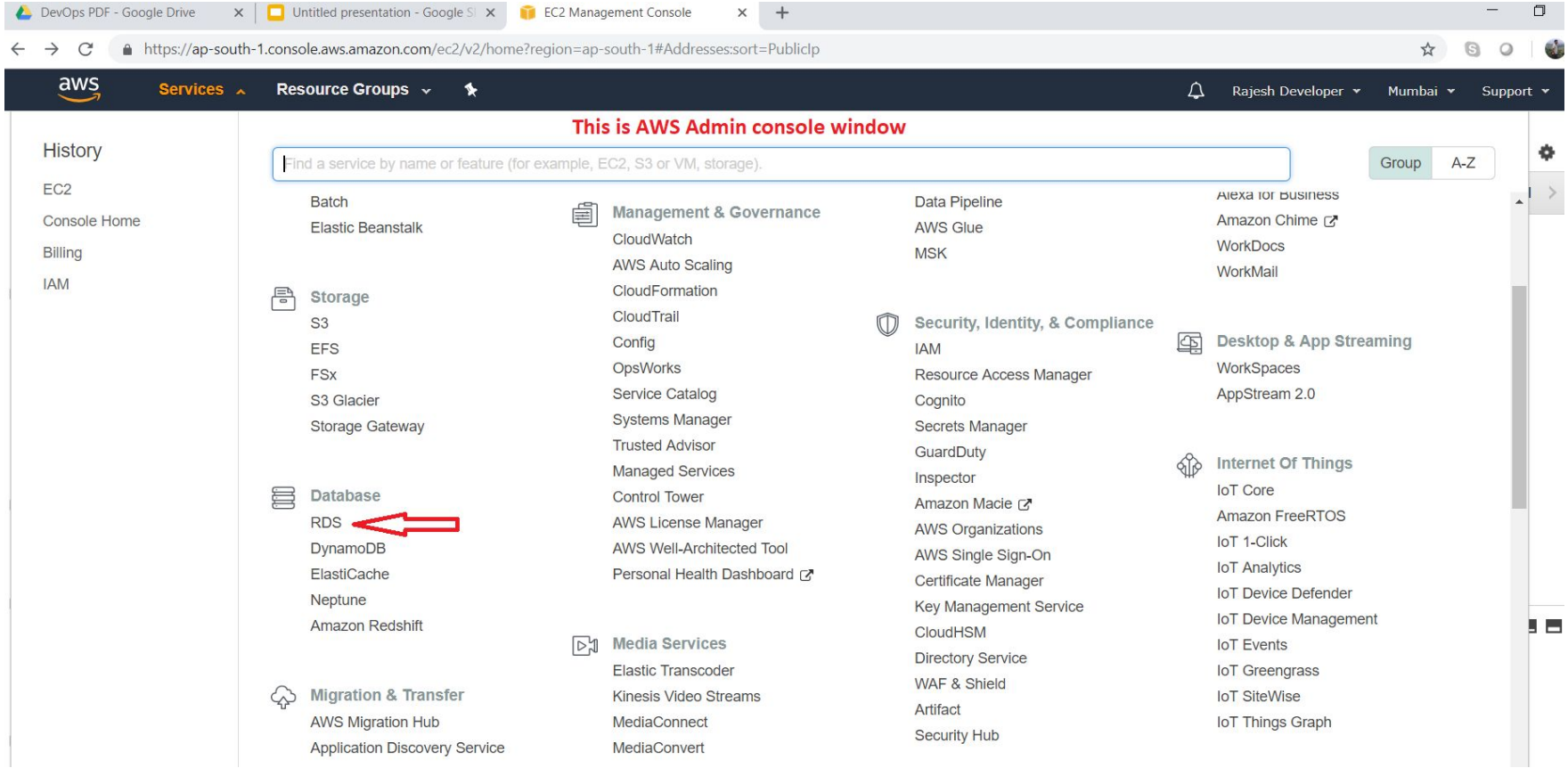
Relational Database Services (RDS)

