

Name: - Muhammad Huzaifa Waseem (2303-KHI-DEG-021)

Pair Partner 1: - Muhammad Faizan Rafique (2303.005.KHI.DEG)

Pair Partner 2: - Syed Muhammad Hammad Irshad(2303.KHI.DEG.032)

UNIT 4.5:

Based on the solution from day 1

(/tasks/5_microservices_development/day_1_microservices/integrating_flask_redis/) add Redis as another ECS service and connect it with existing application.

Incorporate results from function *get_and_increase_hit_count()* into the application and show the results on the main page.

Activities Visual Studio Code May 17 09:11

app.py - assignment4.5 - Visual Studio Code

File Edit Selection View Go Run Terminal Help

EXPLORER

ASSIGNMENT4.5

day_5_aws_deploy...
integrating_flask...
__init__.py
app.py
Dockerfile
README.md
requirements.txt

```
1 import time
2 import os
3 import redis
4 from flask import Flask
5
6 app = Flask(__name__)
7 service=os.environ.get("SERVICE_DISCOVERY")
8 cache = redis.Redis(host=service, port=6379)
9
10
11 def get_and_incr_hit_count():
12     retries = 5
13     while True:
14         try:
15             return cache.incr("hits")
16         except redis.exceptions.ConnectionError as exc:
17             if retries == 0:
18                 raise exc
19             retries -= 1
20             time.sleep(0.5)
21
22
23 @app.route("/")
24 def hello():
25     count = get_and_incr_hit_count()
26     return "Hello World! I have been seen {} times.\n".format(count)
27
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

bash - integrating_flask_redis

hammaddhamad:~/Desktop/Hammad_emeritus/assignment/assignment4.5/integrating_flask_redis

Ln 8, Col 1 Spaces:4 UTF-8 LF Python 3.10.6 64-bit Go Live Prettier

Activities Visual Studio Code May 17 09:12

Dockerfile - assignment4.5 - Visual Studio Code

File Edit Selection View Go Run Terminal Help

EXPLORER

ASSIGNMENT4.5

day_5_aws_deploy...
integrating_flask...
__init__.py
app.py
Dockerfile
README.md
requirements.txt

```
1 FROM python:3.7-alpine
2
3 WORKDIR /code
4
5 ENV FLASK_APP=app.py
6 ENV FLASK_RUN_HOST=0.0.0
7 ENV SERVICE_DISCOVERY="redis"
8 RUN apk add --no-cache gcc musl-dev linux-headers
9 COPY requirements.txt requirements.txt
10
11 RUN pip install -r requirements.txt
12
13 EXPOSE 5000
14
15 COPY . .
16
17 CMD ["flask", "run"]
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Do you want to install the recommended 'Docker' extension from Microsoft for Docker language?

Install Show Recommendations

hammaddhamad:~/Desktop/Hammad_emeritus/assignment/assignment4.5/integrating_flask_redis

Ln 7, Col 22 (17 selected) Spaces:4 UTF-8 LF Docker Go Live Prettier

Amazon ECS

us-east-1.console.aws.amazon.com/ec2/v2/clusters?region=us-east-1

Amazon Elastic Container Service

Clusters

Task definitions

Account settings

Install AWS Copilot

Amazon ECR

Repositories

Clusters (1)

Search clusters

Cluster	Services	Tasks	Registered container instances	CloudWatch monitoring	Capacity provider strategy
taskRedis	2	0 Pending 4 Running	0	Default	No default found

Amazon ECS

us-east-1.console.aws.amazon.com/ec2/v2/namespaces?region=us-east-1

Amazon Elastic Container Service

Namespaces

Task definitions

Account settings

Install AWS Copilot

Amazon ECR

Repositories

Namespaces (1)

Search namespaces

Namespace ID	Namespace	Created at
ms-ef79a6f646volqt	hammad.com	5/16/2023, 10:43:52 UTC

Amazon Elastic Container Registry

Private registry
Public registry
Repositories

Getting started
Documentation
Public gallery

Amazon ECR > Repositories

Private Public

Private repositories (2)

