Datos Generales:

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Este laboratorio presenta Amazon Aurora y proporciona una comprensión básica de cómo usar Aurora. Seguirá los pasos para crear una instancia de Aurora y luego conectarse a ella.

Después de completar este laboratorio, podrá hacer lo siguiente:

- Crear una instancia de Aurora
- Conectarse a una instancia de Amazon EC2
- Configurar la instancia de Amazon EC2 para conectarse a Aurora
- Consultar la instancia de Aurora

Tarea 1: Crear una instancia de Aurora

Amazon Aurora es un motor de base de datos relacional completamente administrado, compatible con MySQL, que combina el rendimiento y la fiabilidad de las bases de datos comerciales de alto nivel con la simplicidad y la rentabilidad de las bases de datos de código abierto.
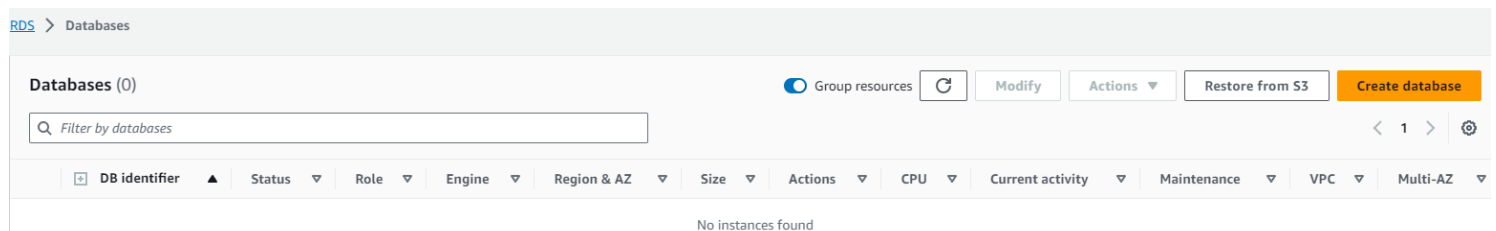
Amazon Aurora entrega hasta cinco veces más rendimiento que MySQL sin requerir cambios a la mayoría de sus aplicaciones insistentes que usan bases de datos MySQL.

En esta tarea, creará una instancia de base de datos de Amazon Aurora.

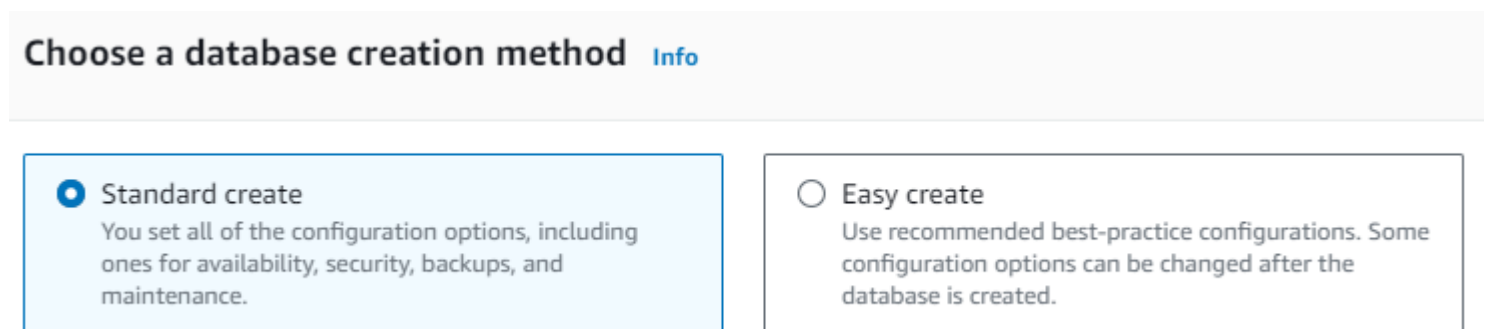**Paso 1:** AWS Management Console → Services → Database → RDS
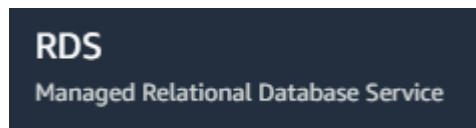
Paso 2: RDS → Panel de navegación → Databases → Create database

Paso 3: Create database → Ingresar siguientes opciones

- Choose a database method → Standard create
- Engine options → Amazon Aurora
- Engine options → Replication features → Single-master
- Templates → Dev/Test

Engine options

Engine type Info

- ● Aurora (MySQL Compatible)
- ○ Aurora (PostgreSQL Compatible)
- ○ MySQL

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.

Paso 4: Create database →Settings

- Cluster Identifier = aurora
- Master username = admin
- Master password = admin123
- Confirm password = admin123

Settings

DB cluster identifier Info

Enter 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.

```
aurora
```

The DB cluster identifier is case-insensitive, but is stored as all lowercase (as in "mydbcluster"). Constraints: 1 to 60 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.

```
admin
```

1 to 32 alphanumeric characters. The first character must be a letter.

