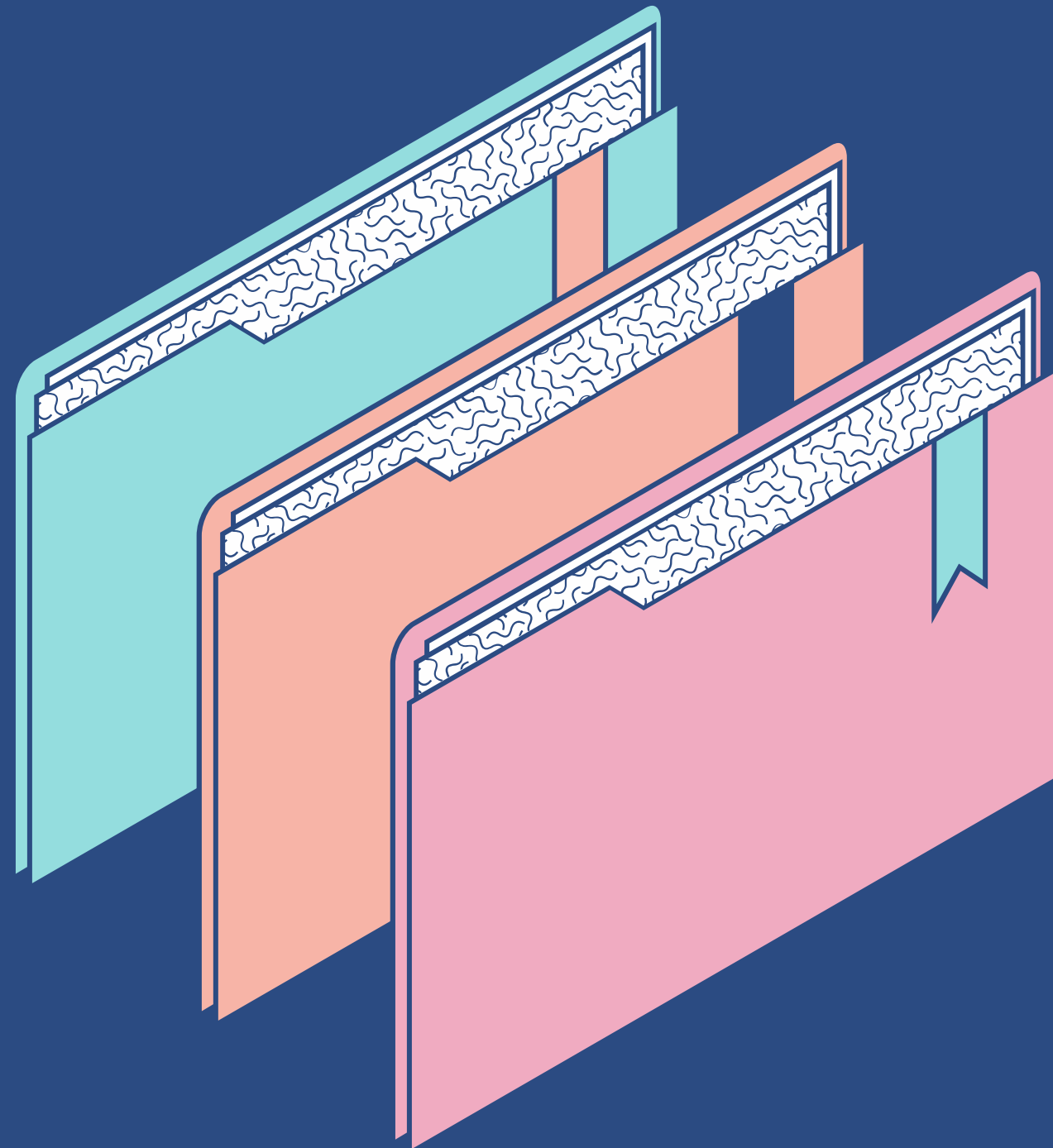




Laboratorio 274

- Introducción a Amazon Aurora

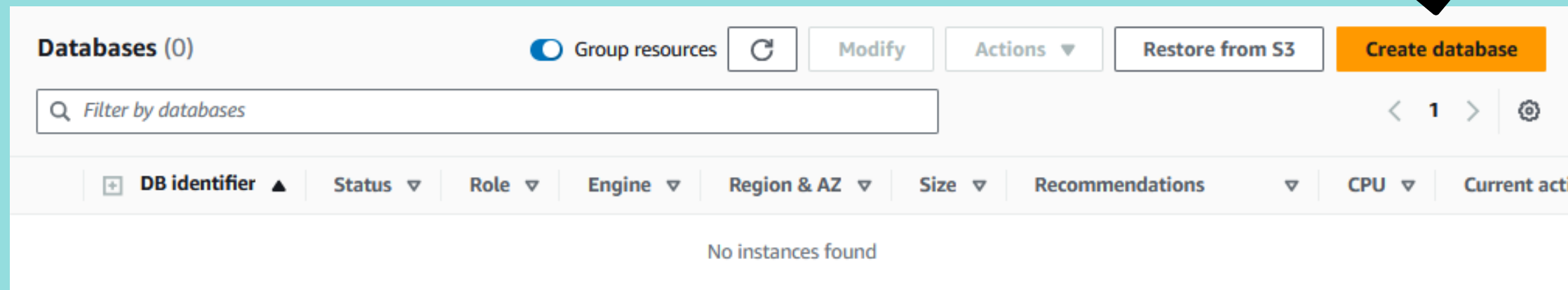
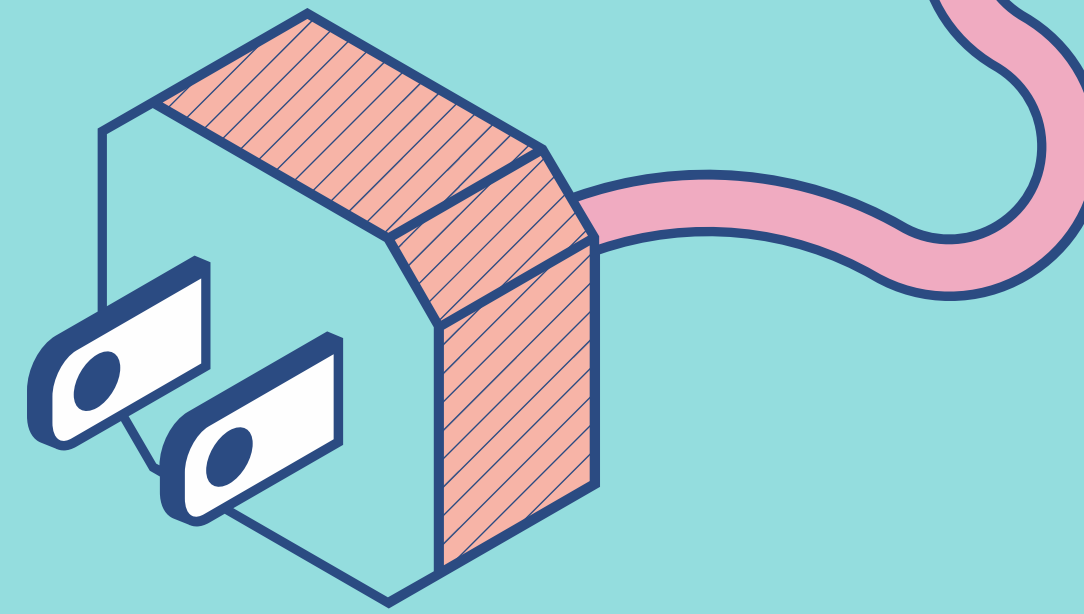
Santiago Burgueño, Benjamin Sabaño, Gonzalo Rondeau, Sony Etcheverry, Fabricio Cervantes, Sabrina Magnani



Objetivos

- Crear una instancia Aurora.
- Conectarse a una instancia EC2 creada previamente.
- Configurar una instancia EC2 para conectarse a Aurora.
- Realizar consultas en la instancia Aurora.

