

AWS PROJECT

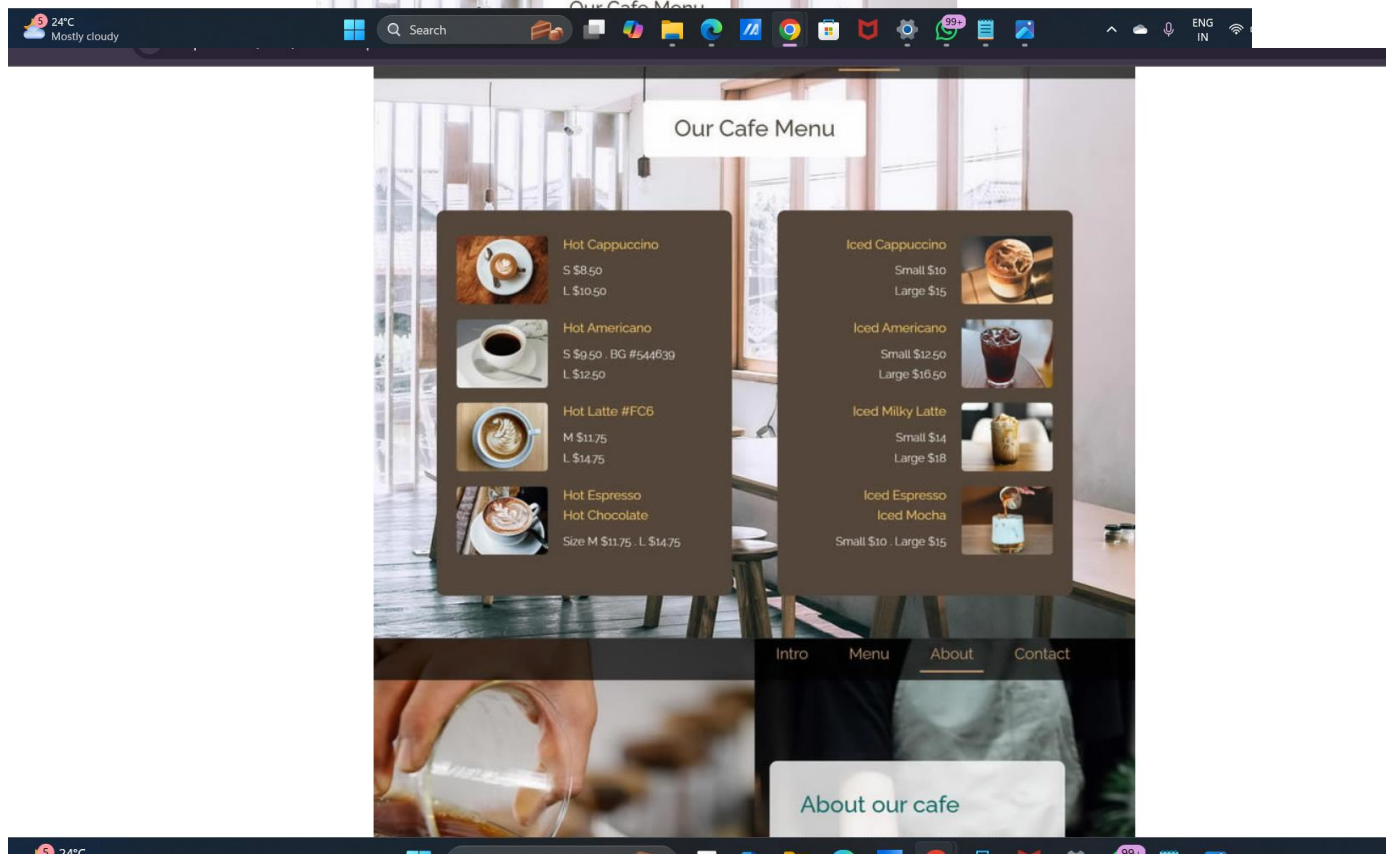
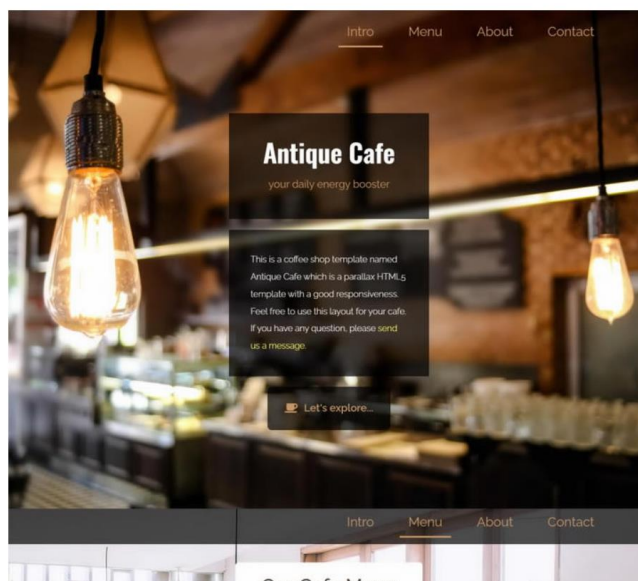
Project Overview

