

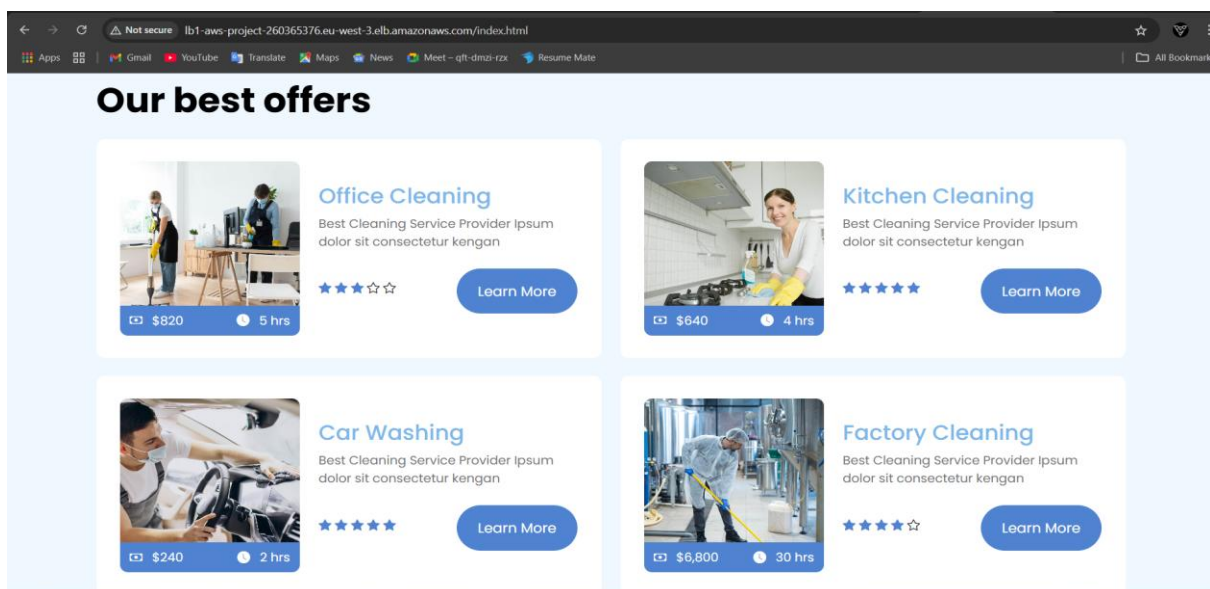
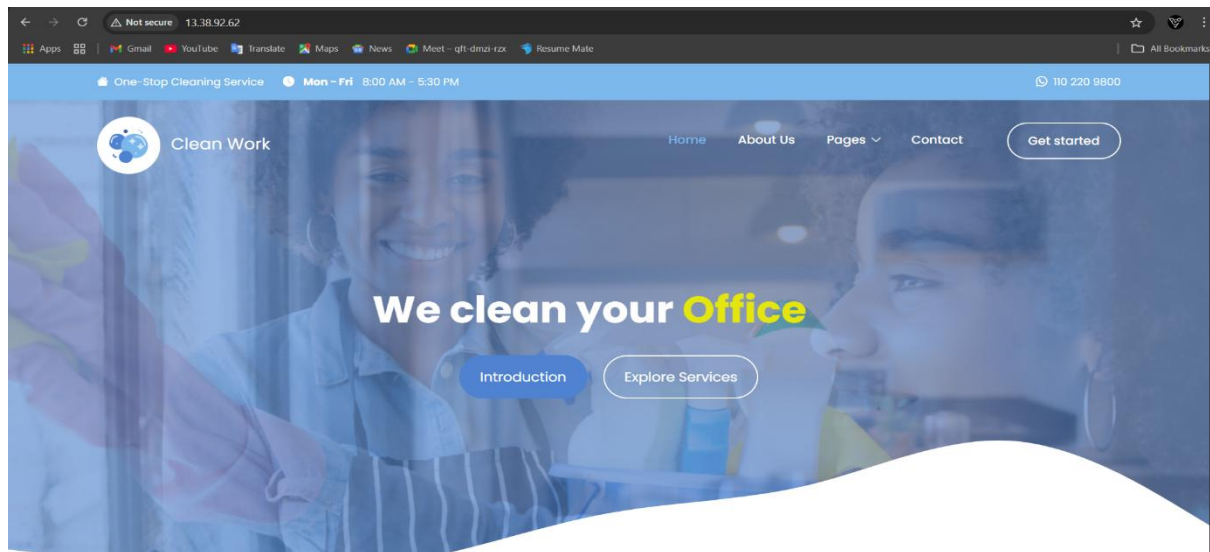
AWS PROJECT

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.



