Creating and Connecting to a Free Tier AWS RDS Instance for MSSQL

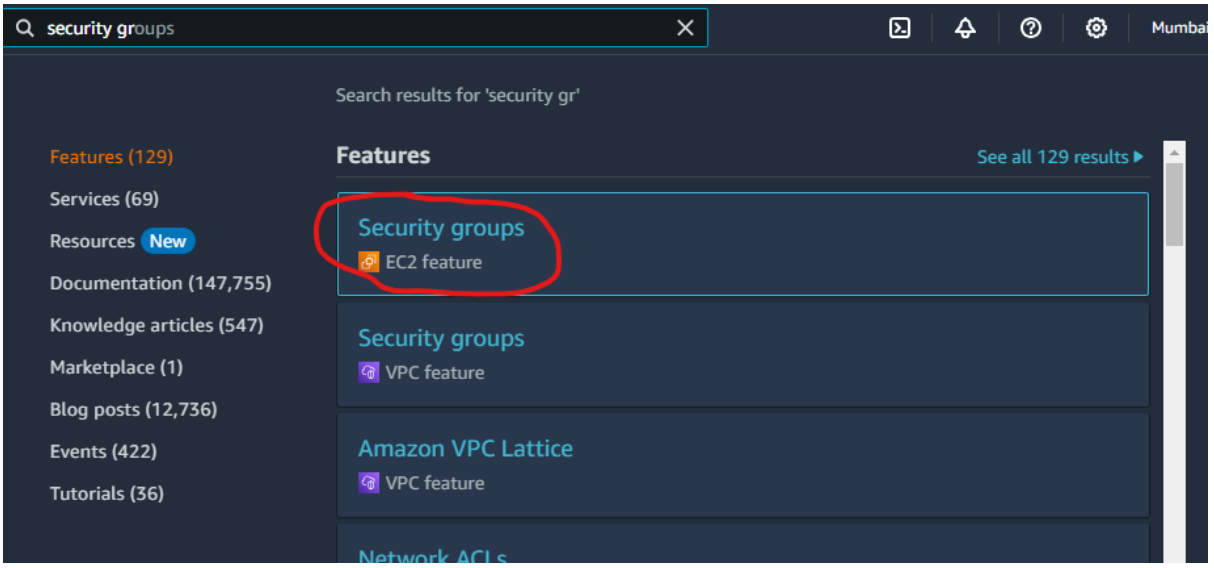
Introduction

This guide will walk you through the steps to create a free tier Amazon RDS (Relational Database Service) instance using Microsoft SQL Server (MSSQL) and connect to it.