Tarea 1- Crear una instancia de aurora

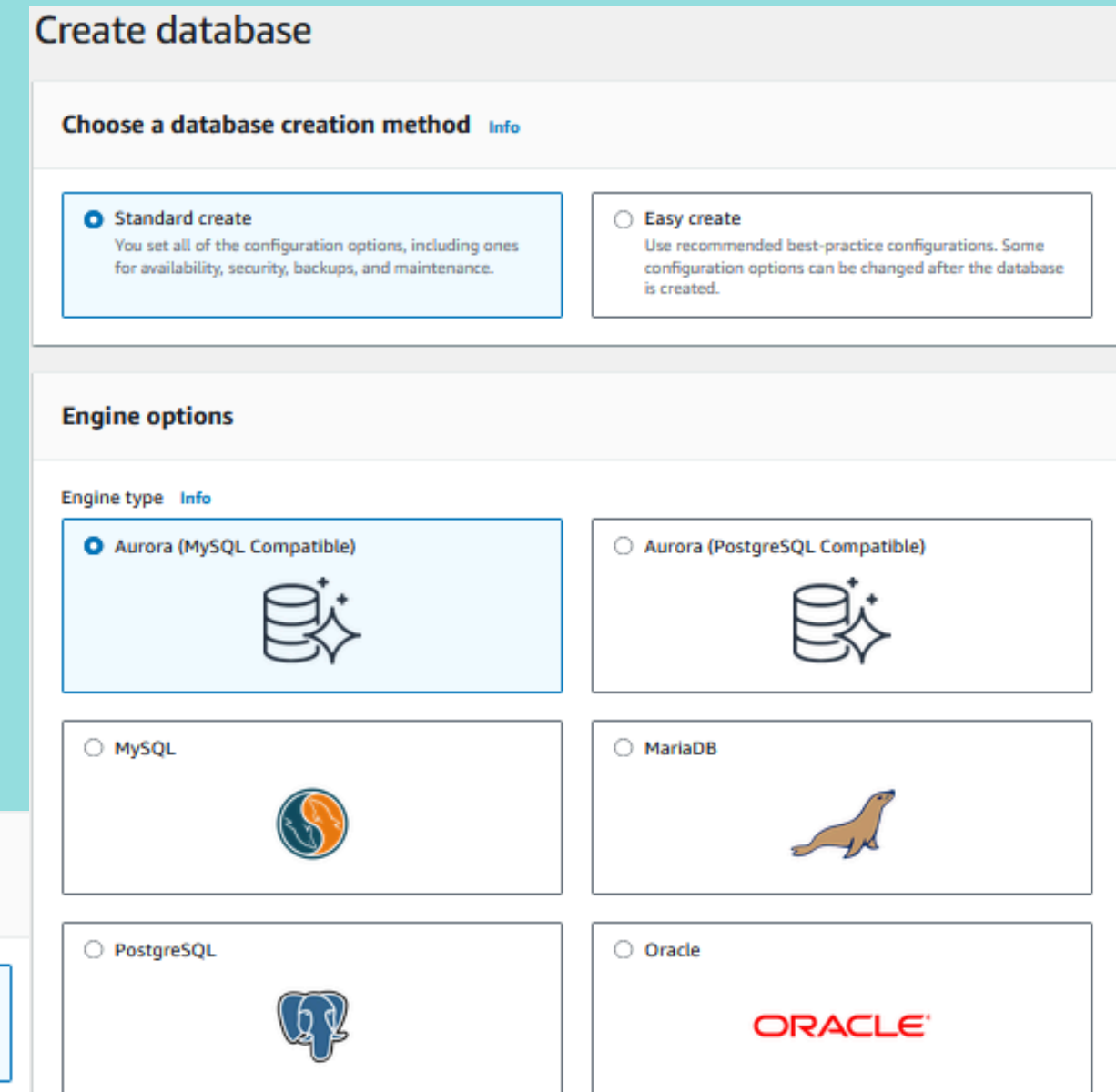


Elija **Create database** y configure las siguientes opciones:

- Para **Choose a database creation method**, seleccione **Standard create**
- Para **Engine options**, seleccione **Amazon Aurora**.

En la sección **Engine options** para **Replication features**, seleccione **Single-master**.

En **Templates**, elija **Dev/Test**.





En la sección **Settings**, configure las siguientes opciones:

- **Cluster Identifier:** Ingrese aurora.
- **Master username:**lingrese admin.
- **Master password:** Ingrese admin123
- **Confirm password:** Ingrese 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.

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

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.

DB instance class [Info](#)

▼ Hide filters

☒ Include previous generation classes

☐ Serverless v2

☐ Memory optimized classes (includes r classes)

☒ Burstable classes (includes t classes)

db.t3.medium

2 vCPUs 4 GiB RAM Network: 2.085 Mbps

En la sección **Availability & durability** para la **Multi-AZ deployment**, seleccione **Don't create an Aurora Replica**.