Find repositories

View push commands Delete Actions Create repository

<input type="checkbox"/>	Repository name	URI	Created at	Tag immutability	Scan frequency	Encryption type	Pull through cache
<input type="checkbox"/>	frontend	854203374229.dkr.ecr.us-east-1.amazonaws.com/frontend	May 16, 2023, 21:56:04 (UTC+05)	Disabled	Manual	AES-256	Inactive
<input type="checkbox"/>	redis	854203374229.dkr.ecr.us-east-1.amazonaws.com/redis	May 16, 2023, 16:32:47 (UTC+05)	Disabled	Manual	AES-256	Inactive

Amazon ECS

us-east-1 console.aws.amazon.com/ecs/v2/task-definitions/region-us-east-1

Amazon Elastic Container Service

Clusters
Namespaces
Task definitions
Account settings

Install AWS Copilot
Amazon ECR
Repositories

Amazon Elastic Container Service > Task definitions

Task definitions (2) info

Filter task definitions by property or value 2 matches

Status of last revision: ACTIVE Clear filters

Task definition	Status of last revision
flask	ACTIVE
redis	ACTIVE

Amazon ECS

us-east-1 console.aws.amazon.com/ecs/v2/task-definitions/flask/1/containers/region-us-east-1

Amazon Elastic Container Service

Clusters
Namespaces
Task definitions
Account settings

Install AWS Copilot
Amazon ECR
Repositories

AWS Batch
AWS Proton

Documentation
Discover products
Subscriptions

Amazon Elastic Container Service > Task definitions > flask > Revision 1 > Containers

flask:1

Deploy Actions Create new revision

Overview info

ARN arn:aws:ecs:us-east-1:854203374229:task-definition/flask:1	Status ACTIVE	Time created 5/17/2023, 03:48:19 UTC	App environment FARGATE
Task role -	Task execution role ecsTaskExecutionRole	Operating system/architecture Linux/X86_64	Network mode awsvpc

Containers JSON Storage Tags

Task size

Task CPU 1 vCPU	Task memory 3 GB
--------------------	---------------------

Containers info

Container name	Image	Private registry	Essential	CPU	Memory	GPU
flask	854203374229.dkr.ecr.us-east-1.amazonaws.com/flask:1	-	Yes	0	-	-

Amazon ECS console showing the **redis:1** task definition. The task is in an **ACTIVE** state. Key details include:

- ARN:** `arn:aws:ecs:us-east-1:854203374229:task-definition/redis:1`
- Status:** ACTIVE
- Time created:** 5/17/2023, 03:43:46 UTC
- App environment:** FARGATE
- Task role:** `ecsTaskExecutionRole`
- Operating system/architecture:** Linux/x86_64
- Network mode:** awsvpc

Task size: 1 vCPU, 3 GB memory.

Containers:

Container name	Image	Private registry	Essential	CPU	Memory	GPU
redis	redis:6.2-alpine	-	Yes	0	-	-

Amazon ECS console showing the **flaskRedis** cluster overview. The cluster is in an **Active** state.

Cluster overview:

- ARN:** `arn:aws:ecs:us-east-1:854203374229:cluster/flaskRedis`
- Status:** Active
- CloudWatch monitoring:** Default
- Registered container instances:** -

Services:

Service name	Status	ARN	Service type	Deployments and tasks	Last deploy...	Task defini...	Revision
redis	Active	arn:aws:ecs:us-east-1:854203374229:service/flaskRedis/redis	REPLICA	2/2 Tasks running	Completed	redis	1
flask	Active	arn:aws:ecs:us-east-1:854203374229:service/flaskRedis/flask	REPLICA	2/2 Tasks running	Completed	flask	1

Amazon ECS console showing the **flaskRedis** cluster tasks. The cluster is in an **Active** state.

Cluster overview:

- ARN:** `arn:aws:ecs:us-east-1:854203374229:cluster/flaskRedis`
- Status:** Active
- CloudWatch monitoring:** Default
- Registered container instances:** -

Tasks:

Task	Last status	Desired st...	Task defi...	Revision	Health sta...	Started at	Container instan...	Launch type	CPU	Memc
i-052a63...	Running	Running	redis	1	Unknown	17 minutes ago	-	FARGATE	1 vCPU	3 GB
i-3f7e09e...	Running	Running	flask	1	Unknown	18 minutes ago	-	FARGATE	1 vCPU	3 GB
i-9a2ec4...	Running	Running	flask	1	Unknown	18 minutes ago	-	FARGATE	1 vCPU	3 GB
i-51e8f3...	Running	Running	redis	1	Unknown	18 minutes ago	-	FARGATE	1 vCPU	3 GB

