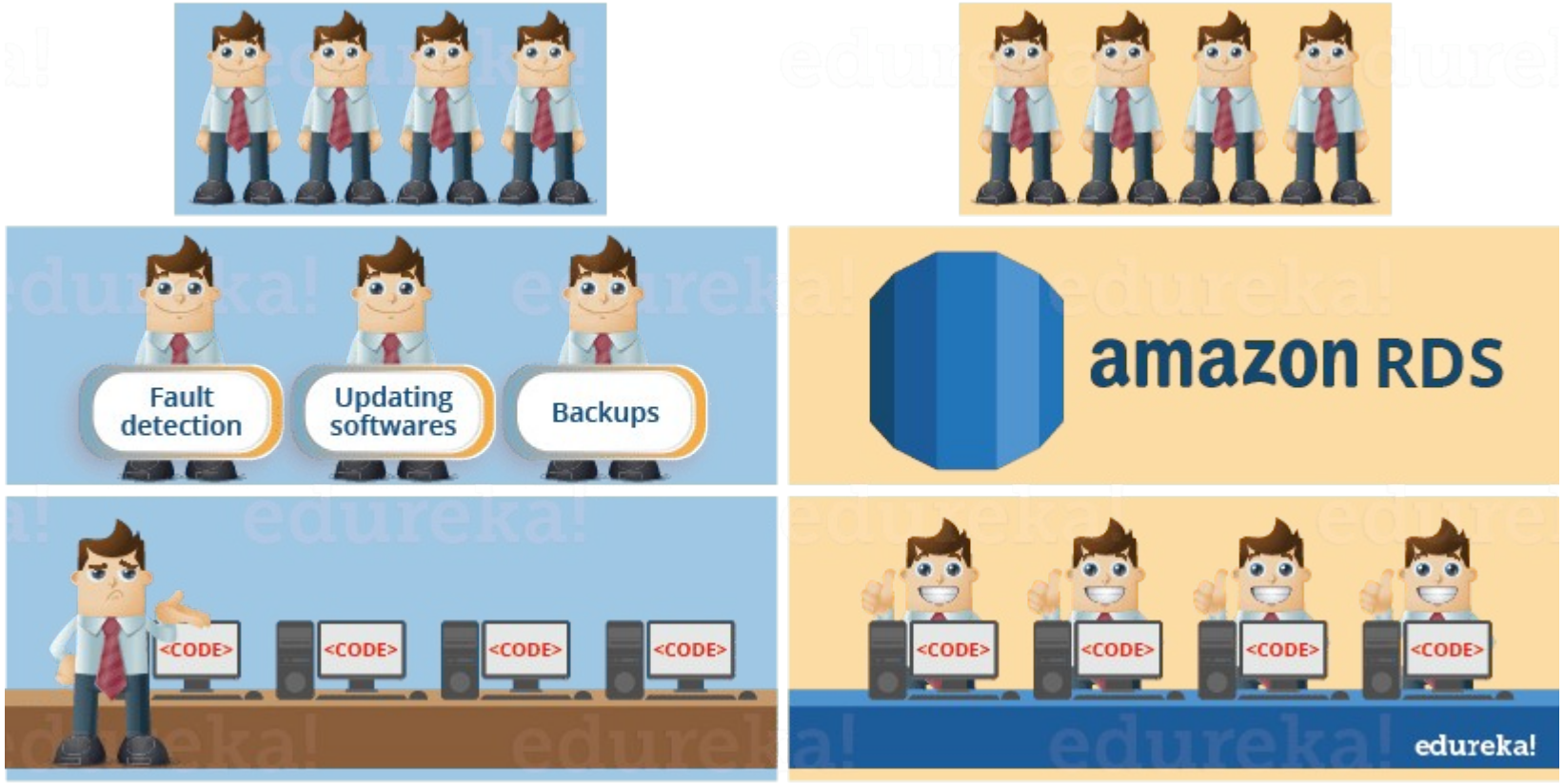

edureka!
ORACLE
Microsoft
SQL Server
Amazon
Aurora
PostgreSQL
MariaDB
MySQL
amazon
RDS


START

Amazon RDS


Fault detection
Updating softwares
Backups
amazon RDS
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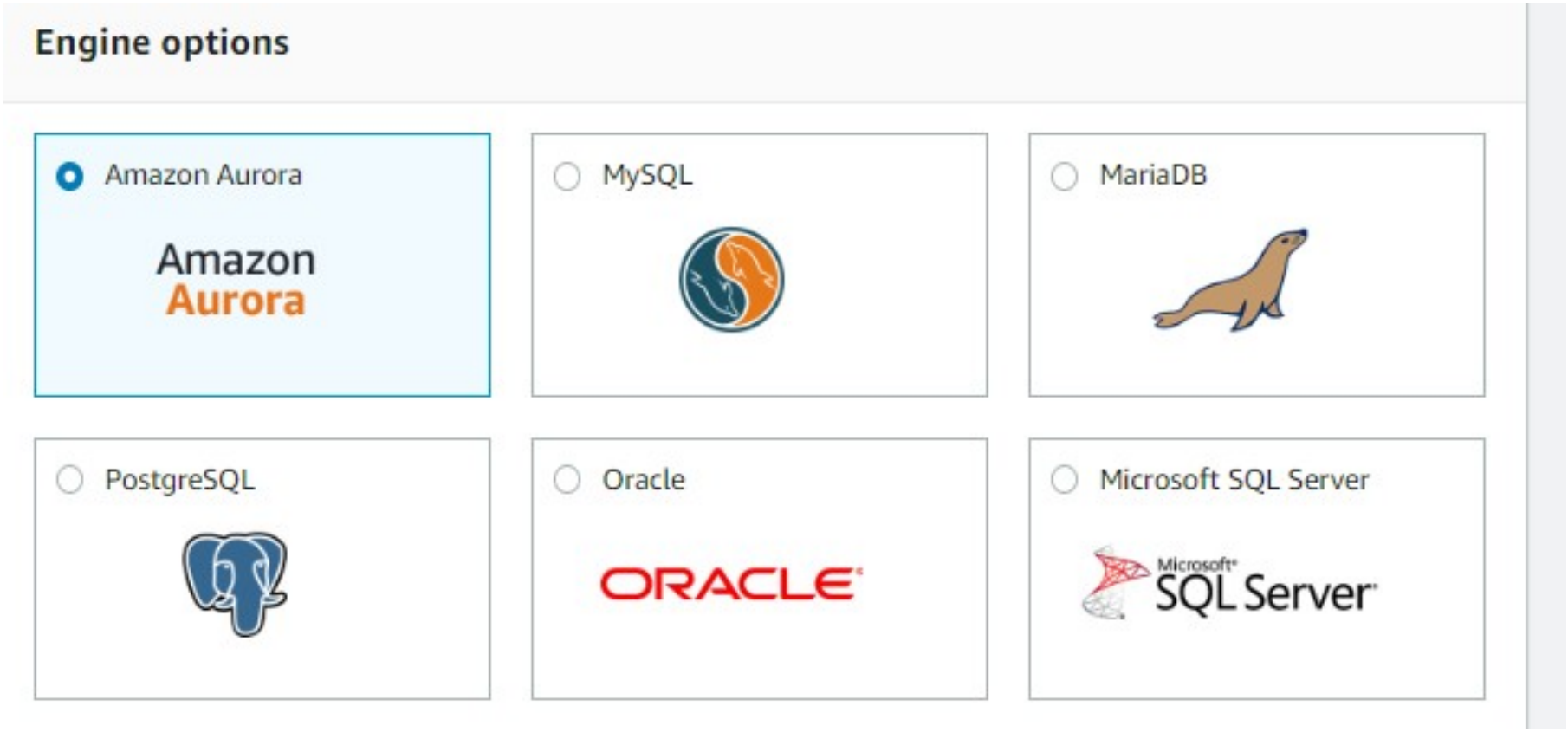
edureka!