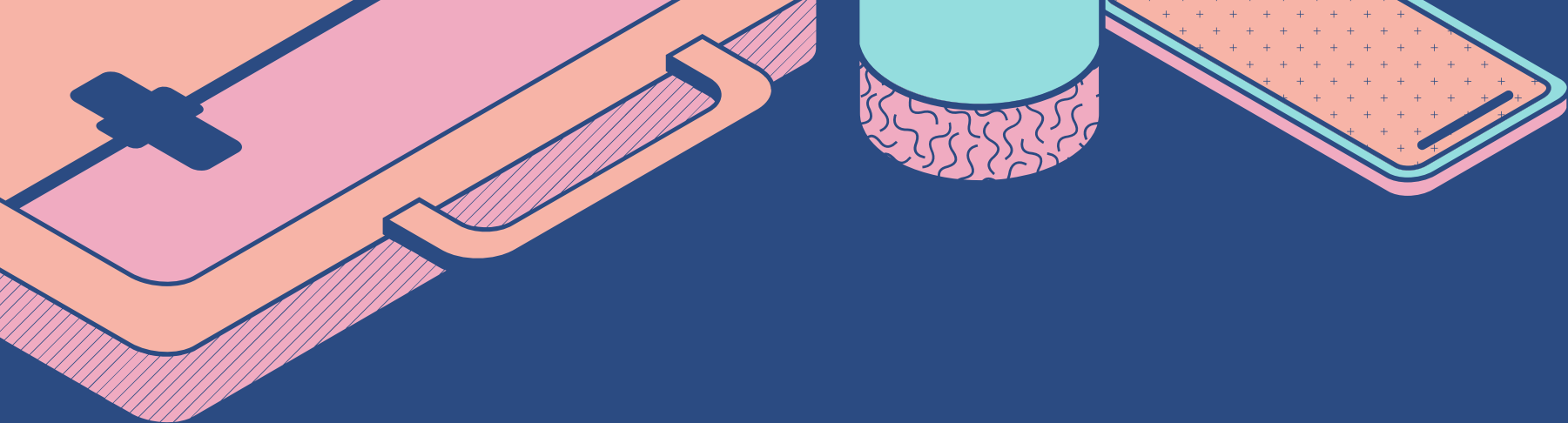
En la sección **DB instance class**, seleccione **Burstable classes** y seleccione **db.t3.small** de la lista desplegable.

Availability & durability

Multi-AZ deployment [Info](#)

☒ Don't create an Aurora Replica

☐ 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.



En **Connectivity**, configure las siguientes opciones:

- Para **Virtual private cloud**, seleccione **LabVPC**.
- Para **Subnet group**, seleccione **dbsubnetgroup**.
- Para **Public access**, seleccione **No**.
- Para **VPC security group**, seleccione **Choose existing**.
- Para **Existing VPC security groups**, elimine el grupo de seguridad predeterminado.
- Desde la lista desplegable **Existing VPC security groups**, seleccione **DBSecurityGroup**.

Virtual private cloud (VPC) [Info](#)
Choose the VPC. The VPC defines the virtual networking environment for this DB cluster.

LabVPC (vpc-0d7c2e5ef2f0fae8a)
2 Subnets, 2 Availability Zones

Only VPCs with a corresponding DB subnet group are listed.

[i](#) 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**
Choose existing VPC security groups

☐ **Create new**
Create new VPC security group

Existing VPC security groups

Choose one or more options

DBSecurityGroup X

En la sección **Encryption**, cancele la selección de la casilla para **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](#)

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.

En la sección **Maintenance**, cancele la selección de la casilla **Enable auto minor version upgrade**

En **Monitoring**, borre la selección de la casilla **Enable Enhanced monitoring**.

Monitoring

- ☐ Enable Enhanced Monitoring
- Enabling Enhanced Monitoring metrics are useful when you want to see how different p

Create database

Tarea 2: Conectarse a una instancia de Linux de Amazon EC2

Junto a la instancia etiquetada **Command Host**, seleccione la casilla ** y luego seleccione **Connect**.

Instances (1/1) Info										
<input type="text" value="Find Instance by attribute or tag (case-sensitive)"/>				All states ▼						
<input checked="" type="checkbox"/>	Name ✎ ▼	Instance ID	Instance state ▼	Instance type ▼	Status check	Alarm status	Availability Zone ▼	Public IPv4 DNS ▼	Public IPv4 ... ▼	Elastic IP
<input checked="" type="checkbox"/>	Command Host	i-03e1acddce1125edf	Running 🔍 🔍	t3.medium	2/2 checks passed	View alarms +	us-west-2a	ec2-35-167-118-217.us...	35.167.118.217	–

Para Connect to instance, seleccione Session Manager.

