

LAB: RDS Instance

You need:

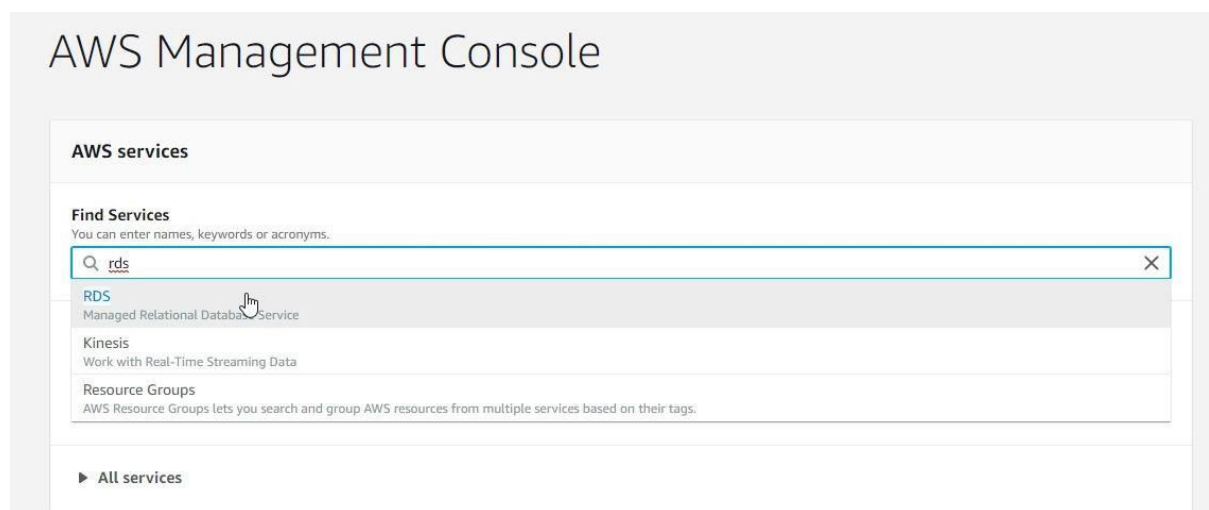
- An AWS Account
- Code in the CodeCommit Repository
- An existing CodeBuild Project

Duration of the Lab: 30 Minutes.