1. Amazon Relational Database Service (Amazon RDS) is a web service that makes it easier to set up, operate, and scale a relational database in the cloud. it provides cost-efficient, resizable capacity for an industry-standard relational database and manages common database administration tasks.
2. Amazon RDS manages backups, software patching, automatic failure detection, and recovery.
3. To deliver a managed service experience, Amazon RDS doesn't provide shell access to DB instances, and it restricts access to certain system procedures and tables that require advanced privileges.
4. You can have automated backups performed when you need them, or manually create your own backup snapshot. You can use these backups to restore a database. The Amazon RDS restore process works reliably and efficiently.
5. You can get high availability with a primary instance and a synchronous secondary instance that you can fail over to when problems occur. You can also use MySQL, MariaDB, or PostgreSQL Read Replicas to increase read scaling.
6. You can use the database products you are already familiar with: MySQL, MariaDB, PostgreSQL, Oracle, Microsoft SQL Server.
7. Each DB instance runs a DB engine. Amazon RDS currently supports the MySQL, MariaDB, PostgreSQL, Oracle, and Microsoft SQL Server DB engines. Each DB engine has its own supported features, and each version of a DB engine may include specific features. Additionally, each DB engine has a set of parameters in a DB parameter group that control the behavior of the databases that it manages.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This is AWS Admin console window
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Find a service by name or feature (for example, EC2, S3 or VM, storage).
Group
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EFS
FSx
S3 Glacier
Storage Gateway
Database
RDS
DynamoDB
ElastiCache
Neptune
Amazon Redshift
Migration & Transfer
AWS Migration Hub
Application Discovery Service
Management & Governance
CloudWatch
AWS Auto Scaling
CloudFormation
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OpsWorks
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Systems Manager
Trusted Advisor
Managed Services
Control Tower
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AWS Well-Architected Tool
Personal Health Dashboard
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Kinesis Video Streams
MediaConnect
MediaConvert
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Resource Access Manager
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GuardDuty
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Key Management Service
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Directory Service
WAF & Shield
Artifact
Security Hub
Alexa for Business
Amazon Chime
WorkDocs
WorkMail
Desktop & App Streaming
WorkSpaces
AppStream 2.0
Internet Of Things
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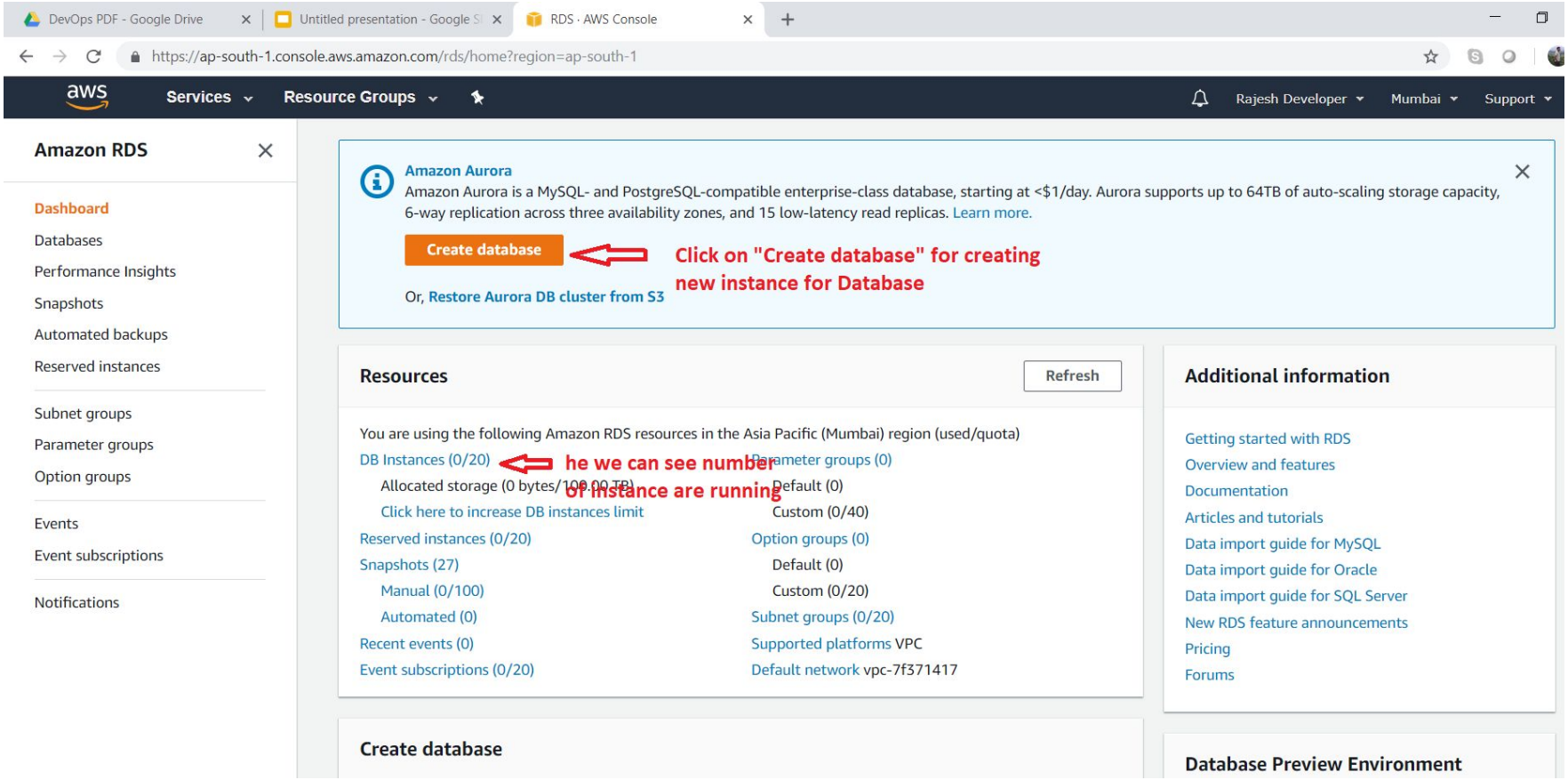
IoT 1-Click
IoT Analytics
IoT Device Defender
IoT Device Management
IoT Events
IoT Greengrass
IoT SiteWise
IoT Things Graph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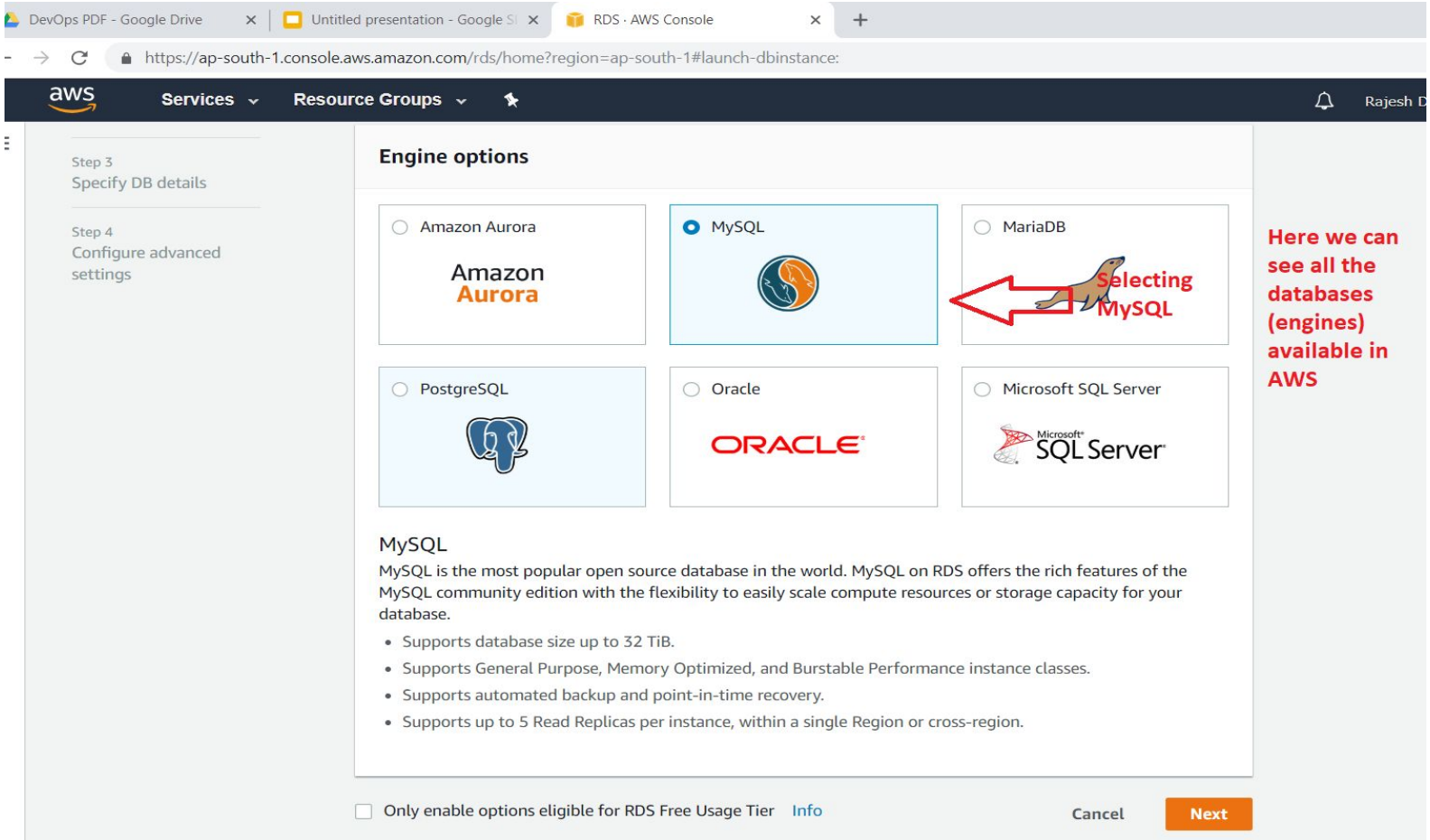
Amazon Aurora
Amazon Aurora is a MySQL- and PostgreSQL-compatible enterprise-class database, starting at <$1/day. Aurora supports up to 64TB of auto-scaling storage capacity, 6-way replication across three availability zones, and 15 low-latency read replicas. Learn more.