Creating an Security group for the RDS instance

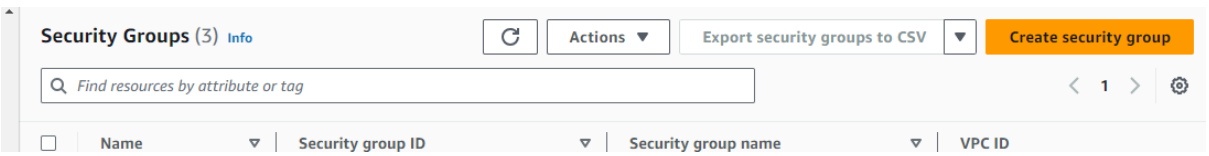
Step 1: Navigate to Security Groups

1. In the AWS Management Console, search for **Security Group** and select it

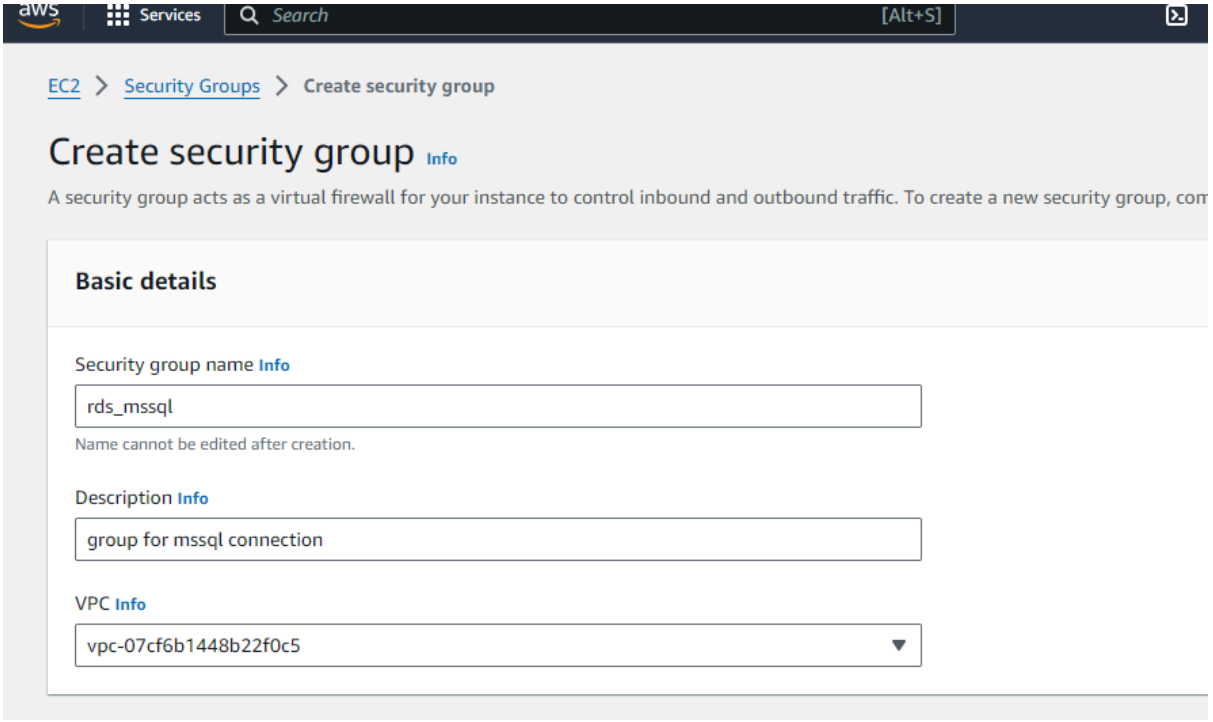


Step 2: Create Security Group

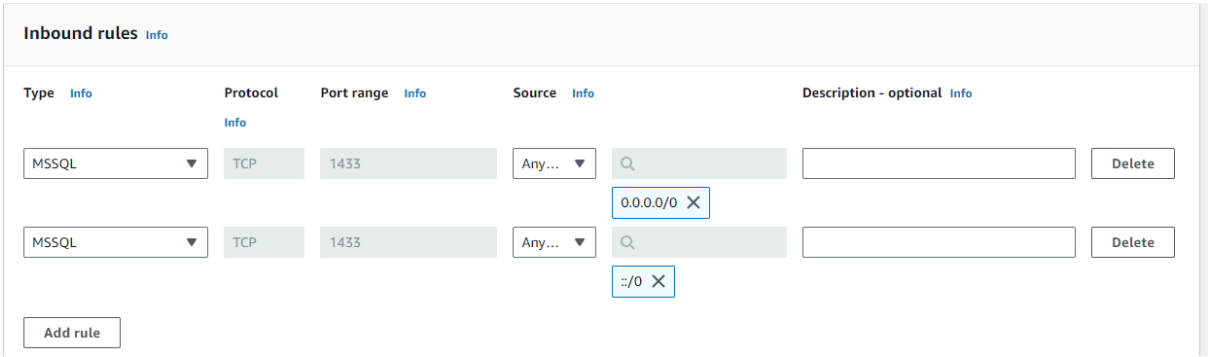
1. Click on **Create Security Group** to add new one



2. Enter the Name ,description (Optional) and VPC

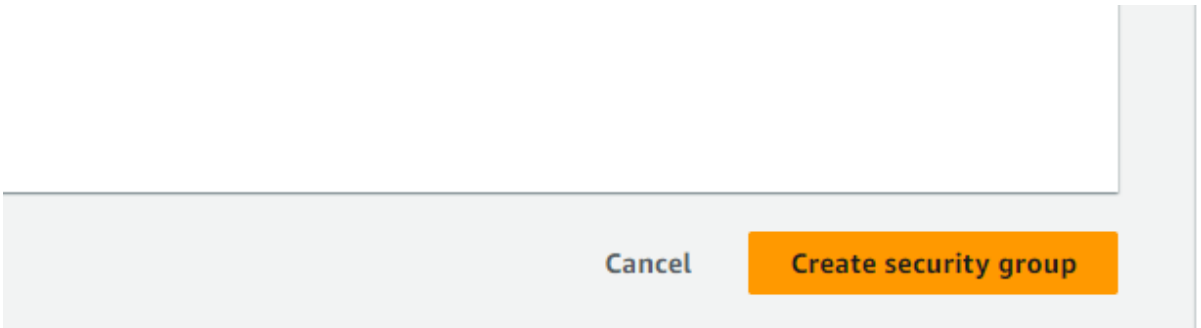


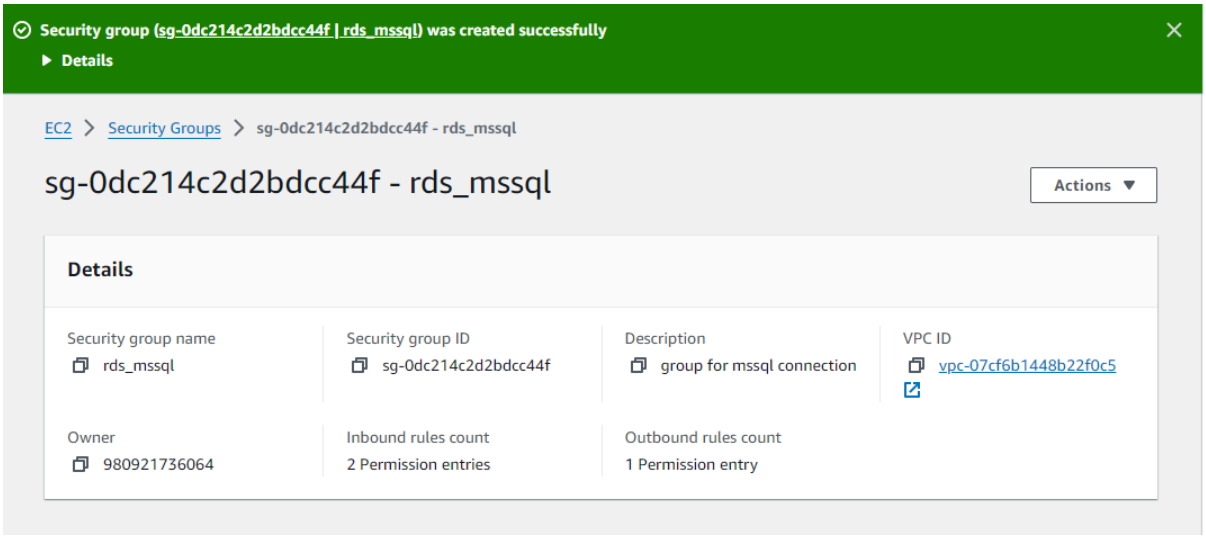
3. Add Inbound Rules (MSSQL in Type (With Source IPv4 and IPV6))