Website hosting on AWS by creating a custom VPC with Auto Scaling, Application Load Balancer, and monitoring using CloudWatch. Also integrates Simple Notification Service (SNS) for alerts and notifications. And also created Private Database.

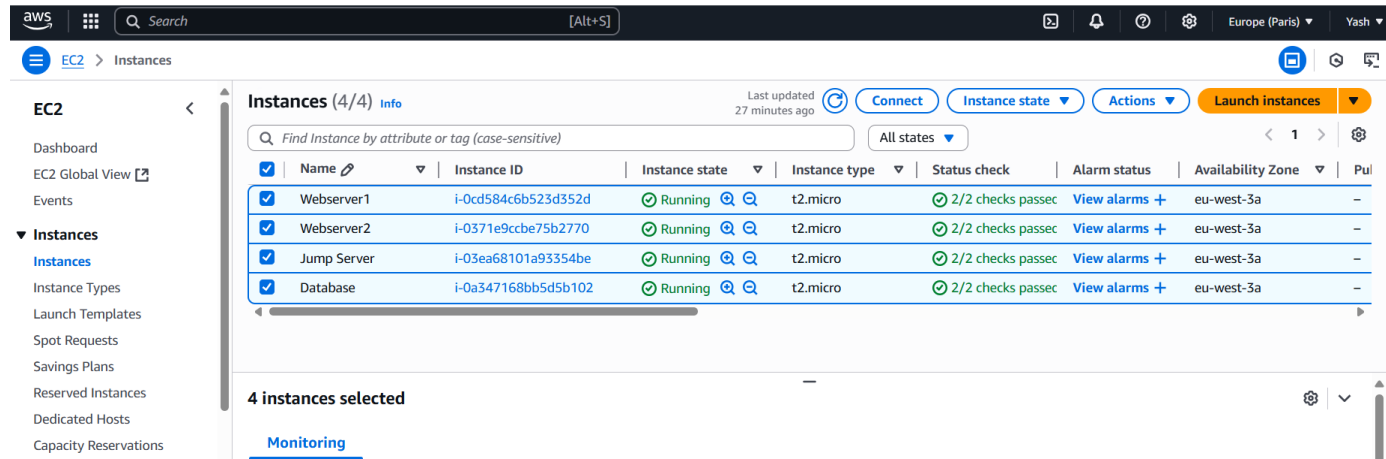
Web server with Public IP & Load Balancer DNS

Deployed a Clean Work HTML template on EC2 with a public IP and integrated it behind an Application Load Balancer for high availability.