Create database
Click on "Create database" for creating new instance for Database
Or, Restore Aurora DB cluster from S3
Resources
Refresh
You are using the following Amazon RDS resources in the Asia Pacific (Mumbai) region (used/quota)
DB Instances (0/20)
he we can see number of instance are running
Allocated storage (0 bytes/100.00 TB)
Click here to increase DB instances limit
Reserved instances (0/20)
Snapshots (27)
Manual (0/100)
Automated (0)
Recent events (0)
Event subscriptions (0/20)
Parameter groups (0)
Default (0)
Custom (0/40)
Option groups (0)
Default (0)
Custom (0/20)
Subnet groups (0/20)
Supported platforms VPC
Default network vpc-7f371417
Additional information
Getting started with RDS
Overview and features
Documentation
Articles and tutorials
Data import guide for MySQL
Data import guide for Oracle
Data import guide for SQL Server
New RDS feature announcements
Pricing
Forums
Create database
Database Preview Environment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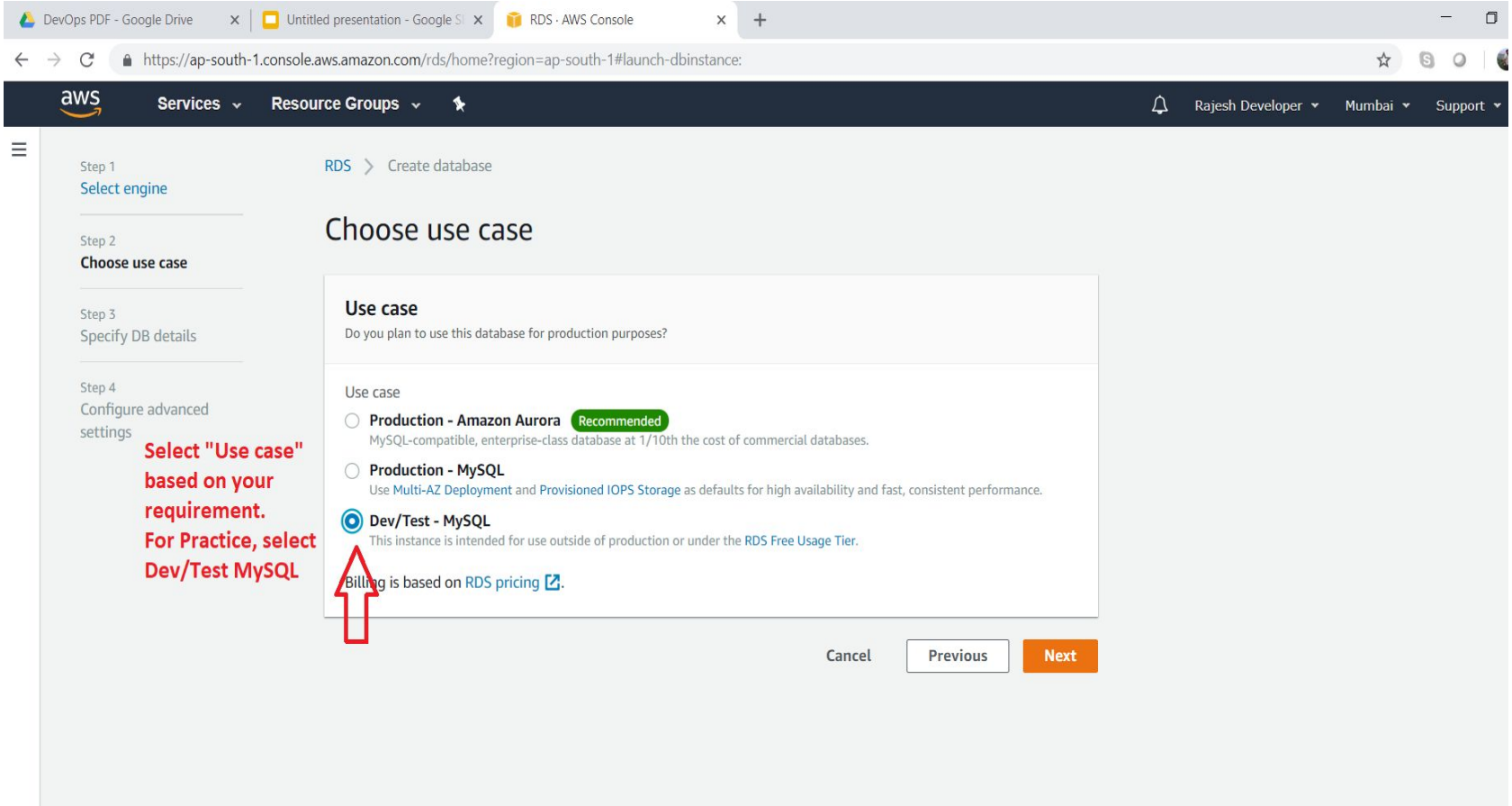
Step 3
Specify DB details
Step 4
Configure advanced settings
Engine options
Amazon Aurora
Amazon Aurora
MySQL
MariaDB
Selecting MySQL
PostgreSQL
Oracle
ORACLE
Microsoft SQL Server
Microsoft SQL Server
MySQL
MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.
Supports database size up to 32 TiB.
Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
Supports automated backup and point-in-time recovery.
Supports up to 5 Read Replicas per instance, within a single Region or cross-region.
Only enable options eligible for RDS Free Usage Tier
Info
Cancel
Next
Here we can see all the databases (engines) available in AWS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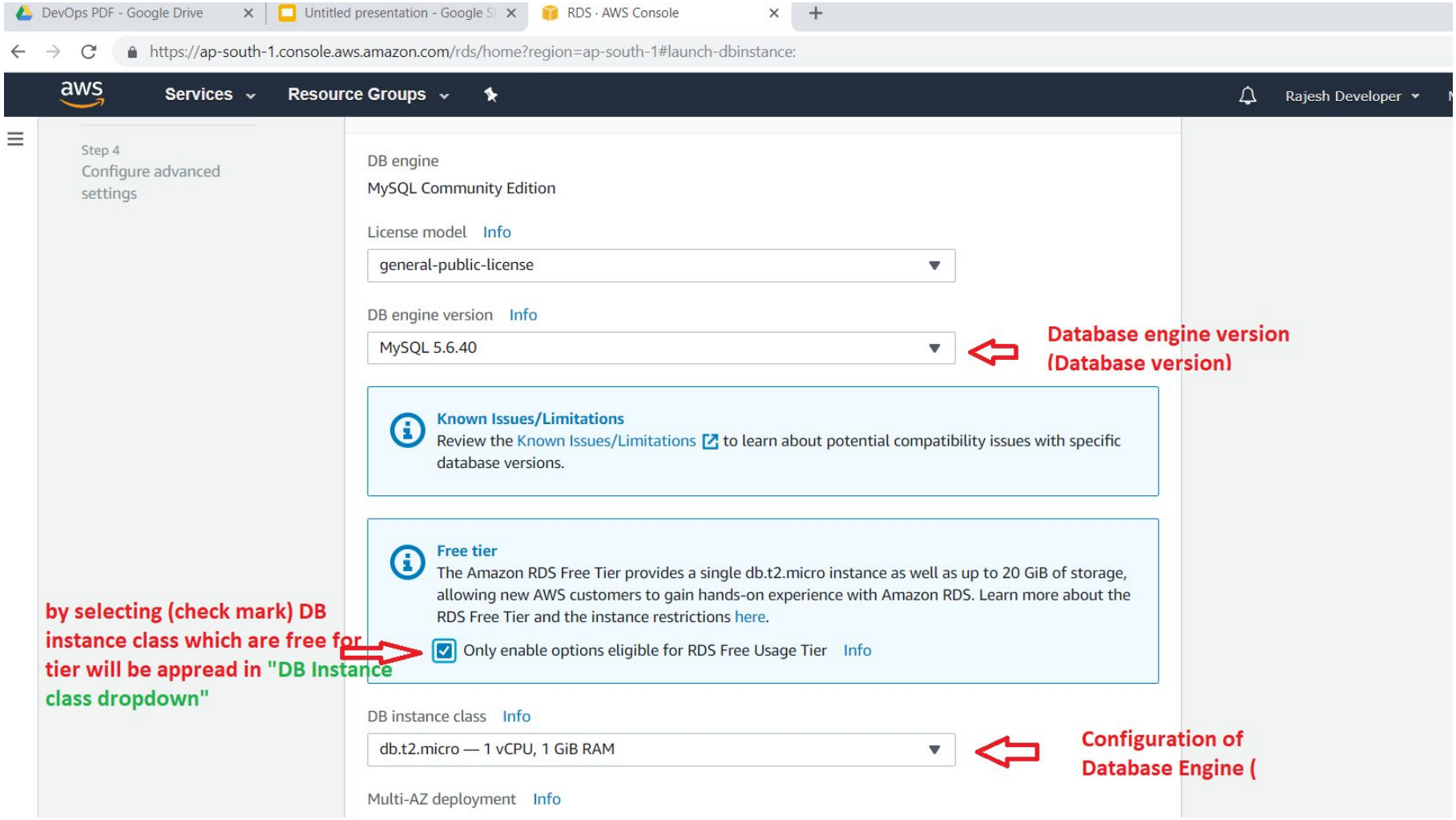
Support
Step 1
Select engine
Step 2
Choose use case
Step 3
Specify DB details
Step 4
Configure advanced settings
RDS > Create database
Choose use case
Use case
Do you plan to use this database for production purposes?
Use case
Production - Amazon Aurora
Recommended
MySQL-compatible, enterprise-class database at 1/10th the cost of commercial databases.
Production - MySQL
Use Multi-AZ Deployment and Provisioned IOPS Storage as defaults for high availability and fast, consistent performance.
Dev/Test - MySQL
This instance is intended for use outside of production or under the RDS Free Usage Tier.
Billing is based on RDS pricing.
Select "Use case" based on your requirement.
For Practice, select Dev/Test MySQL
Cancel
Previous
Next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Step 4
Configure advanced settings
DB engine
MySQL Community Edition
License model Info
general-public-license
DB engine version Info
MySQL 5.6.40
Database engine version (Database version)
Known Issues/Limitations
Review the Known Issues/Limitations to learn about potential compatibility issues with specific database versions.
Free tier
The Amazon RDS Free Tier provides a single db.t2.micro instance as well as up to 20 GiB of storage, allowing new AWS customers to gain hands-on experience with Amazon RDS. Learn more about the RDS Free Tier and the instance restrictions here.
Only enable options eligible for RDS Free Usage Tier Info
by selecting (check mark) DB instance class which are free for tier will be appread in "DB Instance class dropdown"
DB instance class Info
db.t2.micro — 1 vCPU, 1 GiB RAM
Configuration of Database Engine (
Multi-AZ deployment Info