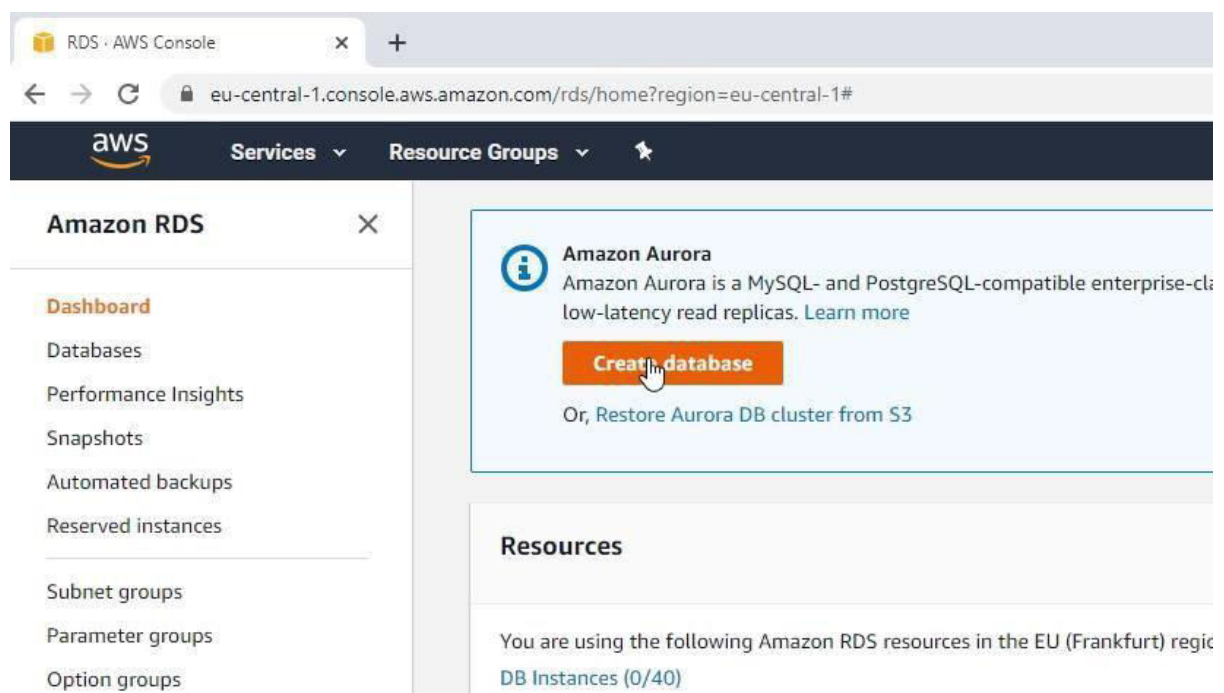
Difficulty: medium

Create an RDS Instance

Open the RDS Dashboard:



Create a new Database:



Select MySQL:

We listened to your feedback!

Now, create a database with a single click using our pre-built configurations! Or choose your own configurations. [Switch to your original interface.](#)

RDS > Create database

Create database


Choose a database creation method [Info](#)


☒ **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](#)


☐ Amazon Aurora


☒ MySQL


☐ MariaDB


☐ PostgreSQL


☐ Oracle


☐ Microsoft SQL Server


And then the Free Tier:

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.

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

You can leave the name at the default setting, and choose to auto-generate a password:

Settings

DB instance identifier [Info](#)

Type a name for your DB instance. The name must be unique cross all DB instances owned by your AWS account in the current AWS Region.

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 alphanumeric characters or hyphens (1 to 15 for SQL Server). 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 16 alphanumeric characters. First character must be a letter.

☒ **Auto generate a password**

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

DB instance size

DB instance class [Info](#)

Choose a DB instance class that meets your processing power and memory requirements. The DB instance class options below are limited to those supported by the engine you selected above.

☐ Standard classes (includes m classes)

☐ Memory Optimized classes (includes r and x classes)

☒ Burstable classes (includes t classes)

db.t2.micro

1 vCPUs 1 GiB RAM Not EBS Optimized

▼

☐ Include previous generation classes

Remove the storage autoscaling for now:

Storage

Storage type [Info](#)

General Purpose (SSD) ▼

Allocated storage

20 GiB

(Minimum: 20 GiB, Maximum: 16384 GiB) Higher allocated storage [may improve](#) IOPS performance.

Storage autoscaling [Info](#)

Provides dynamic scaling support for your database's storage based on your application's needs.

☐ Enable storage autoscaling

Enabling this feature will allow the storage to increase once the specified threshold is exceeded.

You can remove the automatic backups for now and then simply create the database:

Database options

Initial database name [Info](#)

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

DB parameter group [Info](#)

default.mysql5.7 ▼

Option group [Info](#)

default:mysql-5-7 ▼

Backup

Creates a point in time snapshot of your database

☐ Enable automatic backups

Enabling backups will automatically create backups of your database during a certain time window.

