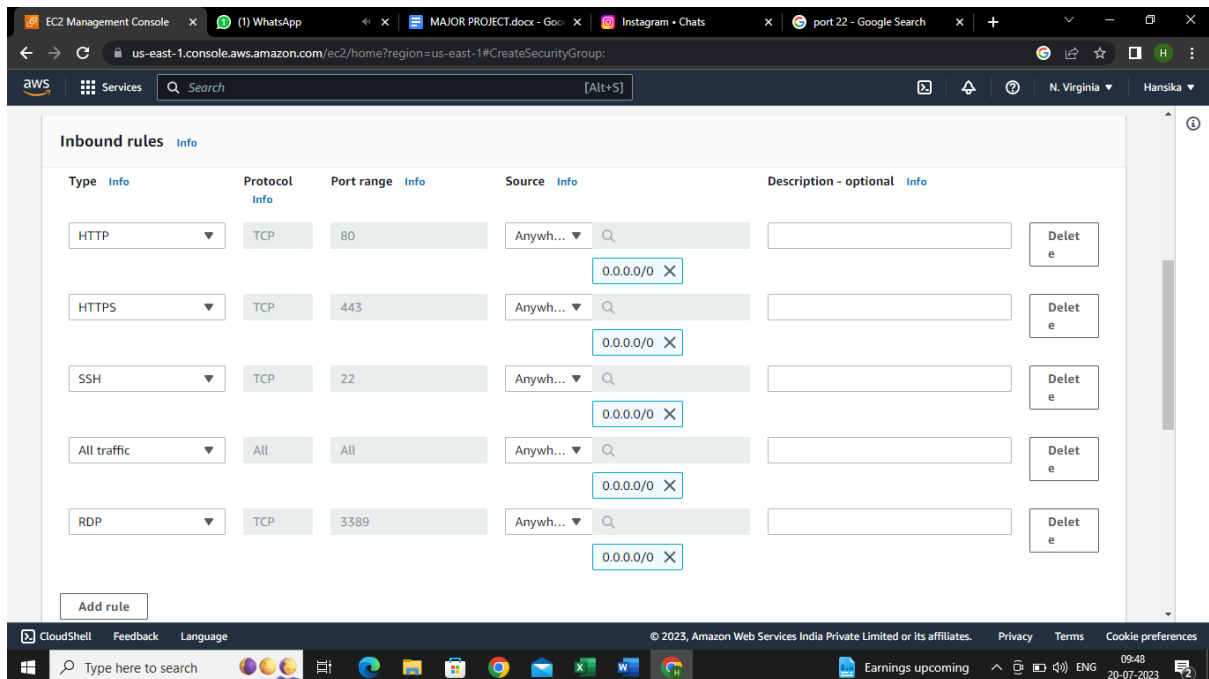


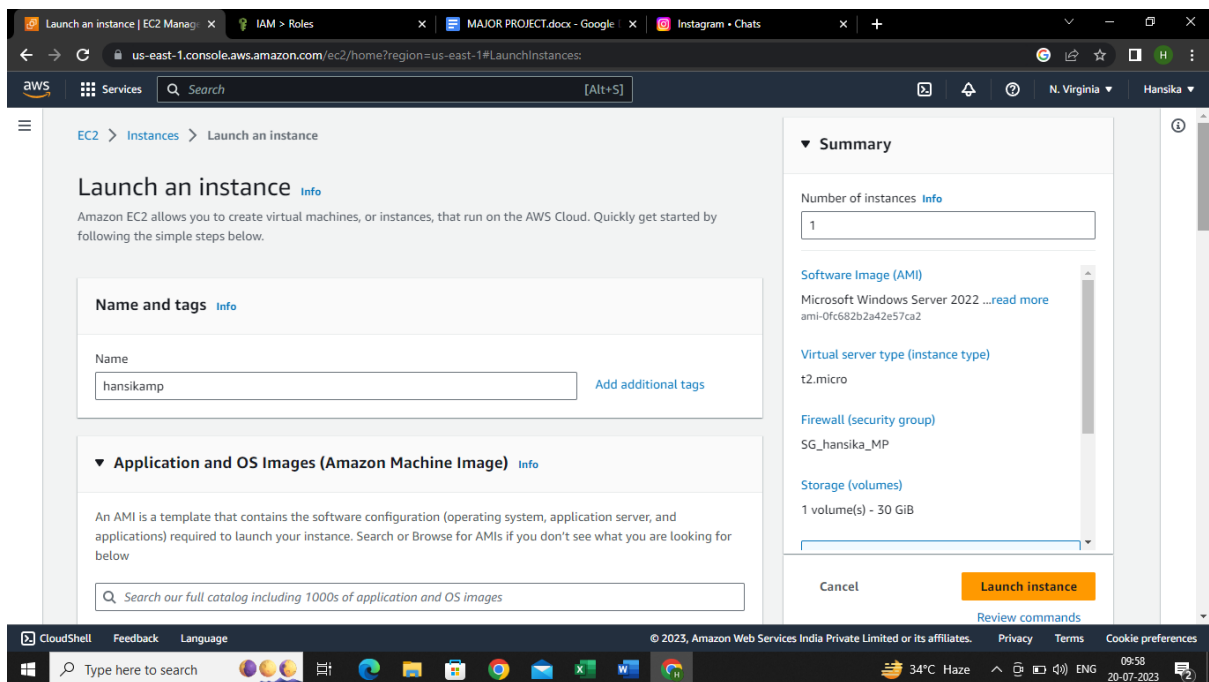
MAJOR PROJECT REPORT

TASK 1

Create a Security group <SG_Firstname_MP> with inbound and outbound ports 80, 443, 22, ALL and RDP.