3

Master password Info

••••••••

Constraints: At least 8 printable ASCII characters. Can't contain any of the following: / (slash), '(single quote), "(double quote) and @ (at sign).

Confirm master password Info

••••••••

Paso 5: Create database → DB instance class

- Seleccionar → Burstable classes
- Seleccionar → db.t3small

Instance configuration

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

DB instance class Info

◯ Serverless v2

◯ Memory optimized classes (includes r classes)

🔘 Burstable classes (includes t classes)

db.t3.medium
2 vCPUs   4 GiB RAM   Network: 2085 Mbps   ▼

Paso 6: Create database → Availability & durability

- Multi-AZ deployment → Don't create an Aurora replica

Availability & durability

Multi-AZ deployment Info

◯ Create an Aurora Replica or Reader node in a different AZ (recommended for scaled availability)
    Creates an Aurora Replica for fast failover and high availability.

🔘 Don't create an Aurora Replica

Paso 7: Create database → Connectivity

- VPC → LabVPC
- Subnet group → dbsubnetgroup
- Public Access → No
- VPC security group → Choose existing
- Existing VPC security groups → Eliminar el grupo de seguridad predeterminado
- Existing VPC security groups → Lista desplegable → DBSecurityGroup

Virtual private cloud (VPC) Info

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

> LabVPC (vpc-05dc4aee96ff278cc)
> 2 Subnets, 2 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 cluster can use in the VPC that you selected.

> dbsubnetgroup
> 2 Subnets, 2 Availability Zones   ▼

Public access Info

○ Yes
   RDS assigns a public IP address to the cluster. Amazon EC2 instances and other resources outside of the VPC can connect to your cluster. Resources inside the VPC can also connect to the cluster. Choose one or more VPC security groups that specify which resources can connect to the cluster.

🔘 No
   RDS doesn't assign a public IP address to the cluster. Only Amazon EC2 instances and other resources inside the VPC can connect to your cluster. Choose one or more VPC security groups that specify which resources can connect to the cluster.

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	○ Create new
Choose existing VPC security groups	Create new VPC security group

Existing VPC security groups

> Choose one or more options   ▼

DBSecurityGroup ✕

Paso 8: Create database → Additional configuration

- Initial database name = world

▼ Additional configuration

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

Database options

Initial database name **Info**

```
world
```

If you do not specify a database name, Amazon RDS does not create a database.

Paso 9: Create database → Encryption

- Deseleccionar la casilla "Enable encryption"

Encryption

☐ Enable encryption
Choose to encrypt the given instance. Master key IDs and aliases appear in the list after they have been created using the AWS Key Management Service console. **Info**

Paso 10: Create database → Monitoring

- Deseleccionar la casilla "Enable Enhanced monitoring"

Monitoring

Monitoring

☐ Enable Enhanced monitoring
Enabling Enhanced monitoring metrics are useful when you want to see how different processes or threads use the CPU.

Paso 11: Create database → Maintenance

- Deseleccionar la casilla "Enable auto minor version upgrade"

Maintenance

Auto minor version upgrade **Info**

☐ Enable auto minor version upgrade

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

Maintenance window **Info**

Select the period you want pending modifications or maintenance applied to the databas

Paso 12: Create database → Create

Create database

⦿   aurora   ⊘ Available   Regional cluster   Aurora MySQL   us-west-2

❌ **Your request to create DB cluster aurora-instance-1 didn't work.**   ✕
User: arn:aws:sts::409583166807:assumed-role/voclabs/user2741130=Tom__sVillaseca is not
authorized to perform: rds:CreateDBInstance on resource: arn:aws:rds:us-west-
2:409583166807:db:aurora-instance-1 with an explicit deny in an identity-based policy

No se puede completar laboratorio dado que usuario entregado no tiene los permisos para crea la
instancia de base de datos.

En esta tarea, iniciará la sesión en su instancia de Linux de Amazon EC2. Esta instancia se inició para usted cuando inició su laboratorio usando CloudFormation.

Paso 1: AWS Management Console → Services → Compute → EC2 → Instances → Command Host

Instances (1/1) Info

	Name ✎	▽	Instance ID	Instance state	▽	Instance type	▽	Status check	
☑	Command Host		i-0abf6ade1eb323e99	⊘ Running ⊕⊖		t3.medium		⊘ 2/2 checks passed	

Paso 2: Command Host → Connect → Session Manager

EC2 > Instances > i-0abf6ade1eb323e99 > Connect to instance

Connect to instance Info

Connect to your instance i-0abf6ade1eb323e99 (Command Host) using any of these options

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

Session Manager usage:

- Connect to your instance without SSH keys, a bastion host, or opening any inbound ports.
- Sessions are secured using an AWS Key Management Service key.
- You can log session commands and details in an Amazon S3 bucket or CloudWatch Logs log group.
- Configure sessions on the Session Manager Preferences ☑ page.

