

Introduction to Amazon Aurora

Here's what happened:

You've learned about some Amazon technologies:

- Amazon Aurora: A fast and reliable database engine that's similar to MySQL, but more powerful and cost-effective.
- Amazon EC2: A service that lets you quickly create and manage virtual servers in the cloud.
- Amazon RDS: A service that makes it easy to create and manage databases in the cloud, including MySQL, PostgreSQL, and others.

Think of it like this:

- Aurora is a high-performance database engine.
- EC2 is a virtual server that can run your applications.
- RDS is a service that helps you create and manage databases, including Aurora, with ease!

These technologies can help you build and run scalable and reliable applications in the cloud!

1: Create an Aurora instance

MOKGADI SELEPE

Console Home

Recently visited: EC2, S3, CloudWatch, IAM, Billing and Cost Management, Aurora and RDS, Lambda.

Applications (0): Create application. Region: US West (Oregon). Select Region: us-west-2 (Current Region). Find applications.

Welcome to AWS: Getting started with AWS. Learn the fundamentals and find valuable information to Error occurred, please reload.

AWS Health: Open issues: 0 (Past 7 days). Scheduled changes.

Cost and usage: Current month: \$0.00. Forecasted month end: 0.

Aurora and RDS

Dashboard: Databases, Query editor, Performance insights, Snapshots, Exports in Amazon S3, Automated backups, Reserved instances, Proxies, Subnet groups, Parameter groups, Option groups, Custom engine versions, Zero-ETL integrations, Events, Event subscriptions.

Resources: DB Instances (0/40), Allocated storage (0 TB/100 TB), Instances and storage include Neptune and DocumentDB, Increase DB instances limit, DB Clusters (0/40), Reserved instances (0/40), Snapshots (0), Manual (DB Cluster (0/100), DB Instance (0/100)), Automated (DB Cluster (0), DB Instance (0)). Recent events (7), Event subscriptions (0/20). Parameter groups (2), Option groups (1), Subnet groups (1/50), Supported platforms VPC, Default network vpc-0dad90004cccd0c14c.

Create a database: Amazon Relational Database Service (RDS) makes it easy to set up, operate, and scale a relational database in the cloud. You can use a backup from Amazon S3 to restore and create a new Aurora MySQL and MySQL database. Create a database, Restore from S3. Note: your DB instances will launch in the US West (Oregon) region.

Service health: Current status: Amazon Relational Database Service (Oregon) - Service is operating normally. View service health dashboard.

Explore Aurora & RDS: In this activity, you will learn how to create a database. To begin, choose Start tutorial. Estimated duration: 2-5 minutes. Start tutorial.

Recommended services: No recommendations yet. Recommended services will display based on your AWS console usage.

Recommended for you: Time-Series Tables in PostgreSQL, Migrate SSRS to RDS for SQL Server, Build RDS Operational Tasks, Test Your DR Strategy in Minutes, Additional information: Getting started with RDS, Overview and features.

MOKGADI SELEPE

Screenshot of the AWS RDS 'Create database' wizard:

Create database [Info](#)

Choose a database creation method

Standard create
You set all of the configuration options, including ones for availability, security, backups, and maintenance.

Easy create
Use recommended best-practice configurations. Some configuration options can be changed after the database is created.

Engine options

Engine type [Info](#)

Aurora (MySQL Compatible) 

Aurora (PostgreSQL Compatible) 

MySQL 

PostgreSQL 

MariaDB 

Oracle 

Microsoft SQL Server

IBM Db2

Templates

Choose a sample template to meet your use case.

Production
Use defaults for high availability and fast, consistent performance.

Dev/Test
This instance is intended for development use outside of a production environment.

Settings

DB cluster identifier [Info](#)
Type a name for your DB cluster. The name must be unique across all DB clusters owned by your AWS account in the current AWS Region.

The DB cluster identifier is case-insensitive, but is stored as all lowercase (as in "mydbcluster"). Constraints: 1 to 63 alphanumeric characters or hyphens. First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

Credentials Settings

Master username [Info](#)
Type a login ID for the master user of your DB instance.

1 to 32 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.

CloudShell **Feedback** © 2025, Amazon Web Services, Inc. or its affiliates. [Privacy](#) [Terms](#) [Cookie preferences](#)

Aurora and RDS > **Databases** > **Create database**

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.