Create EC2 Instance using windows image (t2.micro) <Firstname_MP>



Launch an instance | EC2 Manag... IAM > Roles MAJOR PROJECT.docx - Google Instagram - Chats

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances:

Search

Search our full catalog including 1000s of application and OS images

Quick Start

Amazon Linux macOS Ubuntu Windows Red Hat SUSE Li

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Microsoft Windows Server 2022 Base
ami-0fc682b2a42e57ca2 (64-bit (x86))
Virtualization: hvm ENA enabled: true Root device type: ebs

Free tier eligible

Description

Microsoft Windows Server 2022 Full Locale English AMI provided by Amazon

Architecture AMI ID

64-bit (x86) ami-0fc682b2a42e57ca2

Verified provider

Summary

Number of instances Info

1

Software Image (AMI)

Microsoft Windows Server 2022 ...read more
ami-0fc682b2a42e57ca2

Virtual server type (instance type)

t2.micro

Firewall (security group)

SG_hansika_MP

Storage (volumes)

1 volume(s) - 30 GiB

Cancel Launch instance

Review commands

CloudShell Feedback Language

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Type here to search

34°C Haze 09:58 20-07-2023

Launch an instance | EC2 Manag... IAM > Roles MAJOR PROJECT.docx - Google Instagram - Chats

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances:

Search

Key pair (login) Info

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - required

hansika11

Create new key pair

For Windows instances, you use a key pair to decrypt the administrator password. You then use the decrypted password to connect to your instance.

Network settings Info

Edit

Network Info

vpc-08541ad63ff8978fa

Subnet Info

No preference (Default subnet in any availability zone)

Auto-assign public IP Info

Enable

Firewall (security groups) Info

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

Summary

Number of instances Info

1

Software Image (AMI)

Microsoft Windows Server 2022 ...read more
ami-0fc682b2a42e57ca2

Virtual server type (instance type)

t2.micro

Firewall (security group)

SG_hansika_MP

Storage (volumes)

