkwhfs.ap-south-1.rds.amazonaws.com...Could not open connection
 to the host, on port 3306: Connect failed
```

Local to private subnet we can't connect directly.
We can connect via ssh tunnelling (see the doc ssh tunnelling)
Or
We can connect from the bastion. Try from bastion

```
[root@ip-10-0-221-181 ~]# telnet mysql-rds.ct3ipxrkwhfs.ap-south-1.rds.amazonaws.com 3306
Trying 10.0.207.129...
telnet: connect to address 10.0.207.129: Connection timed out
```

We have to allow 3306 from bastion for the connection
>>>goto the rds and select it in the connectivity and configuration section we have all details about the rds click on the security group id in the security column



Click on the sg it will take you to the sg and at there edit inbound rule allow 3306 from bastion-sg and try the same command again it will connect

```
sh-5.2$ telnet mysql-rds.ct3ipxrkwhfs.ap-south-1.rds.amazonaws.com 3306
Trying 10.0.207.129...
Connected to mysql-rds.ct3ipxrkwhfs.ap-south-1.rds.amazonaws.com.
Escape character is '^]'.
```

Well …. Telnet is saying just whether there is connectivity or not. Now we are confirmed connectivity is there from bastion to ec2.
Like ssh we need mysql client to connect to the rds.soo install mysql client in the bastion

To install mysql client run the following commands

sudo dnf update -y

sudo dnf install -y httpd wget php-fpm php-mysqli php-json php php-devel

sudo dnf install mariadb105-server -y

These commands will install the mysql client

Now mysql is there in the bastion. Connect with rds

mysql -h <rds endpoint> -u <username> -p

mysql -h mysql-rds.ct3ipxrkwhfs.ap-south-1.rds.amazonaws.com -u master_user -p

```
sh-5.2$ mysql -h mysql-rds.ct3ipxrkwhfs.ap-south-1.rds.amazonaws.com -u master_user -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 210
Server version: 8.0.32 Source distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MySQL [(none)]>
```

Now u r in the rds

Run some commands

show databases; ----------gives the list of databases

create database <databaseName> ----------creates a database

use <databaseName> ----------enters into that database

show tables; ----------shows tables

select * from <tableName> ---------shows the columns and rows of the selected table

```
MySQL [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| mysql_rds          |
| performance_schema |
| sys                |
+--------------------+
5 rows in set (0.002 sec)
```

```
MySQL [(none)]> create database test;
Query OK, 1 row affected (0.008 sec)
```

```
MySQL [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| mysql_rds          |
| performance_schema |
| sys                |
| test               |
+--------------------+
6 rows in set (0.001 sec)
```

Observe the outputs test database is created

```
MySQL [test]> use mysql;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
```

```
MySQL [mysql]> show tables;
+------------------------------------------------------+
| Tables_in_mysql                                      |
+------------------------------------------------------+
| columns_priv                                         |
| component                                            |
| db                                                   |
| default_roles                                        |
| engine_cost                                          |
| func                                                 |
| general_log                                          |
| global_grants                                        |
| gtid_executed                                        |
| help_category                                        |
| help_keyword                                         |
| help_relation                                        |
| help_topic                                           |
| innodb_index_stats                                   |
| innodb_table_stats                                   |
| password_history                                     |
| plugin                                               |
| procs_priv                                           |
| proxies_priv                                         |
| rds_configuration                                    |
| rds_global_status_history                            |
| rds_global_status_history_old                        |
| rds_heartbeat2                                       |
| rds_history                                          |
| rds_replication_status                               |
| rds_sysinfo                                          |
| replication_asynchronous_connection_failover         |
| replication_asynchronous_connection_failover_managed |
| replication_group_configuration_version              |
| replication_group_member_actions                     |
| role_edges                                           |
| server_cost                                          |
| servers                                              |
| slave_master_info                                    |
| slave_relay_log_info                                 |
| slave_worker_info                                    |
| slow_log                                             |
| tables_priv                                          |
| time_zone                                            |
| time_zone_leap_second                                |
| time_zone_name                                       |
| time_zone_transition                                 |
| time_zone_transition_type                            |
| user                                                 |
+------------------------------------------------------+
```

```
MySQL [mysql]> select * from user;
+-----------+------------------+-------------+-------------+-------------+-------------+-------------+-----------+-------------+---------------+--------------+-----------+------------+-----------------+------------+
----+------------+--------------+------------+-----------------------+------------------+--------------+-----------------+------------------+------------------+-
---------+------------------+------------+--------------+----------------------+----------+------------+-------------+--------------+---------------+-------------+----
-------------------+---------------------------------------------------------------------+------------------+-----------------------+-------------------+----
---------------------+------------------------+---------------------------+-----------------+
| Host      | User             | Select_priv | Insert_priv | Update_priv | Delete_priv | Create_priv | Drop_priv | Reload_priv | Shutdown_priv | Process_priv |
riv | Alter_priv | Show_db_priv | Super_priv | Create_tmp_table_priv | Lock_tables_priv | Execute_priv | Repl_slave_priv | Repl_client_priv | Create_view_priv |
ine_priv | Create_user_priv | Event_priv | Trigger_priv | Create_tablespace_priv | ssl_type | ssl_cipher | x509_issuer | x509_subject | max_questions | max_upda
gin                 | authentication_string                                               | password_expired | password_last_changed | password_lifetime | acc
Password_reuse_history | Password_reuse_time | Password_require_current | User_attributes |
+-----------+------------------+-------------+-------------+-------------+-------------+-------------+-----------+-------------+---------------+--------------+-----------+------------+-----------------+------------+
----+------------+--------------+------------+-----------------------+------------------+--------------+-----------------+------------------+------------------+-
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-------------------+---------------------------------------------------------------------+------------------+-----------------------+-------------------+----
---------------------+------------------------+---------------------------+-----------------+
| %         | master_user      | Y           | Y           | Y           | Y           | Y           | Y         | Y           | N             | Y            |
    | Y          | Y            | N          | Y                     | Y                | Y            | Y               | Y                | Y                |
         | Y                | Y          | Y            | N                      |          |            |             |              |               0 |
ql_native_password | *25244CF250BFE4A80510E0A76F20BF87274264FC                              | N                | 2023-04-14 15:20:15   |              NULL | N
                   NULL |                     NULL | NULL                      | NULL            |
| localhost | mysql.infoschema | Y           | N           | N           | N           | N           | N         | N           | N             | N            |
    | N          | N            | N          | N                     | N                | N            | N               | N                | N                |
         | N                | N          | N            | N                      |          |            |             |              |               0 |
hing_sha2_password | $A$005$THISISACOMBINATIONOFINVALIDSALTANDPASSWORDTHATMUSTNEVERBRBEUSED | N                | 2023-04-14 15:20:01   |              NULL | Y
                   NULL |                     NULL | NULL                      | NULL            |
| localhost | mysql.session    | N           | N           | N           | N           | N           | N         | N           | N             | N            |
```