Step 3: Review and Create

1. Click on Create security group





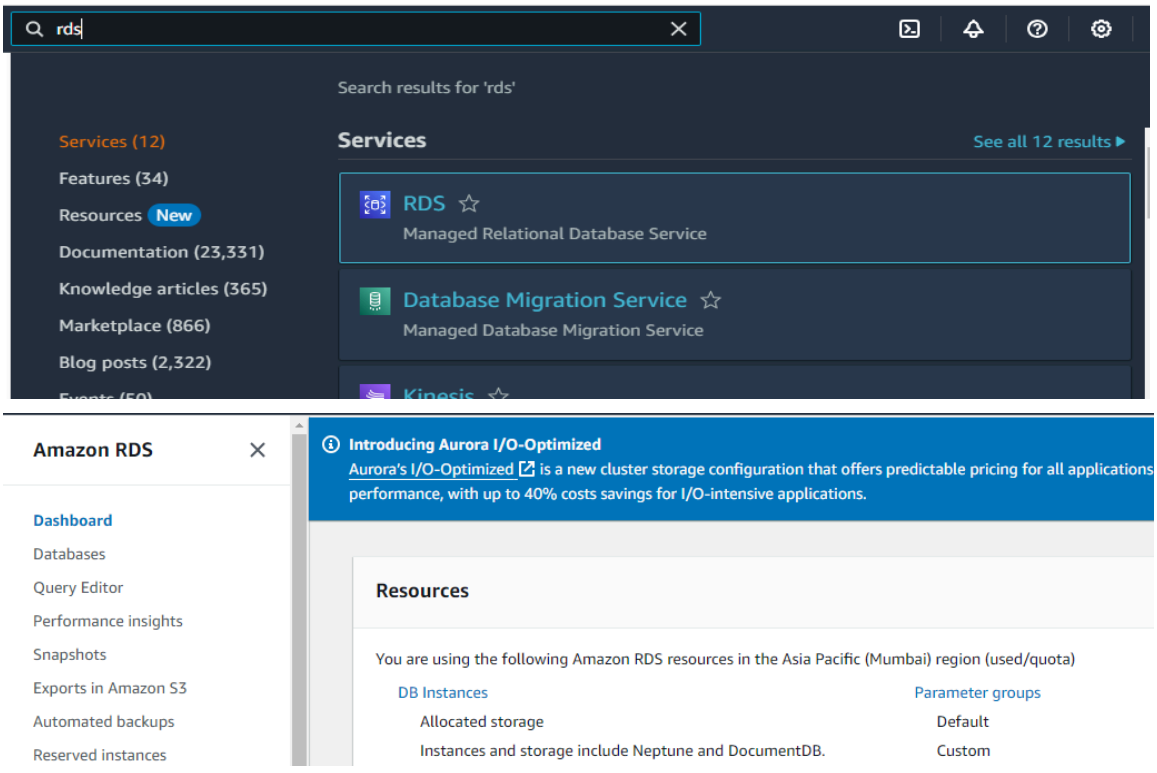
Creating an AWS RDS Instance

Step 1: Sign In to AWS Management Console

1. Go to the AWS Management Console.
2. Enter your credentials and sign in.

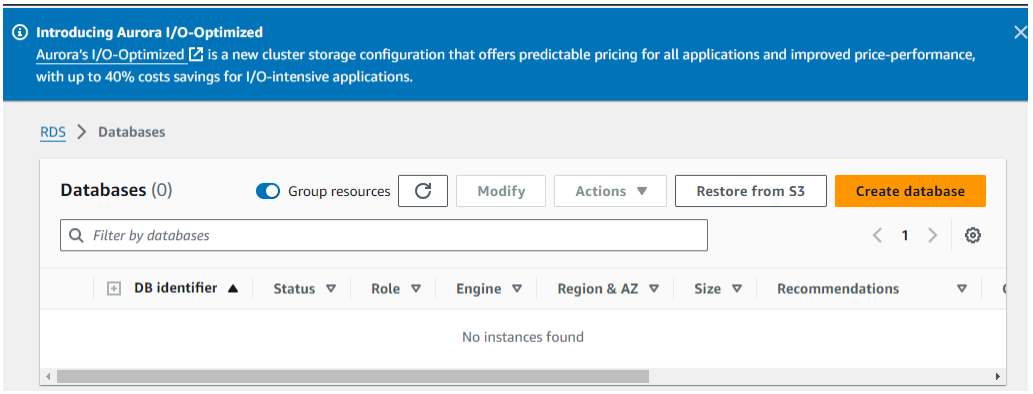
Step 2: Navigate to RDS Dashboard