Antique Cafe HTML Template



EC2 INSTANCES



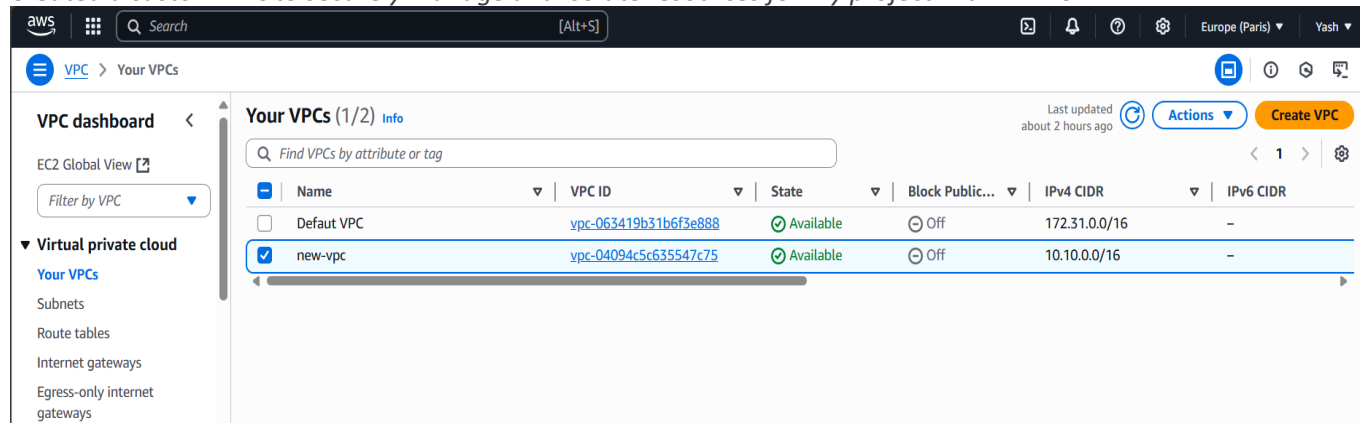
The screenshot shows the AWS Management Console for EC2 Instances. The left sidebar contains navigation links for EC2, Dashboard, EC2 Global View, Events, and a list of instance types (Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations). The main content area displays 'Instances (4/4)' with a search bar and a table of instances. The table has columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and a 'Pul' column. All four instances are in the 'Running' state and are located in the eu-west-3a availability zone. Below the table, it indicates '4 instances selected' and a 'Monitoring' link.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Pul
Webserver1	i-0cd584c6b523d352d	Running	t2.micro	2/2 checks passed	View alarms +	eu-west-3a	-
Webserver2	i-0371e9ccbe75b2770	Running	t2.micro	2/2 checks passed	View alarms +	eu-west-3a	-
Jump Server	i-03ea68101a93354be	Running	t2.micro	2/2 checks passed	View alarms +	eu-west-3a	-
Database	i-0a347168bb5d5b102	Running	t2.micro	2/2 checks passed	View alarms +	eu-west-3a	-

Launched EC2 instances for the project using Auto Scaling to ensure high availability and scalability.

VPC

Created a custom VPC to securely manage and isolate resources for my project within AWS.