EC2 INSTANCES

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

The screenshot displays the AWS Management Console for EC2 instances. The top navigation bar shows the AWS logo, a search bar, and the user's name 'Vighnesh/AWS'. The main header indicates 'Instances (4/4)' and 'Info'. Below this, a table lists four instances: 'database-server', 'webserver1', 'webserver2', and 'bastion-server'. All instances are in the 'Running' state, using 't2.micro' instance types, and are located in the 'eu-west-3a' availability zone. The table also shows status checks, alarm status, and public IP addresses. Below the table, there are buttons for 'Connect', 'Instance state', 'Actions', and 'Launch instances'. A 'Monitoring' section is visible, showing 'Alarm recommendations' and a 'Configure CloudWatch agent' button. The bottom of the console shows a 'CloudShell' button and a 'Feedback' link.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...
database-server	i-0c71431c3ff9599ec	Running	t2.micro	2/2 checks passed	View alarms +	eu-west-3a	-	-
webserver1	i-069efef436960f1f8	Running	t2.micro	2/2 checks passed	View alarms +	eu-west-3a	-	13.38.92.62
webserver2	i-00aa6ad695afccbd5	Running	t2.micro	2/2 checks passed	View alarms +	eu-west-3a	-	15.237.214.126
bastion-server	i-099e2598e770a9f95	Running	t2.micro	2/2 checks passed	View alarms +	eu-west-3a	-	13.38.15.124

VPC

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

The screenshot displays the AWS Management Console for VPCs. The top navigation bar shows the AWS logo, a search bar, and the user's name 'Vighnesh/AWS'. The main header indicates 'Your VPCs (1/2)' and 'Info'. Below this, a table lists two VPCs: 'vpc-aws-project' and 'vpc-0dc2e6420bfc9bd9b'. Both VPCs are in the 'Available' state, with 'Block Public Access' set to 'Off'. The table also shows the IPv4 CIDR, IPv6 CIDR, and DHCP option set. Below the table, there are buttons for 'Actions' and 'Create VPC'. The 'vpc-062c10e7f26d0ff09 / vpc-aws-project' details are shown, including VPC ID, DNS resolution, Main network ACL, IPv6 CIDR, State, Tenancy, Default VPC, Network Address Usage metrics, Block Public Access, DHCP option set, IPv4 CIDR, Route 53 Resolver DNS Firewall rule groups, DNS hostnames, Main route table, IPv6 pool, and Owner ID.

Name	VPC ID	State	Block Public...	IPv4 CIDR	IPv6 CIDR	DHCP option set
vpc-aws-project	vpc-062c10e7f26d0ff09	Available	Off	10.10.0.0/16	-	dopt-095f99ea3835ef634
-	vpc-0dc2e6420bfc9bd9b	Available	Off	172.31.0.0/16	-	dopt-095f99ea3835ef634

vpc-062c10e7f26d0ff09 / vpc-aws-project

Details

VPC ID: vpc-062c10e7f26d0ff09

DNS resolution: Enabled

Main network ACL: acl-0d7bd4d0af235c103

IPv6 CIDR: -

State: Available

Tenancy: default

Default VPC: No

Network Address Usage metrics: Disabled

Block Public Access: Off

DHCP option set: dopt-095f99ea3835ef634

IPv4 CIDR: 10.10.0.0/16

Route 53 Resolver DNS Firewall rule groups: -

DNS hostnames: Disabled

Main route table: rtb-07140711272e34b03

IPv6 pool: -

Owner ID: 746669231524

Subnets

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

aws

Search

[Alt+S]

Europe (Paris)