EC2 Instance Connect

Session Manager

SSH client

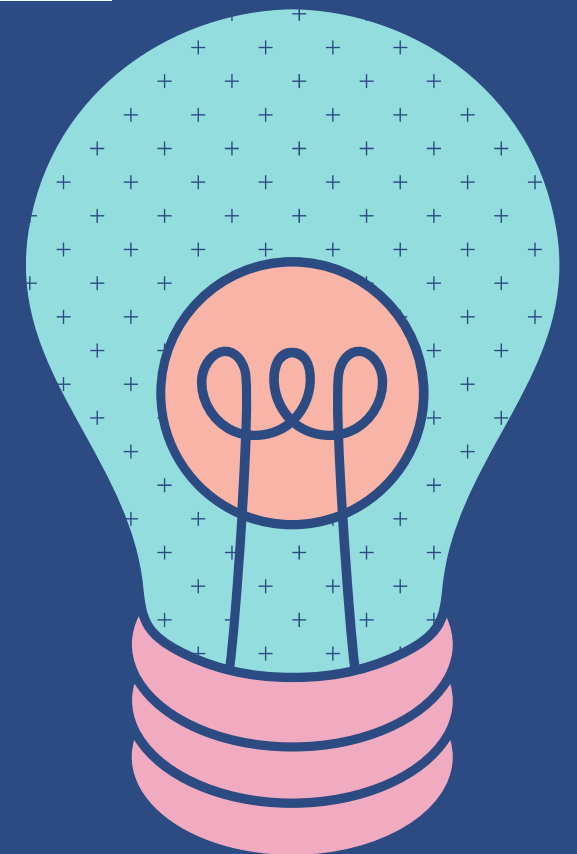
EC2 serial console

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



Tarea 3: Configurar la instancia de Linux de Amazon EC2 para conectarse a Aurora



Para configurar la instancia con el cliente **MariaDB**, ejecute el siguiente comando. (El cliente MariaDB se usa para conectarse a la instancia de Aurora que acaba de crear)

sudo yum install mariadb -y

```
sh-4.2$ sudo yum install mariadb -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core                                | 3.6 kB  00:00:00
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    | 8.8 MB  00:00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : 1:mariadb-5.5.68-1.amzn2.0.1.x86_64      1/1
  Verifying   : 1:mariadb-5.5.68-1.amzn2.0.1.x86_64      1/1

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

Complete!
sh-4.2$
```

Copiamos en la sección Endpoints el endpoint name de nuestra bd y lo dejamos en portapapeles para usarlo en la CLI luego

Related

Q

Filter by databases

<

1

>

⚙

	DB identifier ▲	Status ▼	Role ▼	Engine ▼	Region & AZ ▼	Size ▼	Recommendations ▼	CPU ▼	Current activity ▼	Ma
<input checked="" type="radio"/>	<div><div></div><div>aurora</div></div>	<div><div>✔</div><div>Available</div></div>	Regional cluster	Aurora MySQL	us-west-2	1 instance		-	-	nor
<input type="radio"/>	<div><div></div><div>aurora-instance-1</div></div>	<div><div>✔</div><div>Available</div></div>	Writer instance	Aurora MySQL	us-west-2a	db.t3.medium		<div><div></div><div>11.71%</div></div>	<div><div></div><div>3 Selects/Sec</div></div>	nor

Endpoints (2)

Actions ▼

Create custom endpoint

Q

Find resources

<

1

>

⚙

	Endpoint name ▲	Status ▼	Type ▼	Port
<input type="radio"/>	<div><div></div><div>aurora.cluster-cjicua6ki1lz.us-west-2.rds.amazonaws.com</div></div>	<div><div>✔</div><div>Available</div></div>	Writer	3306

Nos conectamos a la base de datos mediante CLI, utilizando el comando `mysql -u admin --password='admin123' -h aurora.cluster-cjicua6killz.us-west-2.rds.amazonaws.com`

```
sh-4.2$ mysql -u admin --password='admin123' -h aurora.cluster-cjicua6killz.us-west-2.rds.amazonaws.com
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 106
Server version: 8.0.32 Source distribution

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

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

MySQL [(none)]> █
```

Acá mostramos las base de datos y ingresamos a ella

```
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]> █
```

Creamos la siguiente tabla country, con el siguiente contenido

```
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 (0.03 sec)  
  
MySQL [world]> 
```

Rellenamos valores en la tablas

```
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 (0.16 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/Éire','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 (0.01 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 (0.01 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]> █
```

Consultamos los datos de la tabla country, donde GNP es mayor a 35.000, y la población es mayor a 10.000.000

```
MySQL [world]> SELECT * FROM country WHERE GNP > 35000 and Population > 10000000;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+-----+-----+-----+
----+
| Code | Name          | Continent | Region                                | SurfaceArea | IndepYear | Population | LifeExpectancy | GNP      | GNPold    | LocalName      | GovernmentForm      | Capital | Code2 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+-----+-----+-----+
----+
| 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)

MySQL [world]> 
```