Cancel   **Connect**

En esta tarea, configurará la instancia de Linux de Amazon EC2 para conectarse a Aurora.

Paso 1: Configurar la instancia con el **cliente MariaDB** ingresando el siguiente comando:

```
sudo yum install mariadb -y
```

- Cliente MariaDB se utiliza para conectarse a la instancia de Aurora.

```
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
================================================================================
Installing:
 mariadb                                         x86_64

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$
```
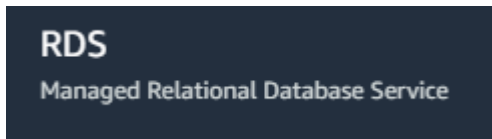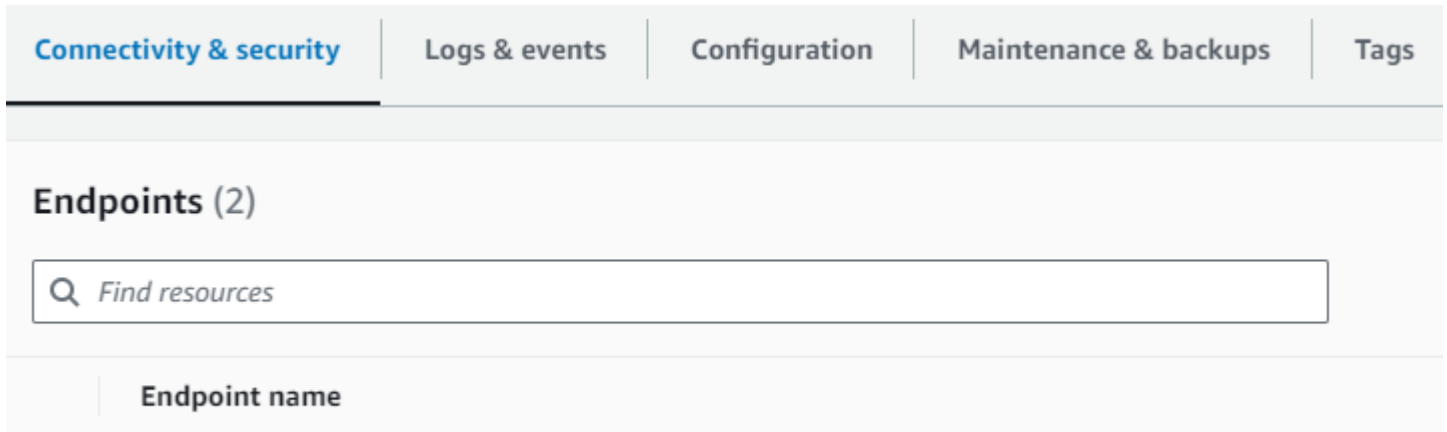
Paso 2: AWS Management Console → Services → Database → RDS

RDS
Managed Relational Database Service

Paso 3: RDS → aurora → pestaña "Connectivity & security" → Endpoints

- Copiar el **Endpoint name**
- aurora.cluster-cp7rym3bxn9t.us-west-2.rds.amazonaws.com

Connectivity & security	Logs & events	Configuration	Maintenance & backups	Tags

Endpoints (2)

Q Find resources

Endpoint name

⬤ 🗐 aurora.cluster-cp7rym3bxn9t.us-west-2.rds.amazonaws.com

Paso 5: Ingrese el siguiente comando para conectarse a Aurora:

```
mysql -u admin --password='admin123' -h <endpoint_goes_here>
```

- Reemplazar <endpoint_goes_here> con **Endpoint name** copiado anteriormente.

Tarea 4: Crer una tabla e insertar registros de consulta

En esta tarea, aprenderá cómo crear una tabla en una base de datos, cargar datos y ejecutar una tarea.

Paso 1: Mostrar una lista de bases de datos disponibles.

```
SHOW DATABASES;
```

Paso 2: Cambiar a la base de datos **world**

```
USE world;
```

Paso 3: Crear una nueva tabla **country** en la base de datos **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`)
);
```

Paso 4: Insertar nuevos registros en la tabla **country**

```
INSERT INTO `country` VALUES ('GAB','Gabon','Africa','Central Africa',267668.00,1960,1226000,50.1,5493.00,5279.00,'Le Gabon','Republic',902,'GA');

INSERT INTO `country` VALUES ('IRL','Ireland','Europe','British Islands',70273.00,1921,3775100,76.8,75921.00,73132.00,'Ireland/Éire','Republic',1447,'IE');

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');

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');

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');
```

Paso 5: Consultar la tabla **country**

```
SELECT * FROM country WHERE GNP > 35000 and Population > 10000000;
```

Laboratorio Completado