

# LAB: RDS Instance

## You need:

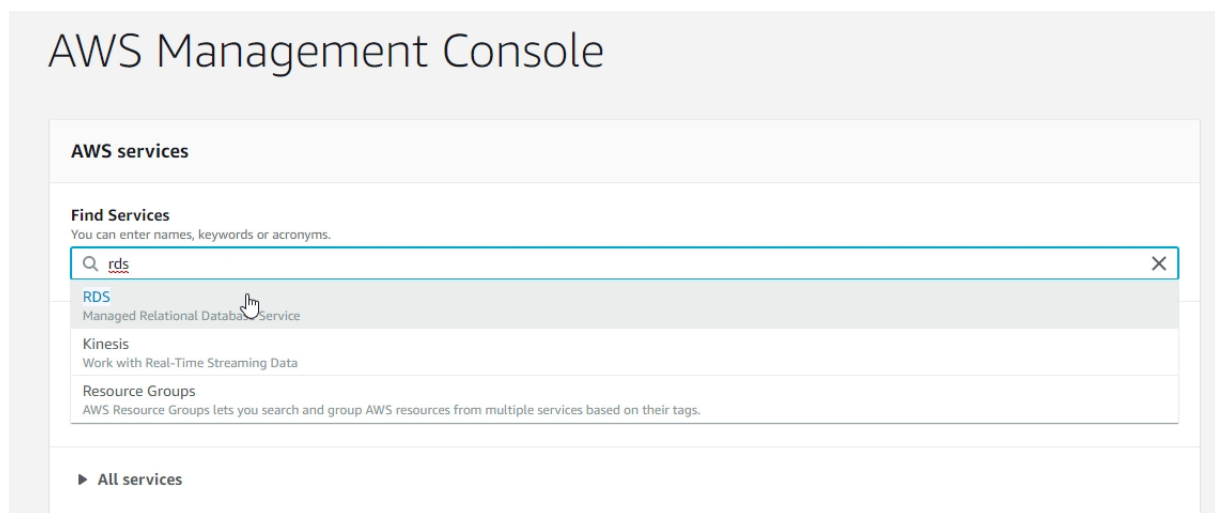
- An AWS Account
- Code in the CodeCommit Repository
- An existing CodeBuild Project