2. In the AWS Management Console, search for **RDS** in the search bar and select **RDS** from the results.

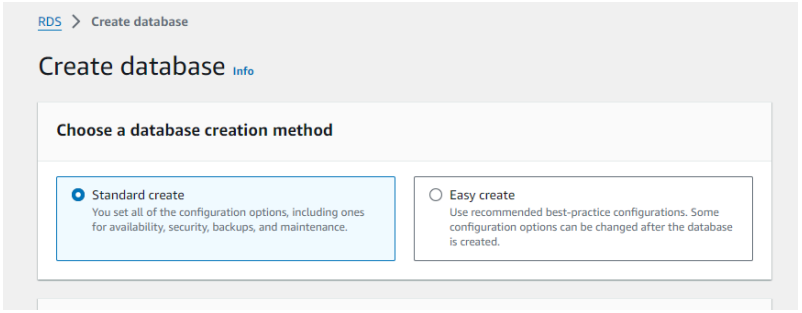


Step 3: Launch a New Database Instance

1. Click on **Create database**



2. Select **Standard Create.**



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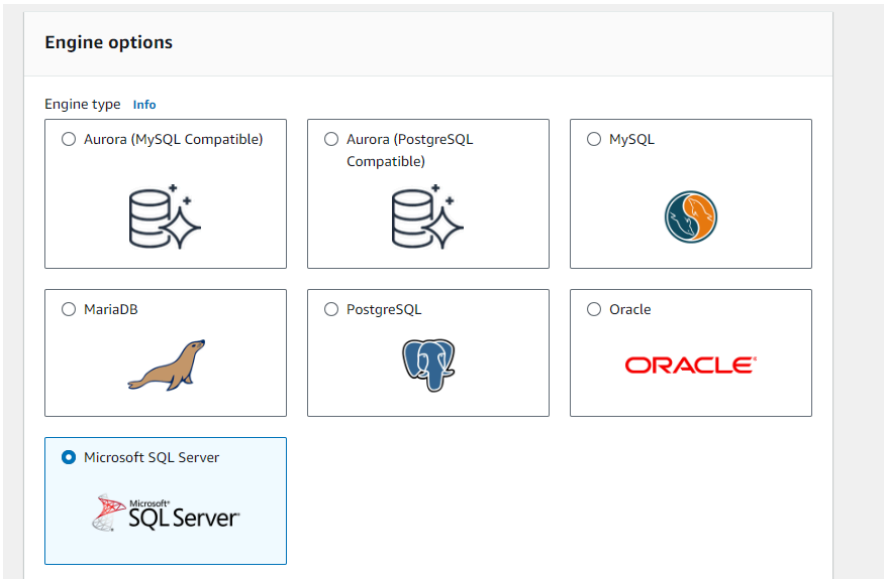
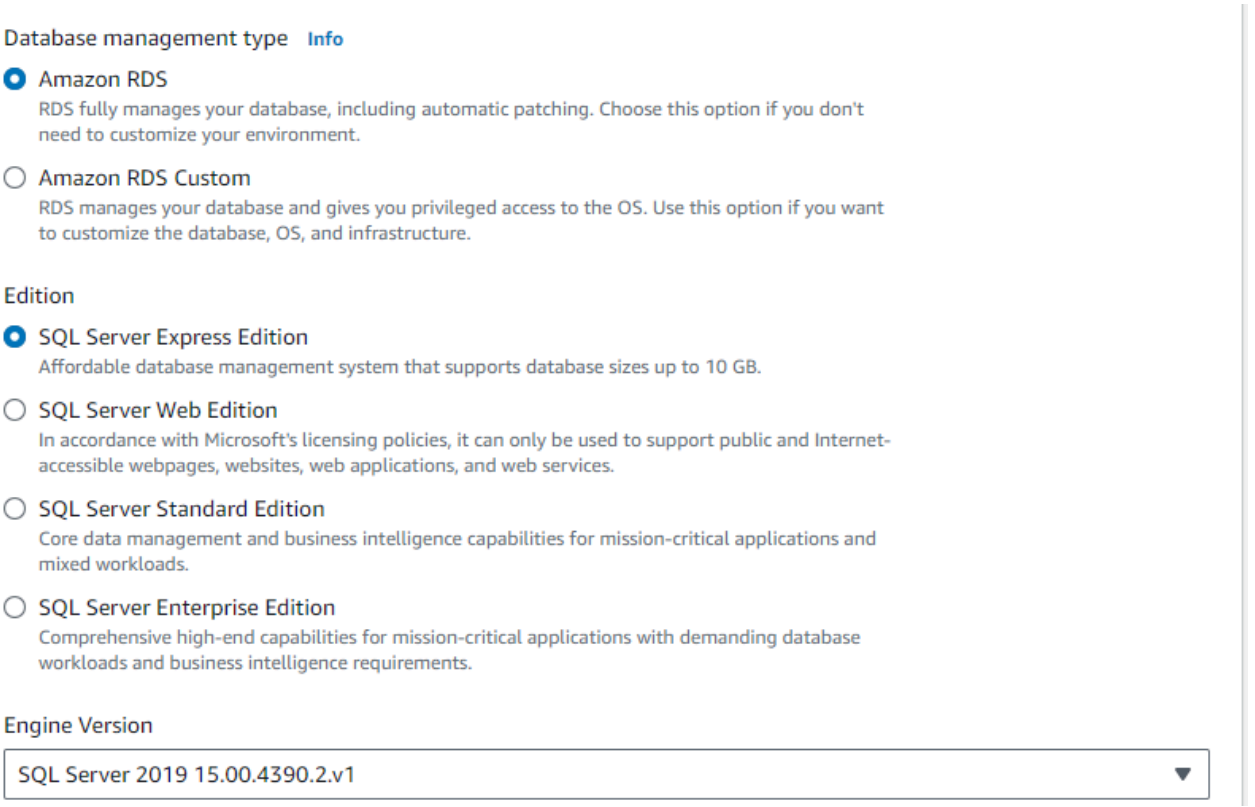
Step 4: Configure the Database Instance