Vignesh/AWS

VPC

Subnets

Subnets (3/9)

info

Last updated less than a minute ago

Actions

Create subnet

Find subnets by attribute or tag

<input checked="" type="checkbox"/>	Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR	IPv6 CIDR
<input checked="" type="checkbox"/>	dummy-subnet-aws-project	subnet-0476d1651423ef8e8	Available	vpc-062c10e7f26d0ff09 vpc-a...	Off	10.10.3.0/24	-
<input type="checkbox"/>	RDS-Pvt-subnet-3	subnet-03be3652cbc7a489a	Available	vpc-062c10e7f26d0ff09 vpc-a...	Off	10.10.4.128/25	-
<input checked="" type="checkbox"/>	public-subnet-aws-project	subnet-0bf20b58573ace50f	Available	vpc-062c10e7f26d0ff09 vpc-a...	Off	10.10.1.0/24	-
<input type="checkbox"/>	-	subnet-05c1afcfaf4578030	Available	vpc-0dc2e6420bfc9bd9b	Off	172.31.32.0/20	-
<input type="checkbox"/>	RDS-Pvt-subnet-2	subnet-0fc53049ac028296e	Available	vpc-062c10e7f26d0ff09 vpc-a...	Off	10.10.4.0/25	-
<input type="checkbox"/>	-	subnet-06bc56518a06fd62f	Available	vpc-0dc2e6420bfc9bd9b	Off	172.31.16.0/20	-
<input type="checkbox"/>	-	subnet-00f8b806be7da672c	Available	vpc-0dc2e6420bfc9bd9b	Off	172.31.0.0/20	-
<input type="checkbox"/>	RDS-Pvt-subnet-1	subnet-0544eef0262ace995	Available	vpc-062c10e7f26d0ff09 vpc-a...	Off	10.10.0.128/25	-
<input checked="" type="checkbox"/>	private-subnet-aws-project	subnet-0d895472fce780155	Available	vpc-062c10e7f26d0ff09 vpc-a...	Off	10.10.2.0/24	-

Subnets: subnet-0476d1651423ef8e8, subnet-0bf20b58573ace50f, subnet-0d895472fce780155

CloudShell

Feedback

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Route Tables

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

aws

Search

[Alt+S]

Europe (Paris)

Vignesh/AWS

VPC

Route tables

Route tables (2/5)

info

Last updated 1 minute ago

Actions

Create route table

Find route tables by attribute or tag

<input checked="" type="checkbox"/>	Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC	Owner ID
<input checked="" type="checkbox"/>	public-RT-aws-project	rtb-064af29f8c3a00a63	subnet-0bf20b58573ace...	-	No	vpc-062c10e7f26d0ff09 vpc-a...	746669231524
<input type="checkbox"/>	-	rtb-0f4a382e180754e26	-	-	Yes	vpc-0dc2e6420bfc9bd9b	746669231524
<input type="checkbox"/>	RDS-Pvt-rt	rtb-05328ef2e7c80b386	3 subnets	-	No	vpc-062c10e7f26d0ff09 vpc-a...	746669231524
<input type="checkbox"/>	-	rtb-07140711272e34b03	-	-	Yes	vpc-062c10e7f26d0ff09 vpc-a...	746669231524
<input checked="" type="checkbox"/>	private-RT-aws-project	rtb-0b037c5fae62f34b6	subnet-0d895472fce780...	-	No	vpc-062c10e7f26d0ff09 vpc-a...	746669231524