Allocated storage

20 GiB

Memory allocated for storage

(Minimum: 20 GiB, Maximum: 20 GiB) Higher allocated storage may improve IOPS performance.

Settings

Name of DB instance, this is used for identifing from all available Databases

DB instance identifier Info

Specify a name that is unique for all DB instances owned by your AWS account in the current region.

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DB instance identifier is case insensitive, but stored as all lower-case, as in "mydbinstance". Must contain from 1 to 63 alphanumeric characters or hyphens (1 to 15 for SQL Server). First character must be a letter. Cannot end with a hyphen or contain two consecutive hyphens.

This is master user name, you have to remember. through this only you will be login. this user is having all permissions.

Master username Info

Specify an alphanumeric string that defines the login ID for the master user.

rajeshdeveloper

Master Username must start with a letter. Must contain 1 to 16 alphanumeric characters.

Master password Info

••••••••

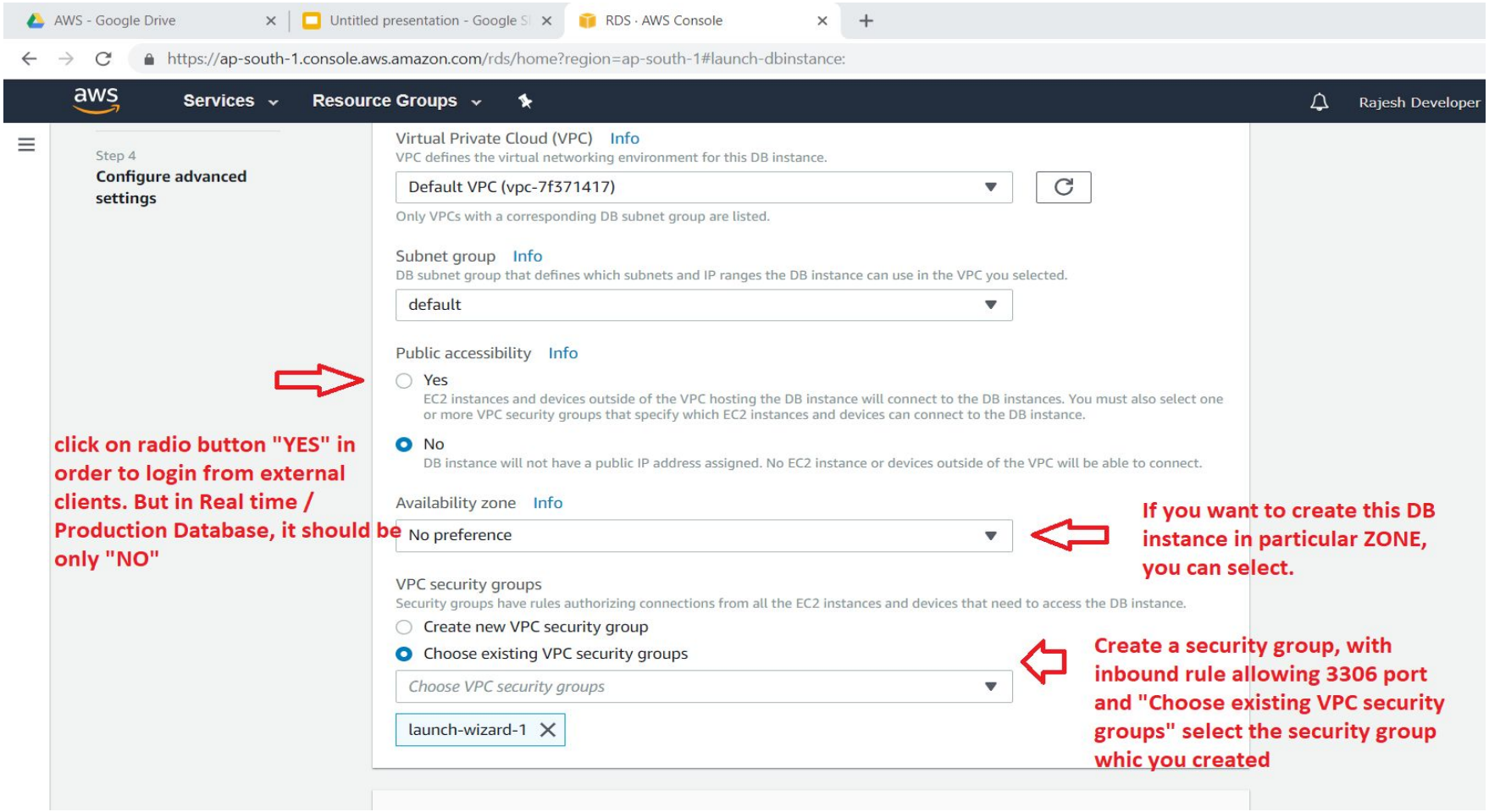
Confirm password Info

••••••••

Master Password must be at least eight characters long, as in "mypassword". Can be any printable ASCII character except "/", """, or "@".