Amazon RDS

- 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.
- So people often develop a misconception, when they confuse RDS with a database.
- RDS is not a database, it’s a service that manages databases, having said that, let’s discuss the databases that RDS can manage as of now

Amazon RDS DB Engines

Amazon RDS



Amazon RDS

- Amazon Aurora:

It is a relational database engine made by amazon which combines the speed and reliability of high-end commercial databases with the simplicity and cost-effectiveness of open source databases. Amazon claims that Aurora is 5x faster than RDS MySQL

- PostgreSQL:

PostgreSQL is yet another open source database management system which uses SQL to access the data

- Oracle:

It is object-relational database management system which was developed by Oracle Inc

- MySql

It is an open source database management system which uses SQL (Structured Query Language) to access the data stored in its system

- SQL SERVER

SQL Server is a Relational Database Management System, which was developed by Microsoft in 2005 for the enterprise environment.

- Maria DB

MariaDB is a community developed fork of MySQL DBMS. The reason for its fork, was the concern over the acquisition of Oracle over MySQL

Overview of Amazon RDS

Why do you want a managed relational database service? Because Amazon RDS takes over many of the difficult or tedious management tasks of a relational database:

- When you buy a server, you get CPU, memory, storage, and IOPS, all bundled together. With Amazon RDS, these are split apart so that you can scale them independently. If you need more CPU, less IOPS, or more storage, you can easily allocate them.
- Amazon RDS manages backups, software patching, automatic failure detection, and recovery.
- 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.
- 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.
- 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.
- You can use the database products you are already familiar with: MySQL, MariaDB, PostgreSQL, Oracle, Microsoft SQL Server.
- In addition to the security in your database package, you can help control who can access your RDS databases by using AWS Identity and Access Management (IAM) to define users and permissions. You can also help protect your databases by putting them in a virtual private cloud.

RDS AWS Components

- DB Instances
- Regions and Availability Zones
- Security Groups
- DB Parameter Groups
- DB Option Groups

DB Instance

- They are the building blocks of RDS. It is an isolated database environment in the cloud, which can contain multiple user-created databases, and can be accessed using the same tools and applications that one uses with a stand-alone database instance.
- A DB Instance can be created using the AWS Management Console , the Amazon RDS API, or the AWS Command line Interface .
- The computation and memory capacity of a DB Instance depends on the DB Instance class. For each DB Instance you can select from 5GB to 6TB of associated storage capacity.
- The DB Instances are of the following types:
  - Standard Instances (m4,m3)
  - Memory Optimised (r3)
  - Micro Instances (t2)

Regions and Availability Zones

- The AWS resources are housed in highly available data centers, which are located in different areas of the world. This “area” is called a region.
- Each region has multiple Availability Zones (AZ), they are distinct locations which are engineered to be isolated from the failure of other AZs.
- You can deploy your DB Instance in multiple AZ, this ensures a failover i.e. in case one AZ goes down, there is a second to switch over to. The failover instance is called a standby, and the original instance is called the primary instance.

Security Groups

- A security group controls the access to a DB Instance. It does so by specifying a range of IP addresses or the EC2 instances that you want to give access.
- Amazon RDS uses 3 types of Security Groups:
- VPC Security Group
  - It controls the DB Instance that is inside a VPC.
- EC2 Security Group
  - It controls access to an EC2 Instance and can be used with a DB Instance.
- DB Security Group
  - It controls the DB Instance that is not in a VPC.

