



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Experiment - 9

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1. Aim:

To design and interact with cloud-based data storage systems using AWS RDS, Google Firebase, and Azure Cosmos DB, focusing on relational modeling, real-time synchronization, and distributed data access.

2. Output

The screenshot shows the AWS RDS 'Create master user' page. It includes fields for 'Master username' (admin), 'Master password' (a masked password), and 'Confirm master password' (also a masked password). Below these are sections for 'Credentials management' (with options for AWS Secrets Manager, Self managed, or Auto generate password, where 'Self managed' is selected), 'Password strength' (labeled 'Strong'), and 'Minimum constraints'. At the bottom, there's an 'Instance configuration' section with a note about limited options.

Type a login ID for the master user of your DB instance.
Master username
1 to 16 alphanumeric characters. The first character must be a letter.

Credentials management
You can use AWS Secrets Manager or manage your master user credentials.

Managed in AWS Secrets Manager - *most secure*
RDS generates a password for you and manages it throughout its lifecycle using AWS Secrets Manager.

Self managed
Create your own password or have RDS create a password that you manage.

Auto generate password
Amazon RDS can generate a password for you, or you can specify your own password.

Master password [Info](#)

Password strength Strong

Minimum constraints: At least 8 printable ASCII characters. Can't contain any of the following symbols: / " @

Confirm master password [Info](#)

Instance configuration
The DB instance configuration options below are limited to those supported by the engine that you selected above.

Creating database sql2022

Your database might take a few minutes to launch. You can use settings from sql2022 to simplify configuration of suggested database add-ons while we finish creating your DB for you.

View credential details X

RDS > Databases

Consider creating a Blue/Green Deployment to minimize downtime during upgrades

You may want to consider using Amazon RDS Blue/Green Deployments and minimize your downtime during upgrades. A Blue/Green Deployment provides a staging environment for changes to production databases. [RDS User Guide](#) [Aurora User Guide](#)

Databases (1)

Group resources C Modify Actions ▾ Restore from S3 Create database

Filter by databases < 1 > ⚙

DB identifier	Status	Role	Engine	Region & AZ	Size	Recommendations
sql2022	Creating	Instance	SQL Server Standard Edition	us-east-1b	db.m5.large	

The screenshot shows the AWS RDS console with a green header bar. The header includes a success message: "Successfully created database **sql2022**". There is also a link to "View connection details". Below the header, a message says: "You can use settings from sql2022 to simplify configuration of suggested database add-ons while we finish creating your DB for you." The main content area shows the database details for "sql2022". The navigation path is "RDS > Databases > sql2022". The database name "sql2022" is displayed prominently. To the right are three buttons: a "Copy" icon, a "Modify" button, and an "Actions" dropdown menu. A "Summary" section provides an overview of the database's configuration, including its identifier, status, role, engine, and recommendations. At the bottom, there are tabs for "Connectivity & security", "Monitoring", "Logs & events", "Configuration", "Maintenance & backups", "Tags", and "Recommendations".

The screenshot shows the Microsoft SQL Server Management Studio interface. The title bar reads "SQLQuery1.sql - sq2022.ccbkoco727za.us-east-1.rds.amazonaws.com.master (admin (86)) - Microsoft SQL Server Management Studio". The menu bar includes File, Edit, View, Project, Tools, Window, Help, and a Quick Launch button. The toolbar has various icons for connecting, executing queries, and managing objects. The Object Explorer sidebar on the left lists the database structure for the connection "sql2022.ccbkoco727za.us-east-1.rds.amazonaws.com (SQL Server 1)". The main area displays the "Login - New" dialog box, which is used to create a new login. It contains fields for "Login name" (set to "r2admin"), "Authentication" (set to "SQL Server authentication"), "Password" (a masked password), "Confirm password" (a masked password), and "Old password" (unchecked). It also includes checkboxes for "Enforce password policy" (checked), "Enforce password expiration" (checked), and "User must change password at next login" (unchecked). Below this, there are options for "Mapped to certificate" (unchecked), "Mapped to asymmetric key" (unchecked), and "Map to Credential" (unchecked). A "Connection" section at the bottom shows the server as "EC2AMAZ-OLA51TB" and the connection as "admin". A link "View connection properties" is also present.

ModifyInboundSecurityGroupRules

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ModifyInboundSecurityGroupRules:securityGroupId=sg-0d8472b8adce9cf6e

aws Services Search [Alt+S]

EC2 > Security Groups > sg-0d8472b8adce9cf6e - default > Edit inbound rules

Edit inbound rules Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules Info

Security group rule ID	Type <small>Info</small>	Protocol <small>Info</small>	Port range	Source <small>Info</small>	Description - optional <small>Info</small>
sgr-0cbad942ac2402cbe	All traffic	All	All	Custom	sg-0d8472b8adce9cf6e X
-	MSSQL	TCP	1433	My IP	49.43.226.187/32 X

Add rule

Amazon RDS

RDS > Databases > sql2022

sql2022

Summary

DB identifier	Status	Role
sql2022	Available	Instance
CPU	Class	Current activity
3.36%	db.m5.large	0.00 sessions

Engine SQL Server Edition

Region & us-east-1

Subnet groups

Parameter groups

Option groups

Custom engine versions

Zero-ETL integrations New

Events

Event subscriptions

Connectivity & security

Monitoring

Logs & events

Configuration

Maintenance & backups

Connectivity & security

Endpoint & port

Endpoint sql2022.ccbkoco727za.us-east-1.

Networking

Availability Zone

us-east-1b

Security

VPC security groups

default (sg-0d8472b8adce9cf6e)