Route tables: rtb-0b037c5fae62f34b6, rtb-064af29f8c3a00a63

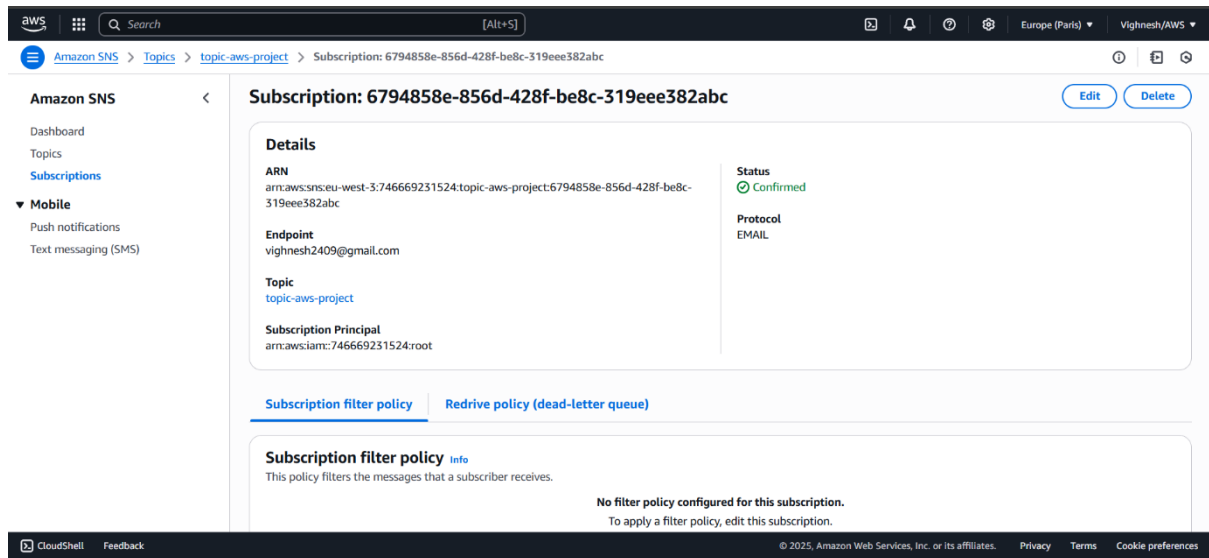
CloudShell

Feedback

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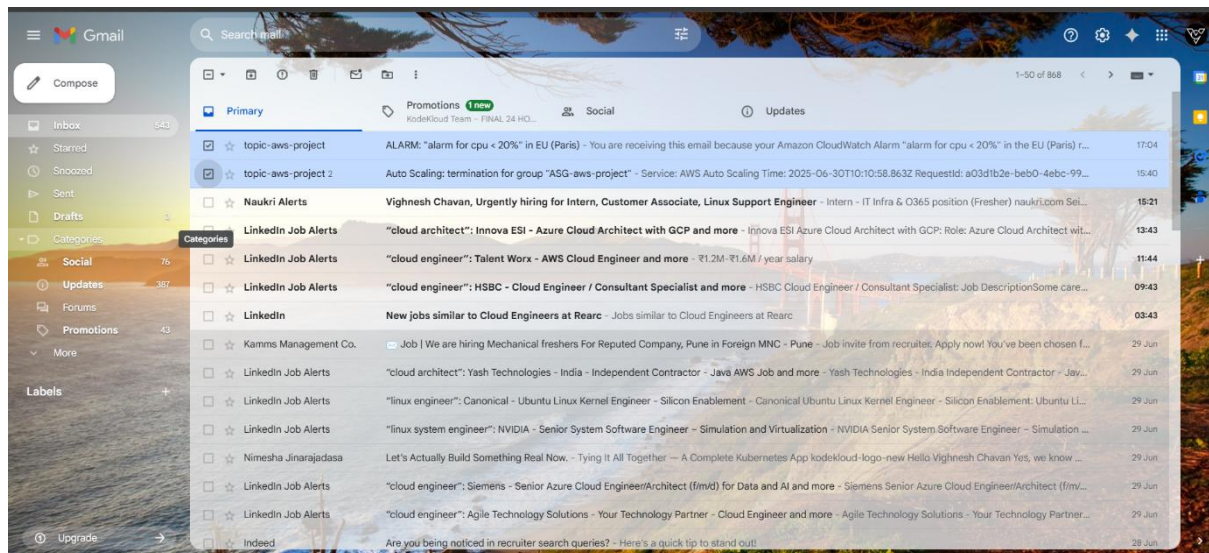
SNS

