

ASSIGNMENT-03

Q: Create a VPC attach to lambda and attach database to lambda.

Lambda: AWS Lambda is a compute service that lets us to run code without provisioning or managing servers. Lambda runs our code on a high-availability compute infrastructure and performs all of the administration of the compute resources, including server and operating system maintenance, capacity provisioning and automatic scaling, and logging. With Lambda, all we need to do is supply our code in one of the language runtimes that Lambda supports.

VPC: With Amazon Virtual Private Cloud (Amazon VPC), we can launch AWS resources in a logically isolated virtual network that we have defined. This virtual network closely resembles a traditional network that we would operate in our own data center, with the benefits of using the scalable infrastructure of AWS.

RDS: Amazon Relational Database Service (Amazon RDS) is a web service that makes it easier to set up, operate, and scale a relational database in the AWS Cloud. It provides cost-efficient, resizable capacity for an industry-standard relational database and manages common database administration tasks.

- Create IAM role for lambda give a specific name to the role and attach VPC full access and RDS full access policies to the IAM role.

The screenshot displays the AWS IAM console for the 'assignment-role'. The breadcrumb trail shows 'IAM > Roles > assignment-role'. The role name 'assignment-role' is highlighted, with an 'Info' link and a 'Delete' button. Below the name, a description states: 'Allows Lambda functions to call AWS services on your behalf.' The 'Summary' section includes an 'Edit' button and details such as the creation date (March 27, 2024, 10:38 UTC+05:30), last activity, ARN (arn:aws:iam::905418408977:role/assignment-role), and maximum session duration (1 hour). The 'Permissions policies (2)' section shows two attached policies: 'AmazonRDSFullAccess' and 'AmazonVPCFullAccess', both of which are AWS managed. The table lists the policy name, type, and the number of attached entities (1 for each).

Policy name	Type	Attached entities
AmazonRDSFullAccess	AWS managed	1
AmazonVPCFullAccess	AWS managed	1

- Create a VPC with name [lambda-vpc]. And create two subnets one with internet connectivity and the other without internet connectivity in two different availability zones. Associate the subnets to the routes.



- Now create database subnet groups in RDS give Name, Description, and attach the created VPC to the subnet group. And add the subnets and availability zones of the VPC.

Create DB subnet group

To create a new subnet group, give it a name and a description, and choose an existing VPC. You will then be able to add subnets related to that VPC.

Subnet group details

Name

You won't be able to modify the name after your subnet group has been created.

lambda-sg

Must contain from 1 to 255 characters. Alphanumeric characters, spaces, hyphens, underscores, and periods are allowed.

Description

nothing

VPC

Choose a VPC identifier that corresponds to the subnets you want to use for your DB subnet group. You won't be able to choose a different VPC identifier after your subnet group has been created.

lambda-vpc (vpc-0a2aae1c0de26d6b1)

Add subnets

Availability Zones

Choose the Availability Zones that include the subnets you want to add.

Choose an availability zone ▼

ap-south-1a ✕

ap-south-1b ✕


Subnets

Choose the subnets that you want to add. The list includes the subnets in the selected Availability Zones.

Select subnets ▼

subnet-0a5cb7b83a0eec783 (120.0.0.0/24) ✕

subnet-05ea747526ff47e74 (120.0.8.0/22) ✕

 For Multi-AZ DB clusters, you must select 3 subnets in 3 different Availability Zones.

Subnets selected (2)

Availability zone	Subnet ID	CIDR block
ap-south-1a	subnet-0a5cb7b83a0eec783	120.0.0.0/24
ap-south-1b	subnet-05ea747526ff47e74	120.0.8.0/22

- Create a function in lambda function with runtime environment of latest version of python

Basic information

Function name

Enter a name that describes the purpose of your function.

assignment-lambda

Use only letters, numbers, hyphens, or underscores with no spaces.

Runtime [Info](#)

Choose the language to use to write your function. Note that the console code editor supports only Node.js, Python, and Ruby.

Python 3.12 ▼



Architecture [Info](#)

Choose the instruction set architecture you want for your function code.

☒ x86_64

☐ arm64

Permissions [Info](#)

By default, Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs. You can customize this default role later when adding triggers.

- Select an existing role in lambda [assignment-role]

▼ Change default execution role

Execution role

Choose a role that defines the permissions of your function. To create a custom role, go to the [IAM console](#).

- ☐ Create a new role with basic Lambda permissions
- ☒ Use an existing role
- ☐ Create a new role from AWS policy templates

Existing role

Choose an existing role that you've created to be used with this Lambda function. The role must have permission to upload logs to Amazon CloudWatch Logs.

assignment-role ▼ 

[View the assignment-role role](#) on the IAM console.

- And then proceed to create function


[Lambda](#) > [Functions](#) > assignment-lambda


assignment-lambda

Throttle Copy ARN Actions ▼

▼ Function overview [Info](#) Export to Application Composer Download ▼

Diagram Template


 assignment-lambda

 Layers (0)

+ Add trigger + Add destination

Description
-

Last modified
13 seconds ago

Function ARN
 arn:aws:lambda:ap-south-1:905418408977:function:assignment-lambda

Function URL [Info](#)
-

- Click on add triggers and add a new API gateway

[Lambda](#) > [Functions](#) > assignment-lambda


assignment-lambda


Throttle Copy ARN Actions ▼


✔ The trigger assignment-lambda-API was successfully added to function assignment-lambda. The function is now receiving events from the trigger. ✕

▼ Function overview [Info](#) Export to Application Composer Download ▼

Diagram Template

 assignment-lambda


 Layers (0)

 API Gateway

+ Add trigger + Add destination

Description
-

Last modified
12 minutes ago

Function ARN
 arn:aws:lambda:ap-south-1:905418408977:function:assignment-lambda

Function URL [Info](#)
-

- Goto lambda configuration and attach the created VPC

VPC

Info

Choose a VPC for your function to access.

vpc-0a2aae1c0de26d6b1 (120.0.0.0/16)

▼

↻

☒ Allow IPv6 traffic for dual-stack subnets

You can allow outbound IPv6 traffic to subnets that have both IPv4 and IPv6 CIDR blocks.

Subnets

Select the VPC subnets for Lambda to use to set up your VPC configuration.

Choose subnets

▼

↻

subnet-0a5cb7b83a0eec783 (120.0.0.0/24) ap-south-1a

✕

Name: lambda-pub-subnet

subnet-05ea747526ff47e74 (120.0.8.0/22) ap-south-1b

✕

Name: lambda-pri-subnet

Security groups

Choose the VPC security groups for Lambda to use to set up your VPC configuration. The table below shows the inbound and outbound rules for the security groups that you choose.

Choose security groups

▼

↻

sg-05601c476fd7f96a3 (default)

✕

default VPC security group

- Now create database and attach to the lambda

RDS

>

Databases

>

database-1

database-1

↻

Modify

Actions ▼

Summary

DB identifier database-1	Status ✔ Available	Role Instance	Engine MySQL Community	Recommendations
CPU 2.81%	Class db.t3.micro	Current activity 0 Connections	Region & AZ ap-south-1a	

Code

Test

Monitor

Configuration

Aliases

Versions

General configuration

Triggers

Permissions

Destinations

Function URL

Environment variables

Tags

VPC

RDS databases

RDS database connections (1) Info

Connect to RDS database

The following table shows databases that match this function's VPC and security group. Review the details to confirm a connection.

DB identifier	Proxy identifier	Endpoint	Lambda security g...
database-1	-	database-1.clqsiq2...	default (sg-05601c...