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

Master password [Info](#)

Password strength Neutral Minimum constraints: At least 8 printable ASCII characters. Can't contain any of the following symbols: / \ ^ @

Confirm master password [Info](#)

Cluster storage configuration [Info](#)
Choose the storage configuration for the Aurora DB cluster that best fits your application's price predictability and price performance needs.

Configuration options
Database instance, storage, and I/O charges vary depending on the configuration. [Learn more](#)

Aurora I/O-Optimized

- Predictable pricing for all applications. Improved price performance for I/O-intensive applications (I/O costs >25% of total database costs).
- No additional charges for read/write I/O operations. DB instance and storage prices include I/O usage.

Aurora Standard

- Cost-effective pricing for many applications with moderate I/O usage (I/O costs <25% of total database costs).
- Pay-per-request I/O charges apply. DB instance and storage prices don't include I/O usage.

CloudShell **Feedback** © 2025, Amazon Web Services, Inc. or its affiliates. [Privacy](#) [Terms](#) [Cookie preferences](#)

MOKGADI SELEPE

The screenshot shows the AWS Aurora and RDS 'Create database' wizard with three main sections:

- Instance configuration**:
 - DB instance class: db.t3.medium (selected)
 - Multi-AZ deployment: Don't create an Aurora Replica (selected)
- Availability & durability**:
 - Compute resource: Don't connect to an EC2 compute resource (selected)
 - Network type: IPv4 (selected)
- Connectivity**:
 - Virtual private cloud (VPC): LabVPC (vpc-04019edbd4b05d900) (selected)
 - DB subnet group: dbsubnetgroup (selected)
 - Public access: No (selected)
 - RDS Proxy: Create an RDS Proxy (unchecked)
 - Certificate authority - optional: rds-ca-rsa2048-g1 (default) (selected)

MOKGADI SELEPE

The screenshots show the configuration steps for creating a new Amazon Aurora database:

- Monitoring:** Options for Database Insights (Standard selected) and Enhanced Monitoring.
- Backup:** Configuration for backup retention period (1 day), copy tags to snapshots, enable encryption, and backtrack settings.
- Maintenance:** Options for enabling auto minor version upgrade, maintenance window (No preference selected), and enable deletion protection.
- Estimated monthly costs:** Shows a total cost of \$59.86 USD per month.

At the bottom, a note states: "You are responsible for ensuring that you have all of the necessary rights for any third-party products or services that you use with AWS services."

MOKGADI SELEPE

Suggested add-ons for aurora

Simplify the configuration of the following suggested add-ons by using settings from your new database.



Create an ElastiCache cluster from RDS using your DB settings

You can save costs and improve read performance by using ElastiCache with RDS versus running on RDS alone.

*For example: you can save up to 55% in cost and gain up to 80x faster read performance using ElastiCache with RDS for MySQL (vs. RDS for MySQL alone).

[Learn more ↗](#)

[Create ElastiCache cluster](#)



Use RDS Proxy

Using a proxy allows your applications to pool and share database connections to help them scale. A proxy simplifies connection management and makes applications more resilient to database failures.

[Learn more ↗](#)

[Create proxy](#)

ⓘ You can hide these suggestions so they don't appear after database creation. All these actions can be taken from the database list page or database details page.

Hide add-ons for 30 days

[Close modal](#)

The screenshot shows the AWS Aurora and RDS console under the 'Databases' section. A blue banner at the top states: 'Creating database aurora. Your database might take a few minutes to launch. You can use settings from aurora to simplify configuration of suggested database add-ons while we finish creating your DB for you.' Below the banner is a table titled 'Databases (2)' showing two entries: 'aurora' (Available, Regional cluster, Aurora MySQL, us-west-2, 1 instance) and 'aurora-instance-1' (Creating, Writer instance, Aurora MySQL, us-west-2b, db.t3.medium). The left sidebar includes links for Dashboard, Databases, Query editor, Performance insights, Snapshots, Exports in Amazon S3, Automated backups, Reserved instances, Proxies, Subnet groups, Parameter groups, Option groups, Custom engine versions, Zero-ETL integrations, Events, and Event subscriptions.

The screenshot shows the AWS Aurora and RDS console under the 'Databases' section. A green banner at the top states: 'Successfully created database aurora. You can use settings from aurora to simplify configuration of suggested database add-ons while we finish creating your DB for you.' Below the banner is a table titled 'Databases (2)' showing the same two entries as the previous screenshot ('aurora' and 'aurora-instance-1'). The left sidebar is identical to the first screenshot.

