

# Laboratorio 4: Trabajo con EBS

## Tarea 1: Crear un grupo de seguridad para la instancia de base de datos de RDS

The screenshot shows the 'Create security group' page in the AWS VPC console. In the 'Basic details' section, the security group name is 'DB Security Group'. The 'Description' field contains 'Permit access from Web Security Group'. Under 'VPC info', the selected VPC is 'vpc-011ff32d039ed061e (Lab VPC)'. In the 'Inbound rules' section, there is one rule: 'MySQL/Aurora' (Protocol: TCP, Port range: 3306) from 'Custom' source with the description 'sg-0839f4e22b785212b'. An 'Add rule' button is visible.

## Tarea 2: Crear un grupo de subredes de base de datos

The screenshot shows the 'Create DB subnet group' page in the AWS RDS console. In the 'Subnet group details' section, the name is 'DB-Subnet-Group' and the description is 'DB-Subnet-Group'. Under 'VPC', the selected VPC is 'Lab VPC (vpc-011ff32d039ed061e)' with 4 Subnets and 2 Availability Zones. In the 'Add subnets' section, 'us-east-1a' and 'us-east-1b' are selected. Under 'Subnets', 'Public Subnet 1' (Subnet ID: subnet-0451d7b707ce3e396, CIDR: 10.0.0.0/24) and 'Private Subnet 2' (Subnet ID: subnet-02e43ed4e0638051c, CIDR: 10.0.3.0/24) are selected. A note says 'For Multi-AZ DB clusters, you must select 3 subnets in 3 different Availability Zones.' In the 'Subnets selected (2)' table, it shows two rows: 'us-east-1a' with 'Public Subnet 1' and 'us-east-1b' with 'Private Subnet 2'. The table has columns: Availability zone, Subnet name, Subnet ID, and CIDR block. Buttons for 'Cancel' and 'Create' are at the bottom right.

## Tarea 3: Crear una instancia de base de datos de Amazon RDS

Screenshot of the AWS RDS 'Create database' wizard.

**Choose a database creation method:**

- Full configuration: 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:**

- Aurora (MySQL Compatible)
- Aurora (PostgreSQL Compatible)
- MySQL
- PostgreSQL
- MariaDB
- Oracle
- Microsoft SQL Server
- IBM Db2

**Edition:**

- MySQL Community

**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.
- Free tier: Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS. [Info](#)

**Availability and durability:**

Choose the deployment option that provides the availability and durability needed for your use case. AWS is committed to a certain level of uptime depending on the deployment option you choose. Learn more in the [Amazon RDS service level agreement \(SLA\)](#).

- Multi-AZ DB cluster deployment (3 instances): Creates a primary DB instance with two readable standbys in separate Availability Zones. This setup provides:
  - 99.95% uptime
  - Redundancy across Availability Zones
  - Increased read capacity
  - Reduced write latency
- Multi-AZ DB instance deployment (2 instances): Creates a primary DB instance with a non-readable standby instance in a separate Availability Zone. This setup provides:
  - 99.95% uptime
  - Redundancy across Availability Zones
- Single-AZ DB instance deployment (1 instance): Creates a single DB instance without standby instances. This setup provides:
  - 99.5% uptime
  - No data redundancy

**Settings:**

**DB instance identifier:** lab-db

**Credentials Settings:**

**Master username:** main

**Credentials management:** Self managed

**Master password:**

**Password strength:** Average

**Confirm master password:**

Aurora and RDS > Databases > Create database

### 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**

Show instance classes that support Amazon RDS Optimized Writes [Info](#)  
Amazon RDS Optimized Writes improves write throughput by up to 2x at no additional cost.