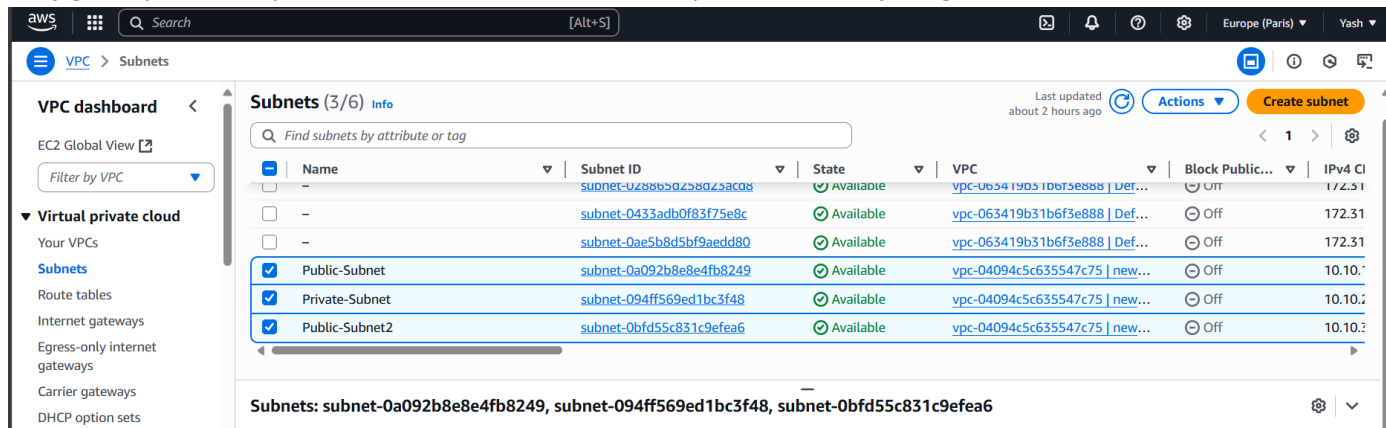


The screenshot shows the AWS Management Console for VPCs. The left sidebar contains navigation links for VPC dashboard, EC2 Global View, and a list of VPC resources (Your VPCs, Subnets, Route tables, Internet gateways, Egress-only internet gateways). The main content area displays 'Your VPCs (1/2)' with a search bar and a table of VPCs. The table has columns for Name, VPC ID, State, Block Public..., IPv4 CIDR, and IPv6 CIDR. Two VPCs are listed: 'Default VPC' and 'new-vpc'. Both are in the 'Available' state and are located in the eu-west-3a availability zone. Below the table, it indicates '2 VPCs selected' and a 'Monitoring' link.

Name	VPC ID	State	Block Public...	IPv4 CIDR	IPv6 CIDR
Default VPC	vpc-063419b31b6f3e888	Available	Off	172.31.0.0/16	-
new-vpc	vpc-04094c5c635547c75	Available	Off	10.10.0.0/16	-

Subnets

Configured public and private subnets within the VPC to separate internet-facing and internal resources.

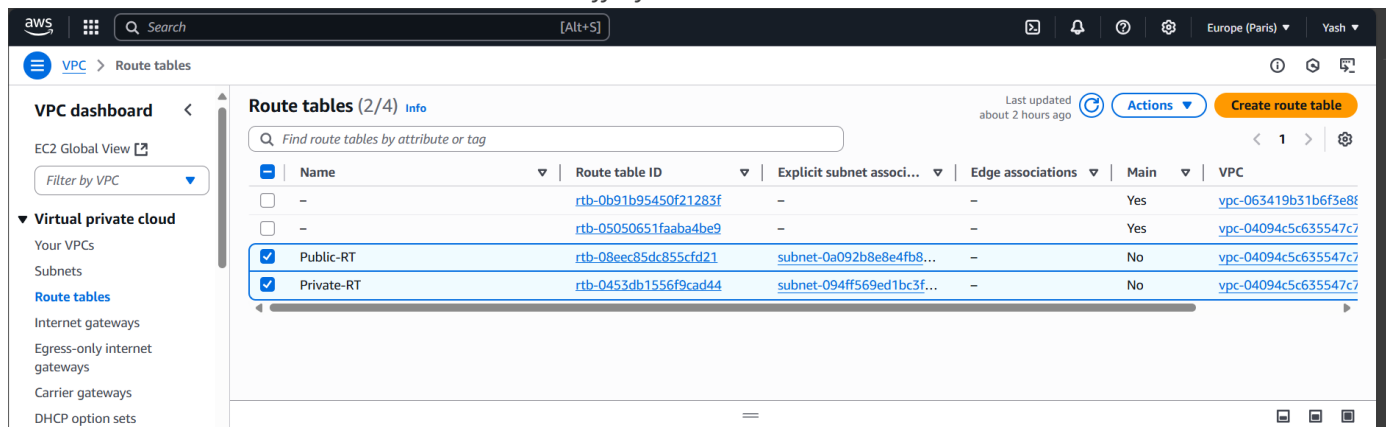


The screenshot shows the AWS Management Console interface for the 'Subnets' page. The left sidebar contains the 'VPC dashboard' and a list of VPC resources: 'Your VPCs', 'Subnets', 'Route tables', 'Internet gateways', 'Egress-only internet gateways', 'Carrier gateways', and 'DHCP option sets'. The main content area is titled 'Subnets (3/6)' and includes a search bar and a table of subnets. The table has columns for Name, Subnet ID, State, VPC, Block Public IP, and IPv4 CIDR. Three subnets are listed: 'Public-Subnet', 'Private-Subnet', and 'Public-Subnet2'. All three are in the 'Available' state and are associated with the VPC 'vpc-04094c5c635547c75'. The 'Public-Subnet' and 'Public-Subnet2' have a 'Block Public IP' setting of 'Off', while 'Private-Subnet' has it set to 'On'. The IPv4 CIDR addresses are 10.10.10.0/24, 10.10.10.0/24, and 10.10.10.0/24 respectively. A summary bar at the bottom indicates that there are 3 subnets in total.