Password & Confirm Password

Cancel Previous Next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Step 4
Configure advanced settings
Virtual Private Cloud (VPC) Info
VPC defines the virtual networking environment for this DB instance.
Default VPC (vpc-7f371417)
Only VPCs with a corresponding DB subnet group are listed.
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 accessibility Info
Yes
EC2 instances and devices outside of the VPC hosting the DB instance will connect to the DB instances. You must also select one or more VPC security groups that specify which EC2 instances and devices can connect to the DB instance.
No
DB instance will not have a public IP address assigned. No EC2 instance or devices outside of the VPC will be able to connect.
click on radio button "YES" in order to login from external clients. But in Real time / Production Database, it should be only "NO"
Availability zone Info
No preference
If you want to create this DB instance in particular ZONE, you can select.
VPC security groups
Security groups have rules authorizing connections from all the EC2 instances and devices that need to access the DB instance.
Create new VPC security group
Choose existing VPC security groups
Choose VPC security groups
launch-wizard-1
Create a security group, with inbound rule allowing 3306 port and "Choose existing VPC security groups" select the security group whic you created

Database options

This Database name is your application Database name, i.e in Database Engine, sample database is created

Database name Info

sample

Note: if no database name is specified then no initial MySQL database will be created on the DB Instance.

Port Info

TCP/IP port the DB instance will use for application connections.

3306

This is a Default port no. if you want you can change, if you change, make sure that your security group should have this changed port number in inboud rules

DB parameter group Info

default.mysql5.6

Option group Info

default:mysql-5-6

IAM DB authentication Info

- ○ Enable IAM DB authentication
  Manage your database user credentials through AWS IAM users and roles.
- ◉ Disable

Encryption

Backup

Please note that automated backups are currently supported for InnoDB storage engine only. If you are using MyISAM, refer to detail here [F2]

This is for backup your database, if your DB Engine is corrupted or lost, you can take backup.
if you give "NO Preference" then at some point of time it will take backup.
if you "select Window" you can give time when to backup for every 7 days

Backup retention period Info
Select the number of days that Amazon RDS should retain automatic backups of this DB instance.
7 days

Backup window Info
- (•) Select window
- ( ) No preference

Start Time
01 : 00 UTC

Duration
2 hours

[x] Copy tags to snapshots

Monitoring

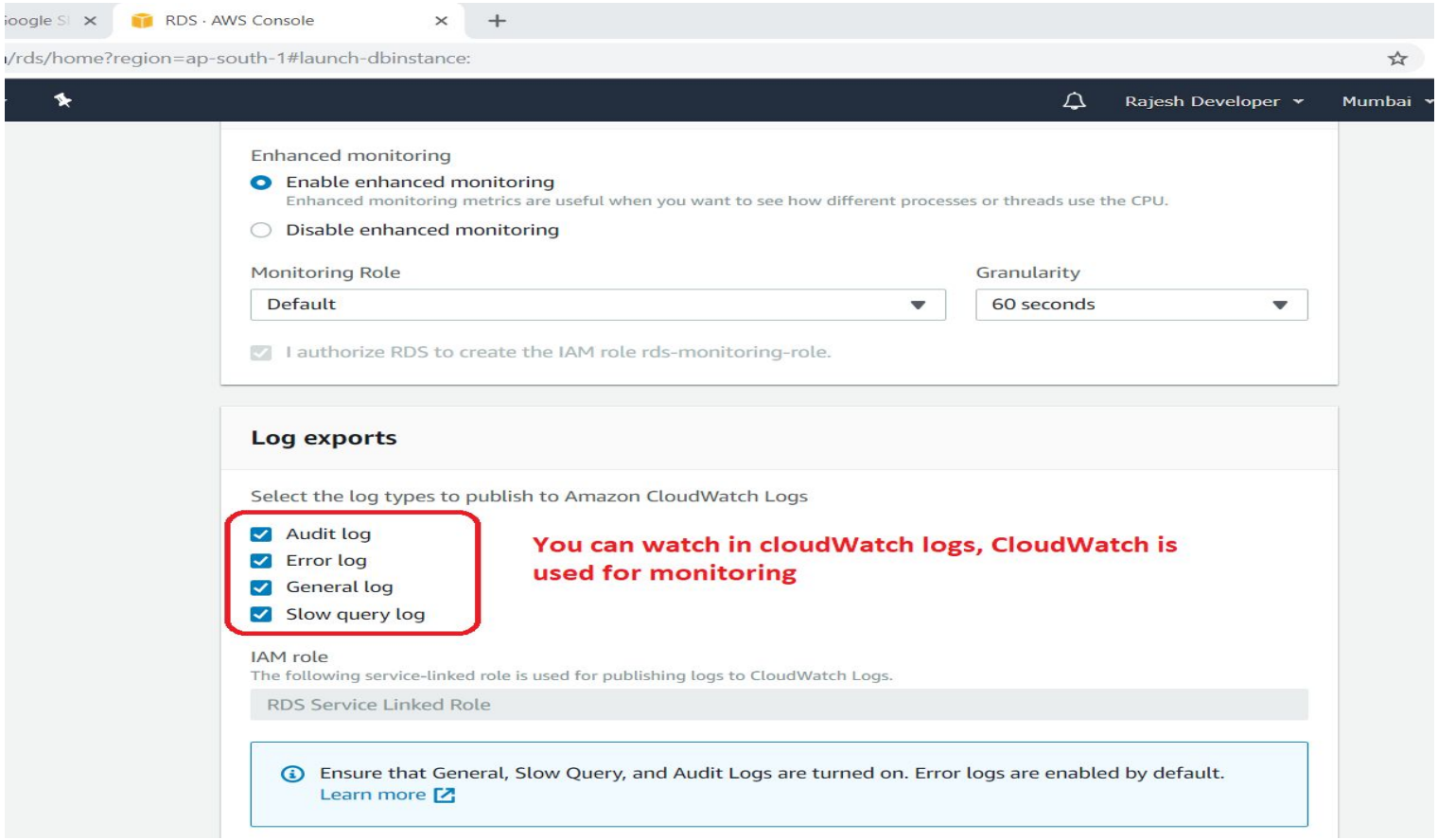
Enhanced monitoring
- (•) Enable enhanced monitoring
  Enhanced monitoring metrics are useful when you want to see how different processes or threads use the CPU.
- ( ) Disable enhanced monitoring

You can monitor all traffic with latest of 60 sec

Monitoring Role
Default

Granularity
60 seconds

[x] I authorize RDS to create the IAM role rds-monitoring-role.