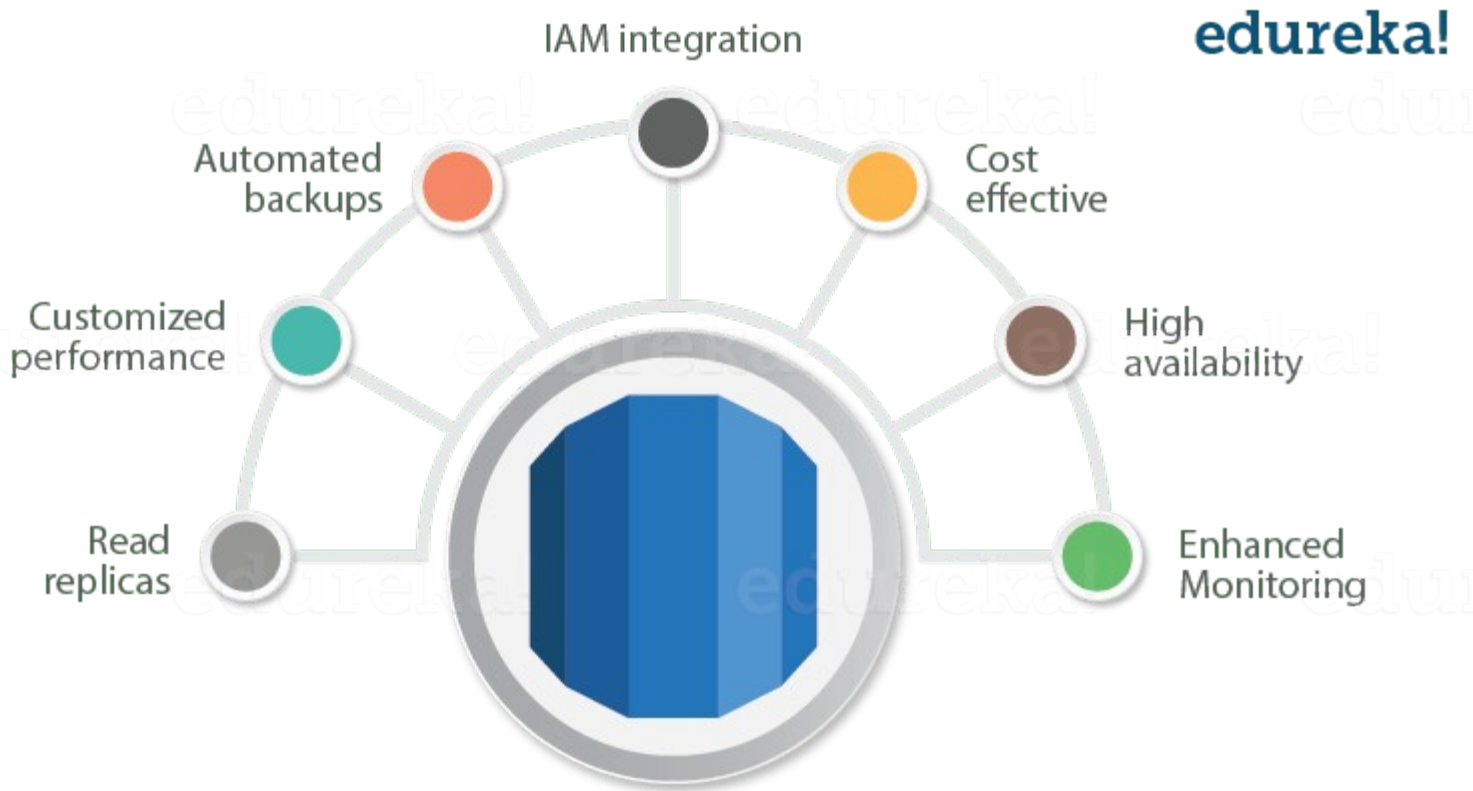
DB Parameter groups

- It contains the engine configuration values that can be applied to one or more DB Instances of the same instance type.
- If you don’t apply a DB Parameter group to your instance, you are assigned a default Parameter group which has the default values.

DB Option groups

- Some DB engines offer tools that simplify managing your databases.
- RDS makes these tools available with the use of Option groups.