Name	Subnet ID	State	VPC	Block Public IP	IPv4 CIDR
-	subnet-0a92b8e8e4fb8249	Available	vpc-063419b31b6f3e888	Off	172.31.0.0/24
-	subnet-0433adb0f83f75e8c	Available	vpc-063419b31b6f3e888	Off	172.31.0.0/24
-	subnet-0ae5b8d5bf9aed80	Available	vpc-063419b31b6f3e888	Off	172.31.0.0/24
Public-Subnet	subnet-0a92b8e8e4fb8249	Available	vpc-04094c5c635547c75	Off	10.10.10.0/24
Private-Subnet	subnet-094ff569ed1bc3f48	Available	vpc-04094c5c635547c75	On	10.10.10.0/24
Public-Subnet2	subnet-0bfd55c831c9efea6	Available	vpc-04094c5c635547c75	Off	10.10.10.0/24

Route Tables

Created and associated route tables to control traffic flow between subnets and external networks.



The screenshot shows the AWS Management Console interface for the 'Route tables' page. The left sidebar contains the 'VPC dashboard' and a list of VPC resources: 'Your VPCs', 'Subnets', 'Route tables', 'Internet gateways', 'Egress-only internet gateways', 'Carrier gateways', and 'DHCP option sets'. The main content area is titled 'Route tables (2/4)' and includes a search bar and a table of route tables. The table has columns for Name, Route table ID, Explicit subnet associations, Edge associations, Main, and VPC. Two route tables are listed: 'Public-RT' and 'Private-RT'. Both are associated with the VPC 'vpc-04094c5c635547c75'. The 'Public-RT' has a 'Main' status of 'No', while 'Private-RT' has it set to 'No'. The 'Explicit subnet associations' column shows that 'Public-RT' is associated with 'subnet-0a92b8e8e4fb8249' and 'Private-RT' is associated with 'subnet-094ff569ed1bc3f48'. A summary bar at the bottom indicates that there are 2 route tables in total.

Name	Route table ID	Explicit subnet associations	Edge associations	Main	VPC
-	rtb-0b91b95450f21283f	-	-	Yes	vpc-063419b31b6f3e888
-	rtb-05050651faaba4be9	-	-	Yes	vpc-04094c5c635547c75
Public-RT	rtb-08eec85dc855cfd21	subnet-0a92b8e8e4fb8249	-	No	vpc-04094c5c635547c75
Private-RT	rtb-0453db1556f9cad44	subnet-094ff569ed1bc3f48	-	No	vpc-04094c5c635547c75

SNS

Configured Amazon SNS to send automated alerts and notifications based on CloudWatch alarms

The screenshot shows the Amazon SNS console interface. The left sidebar contains navigation links: Dashboard, Topics, Subscriptions, Mobile, Push notifications, and Text messaging (SMS). The main content area displays the details for a subscription with the ARN `arn:aws:sns:eu-west-3:867344472885:Topic-new-vpc:80550bc6-1059-4f7e-b9bb-288b9df2f7cc`. The status is 'Confirmed' with a green checkmark. The endpoint is `yashvirutkar31@gmail.com` and the protocol is 'EMAIL'. The subscription principal is `arn:aws:iam::867344472885:root`. Below the details, there are tabs for 'Subscription filter policy' and 'Redrive policy (dead-letter queue)'. The 'Subscription filter policy' tab is active, showing a message: 'No filter policy configured for this subscription.'

Email

email notifications for system alerts triggered by CloudWatch alarms

The screenshot shows a Gmail inbox with a search bar at the top. The left sidebar shows the 'Inbox' with 123 messages. The main content area displays an email from 'Topic-new-vpc <no-reply@sns.amazonaws.com>' to 'me'. The email subject is 'ALARM: "Alarm for CPU < 20%" in EU (Paris)'. The email body contains the following information:

You are receiving this email because your Amazon CloudWatch Alarm "Alarm for CPU < 20%" in the EU (Paris) region has entered the ALARM state, because "Threshold Crossed: 1 out of the last 1 datapoints [3.299620885225355 (05/07/25 12:52:00)] was less than the threshold (20.0) (minimum 1 datapoint for OK -> ALARM transition)." at "Saturday 05 July, 2025 12:57:12 UTC".