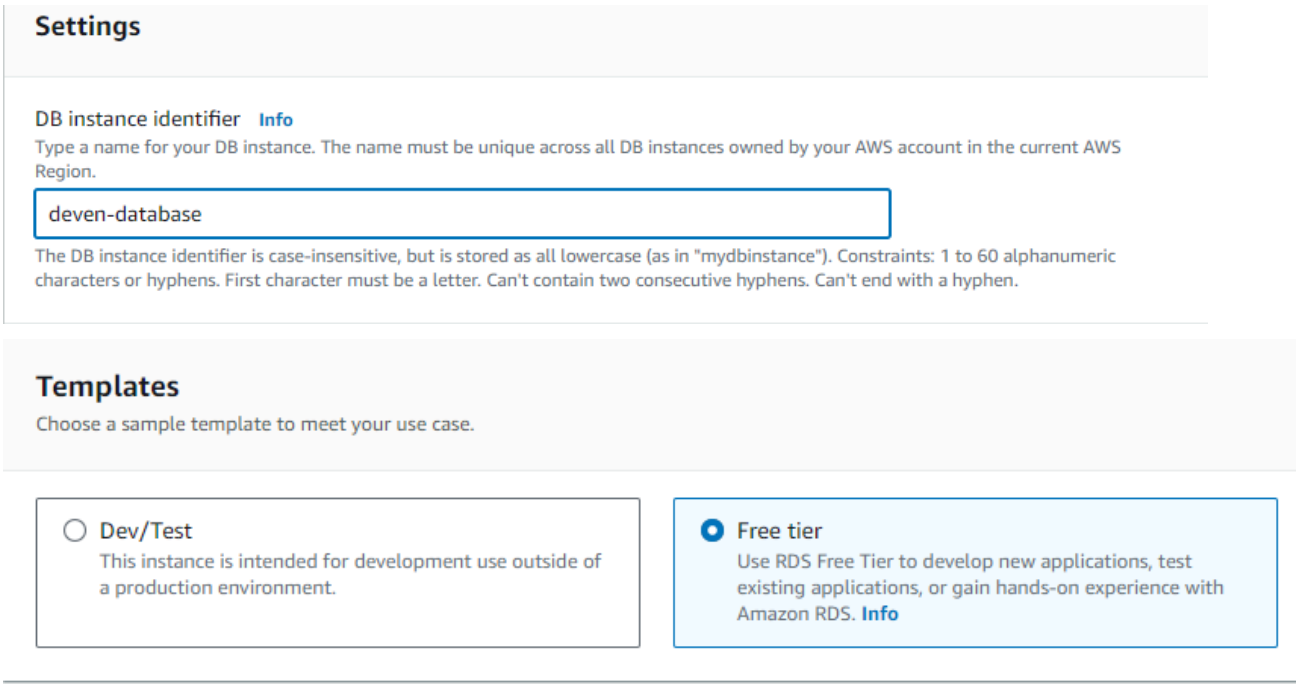
1. **Engine Options**: Select **Microsoft SQL Server**.