**Duration of the Lab:** 30 Minutes.

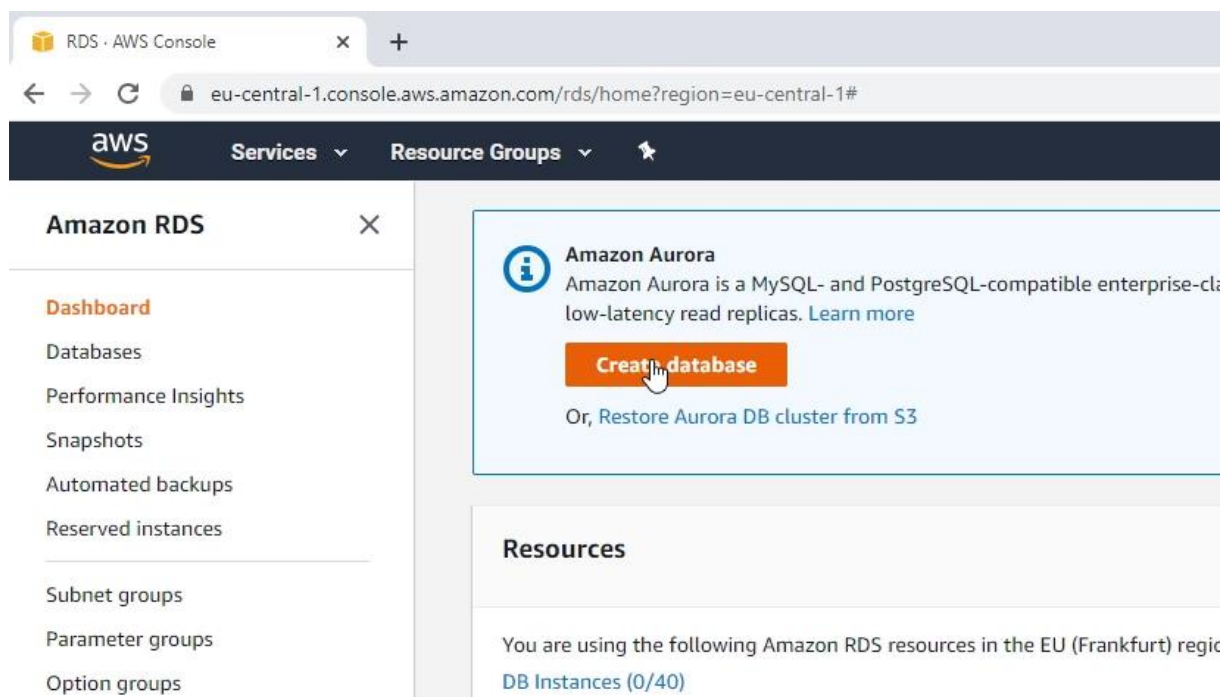
**Difficulty:** medium

## 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)**

▼

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

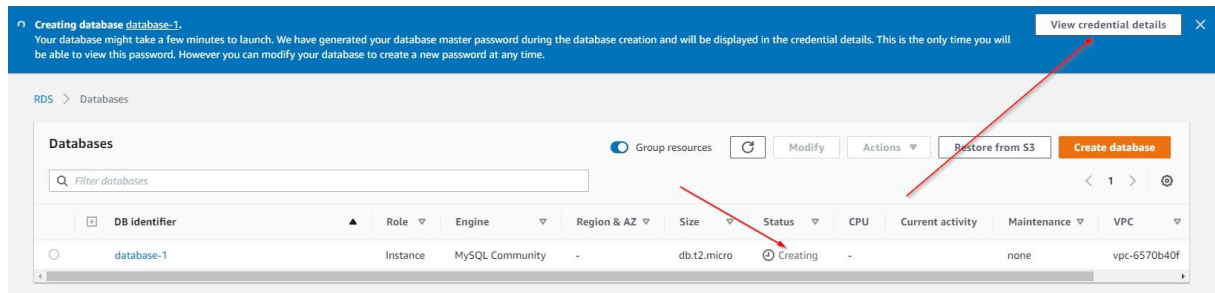
☐ Error log

☐ General log

☐ Slow query log

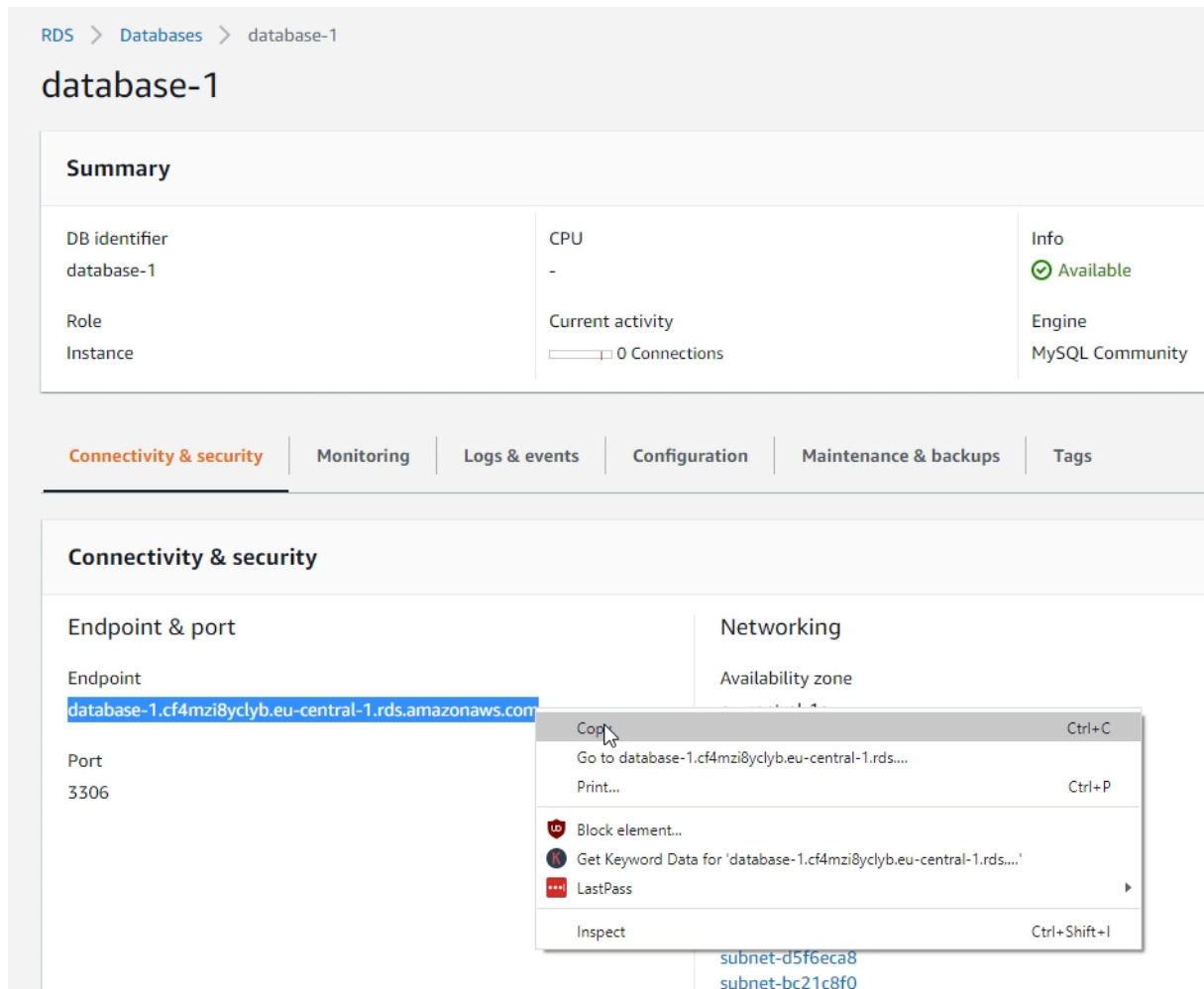
After creating the database, it will take a while until the database is ready. In the meantime, you can check the newly created credentials:

## Complete AWS ECS DevOps Masterclass for Beginners



## 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 is a navigation menu with options: 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, there's a status filter section with 'Status: Active Inactive 1 selected'. 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 page 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 is the 'Environment variables' section, which has a table with columns 'Key', 'Value', and 'Add key'. The table contains three entries: 'DB\_HOST' with value 'database-1.cf4mzi8yclyb.eu-central-1.rds.amazonaws.com', 'DB\_USER' with value 'admin', and 'DB\_PASSWORD' with value 'Add value'. Below the table is the 'STARTUP DEPENDENCY ORDERING' section, which has a table with columns 'Container name' and 'Condition'. The table is empty. 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](#) **Actions** ▾

**Builder** JSON Tags

- Run Task
- Create Service
- Update Service**
- Deregister

**Task Definition Name** myphpcontainer:3

**Task Role** None  
Optional IAM role t an Amazon Elastic

## Complete AWS ECS DevOps Masterclass for Beginners

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.

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

The screenshot shows the AWS EC2 console's Security Groups page. The left sidebar contains navigation links for EC2 Dashboard, Events, Tags, Reports, Limits, INSTANCES, Launch Templates, and Spot Requests. The main content area shows a table of security groups. The 'phpser-3659' group is selected, and its details are shown in the table. The 'Create security group' button is visible in the top right corner.

Security group ID	Security group name	VPC ID	Description	Owner	Inbound rules count	Outbound rules count
sg-08d8865085403a9e	phpser-3659	vpc-6570b40f	2020-04-09T11:25:30...	161952721022	1 Permission entry	1 Permission entry
sg-cbc9d3ae	default	vpc-6570b40f	default VPC security gr...	161952721022	1 Permission entry	1 Permission entry

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 Q | 3  
0.0.0.0/32  
::/0  
::/16  
::/32  
::/48  
::/64  
Security Groups  
phpseer-3639 | sg-08d8886505c403a9e 3  
default | sg-c0c3d3ae  
Prefix lists  
com.amazonaws.eu-cen... | pl-6ea54007  
com.amazonaws.eu-cen... | pl-6ea54007

**Outbound rules** [Info](#)

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

All traffic All All Custom Q |   
0.0.0.0/0 X

[Cancel](#) [Create security group](#)

Then attach the new security group to your RDS instance:

RDS > Databases

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

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 )

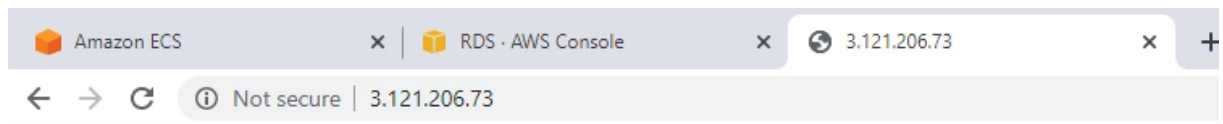


### Public accessibility

No

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

## Complete AWS ECS DevOps Masterclass for Beginners



Connection successful



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*Lab End*

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