Include previous generation classes

Standard classes (includes m classes)

Memory optimized classes (includes r and x classes)

Burstable classes (includes t classes)

db.t3.micro  
2 vCPUs 1 GiB RAM EBS Bandwidth: Up to 2,085 Mbps Network: Up to 5 Gbps

### Storage

**Storage type** [Info](#)  
Provisioned IOPS SSD (io2) storage volumes are now available.

General Purpose SSD (gp2)  
Baseline performance determined by volume size

**Allocated storage** [Info](#)  
20 GiB  
Allocated storage value must be 20 GiB to 6,144 GiB

### Connectivity

**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.

Lab VPC (vpc-011ff2d039ed061e)  
4 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 instance can use in the VPC that you selected.

db-subnet-group  
2 Subnets, 2 Availability Zones

**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  
DB Security Group X

Aurora and RDS > Databases > Create database

### Monitoring

**Monitoring** [Info](#)  
Choose monitoring tools for this database. Database Insights provides a combined view of Performance Insights and Enhanced Monitoring for your fleet of databases. **Database Insights** pricing is separate from RDS monthly estimates. See [Amazon CloudWatch pricing](#).

Database Insights - Advanced

- Retains 15 months of performance history
- Fleet-level monitoring
- Integration with CloudWatch Application Signals

Database Insights - Standard

**Additional monitoring settings**  
Enhanced Monitoring, CloudWatch Logs and DevOps Guru

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

**Log exports**  
Select the log types to publish to Amazon CloudWatch Logs

Audit log

Error log

General log

iam-db-auth-error log

Slow query log

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

RDS service-linked role

Aurora and RDS > Databases > Create database

**Additional configuration**

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

**Database options**

Initial database name [Info](#)  
lab  
If you do not specify a database name, Amazon RDS does not create a database.

DB parameter group [Info](#)  
default.mysql8.0

Option group [Info](#)  
default:mysql-8.0

**Backup**

Enable automated backup  
Creates a point-in-time snapshot of your database.

Backup tags [Info](#)  
Copies tags from the source database to the automated backup and snapshots respectively.

Copy tags to automated backup  
This is a one-time setting. Future tag modifications need manual updates.

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](#)

lab-db - Database Details | Aurora and RDS > Databases > lab-db

Successfully created database lab-db  
You can use settings from lab-db to simplify configuration of suggested database add-ons while we finish creating your DB for you.

**lab-db**

| Summary                 |                                     | Recommendations  |                           |
|-------------------------|-------------------------------------|------------------|---------------------------|
| DB Identifier<br>lab-db | Status<br><a href="#">Modifying</a> | Role<br>Instance | Engine<br>MySQL Community |
| CPU<br>-                | Class<br>db.t3.micro                | Current activity | Region & AZ<br>us-east-1b |

**Connectivity & security**

| Endpoint<br><a href="#">lab-db.cb1dlclboeh.us-east-1.rds.amazonaws.com</a> | Networking<br>Availability Zone<br>us-east-1b<br>VPC<br>Lab VPC (vpc-011ff32d039ed061e) | Security<br>VPC security groups<br>DB Security Group (sg-0024fb1736fca9839)<br>Active<br>Publicly accessible |
|--|---|--|
|--|---|--|

## Tarea 4: Interactuar con la base de datos

lab-db - Database Details | Aurora and RDS > Databases > lab-db

Generating CPU Load! (auto refresh in 5 seconds)

Current CPU Load: 100%

lab-db - Database Details | Aurora and RDS > Databases > lab-db

**Address Book**

| Last name | First name | Phone        | Email                      | Admin                                       |
|-----------|------------|--------------|----------------------------|---|
| Doe       | Jane       | 010-110-1101 | janed@someotheraddress.org | <a href="#">Edit</a> <a href="#">Remove</a> |
| Elshin    | Vadim      | 1234567899   | vadels@alumni.edu.gva.es   | <a href="#">Edit</a> <a href="#">Remove</a> |
| Johnson   | Roberto    | 123-456-7890 | roberto@someaddress.com    | <a href="#">Edit</a> <a href="#">Remove</a> |