RDS · AWS Console
/rds/home?region=ap-south-1#launch-dbinstance:
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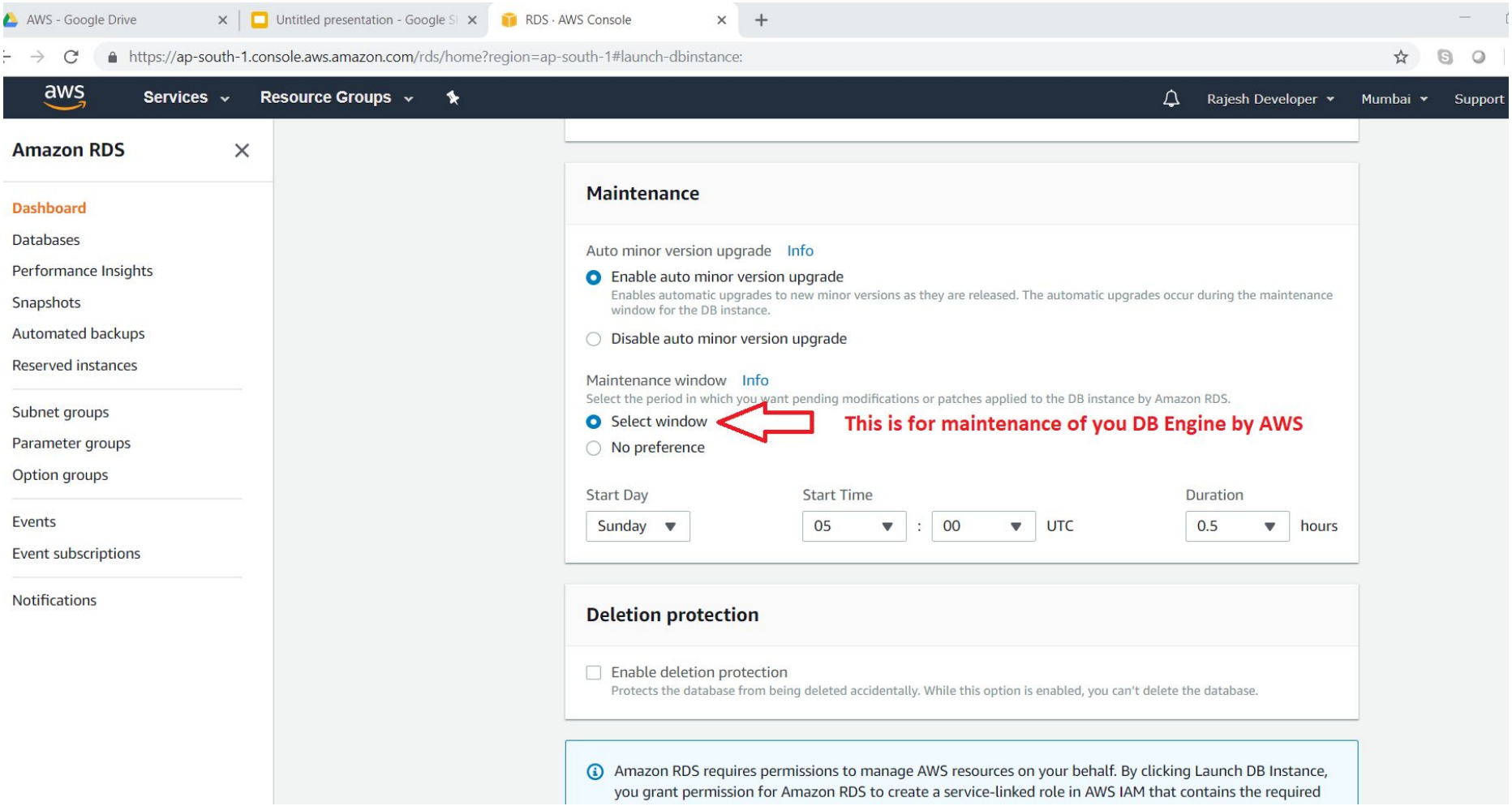
Mumbai
Enhanced monitoring
Enable enhanced monitoring
Enhanced monitoring metrics are useful when you want to see how different processes or threads use the CPU.
Disable enhanced monitoring
Monitoring Role
Default
Granularity
60 seconds
I authorize RDS to create the IAM role rds-monitoring-role.
Log exports
Select the log types to publish to Amazon CloudWatch Logs
Audit log
Error log
General log
Slow query log
You can watch in cloudWatch logs, CloudWatch is used for monitoring
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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Subnet groups
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Option groups
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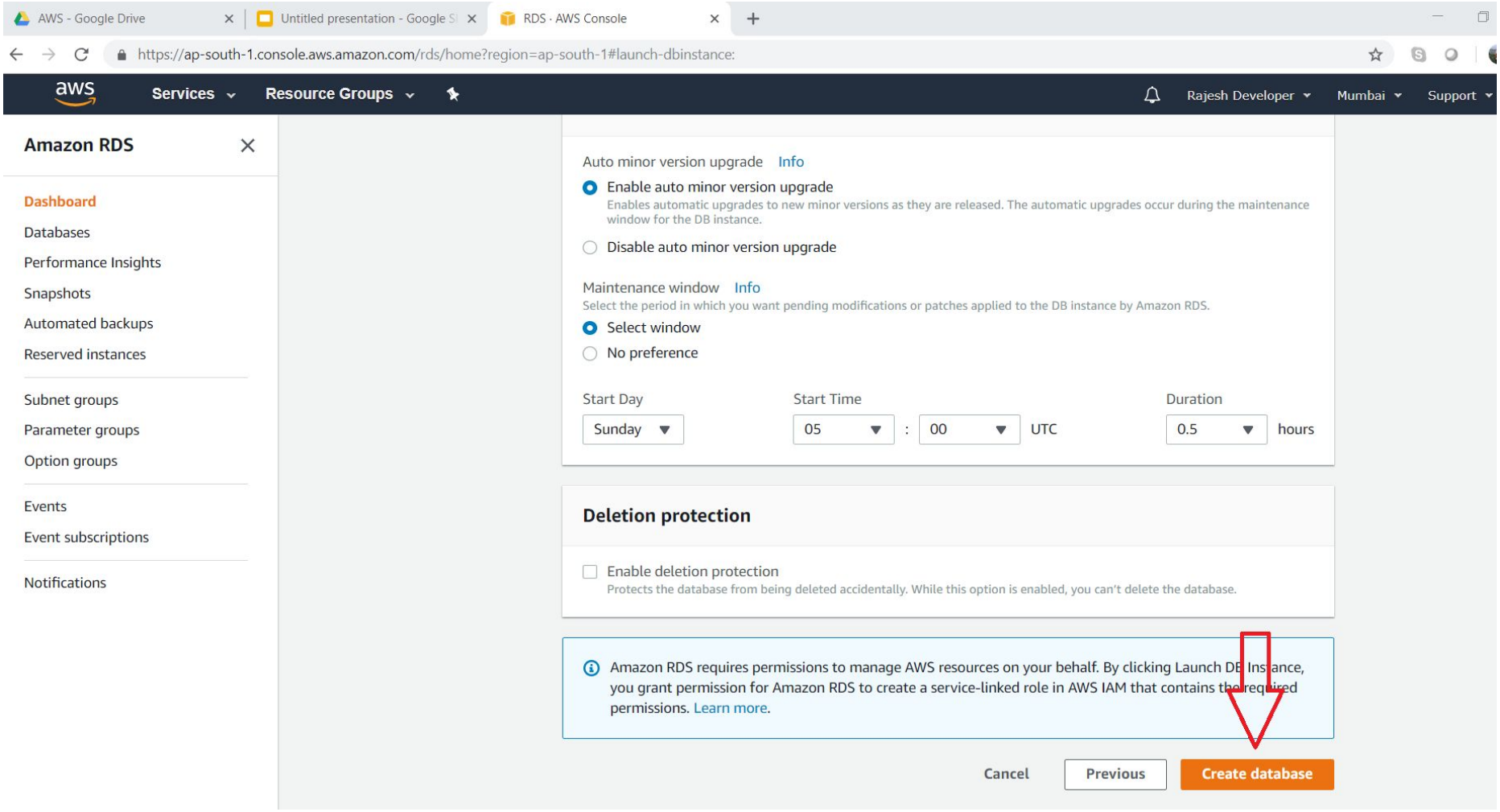
Event subscriptions
Notifications
Maintenance
Auto minor version upgrade Info
Enable auto minor version upgrade
Enables automatic upgrades to new minor versions as they are released. The automatic upgrades occur during the maintenance window for the DB instance.
Disable auto minor version upgrade
Maintenance window Info
Select the period in which you want pending modifications or patches applied to the DB instance by Amazon RDS.
Select window
No preference
This is for maintenance of you DB Engine by AWS
Start Day
Sunday
Start Time
05
00
UTC
Duration
0.5
hours
Deletion protection
Enable deletion protection
Protects the database from being deleted accidentally. While this option is enabled, you can't delete the database.
Amazon RDS requires permissions to manage AWS resources on your behalf. By clicking Launch DB Instance, you grant permission for Amazon RDS to create a service-linked role in AWS IAM that contains the required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Cancel
Previous
Create database

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https://ap-south-1.console.aws.amazon.com/rds/home?region=ap-south-1#launch-dbinstance:

aws Services Resource Groups Rajesh Developer

Amazon RDS

- Dashboard
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- Performance Insights
- Snapshots
- Automated backups
- Reserved instances
- Subnet groups
- Parameter groups
- Option groups
- Events
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- Notifications

RDS > Create database

Your DB instance is being created.