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



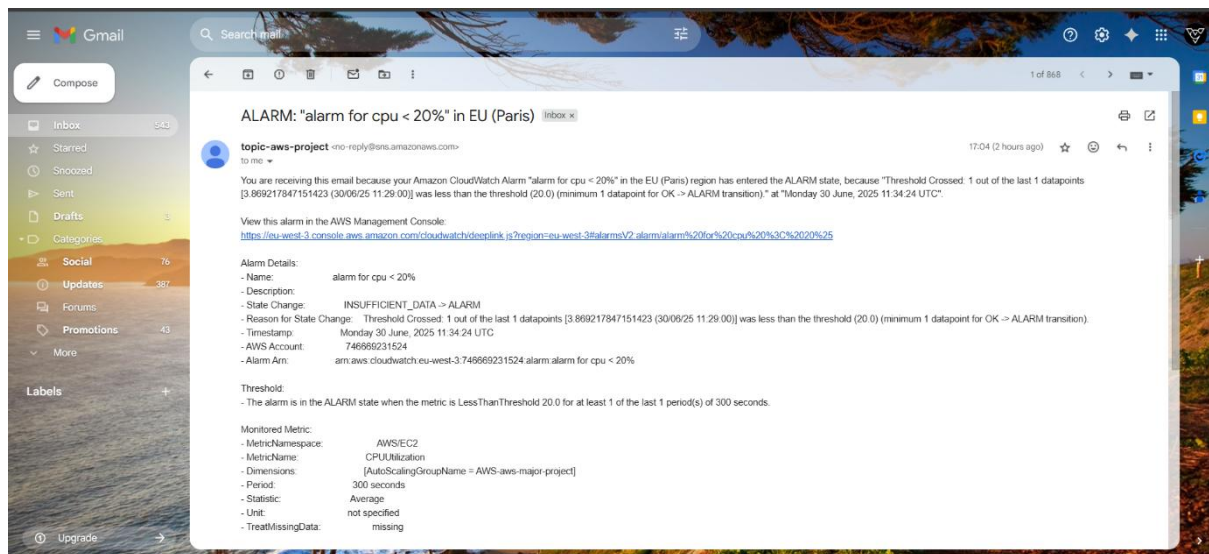
Email

email notifications for system alerts triggered by CloudWatch alarms



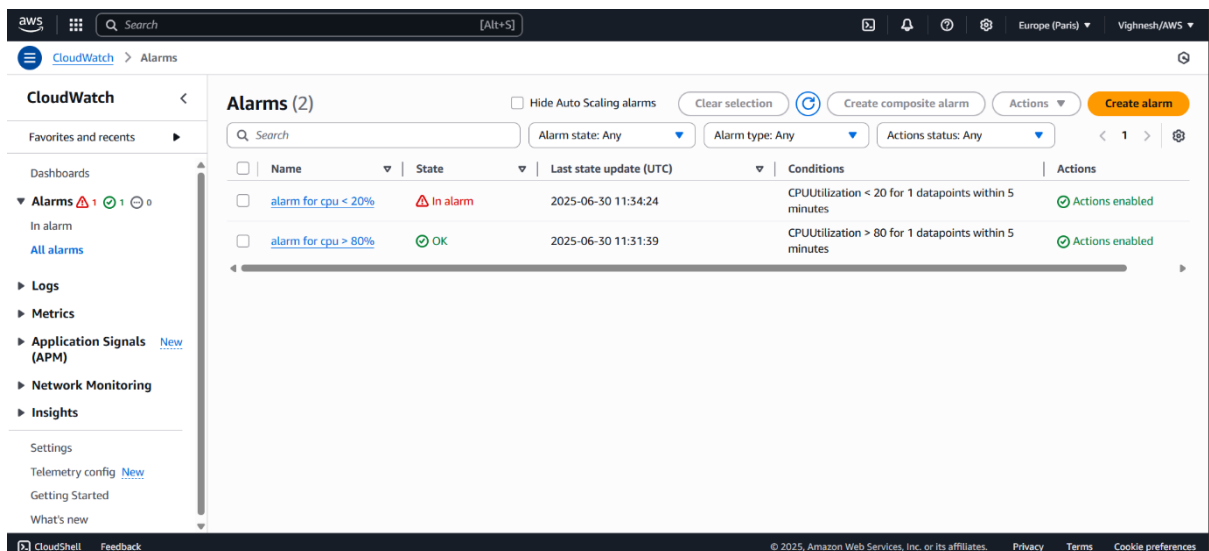
Email for Alarms

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