MOKGADI SELEPE

I've created an Amazon Aurora database instance! Here's what I did:

- I chose to create an Aurora database with MySQL compatibility.
- I set up the database with a username (admin) and password (admin123), and chose a database instance type (db.t3.medium).
- I configured the database to run in a specific Virtual Private Cloud (VPC) called LabVPC and subnet group called dbsubnetgroup.
- I created the database, and it's now launching (it'll take a few minutes to be ready).

Think of it like setting up a new database server that's fast, reliable, and secure! I've given it a name, "aurora", and an initial database name, "world". I've also configured some security settings, like choosing an existing VPC security group called DBSecurityGroup.

I'm expecting to see a notification message saying "Successfully created database aurora" once it's ready.

2: Connect to an Amazon EC2 Linux instance

The screenshot shows the AWS EC2 Dashboard. On the left, a sidebar menu includes 'Instances' (with 1 instance running), 'Images' (AMIs, AMI Catalog), and 'Elastic Block Store' (Volumes, Snapshots). The main content area has a blue header bar with a dismiss button and a 'Change landing page' link. Below this, the 'Resources' section displays the following counts: Instances (running) 1, Auto Scaling Groups 0, Capacity Reservations 0, Dedicated Hosts 0, Elastic IPs 0, Instances 1, Key pairs 1, Load balancers 0, Placement groups 0, Security groups 4, Snapshots 0, and Volumes 1. To the right of the resources is the 'Account attributes' section, which lists the Default VPC (vpc-0dad90004cc0c14c), Settings (Data protection and security, Allowed AMIs, Zones, EC2 Serial Console, Default credit specification, EC2 console preferences), and the 'Explore AWS' section, which introduces Spot Blueprints and offers to enable Best Price-Performance with AWS Graviton2. A note at the bottom of the dashboard states: 'Note: Your instances will launch in the United States (Oregon) Region'.

MOKGADI SELEPE

The screenshot shows two consecutive pages from the AWS EC2 service.

Instances (1/1) Info

- Account ID: 0599-0642-8643
vocabs/user4473058=Mokgadi_Selepe
- Region: United States (Oregon)
- Instances (1/1): Command Host (i-0fad51ab9004406e4)
- Instance state: Running
- Instance type: t3.medium
- Status check: 3/3 checks passed
- Alarm status: View alarms
- Availability Zone: us-west-2a
- Public IP: ec2-34-208-159-221.us-west-2.compute.amazonaws.com

i-0fad51ab9004406e4 (Command Host)

Details | Status and alarms | Monitoring | Security | Networking | Storage | Tags

Instance summary

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0fad51ab9004406e4	34.208.159.221 open address	10.0.0.232

Connect

Connect to an instance using the browser-based client.