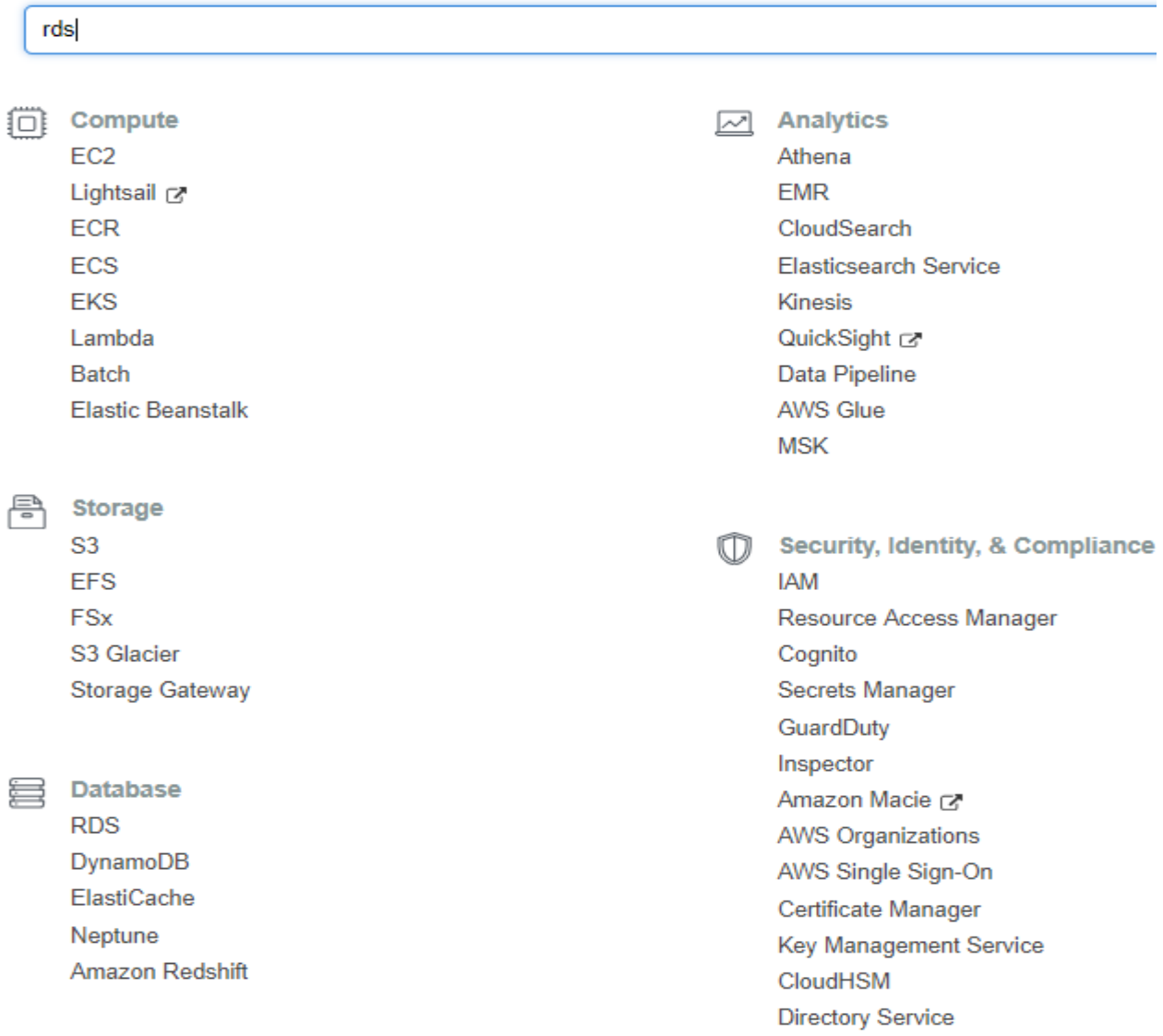
RDS Advantages



Demo

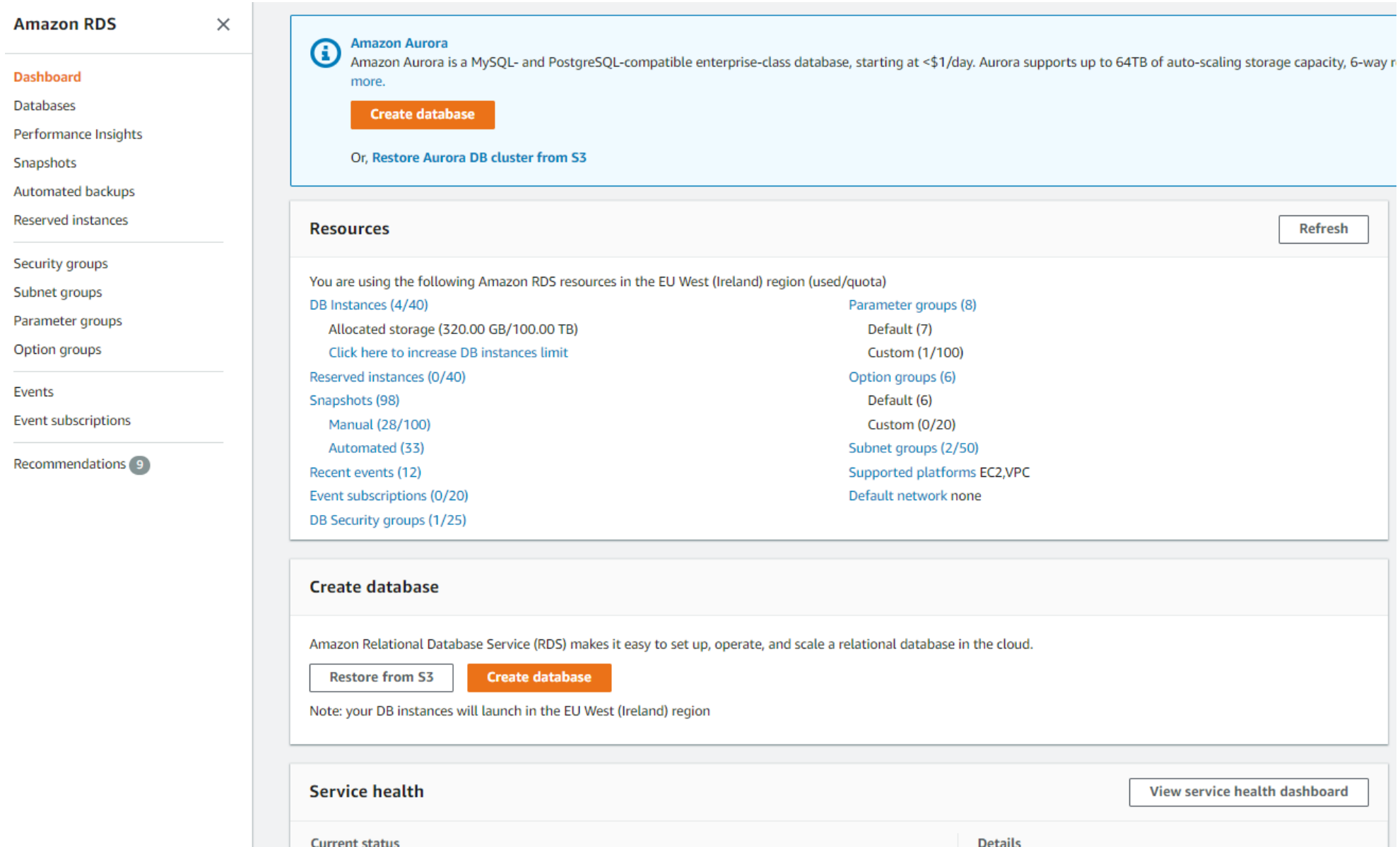
Hands- ON

First select RDS Service from the AWS management console



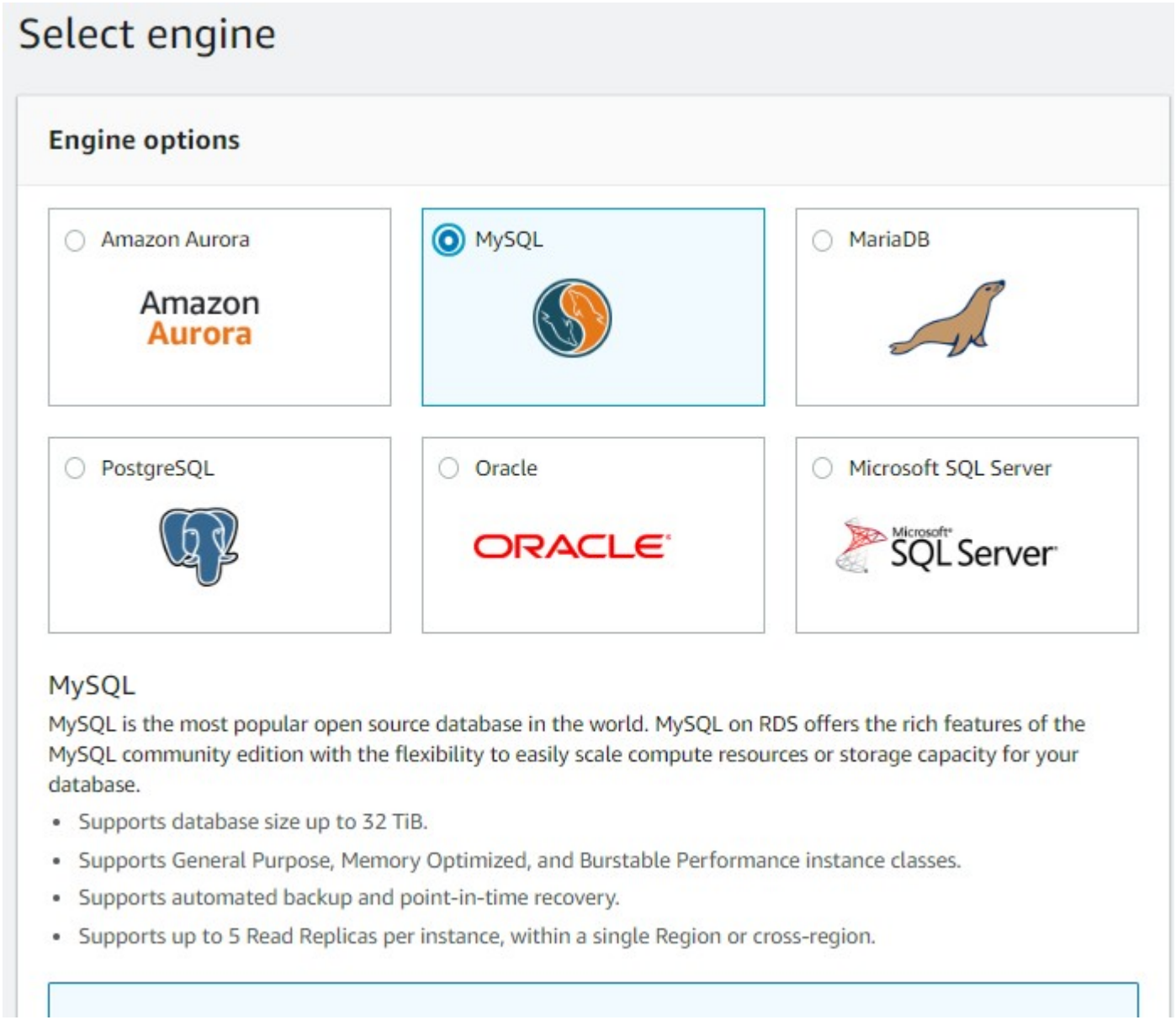
RDS Dashboard

Create Database

