

# Lab overview

A backend database plays an important role in any environment, and the security and access control to this critical resource is vital to any architecture. In this lab, you create an Amazon Aurora database (DB) cluster to manage a MySQL database and an Application Load Balancer (ALB). The Amazon Web Services (AWS) Security pillar of the Well-Architected Framework recommends keeping people away from data; as such, the database is separated from the front end using the Application Load Balancer. The Application Load Balancer routes traffic to healthy Amazon Elastic Compute Cloud (Amazon EC2) instances that hosts the front-end application. This provides high availability and allow communication to the database to happen behind the Application Load Balancer in a private subnet.

## OBJECTIVES

By the end of this lab, you will be able to do the following:

- Create an Amazon Relational Database Service (Amazon RDS) database instance.
- Create an Application Load Balancer.
- Create an HTTP listener for the Application Load Balancer.
- Create a target group.
- Register targets with a target group.
- Test the load balancer and the application connectivity to the database.
- Review the Amazon RDS DB instance metadata using the console.
- Optional Task: Create an Amazon RDS read replica in a different AWS Region.

## PREREQUISITES

This lab requires the following:

- Access to a notebook computer with Wi-Fi and Microsoft Windows, macOS, or Linux (Ubuntu, SuSE, or Red Hat)
- An internet browser, such as Chrome, Firefox, or Microsoft Edge
- A plaintext editor

## ICON KEY

Various icons are used throughout this lab to call attention to different types of instructions and notes. The following list explains the purpose for each icon:

- **Note:** A hint, tip, or important guidance.

- **Learn more:** Where to find more information.
  - **Caution:** Information of special interest or importance (not so important to cause problems with the equipment or data if you miss it, but it could result in the need to repeat certain steps).
  - **WARNING:** An action that is irreversible and could potentially impact the failure of a command or process (including warnings about configurations that cannot be changed after they are made).
  - **Expected output:** A sample output that you can use to verify the output of a command or edited file.
  - **Command:** A command that you must run.
  - **Consider:** A moment to pause to consider how you might apply a concept in your own environment or to initiate a conversation about the topic at hand.
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