EC2 Instance Connect | Session Manager | SSH client | EC2 serial console

Connection type

Connect using a Public IP
Connect using a public IPv4 or IPv6 address

Connect using a Private IP
Connect using a private IP address and a VPC endpoint

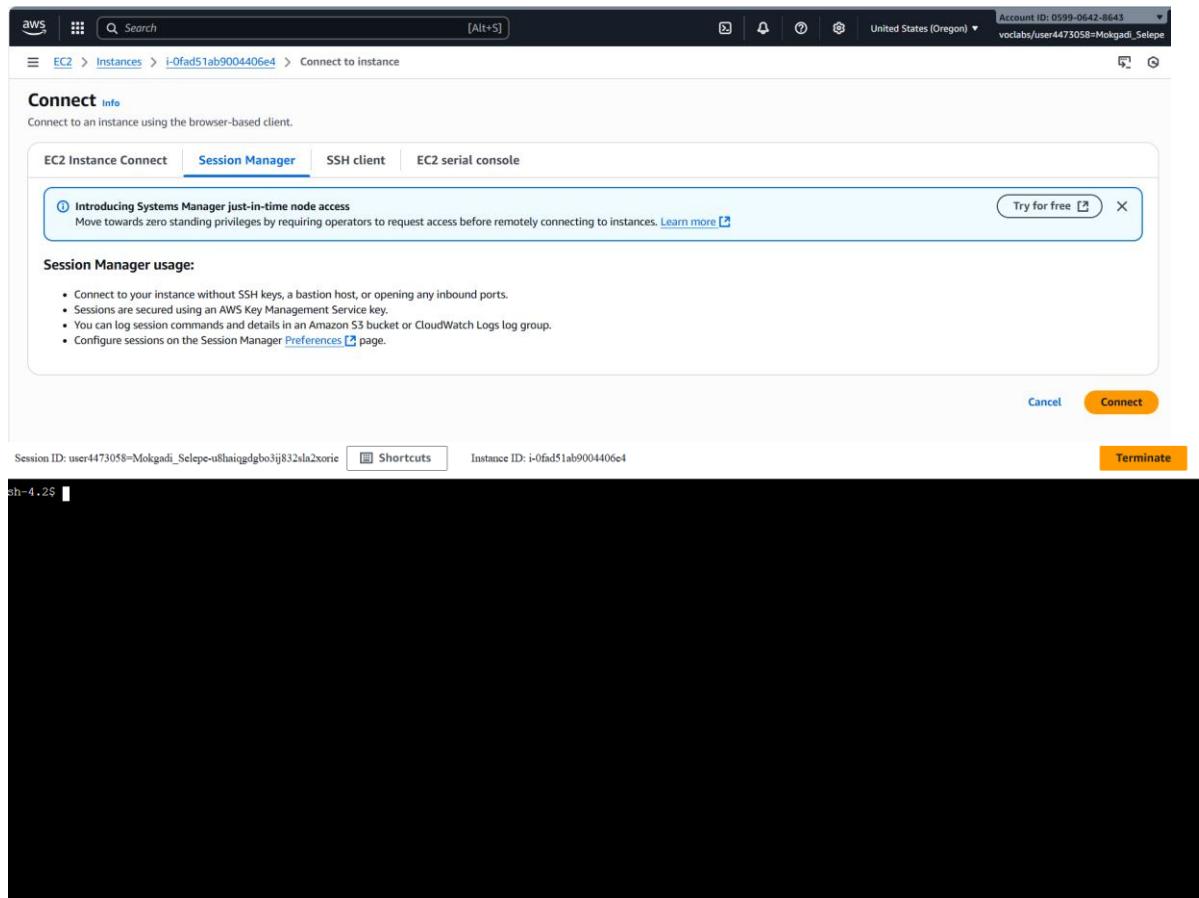
Username
Enter the username defined in the AMI used to launch the instance. If you didn't define a custom username, use the default username, ec2-user.

ec2-user

Note: In most cases, the default username, ec2-user, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.

Cancel | Connect

MOKGADI SELEPE



I've connected to an Amazon EC2 Linux instance! Here's what I did:

- I searched for and opened the EC2 service in the AWS Management Console.
- I selected the instance labelled "Command Host" and chose to connect to it.
- I used Session Manager to connect to the instance, which opened a terminal window.

Think of it like logging into a remote computer! I'm now connected to the Command Host instance and can start running commands.

3: Configure the Amazon EC2 Linux instance to connect to Aurora

MOKGADI SELEPE

Session ID: user4473058=Mokgadi_Selepe-u8haingdgbo3ij832sla2xorise [Shortcuts](#) Instance ID: i-0fd51ab9004406e4 [Terminate](#)

```
sh-4.2$ sudo yum install mariadb -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core
Resolving Dependencies
--> Running transaction check
--> Package mariadb.x86_64 1:5.5.68-1.amzn2.0.1 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

=====
Package           Arch      Version          Repository      Size
=====
Installing:
mariadb          x86_64   1:5.5.68-1.amzn2.0.1    amzn2-core      8.8 M

Transaction Summary
Install  1 Package

Total download size: 8.8 M
Installed size: 49 M
Downloading packages:
mariadb-5.5.68-1.amzn2.0.1.x86_64.rpm
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : 1:mariadb-5.5.68-1.amzn2.0.1.x86_64
  Verifying  : 1:mariadb-5.5.68-1.amzn2.0.1.x86_64

Installed:
  mariadb.x86_64 1:5.5.68-1.amzn2.0.1

Complete!
sh-4.2$
```

AWS Search [Alt+S] United States (Oregon) volelabs/user4473058=Mokgadi_Selepe Account ID: 0599-0642-8643

[Aurora and RDS](#) > Dashboard

Aurora and RDS

- [Dashboard](#)
- Databases
- Query editor
- Performance insights
- Snapshots
- Exports in Amazon S3
- Automated backups
- Reserved instances
- Proxies
- Subnet groups
- Parameter groups
- Option groups
- Custom engine versions
- Zero-ETL integrations
- Events
- Event subscriptions

Resources

You are using the following Amazon RDS resources in the US West (Oregon) region (used/quota)

DB Instances (1/40)	Parameter groups (2)
Allocated storage (0 TB/100 TB)	Default (2)
Instances and storage include Neptune and DocumentDB. Increase DB instances limit ↗	Custom (0/100)
DB Clusters (1/40)	Option groups (1)
Reserved instances (0/40)	Default (1)
Snapshots (0)	Custom (0/20)
Manual	Subnet groups (1/50)
DB Cluster (0/100)	Supported platforms ↗ VPC
DB Instance (0/100)	Default network vpc-0cbfe50cc56b6b68a
Automated	
DB Cluster (0)	
DB Instance (0)	
Recent events (3)	
Event subscriptions (0/20)	

Explore Aurora & RDS

In this activity, you will learn how to create a database. To begin, choose [Start tutorial](#).