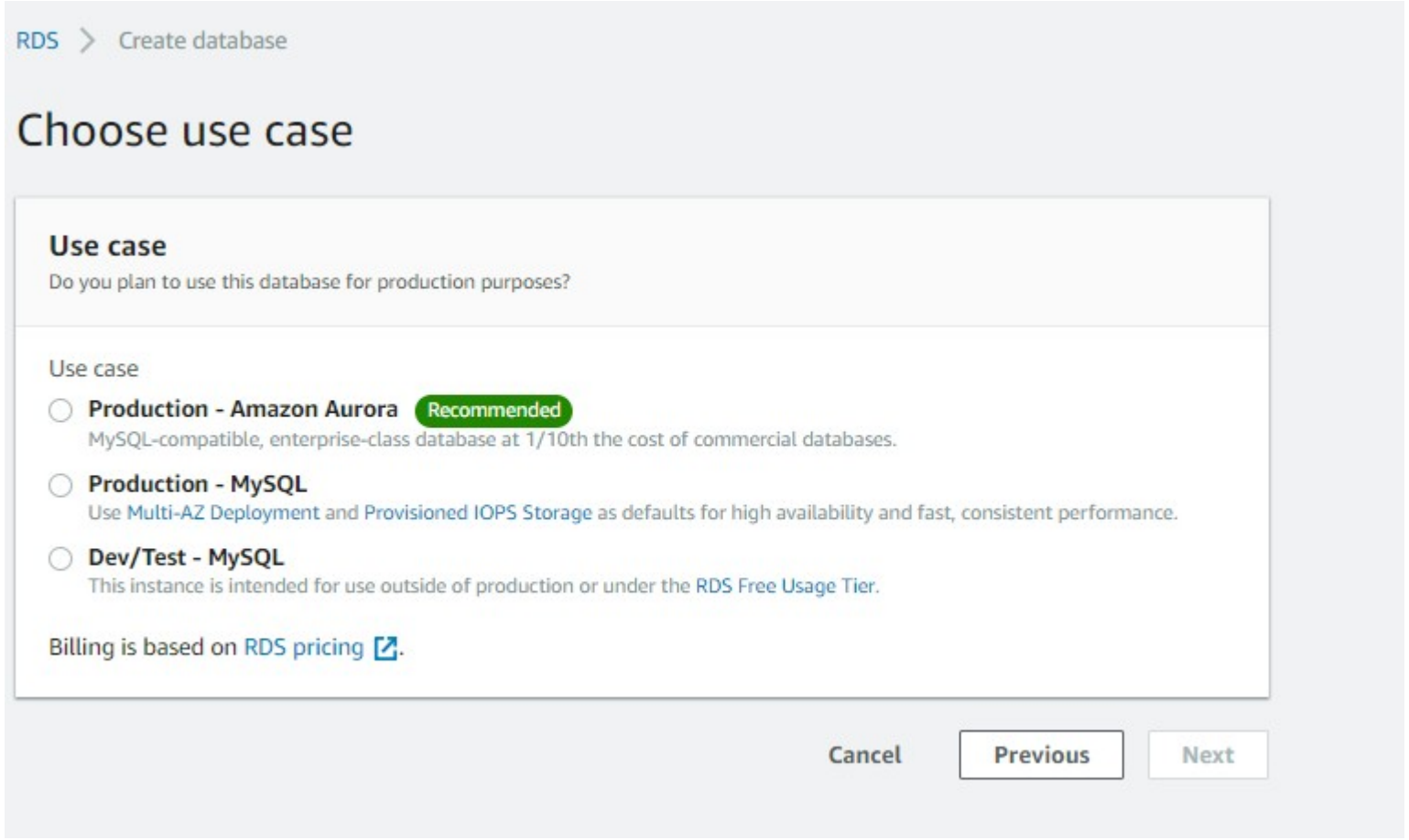


Select Engine

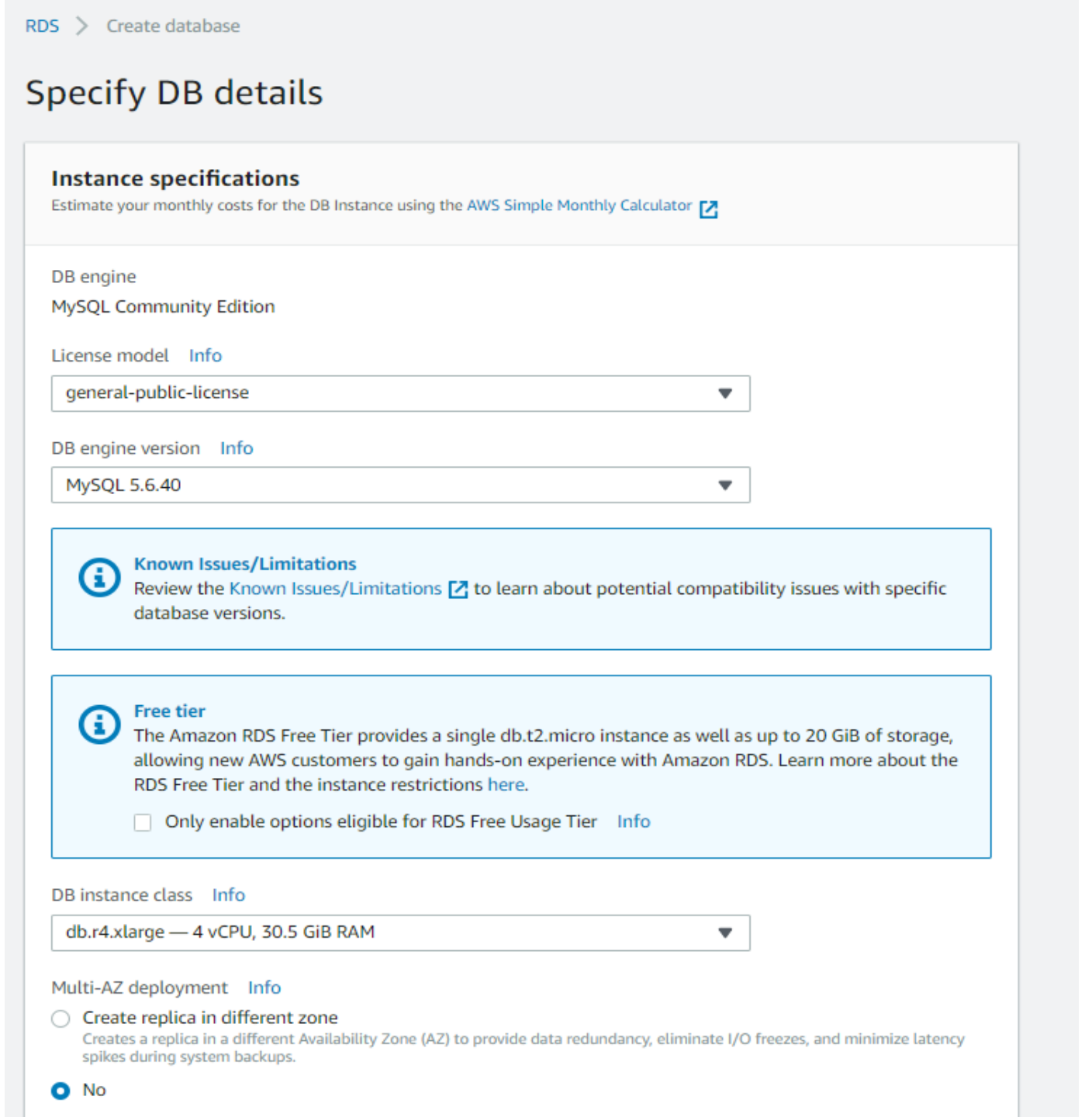
For Example, Select MySQL
Click Next



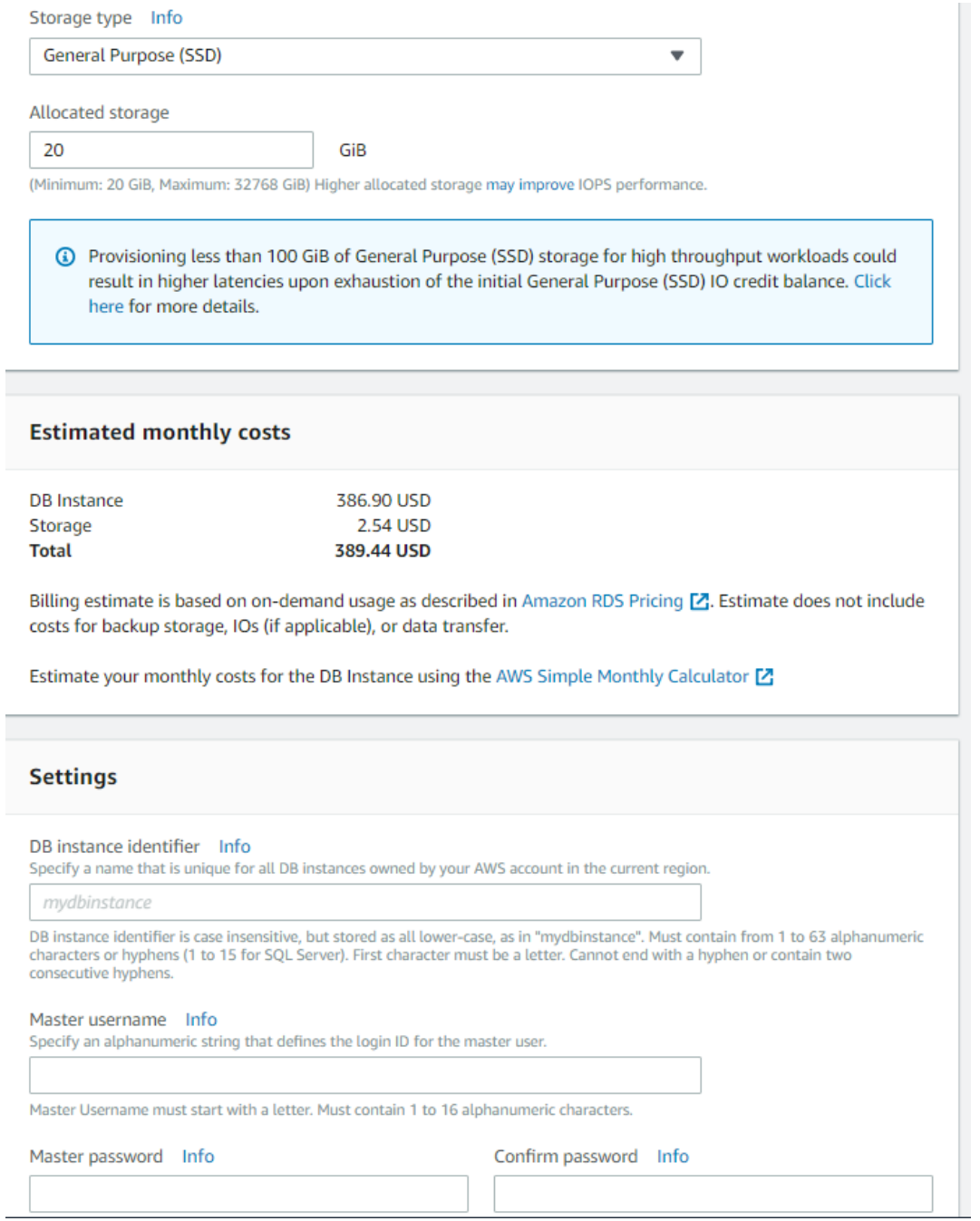
Use-Case


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.
Cancel