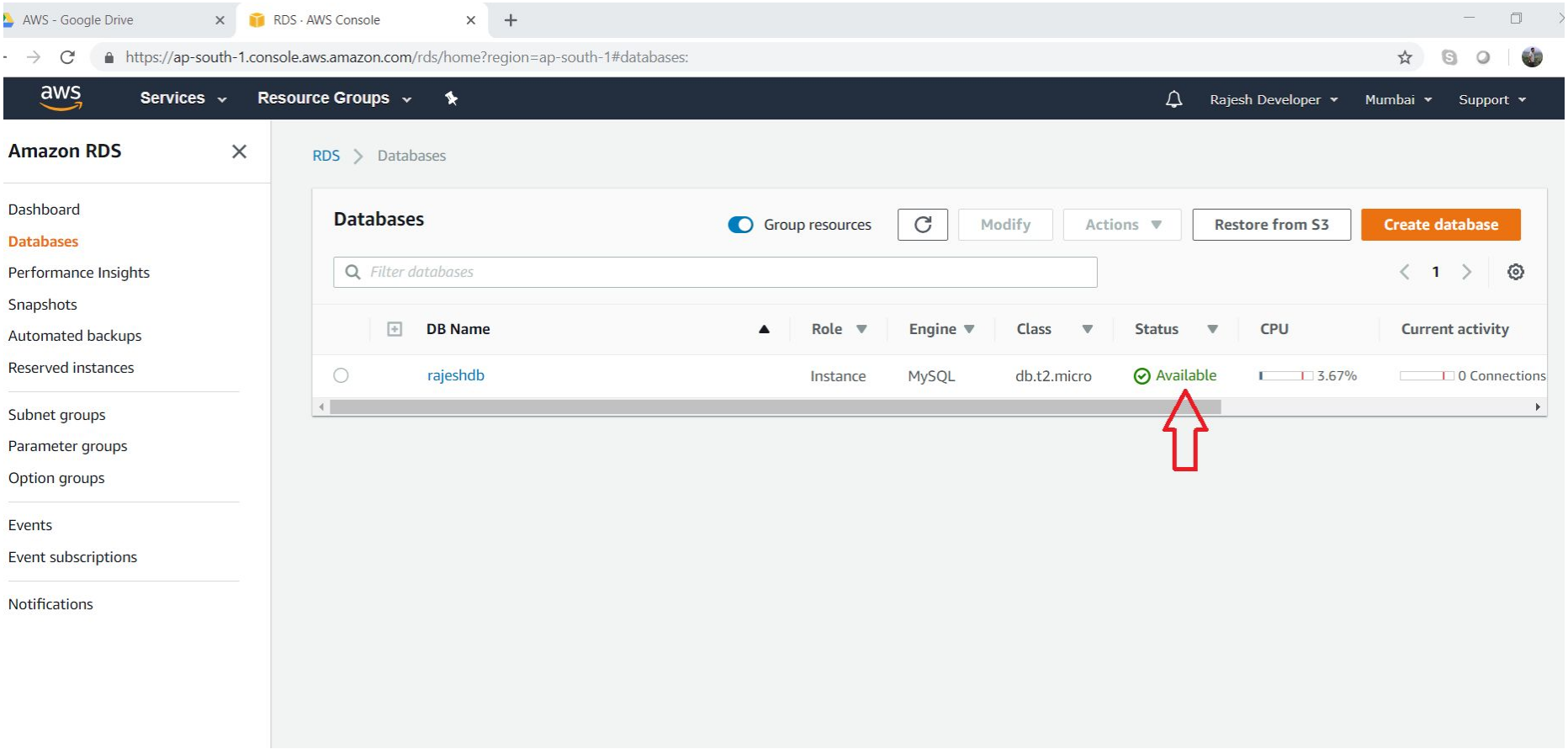
Note: Your instance may take a few minutes to launch.

Connecting to your DB instance

Once Amazon RDS finishes provisioning your DB instance, you can use a SQL client application or utility to connect to the instance.

Learn about connecting to your DB instance

All DB instances | View DB instance details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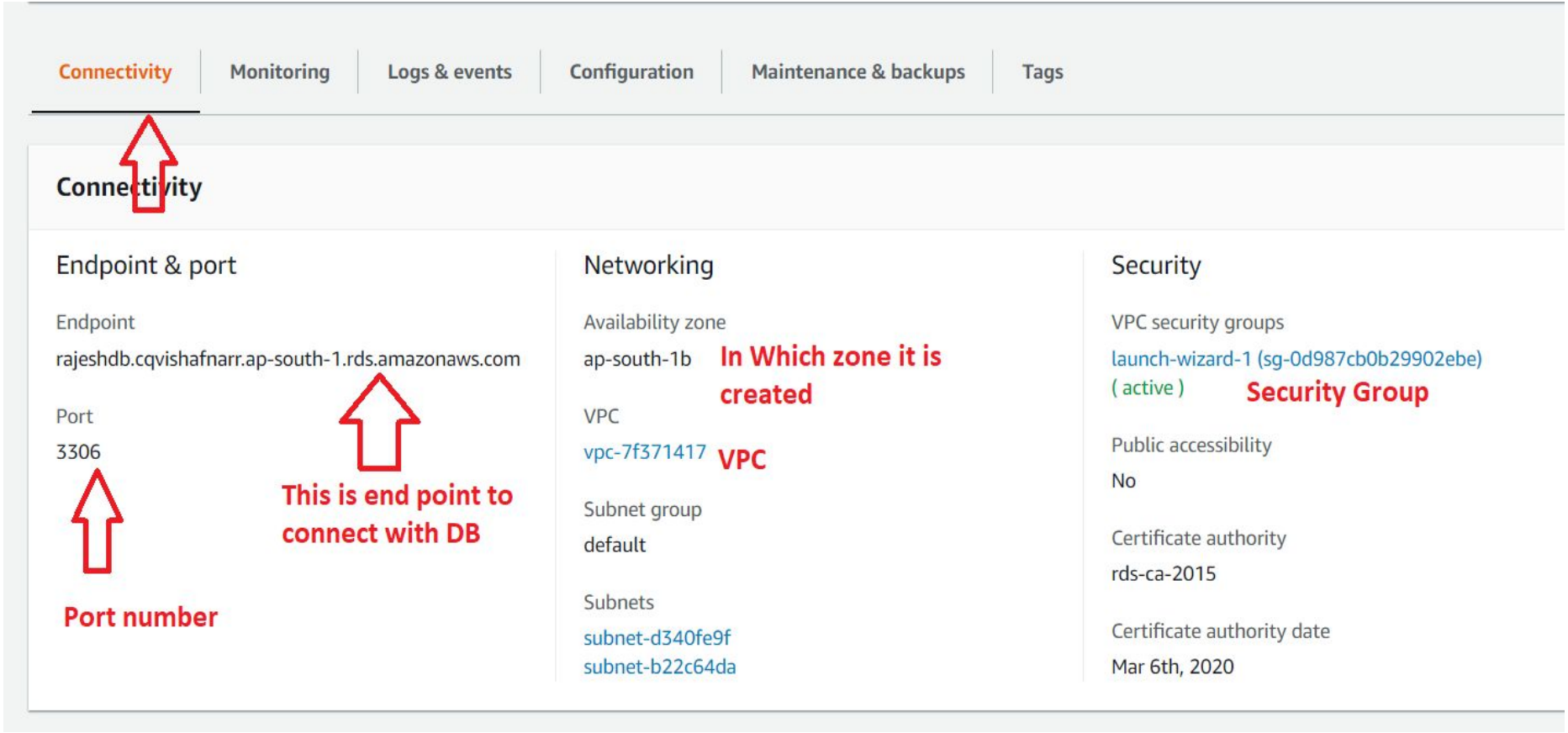
Create database
Filter databases
1
DB Name
Role
Engine
Class
Status
CPU
Current activity
rajeshdb
Instance
MySQL
db.t2.micro
Available
3.67%
0 Connections