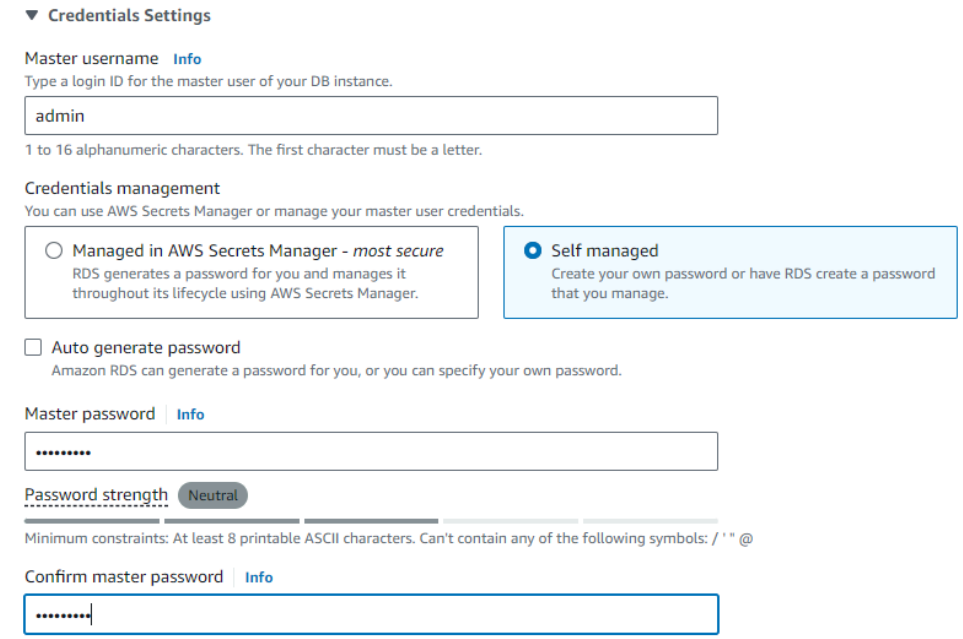
2. **Version**: Choose the version you need, ensuring it's eligible for the free tier.



3. **Enter Database instance name and select Templates**: Select **Free Tier**.

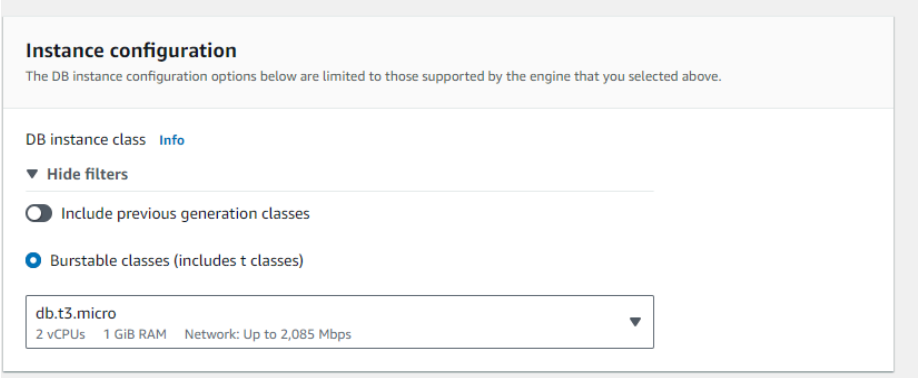


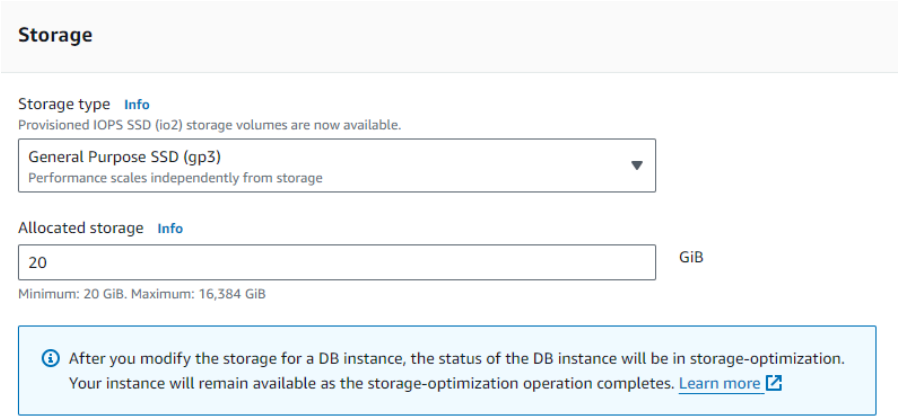
4. **Master Username**: Enter a master username and **Master Password**: Enter and confirm your master password.



admin
Deven5656

5. **Continue with Default setting and turn off the Monitoring,backup and Maintainance for the task only**





▼ **Advanced settings**

Baseline IOPS of 3,000 IOPS and storage throughput of 125 MiBps are included for allocated storage of 20 GiB or greater. Higher IOPS and throughput can be provisioned for addition cost.

Provisioned IOPS Info

3000 IOPS

Provisioned IPOS value must be 3,000 IOPS to 16,000 IOPS. The IOPS to GiB ratio must be between 0.5 and 500

Storage throughput Info

125 MiBps

Minimum: 125 MiBps. Maximum: 1,000 MiBps

▼ **Storage autoscaling**

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 after the specified threshold is exceeded.

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

Choose the VPC. The VPC defines the virtual networking environment for this DB instance.

Default VPC (vpc-07cf6b1448b22f0c5)
3 Subnets, 3 Availability Zones

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.

default

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.

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

rds_mssql ✕ default ✕

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-rsa2048-g1 (default)
Expiry: May 20, 2061

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

▼ **Additional configuration**

Database port Info

TCP/IP port that the database will use for application connections.

1433

Microsoft SQL Server Windows Authentication

Choose a directory in which you want to allow authorized domain users to authenticate with this SQL Server instance using Windows Authentication.