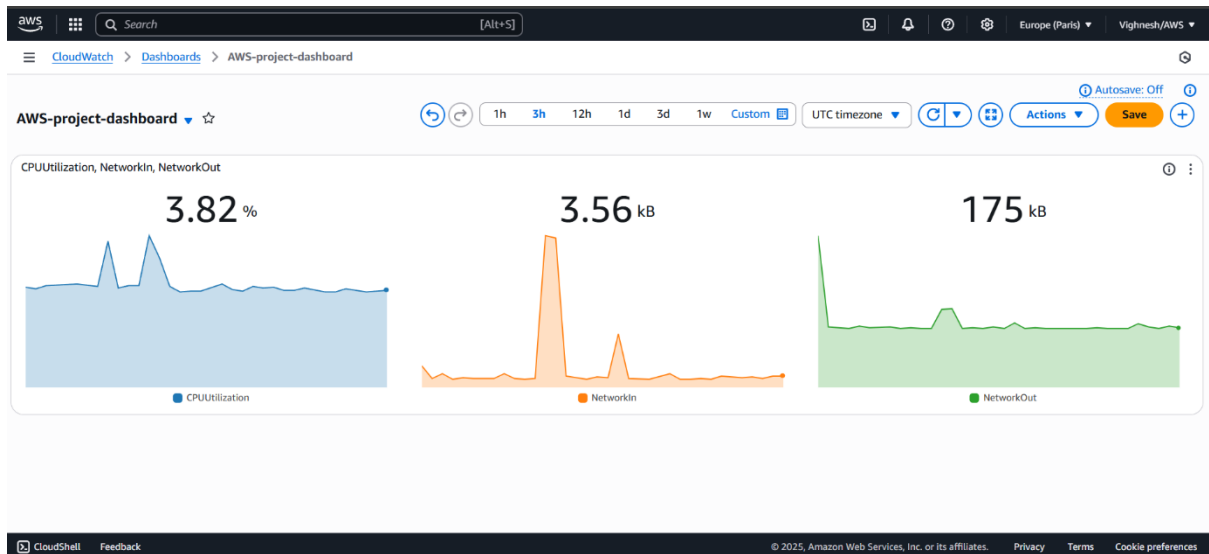
CloudWatch Alarms

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



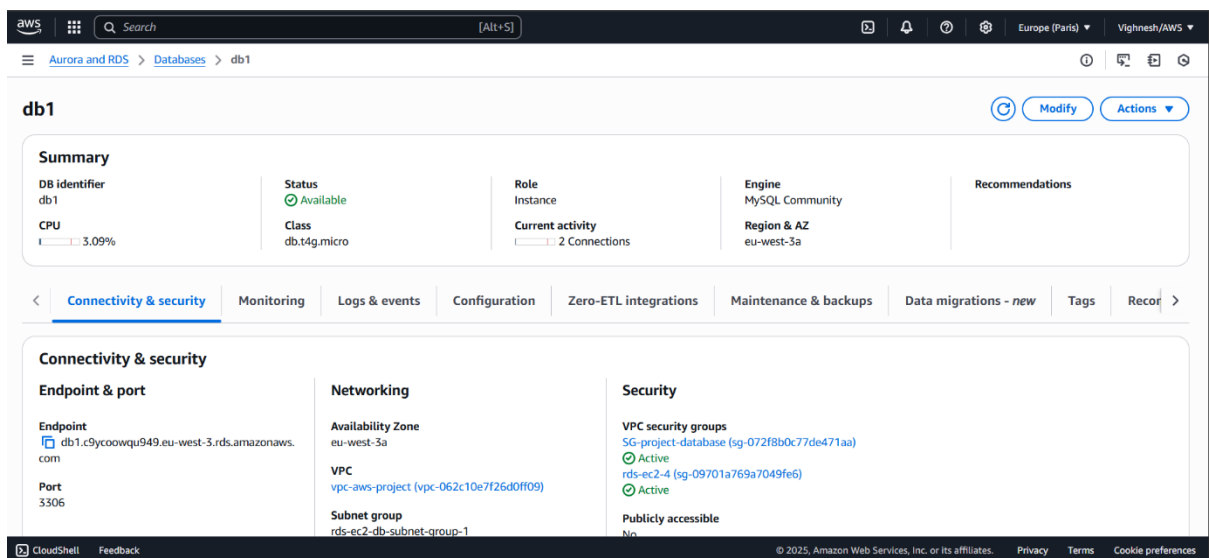
CloudWatch Dashboard

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      |
+-----+
6 rows in set (0.00 sec)
```

Db1