Amazon ECS x Network interfa: x Network interfa: x inference | ham: x Elastic Containe: x IAM Managem: x Billing Manag: x My Drive - Googl: x ec2-3-83-1-110.co: x

us-east-1 console.aws.amazon.com/ecs/v2/clusters/cluster/tasks/052a63e3b04c487b9c3f0189a83e293/configuration?region=us-east-1&selectedContainer=redis

Amazon Elastic Container Service

Clusters
Namespaces [New](#)
Task definitions
Account settings [New](#)

Install AWS Copilot [🔗](#)

Amazon ECR [🔗](#)
Repositories
AWS Batch [🔗](#)
AWS Proton [🔗](#)

Documentation [🔗](#)
Discover products [🔗](#)
Subscriptions [🔗](#)

Amazon Elastic Container Service > Clusters > Redis > Tasks > 052a63e3b04c487b9c3f0189a83e293 > Configuration

052a63e3b04c487b9c3f0189a83e293

Configuration | Logs | Networking | Tags

Task overview

ARN 052a63e3b04c487b9c3f0189a83e293	Last status Running	Desired status Running	Started/Created at 5/17/2023, 05:53:04 UTC 5/17/2023, 05:52:41 UTC
--	------------------------	---------------------------	--

Configuration

Operating system/Architecture Linux/x86_64	Capacity provider -	ENI ID eni-0449d790178697796 🔗	Public IP 3.87.7.31 open address 🔗
CPU / Memory -	Launch type -	Network mode -	Private IP -

Container details for redis

Details | Log configuration | Network bindings | Docker labels and hosts | Environment variables and files | Volume configuration

Details

Image URI 854203374229.dkr.ecr.us-east-1.amazonaws.com/redis	Essential Yes	Command -
---	------------------	--------------

Amazon ECS x Network inter: x Network inter: x Network inter: x inference | ha: x Elastic Contai: x IAM Managem: x Billing Manag: x My Drive - Go: x ec2-3-83-1-110: x

us-east-1 console.aws.amazon.com/ecs/v2/home?region=us-east-1&networkinterface=eni-0449d790178697796&desc=networkinterface

Network interfaces (1) info

Search

Network interface ID x eni-0449d790178697796 | Clear filters

Name	Network interface ID	Subnet ID	VPC ID	Availability Zone	Security group n...	Security group IDs	Interface Type
-	eni-0449d790178697796	subnet-08c3c9b3167639f18 🔗	vpc-0ba56b1024d8a2b20 🔗	us-east-1a	redis-2336	sg-0c116a33d2f67c...	Elastic network interface

Select a network interface

Amazon ECS x Network inter: x Network inter: x Network inter: x inference | ha: x Elastic Contai: x IAM Managem: x Billing Manag: x My Drive - Go: x ec2-3-83-1-110: x

us-east-1 console.aws.amazon.com/ecs/v2/home?region=us-east-1&networkinterface=eni-0449d790178697796

EC2 > Network interfaces > eni-0449d790178697796

Network interface summary for eni-0449d790178697796

Network interface details

Network interface ID eni-0449d790178697796	Name -	Description amazon-ec2-us-east-1-854203374229-attachment/Out0445-d0d8-4187-a50c-9c5309f93f9
Network interface status In-use	Interface type Elastic network interface	Security groups sg-0c116a33d2f67c90 (redis-2336)
VPC ID vpc-0ba56b1024d8a2b20 🔗	Subnet ID subnet-08c3c9b3167639f18 🔗	Availability Zone us-east-1a
Owner 854203374229	Requester ID 878754402556	Requester-managed True
Source/dest. check True		
IP addresses		
Private IPv4 address 10.0.0.60	Private IPv4 DNS ip-10-0-0-60.ec2.internal	Elastic Fabric Adapter False
Public IPv4 address 3.87.7.31	Public IPv4 DNS ec2-3-87-7-31.compute-1.amazonaws.com	IPv4 addresses -
Secondary private IPv4 addresses -	Association ID -	Elastic IP address owner amazon
MAC address 12:8B:06:32:17:a5	IPv6 Prefix Delegation -	IPv6 Prefix Delegation -
Instance details		