Previous
Next

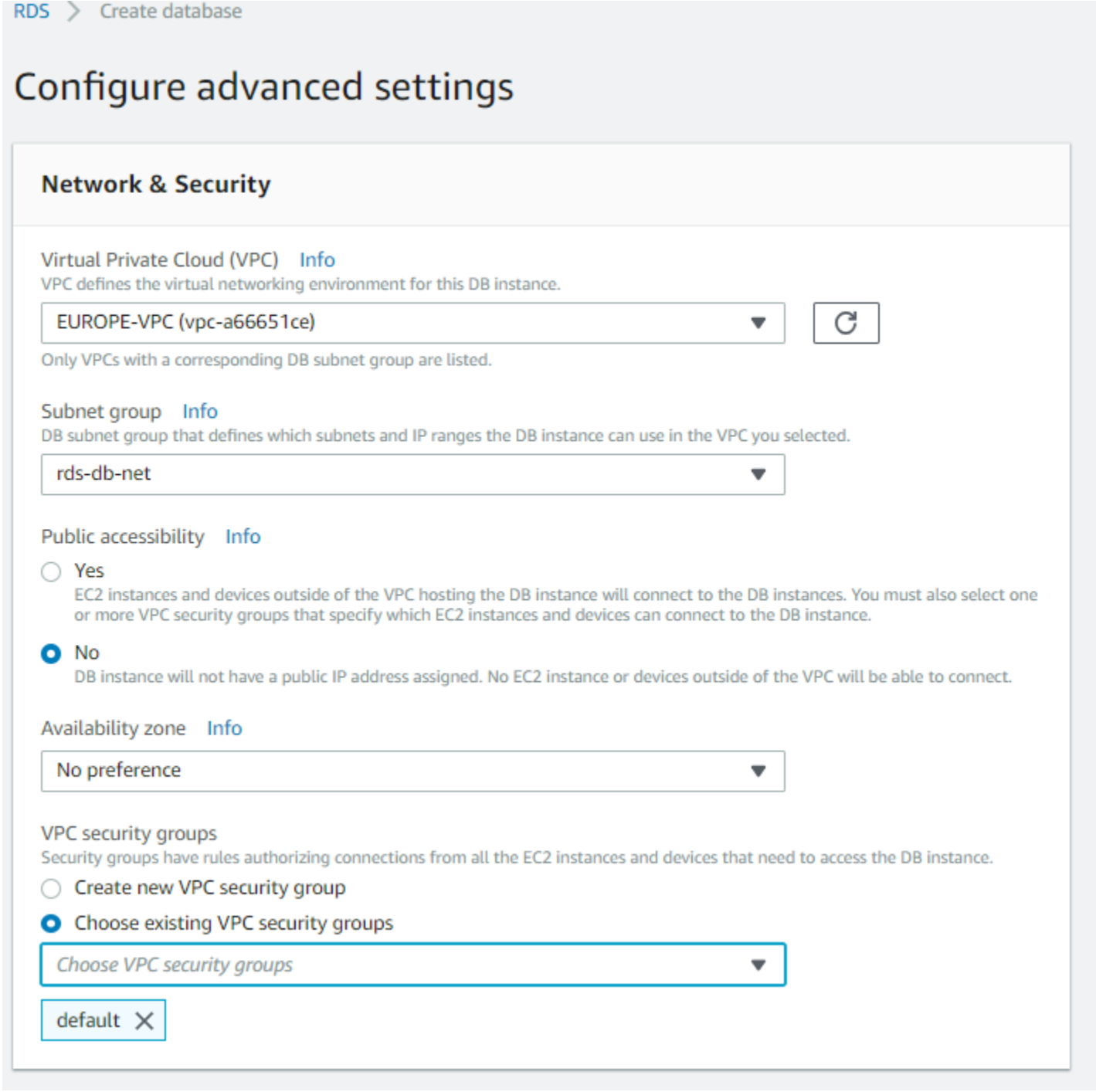
Specify DB Details



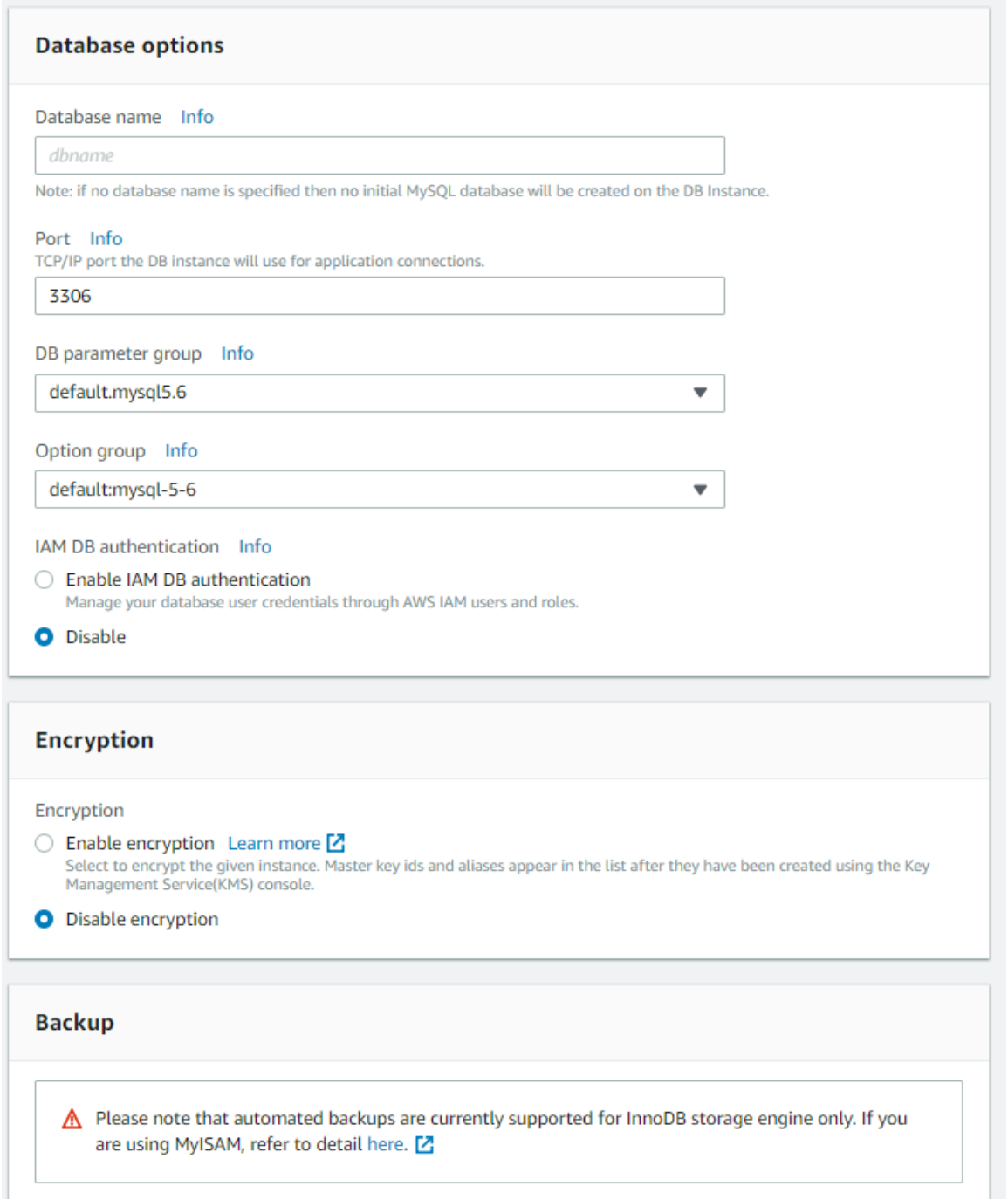
Storage Type, Size, DB Credentials



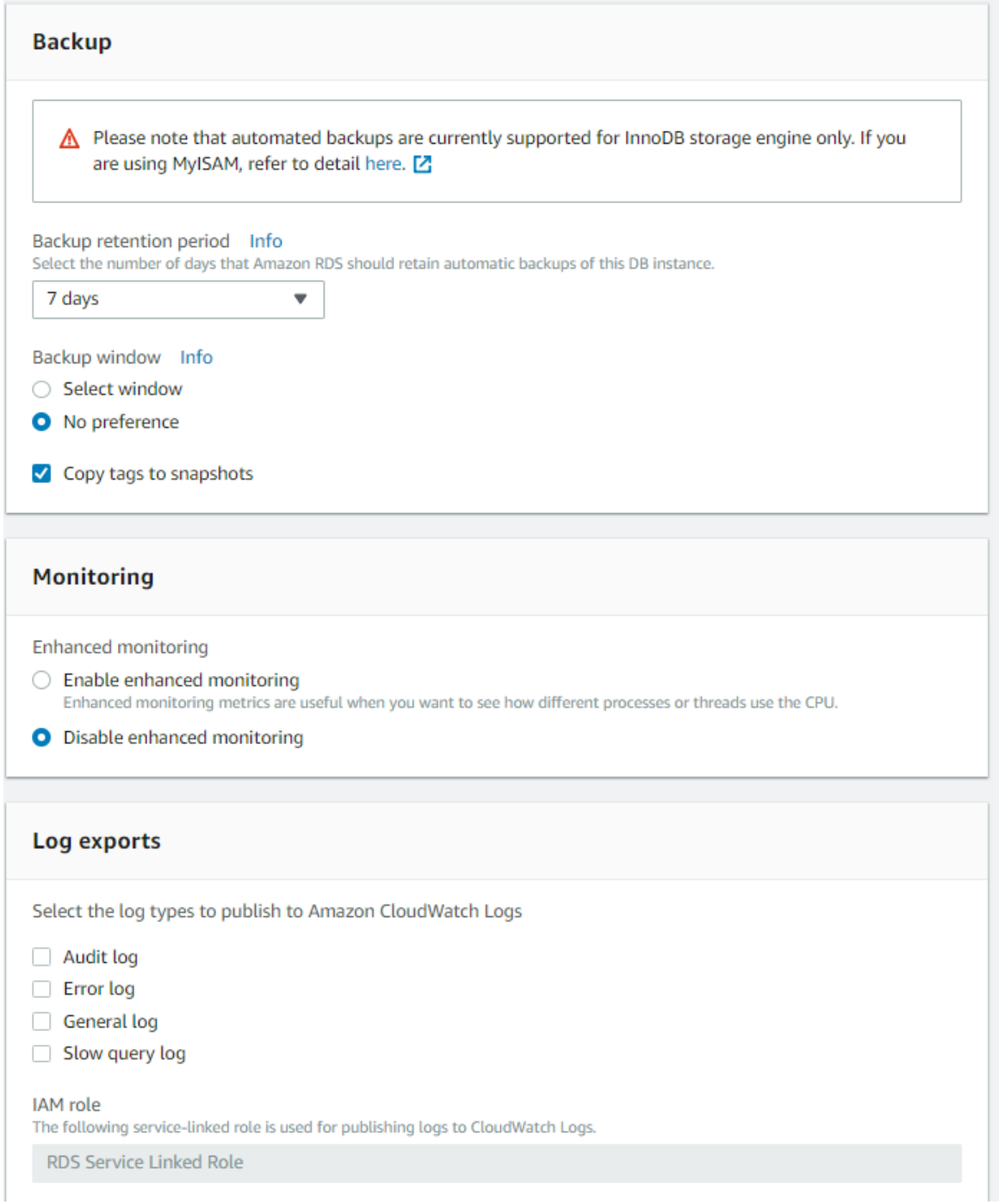
Advance Settings



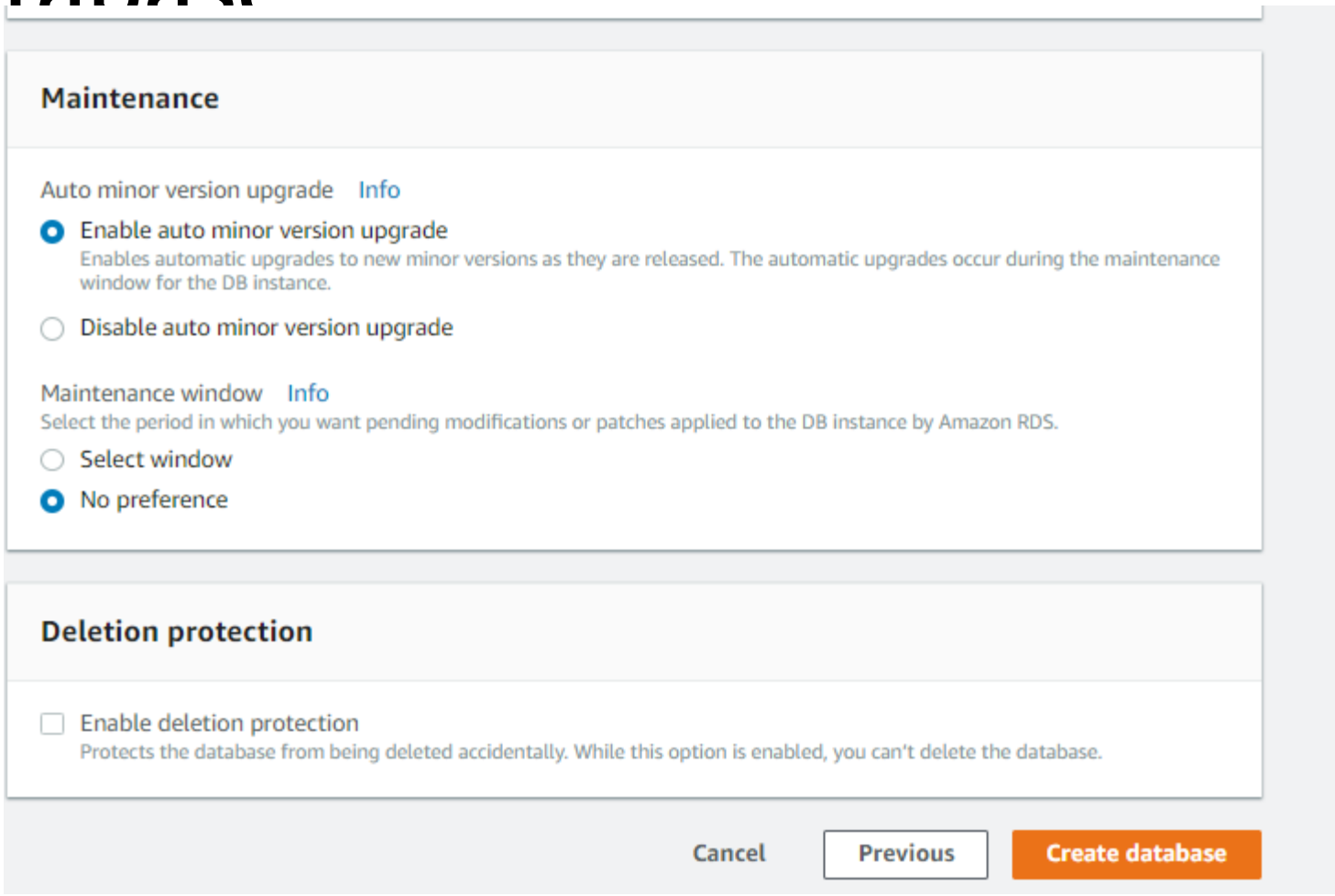
DB Options


Database options
Database name Info
dbname
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
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
Encryption
Enable encryption Learn more
Select to encrypt the given instance. Master key ids and aliases appear in the list after they have been created using the Key Management Service(KMS) console.
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.

Backup Monitoring



Create Database



Connect using EndPoint


COOL!