View this alarm in the AWS Management Console:
<https://eu-west-3.console.aws.amazon.com/cloudwatch/deeplink.js?region=eu-west-3#alarmsV2:alarm/Alarm%20for%20CPU%20%3C%2020%25>

Alarm Details:

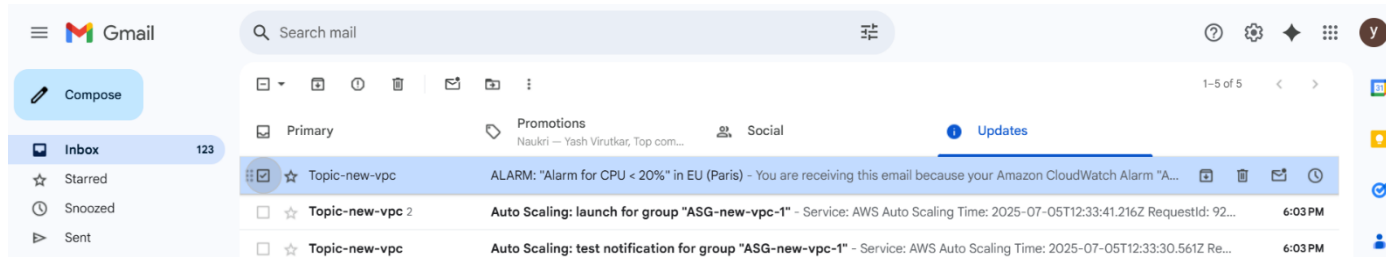
- Name: Alarm for CPU < 20%
- Description:
- State Change: INSUFFICIENT_DATA -> ALARM
- Reason for State Change: Threshold Crossed: 1 out of the last 1 datapoints [3.299620885225355 (05/07/25 12:52:00)] was less than the threshold (20.0) (minimum 1 datapoint for OK -> ALARM transition).
- Timestamp: Saturday 05 July, 2025 12:57:12 UTC
- AWS Account: 867344472885
- Alarm Arn: arn:aws:cloudwatch:eu-west-3:867344472885:alarm:Alarm for CPU < 20%

Threshold:

- The alarm is in the ALARM state when the metric is LessThanThreshold 20.0 for at least 1 of the last 1 period(s) of 300 seconds.

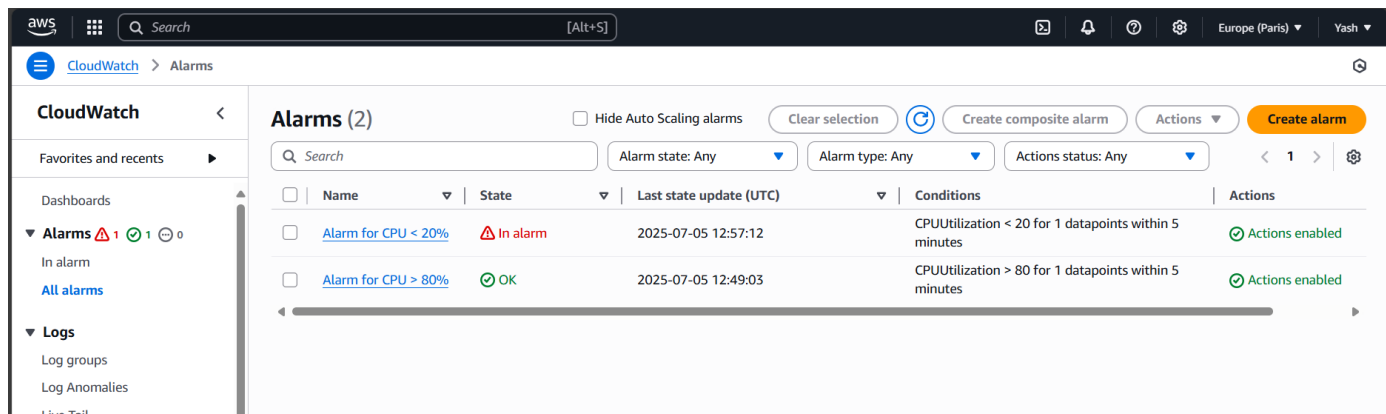
Email for Alarms

Received automated email notification via SNS triggered by a CloudWatch alarm when EC2 CPU utilization dropped below 20%.