☐ Enable Microsoft SQL Server Windows authentication

Tags - *optional*

A tag consists of a case-sensitive key-value pair.

No tags associated with the resource.

Add new tag

Monitoring

Performance Insights Info

☐ Turn on Performance Insights

▶ **Additional configuration**
Enhanced Monitoring

Additional configuration

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

Database options

DB parameter group Info

default.sqlserver-ex-15.0

Option group Info

default:sqlserver-ex-15-00

Time zone

No preference

Collation Info

Backup

- [ ] Enable automated backups

  Creates a point-in-time snapshot of your database

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- [ ] Enable automated backups

  Creates a point-in-time snapshot of your database

Log exports

Select the log types to publish to Amazon CloudWatch Logs

- [ ] Error log

IAM role

The following service-linked role is used for publishing logs to CloudWatch Logs.

RDS service-linked role

Maintenance

Auto minor version upgrade Info

- [ ] Enable auto minor version upgrade

  Enabling auto minor version upgrade will automatically upgrade to new minor versions as they are released. The automatic upgrades occur during the maintenance window for the database.

Maintenance window Info

Select the period you want pending modifications or maintenance applied to the database by Amazon RDS.

- ( ) Choose a window
- (•) No preference

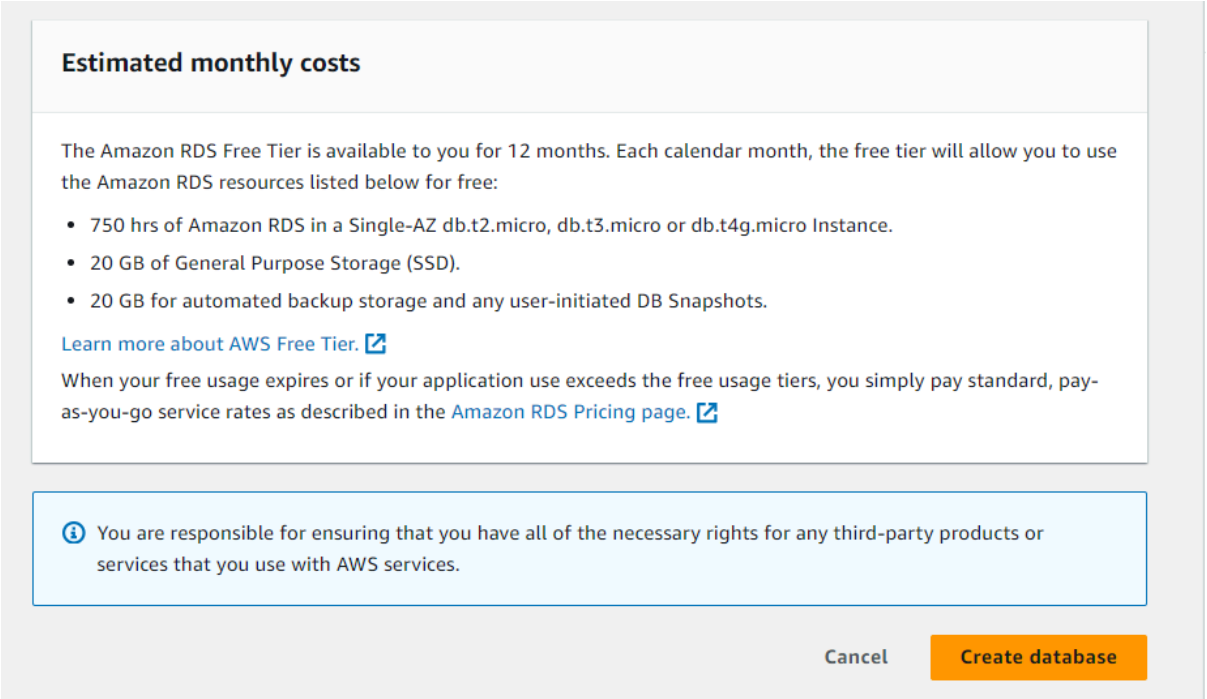
Deletion protection

- [ ] Enable deletion protection

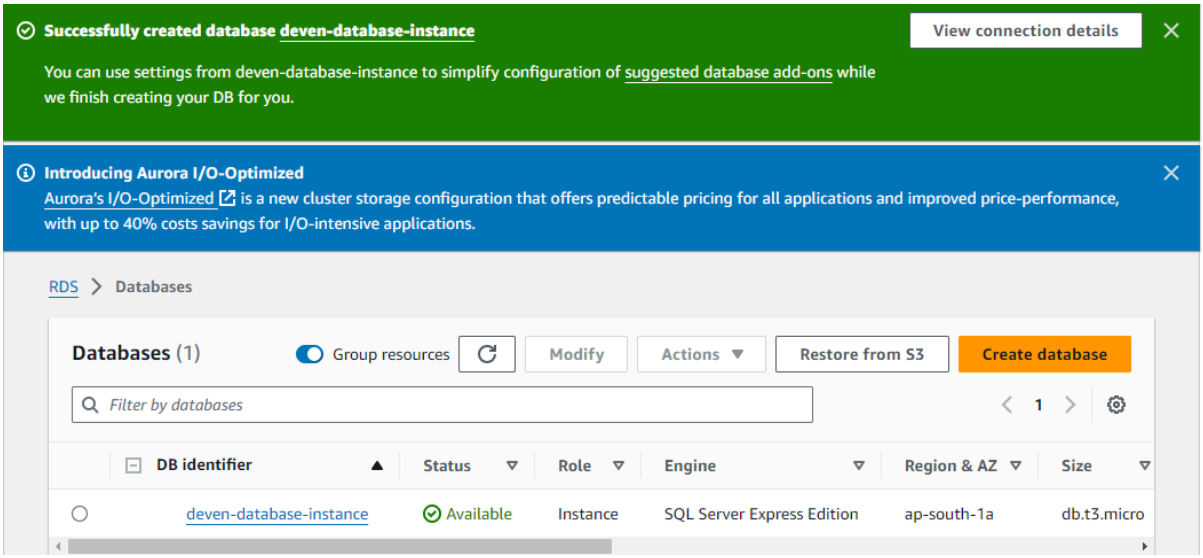
  Protects the database from being deleted accidentally. While this option is enabled, you can't delete the database.