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

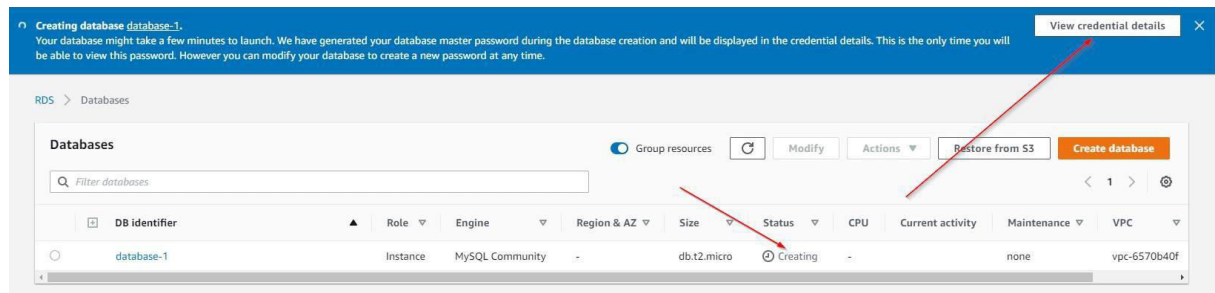
☐ Error log

☐ General log

☐ Slow query log

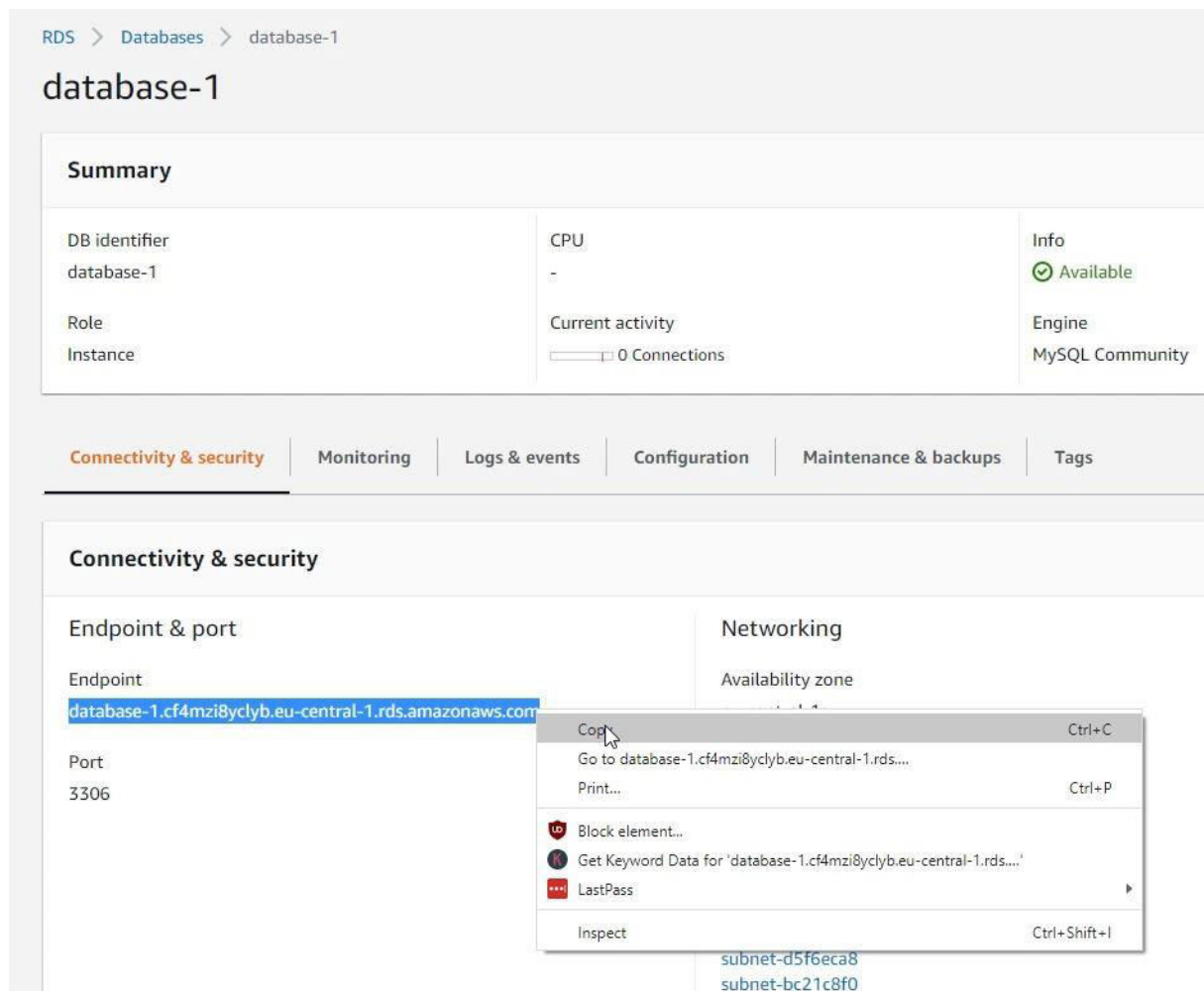
After creating the database, it will take a while until the database is ready. In the meantime, you can check the newly created credentials:

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Connecting to the Database

To connect we need to copy the url and have the username and the password ready:



Let's add these parameters and environment variables to the task definition:

Create a new Revision

Complete AWS ECS DevOps Masterclass for Beginners

The screenshot shows the AWS Management Console interface. On the left, the navigation menu includes Amazon ECS Clusters, Task Definitions (highlighted), Account Settings, Amazon EKS Clusters, Amazon ECR Repositories, AWS Marketplace Discover software, and Subscriptions. The main content area is titled 'Task Definitions > myphpcontainer > status > ACTIVE'. Below this, the 'Task Definition Name : myphpcontainer' is displayed. A button 'Create new revision' is highlighted with a mouse cursor. Below the button, the status is 'Active' (selected) and 'Inactive' (1 selected). A filter box 'Filter in this page' is present. A table lists task definitions with columns 'Task Definition Name : Revision'. The table shows two entries: 'myphpcontainer:2' (selected) and 'myphpcontainer:1'.

For the PHP container add some environment variables:

The screenshot shows the 'Edit container' configuration for 'myphpcontainer'. The left sidebar shows the 'Container Definitions' section with 'myphpcontainer' selected. The main content area is titled 'Edit container'. It includes fields for 'GPUs', 'Essential' (checked), 'Entry point' (comma delimited: sh-c), 'Command' (comma delimited: echo,hello world), and 'Working directory' (/usr/app). Below these fields is the 'Environment variables' section. It contains a table with columns 'Key', 'Value', and 'ValueFrom'. The table has three rows: 'DB_HOST' with value 'database-1.cf4mzi8yclyb.eu-central-1.rds.amazonaws.' and 'ValueFrom' 'Value'; 'DB_USER' with value 'admin' and 'ValueFrom' 'Value'; and 'DB_PASSWORD' with value 'Add value' and 'ValueFrom' 'Value'. Below the table is the 'STARTUP DEPENDENCY ORDERING' section, which includes a table with columns 'Container name' and 'Condition'. The table has one row with 'Container name' 'myphpcontainer' and 'Condition' 'myphpcontainer:1'. Below the table is the 'CONTAINER TIMEOUTS' section.

The host from your MySQL Instance, the username and password that was autogenerated.

Update the Service

Then save the service and update it:

Amazon ECS
Clusters
Task Definitions
Account Settings
Amazon EKS
Clusters
Amazon ECR
Repositories
AWS Marketplace
Discover software
Subscriptions

Created new revision of Task Definition myphpcontainer:3 successfully

Task Definitions > myphpcontainer > 3

Task Definition: myphpcontainer:3

View detailed information for your task definition. To modify the task definition, you need to create a new r

Create new revision

Builder JSON Tags

Actions

- Run Task
- Create Service
- Update Service
- Deregister

Task Definition Name myphpcontain

Task Role None
Optional IAM role t
an Amazon Elastic

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A service lets you specify how many copies of your task definition to run and maintain in a cluster. You can optionally use an Elastic Load Balancing load balancer to distribute incoming traffic to containers in your service. Amazon ECS maintains that number of tasks and coordinates task scheduling with the load balancer. You can also optionally use Service Auto Scaling to adjust the number of tasks in your service.

Task Definition	Family
	myphpcontainer ▼
	Revision
	3 ▼
Launch type	FARGATE ⓘ
Platform version	LATEST ▼ ⓘ
Force new deployment	<input type="checkbox"/> ⓘ
Cluster	fargatecluster ▼ ⓘ
Service name	phpservice ▼ ⓘ
Service type*	REPLICA ⓘ
Number of tasks	1 ⓘ
Minimum healthy percent	100 ⓘ
Maximum percent	200 ⓘ

*Required

[Cancel](#)

[Skip to review](#)

[Next step](#)

Try the new Service

After the service is “running” copy the IP Address again and open it in a new tab:

Clusters > fargatecluster > Task: d177f48a-29e3-46cc-a70f-5855143e5e7b

Task : d177f48a-29e3-46cc-a70f-5855143e5e7b

Details Tags Logs

Cluster

fargatecluster

Launch type

FARGATE

Platform version

1.3.0

Task definition

myphpcontainer:3

Group

service:phpservice

Task role

None

Last status

RUNNING

Desired status

RUNNING

Created at

2020-04-09 13:59:28 +0200

Started at

2020-04-09 14:00:16 +0200

Network

Network mode

awsvpc

ENI Id

eni-0a5e4cd3dd7855acb

Subnet Id

subnet-cfd47ba5

Private IP

172.31.22.19

Public IP

3.121.206.73

Mac address

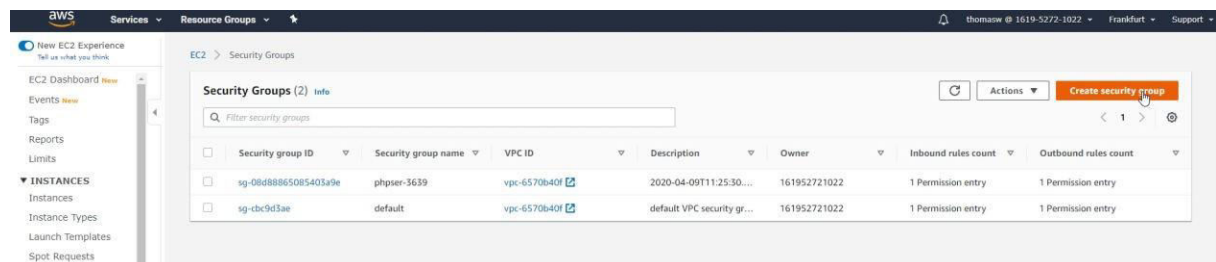
02:3c:90:e3:dd:1e

Containers

You will see it will time-out. Because our Security Group from the Database doesn't let any connections in. So we have to edit the mysql security group.

Edit the Security Group

Head over to the EC2 Console and create a new security group:



Give it a name, a description and allow MySQL/Aurora connection from your cluster security group, which most likely is called something like "phpser-***":

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Basic details

Security group name [Info](#)
rds-sg 1

Name cannot be edited after creation.

Description [Info](#)
Allows SSH access to developers

VPC [Info](#)
vpc-6570b40f

Inbound rules [Info](#)

Type [Info](#) Protocol [Info](#) Port range [Info](#) Source [Info](#) Description - optional [Info](#)

MySQL/Aurora 2 TCP 3306 Custom 0.0.0.0/0 3

Outbound rules [Info](#)

Type [Info](#) Protocol [Info](#) Port range [Info](#) Destination [Info](#) Description - optional [Info](#)

All traffic All All Custom 0.0.0.0/0

Cancel Create security group

Then attach the new security group to your RDS instance:

RDS > Databases

Databases [Group resources](#) [Refresh](#) [Modify](#) [Actions](#)

Filter databases

DB identifier	Role	Engine	Region & AZ	Size	Status	CPU
database-1	Instance	MySQL Community	eu-central-1a	db.t2.micro	Available	2.37%

Under “Network & Security” remove the security group and attach the newly created security group:

Network & Security

Subnet group
Use this field to move the DB instance to a new subnet group in another vpc. [Learn more.](#)
default-vpc-6570b40f

Security group
List of DB security groups to associate with this DB instance:
Choose security groups
rds-sg (sg-0f92633d79f0247ff) (vpc-6570b40f) X

Certificate authority
Certificate authority for this DB instance
rds-ca-2019

Public accessibility [Info](#)

☐ Yes
EC2 instances and devices outside of the VPC hosting the DB instance will connect to the DB instances. You must also select one or more VPC security groups that specify which EC2 instances and devices can connect to the DB instance.

☒ No
DB instance will not have a public IP address assigned. No EC2 instance or devices outside of the VPC will be able to connect.

RDS > Databases > Modify

Modify DB Instance: database-1

Summary of modifications

You are about to submit the following modifications. Only values that will change are displayed. Carefully verify your changes and click Modify DB Instance.


Attribute	Current value	New value
Security group	default	rds-sg

Scheduling of modifications

When to apply modifications

☐ Apply during the next scheduled maintenance window
Current maintenance window: sun:22:29-sun:22:59

☒ Apply immediately
The modifications in this request and any pending modifications will be asynchronously applied as soon as possible, regardless of the maintenance window setting for this database instance.

 **Potential unexpected downtime**

If you choose to apply changes immediately, please note that any changes in the pending modifications queue are also applied. If any of the pending modifications require downtime, choosing this option can cause unexpected downtime.

Cancel

Back

Modify DB Instance

Wait until the security group is modified:

Security

VPC security groups

rds-sg (sg-0f92633d79f0247ff)

(adding)

default (sg-cbc9d3ae)

(removing)



Public accessibility

No

And then open the tab with the IP endpoint of your container again:

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Lab End