Connectivity
Monitoring
Logs & events
Configuration
Maintenance & backups
Tags
Connectivity
Endpoint & port
Endpoint
rajeshdb.cqvishafnarr.ap-south-1.rds.amazonaws.com
Port
3306
This is end point to connect with DB
Port number
Networking
Availability zone
ap-south-1b
In Which zone it is created
VPC
vpc-7f371417
VPC
Subnet group
default
Subnets
subnet-d340fe9f
subnet-b22c64da
Security
VPC security groups
launch-wizard-1 (sg-0d987cb0b29902ebe)
(active)
Security Group
Public accessibility
No
Certificate authority
rds-ca-2015
Certificate authority date
Mar 6th, 2020

Connectivity | Monitoring | Logs & events | Configuration | Maintenance & backups | Tags

Instance

Configuration

DB instance id
rajeshdb

DB Engine Name

Engine version
5.6.40

Storage type
General Purpose (SSD)

IOPS
-

Storage
20 GiB

License model
General Public License

Instance class

Instance class
db.t2.micro

DB Engine Configuration, Based on this only speed of DB maters

vCPU
1

RAM
1 GB

Availability

Master username
rajeshdeveloper

this is Master User Name to login

IAM db authentication
Not Enabled

Multi AZ

Encryption

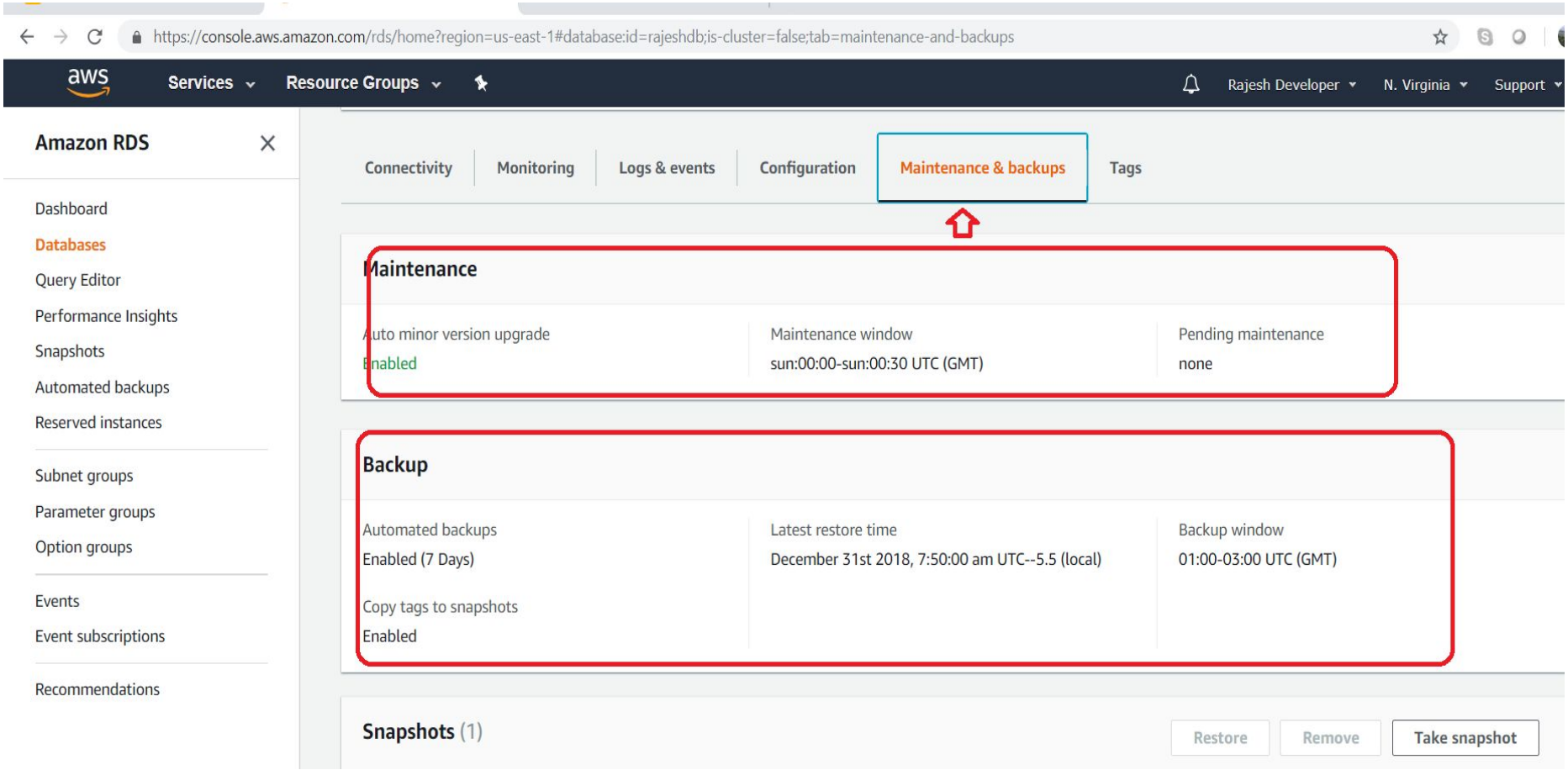
Encryption
Not Enabled

Performance insights

Performance Insights enabled
No

Published logs

CloudWatch Logs
Audit
Error
General
Slow query


https://console.aws.amazon.com/rds/home?region=us-east-1#database:id=rajeshdb;is-cluster=false;tab=maintenance-and-backups
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Maintenance
Auto minor version upgrade
Enabled
Maintenance window
sun:00:00-sun:00:30 UTC (GMT)
Pending maintenance
none
Backup
Automated backups
Enabled (7 Days)
Latest restore time
December 31st 2018, 7:50:00 am UTC--5.5 (local)
Backup window
01:00-03:00 UTC (GMT)
Copy tags to snapshots
Enabled
Snapshots (1)
Restore
Remove
Take snapshot

Create an EC2 Instance (Ubuntu) if not available
#sudo su root
#apt-get udate
#apt-get install mysql-client-core-5.6

Below is to connect with Database

Syntax:
#mysql -u <DB user name> -h <endpoint> -p
EX:
#mysql -u rajesh -h rajesh.....amazonaws.com -p
Enter password : ********