Step 5: Review and Create

1. Review your configuration settings.



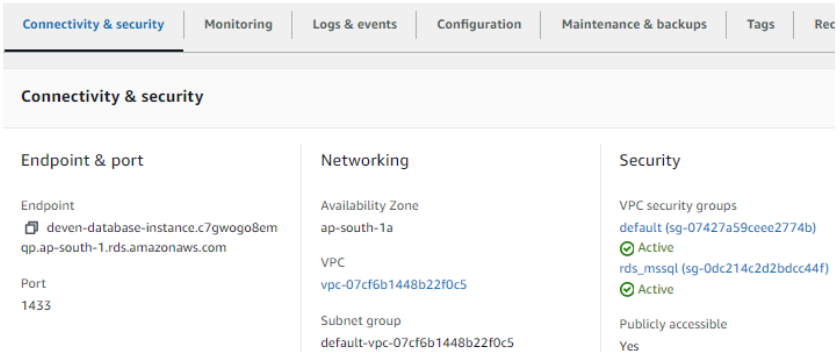
2. Click **Create database**.



Connecting to Your RDS MSSQL Instance

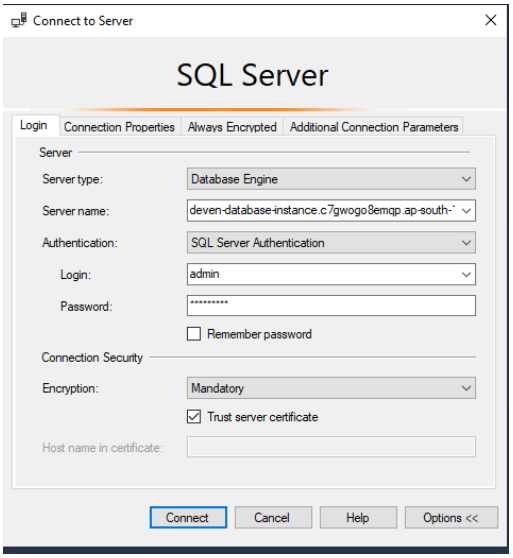
Step 1: Obtain Connection Details

1. In the RDS Dashboard, select **Databases**.
2. Click on your newly created database instance.
3. Note the **Endpoint** and **Port**.



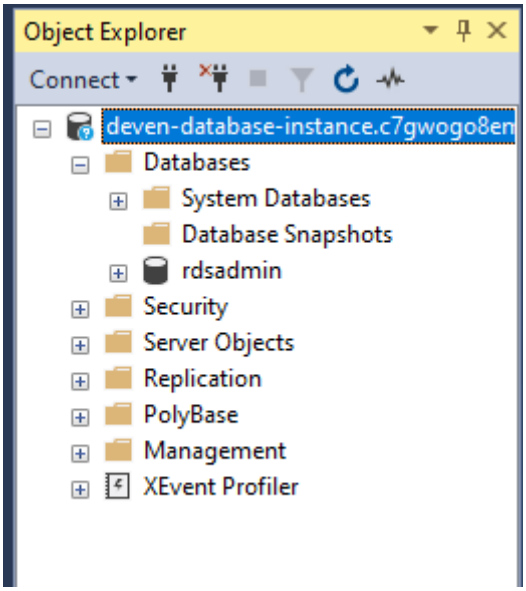
Step 2: Connect Using SQL Server Management Studio (SSMS)

1. Open SQL Server Management Studio (SSMS).
2. In the **Connect to Server** window, enter the following:
    - **Server type**: Database Engine
    - **Server name**: `<Endpoint>,<Port>` (e.g., `deven-database-instance.c7gwogo8emqp.ap-south-1.rds.amazonaws.com`)
    - **Authentication**: SQL Server Authentication
    - **Login**: Your master username
    - **Password**: Your master password
3. Click **Connect**.



Step 3: Verify Connection

1. Once connected, you should see your database instance in the Object Explorer.
2. Expand the instance to verify your database is accessible.



Troubleshooting

- **Cannot connect to the database**: Ensure that your RDS security group allows inbound traffic on the port used by MSSQL (default is 1433).
- **Authentication errors**: Double-check your master username and password.