```
MySQL [db1]> SELECT * FROM contact_messages;
+-----+-----+-----+-----+-----+-----+
| id | full_name | email | subject | message | submitted_at |
+-----+-----+-----+-----+-----+-----+
| 1 | Rahul Sharma | rahul@example.com | Web Design Inquiry | I want a website like Clean Work. | 2025-06-30 13:15:15 |
| 2 | Anita Mehta | anita@example.com | Partnership | Looking to collaborate on future projects. | 2025-06-30 13:15:15 |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

MySQL [db1]> SELECT * FROM portfolio_projects;
+-----+-----+-----+-----+-----+
| project_id | project_title | category | image_url | project_description |
+-----+-----+-----+-----+-----+
| 1 | Corporate Website | Web Design | images/project1.jpg | A responsive corporate website for a client. |
| 2 | Mobile App UI | App Design | images/project2.jpg | Designed UI/UX for a mobile application. |
| 3 | eCommerce Platform | Development | images/project3.jpg | Built an eCommerce backend using Laravel and MySQL. |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

MySQL [db1]> SELECT * FROM services;
+-----+-----+-----+-----+
| service_id | service_title | icon_class | service_description |
+-----+-----+-----+-----+
| 1 | Web Design | fa fa-desktop | Professional and modern website designs. |
| 2 | App Development | fa fa-mobile | Android and iOS mobile application development. |
| 3 | SEO Optimization | fa fa-line-chart | Improve your website's visibility on search engines. |
+-----+-----+-----+-----+
```

Db2

```
MySQL [db2]> SELECT * FROM branches;
+-----+-----+-----+
| branch_id | branch_name | city |
+-----+-----+-----+
| 1 | Andheri Branch | Mumbai |
| 2 | Koregaon Branch | Pune |
| 3 | Panaji Branch | Goa |
+-----+-----+-----+
3 rows in set (0.00 sec)

MySQL [db2]> SELECT * FROM accounts;
+-----+-----+-----+-----+-----+-----+
| account_id | customer_id | branch_id | account_type | balance | opened_on |
+-----+-----+-----+-----+-----+-----+
| 1 | 1 | 1 | Savings | 120000.50 | 2023-02-10 |
| 2 | 2 | 2 | Current | 450000.00 | 2023-04-01 |
| 3 | 3 | 3 | Savings | 78000.75 | 2023-06-15 |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

MySQL [db2]> SELECT * FROM transactions;
+-----+-----+-----+-----+-----+-----+
| transaction_id | account_id | txn_date | txn_type | amount | description |
+-----+-----+-----+-----+-----+-----+
| 1 | 1 | 2024-06-01 | Credit | 20000.00 | Salary credited |
| 2 | 2 | 2024-06-05 | Debit | 5000.00 | Rent payment |
| 3 | 2 | 2024-06-10 | Debit | 15000.00 | Office expense |
| 4 | 3 | 2024-06-12 | Credit | 10000.00 | Freelance payment |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

MySQL [db2]> SELECT * FROM loans;
+-----+-----+-----+-----+-----+-----+-----+
| loan_id | customer_id | loan_type | amount | interest_rate | start_date | duration_years | status |
+-----+-----+-----+-----+-----+-----+-----+
| 1 | 1 | Home Loan | 2500000.00 | 7.25 | 2022-05-01 | 20 | Ongoing |
| 2 | 2 | Car Loan | 850000.00 | 8.50 | 2023-07-10 | 5 | Ongoing |
| 3 | 3 | Education Loan | 500000.00 | 10.00 | 2024-01-01 | 7 | Approved |
+-----+-----+-----+-----+-----+-----+-----+
```