Estimated duration
2-5 minutes

[Start tutorial](#)

Recommended services ↗

Customers like you also use these services.

No recommendations yet

Recommended services will display based on your AWS console usage.

Recommended for you

[Migrate SSRS to RDS for SQL Server](#)

Learn how you can migrate existing SSRS content to an Amazon RDS for SQL Server instance using a

AWS Search [Alt+S] United States (Oregon) volelabs/user4473058=Mokgadi_Selepe Account ID: 0599-0642-8643

[Aurora and RDS](#) > Databases > aurora

Aurora and RDS

- [Dashboard](#)
- Databases
- Query editor
- Performance insights
- Snapshots
- Exports in Amazon S3
- Automated backups
- Reserved instances
- Proxies
- Subnet groups
- Parameter groups
- Option groups
- Custom engine versions
- Zero-ETL integrations
- Events
- Event subscriptions

Related

DB identifier	Status	Role	Engine	Region ...	Size	Recom...	CPU
aurora	Available	Regional c...	Aurora My...	us-west-2	1 instance	-	-
aurora-instance-1	Available	Writer ins...	Aurora My...	us-west-2b	db.t3.med...	-	-

Endpoints (0)

[Create custom endpoint](#)

Manage IAM roles

Select IAM roles to add to this cluster

Sunday, 09 November 2025

MOKGADI SELEPE

The screenshot shows the AWS Aurora and RDS console. In the left sidebar, under 'Aurora and RDS', the 'Databases' section is selected. Under 'Databases', 'aurora' is highlighted. The main pane displays the 'aurora' database configuration. It shows a table for 'DB identifier' with one row for 'aurora'. Below this is a table for 'Endpoints (2)' with two rows: 'aurora.cluster-cc012n8grj74.us-west-2.rds.amazonaws.com' (Writer) and 'aurora.cluster-ro-cc012n8grj74.us-west-2.rds.amazonaws.com' (Reader). At the bottom of the screenshot, a terminal window shows the MySQL command-line interface connected to the Aurora database:

```
sh-4.2$ mysql -u admin --password='Admin123#4' -h aurora.cluster-cc012n8grj74.us-west-2.rds.amazonaws.com
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MySQL connection id is 220
Server version: 8.0.39 8bc99e28

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

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

I've configured my Amazon EC2 Linux instance to connect to my Aurora database!

Here's what I did:

- I installed the MariaDB client using the yum package manager, which allows me to connect to my Aurora instance.
- I went back to the AWS Management Console, found my Aurora instance, and copied the endpoint name for the Writer instance.
- I used the endpoint to log into my database using the MySQL Command-Line Client, providing my username and password.

Think of it like setting up a connection between my Linux instance and my database, so I can start interacting with it! I've got the MariaDB monitor open, and I'm ready to start running queries.

4: Create a table and insert and query records

MOKGADI SELEPE

```
MySQL [(none)]> SHOW DATABASES;
+-----+
| Database      |
+-----+
| information_schema |
| mysql          |
| performance_schema |
| sys            |
| world          |
+-----+
5 rows in set (0.00 sec)