CloudWatch Alarms

CloudWatch alarm transitioned between 'In Alarm' and 'OK' states based on CPU utilization thresholds.



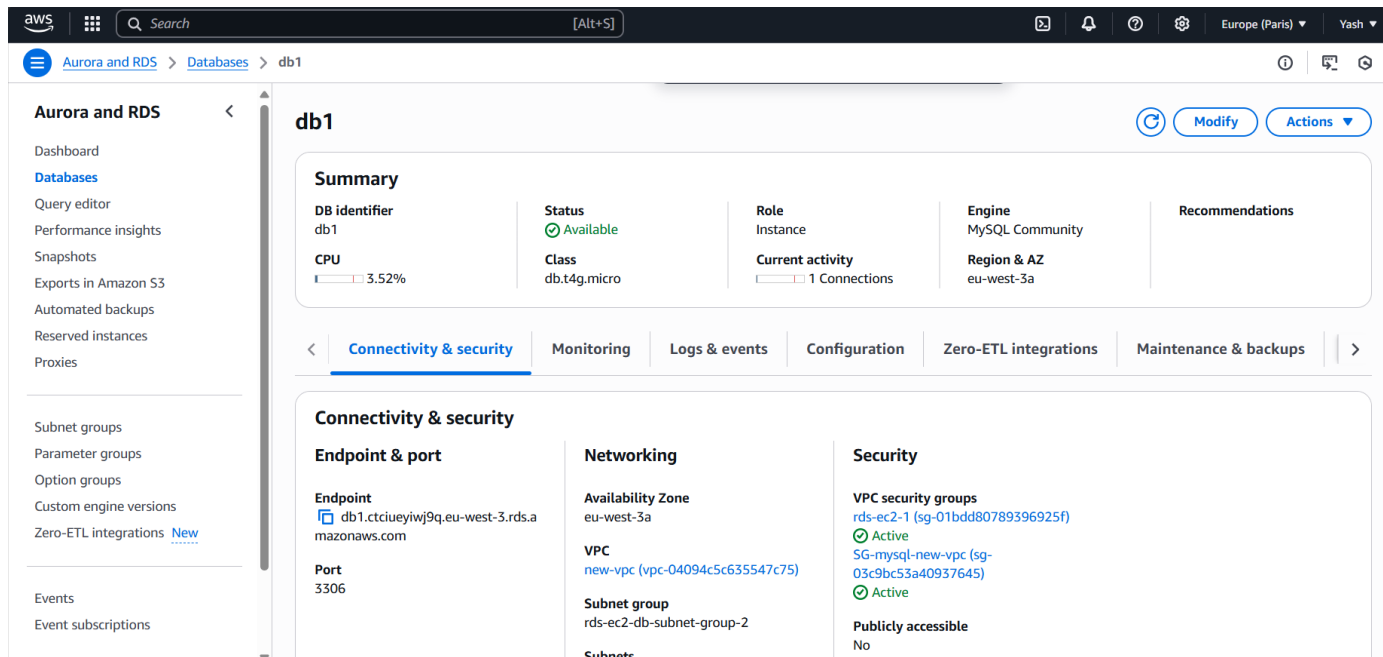
CloudWatch Dashboard

Created a CloudWatch dashboard to visualize and monitor real-time metrics of AWS resources in one place.



Aurora and RDS

Designed and deployed a secure database architecture using Amazon RDS and Aurora in private subnets to support high availability, scalability, and automated management for the project.



Databases

Created two databases, DB1 and DB2, on Amazon RDS and Aurora, and inserted structured sample data.

```
MySQL [db1]> show databases;
+-----+
| Database |
+-----+
| db1      |
| db2      |
| information_schema |
| mysql    |
| performance_schema |
| sys      |
+-----+
```

Db1

```
MySQL [db1]> Select * from Banking;
```

account_id	customer_name	account_number	account_type	balance	created_at
1	Ravi Kumar	ACC1001	Savings	15000.75	2025-07-05 13:53:02
2	Anjali Mehta	ACC1002	Current	50000.00	2025-07-05 13:53:02
3	Suresh Raina	ACC1003	Fixed Deposit	120000.00	2025-07-05 13:53:02

THANK YOU