MySQL [(none)]> USE world;
Database changed
MySQL [world]> 
```

Session ID: user4473058=Mokgadi_Selepe-ceg7nroqat2nrkzel3tcnhi Shortcuts Instance ID: i-01220c8369e039cfa Terminate

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

MySQL [(none)]> SHOW DATABASES;
+-----+
| Database      |
+-----+
| information_schema |
| mysql          |
| performance_schema |
| sys            |
| world          |
+-----+
5 rows in set (0.00 sec)

MySQL [(none)]> USE world;
Database changed
MySQL [world]> CREATE TABLE `country` (
    --> `Code` CHAR(3) NOT NULL DEFAULT '',
    --> `Name` CHAR(52) NOT NULL DEFAULT '',
    --> `Continent` enum('Asia','Europe','North America','Africa','Oceania','Antarctica','South America') NOT NULL DEFAULT 'Asia',
    --> `Region` CHAR(26) NOT NULL DEFAULT '',
    --> `SurfaceArea` FLOAT(10,2) NOT NULL DEFAULT '0.00',
    --> `IndepYear` SMALLINT(6) DEFAULT NULL,
    --> `Population` INT(11) NOT NULL DEFAULT '0',
    --> `LifeExpectancy` FLOAT(3,1) DEFAULT NULL,
    --> `GNP` FLOAT(10,2) DEFAULT NULL,
    --> `GNPOld` FLOAT(10,2) DEFAULT NULL,
    --> `LocalName` CHAR(45) NOT NULL DEFAULT '',
    --> `GovernmentForm` CHAR(45) NOT NULL DEFAULT '',
    --> `Capital` INT(11) DEFAULT NULL,
    --> `Code2` CHAR(2) NOT NULL DEFAULT '',
    --> PRIMARY KEY (`Code`)
--> );
Query OK, 0 rows affected, 7 warnings (0.09 sec)

MySQL [world]>
MySQL [world]> INSERT INTO `country` VALUES ('GAB','Gabon','Africa','Central Africa',267668.00,1960,1226000,50.1,5493.00,5279.00,'Le Gabon','Republic',902,'GA');
Query OK, 1 row affected (0.00 sec)

MySQL [world]>
MySQL [world]> INSERT INTO `country` VALUES ('IRL','Ireland','Europe','British Islands',70273.00,1921,3775100,76.8,75921.00,73132.00,'Ireland/Eire','Republic',1447,'IE');
Query OK, 1 row affected (0.00 sec)

MySQL [world]>
MySQL [world]> INSERT INTO `country` VALUES ('THA','Thailand','Asia','Southeast Asia',513115.00,1350,61399000,68.6,116416.00,153907.00,'Prathet Thai','Constitutional Monarchy',3320,'TH');
Query OK, 1 row affected (0.00 sec)

MySQL [world]>
MySQL [world]> INSERT INTO `country` VALUES ('CRI','Costa Rica','North America','Central America',51100.00,1821,4023000,75.8,10226.00,9757.00,'Costa Rica','Republic',584,'CR');
Query OK, 1 row affected (0.00 sec)

MySQL [world]>
MySQL [world]> INSERT INTO `country` VALUES ('AUS','Australia','Oceania','Australia and New Zealand',7741220.00,1901,18886000,79.8,351182.00,392911.00,'Australia','Constitutional Monarchy',Federation,135,'AU');
Query OK, 1 row affected (0.00 sec)

MySQL [world]> 
```

Code	Name	Continent	Region	SurfaceArea	IndepYear	Population	LifeExpectancy	GNP	GNPOld	LocalName	GovernmentForm
AUS	Australia	Oceania	Australia and New Zealand	7741220.00	1901	18886000	79.8	351182.00	392911.00	Australia	Constitutional Monarchy, Federation,135,AU
THA	Thailand	Asia	Southeast Asia	513115.00	1350	61399000	68.6	116416.00	153907.00	Prathet Thai	Constitutional Monarchy,3320,TH

2 rows in set (0.00 sec)

I've worked with a database!

Here's what I did:

MOKGADI SELEPE

- I listed the available databases and found the "world" database I created earlier.
- I switched to the "world" database and created a new table called "country" with columns for country data.
- I inserted five new records into the "country" table with data about different countries.
- I ran a query to find countries with a GNP (Gross National Product) over 35,000 and a population over 10 million, and it returned two records: Australia and Thailand!

Think of it like creating a spreadsheet, adding data to it, and then searching for specific information in the spreadsheet.

Conclusion

I've wrapped up my project!

Here's what I've accomplished:

- I created an Amazon Aurora database instance, which is a powerful and reliable database.
- I connected to an Amazon EC2 instance, which is a virtual computer in the cloud.
- I set up the EC2 instance to connect to my Aurora database, so they can talk to each other.
- I used the EC2 instance to query my Aurora database, running commands and getting results.

Think of it like building a house:

- I built a strong foundation (Aurora database).
- I created a workshop (EC2 instance) to work on my project.
- I connected the workshop to the foundation (configured EC2 to connect to Aurora).
- I started working on my project, using the workshop to query the foundation (ran queries on Aurora).

It's been a great learning experience, and I'm excited to keep exploring and building with AWS!