1 volume(s) - 30 GiB

Cancel Launch instance

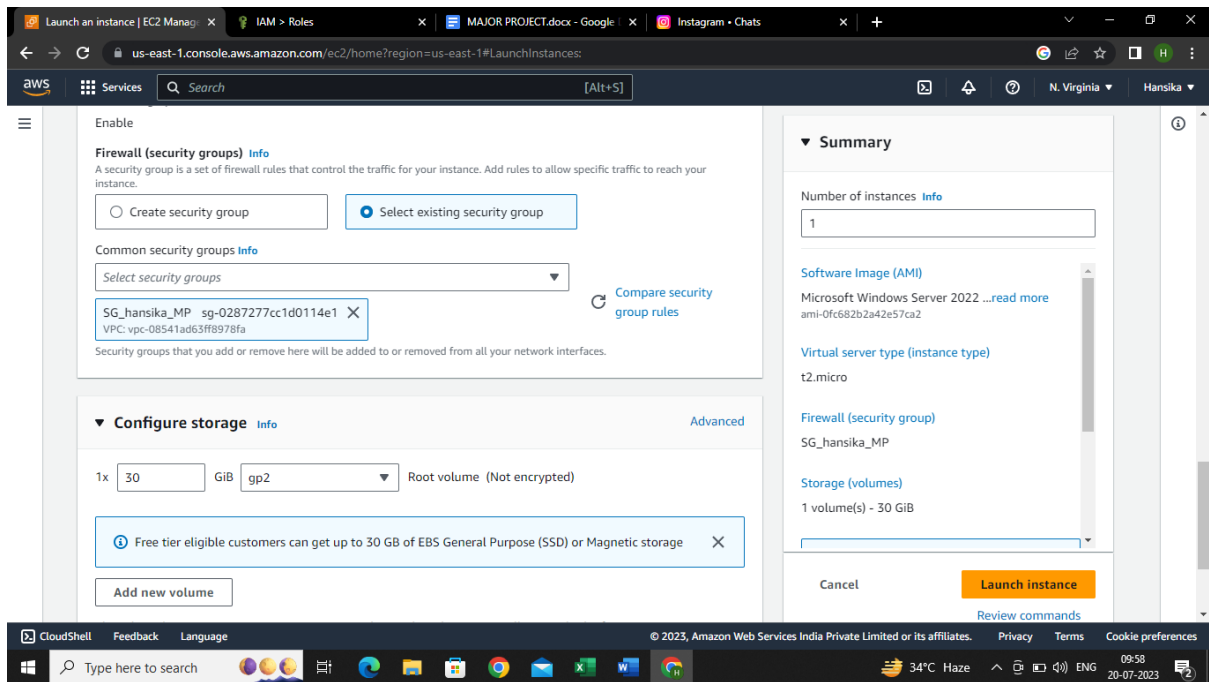
Review commands

CloudShell Feedback Language

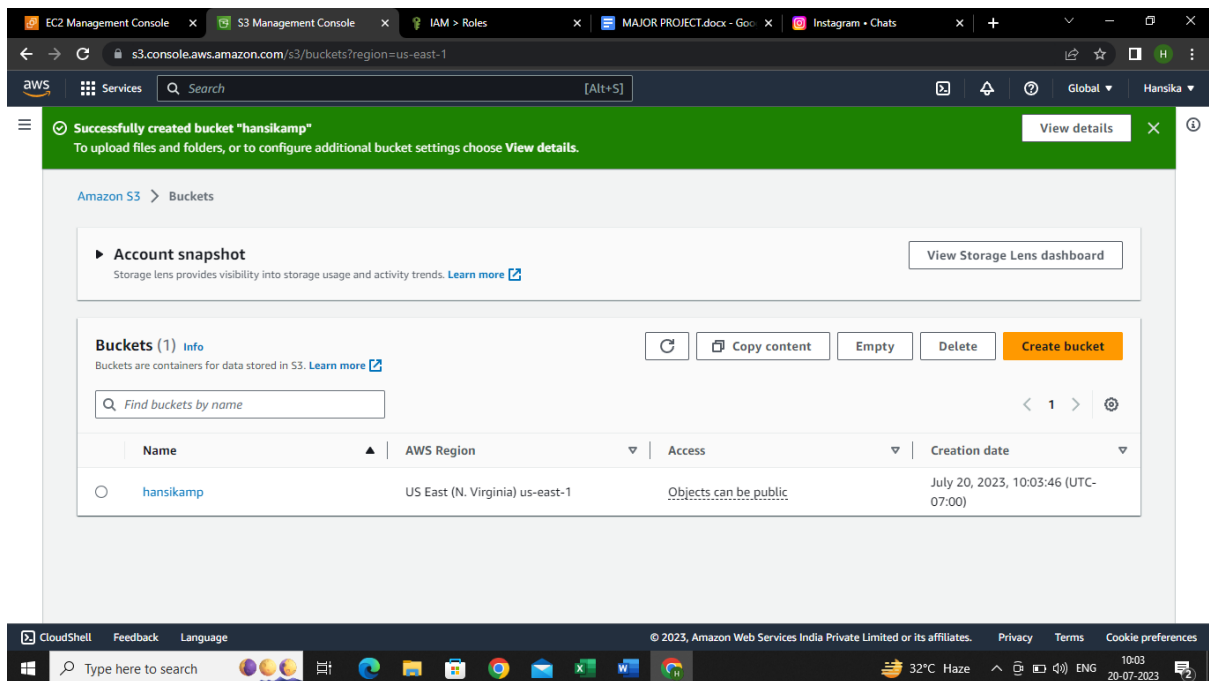
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Type here to search

34°C Haze 09:58 20-07-2023



Create S3 bucket <anything>



Create IAM role (S3 Full Access) and attach to EC2 instance <Firstname_MP_Full>

Launch an instance | EC2 Manag... IAM > Roles > Create role MAJOR PROJECT.docx - Google Instagram • Chats

us-east-1.console.aws.amazon.com/iamv2/home?region=us-east-1#/roles/create?commonUseCase=EC2&policies=arn%3Aaws%3Aiam%3A%3Aaws%3Aapolicy%2FAma...

Services Search [Alt+S]

IAM > Roles > Create role

Step 1
Select trusted entity

Step 2
Add permissions

Step 3
Name, review, and create

Name, review, and create

Role details

Role name
Enter a meaningful name to identify this role.

hansika_mpl

Maximum 64 characters. Use alphanumeric and '+', '@', '_' characters.

Description
Add a short explanation for this role.

Allows EC2 instances to call AWS services on your behalf.

Maximum 1000 characters. Use alphanumeric and '+', '@', '_' characters.

Step 1: Select trusted entities

Edit

```
1 {  
2   "Version": "2012-10-17",
```

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Launch an instance | EC2 Manag... IAM > Roles > Create role MAJOR PROJECT.docx - Google Instagram • Chats

us-east-1.console.aws.amazon.com/iamv2/home?region=us-east-1#/roles/create?commonUseCase=EC2&policies=arn%3Aaws%3Aiam%3A%3Aaws%3Aapolicy%2FAma...

Services Search [Alt+S]

IAM > Roles > Create role

Step 1: Select trusted entities

```
1 {  
2   {  
3     "Version": "2012-10-17",  
4     "Statement": [  
5       {  
6         "Effect": "Allow",  
7         "Action": [  
8           "sts:AssumeRole"  
9         ],  
10        "Principal": {  
11          "Service": [  
12            "ec2.amazonaws.com"  
13          ]  
14        }  
15      }  
16    ]  
17  }  
18 }
```

Step 2: Add permissions

Edit

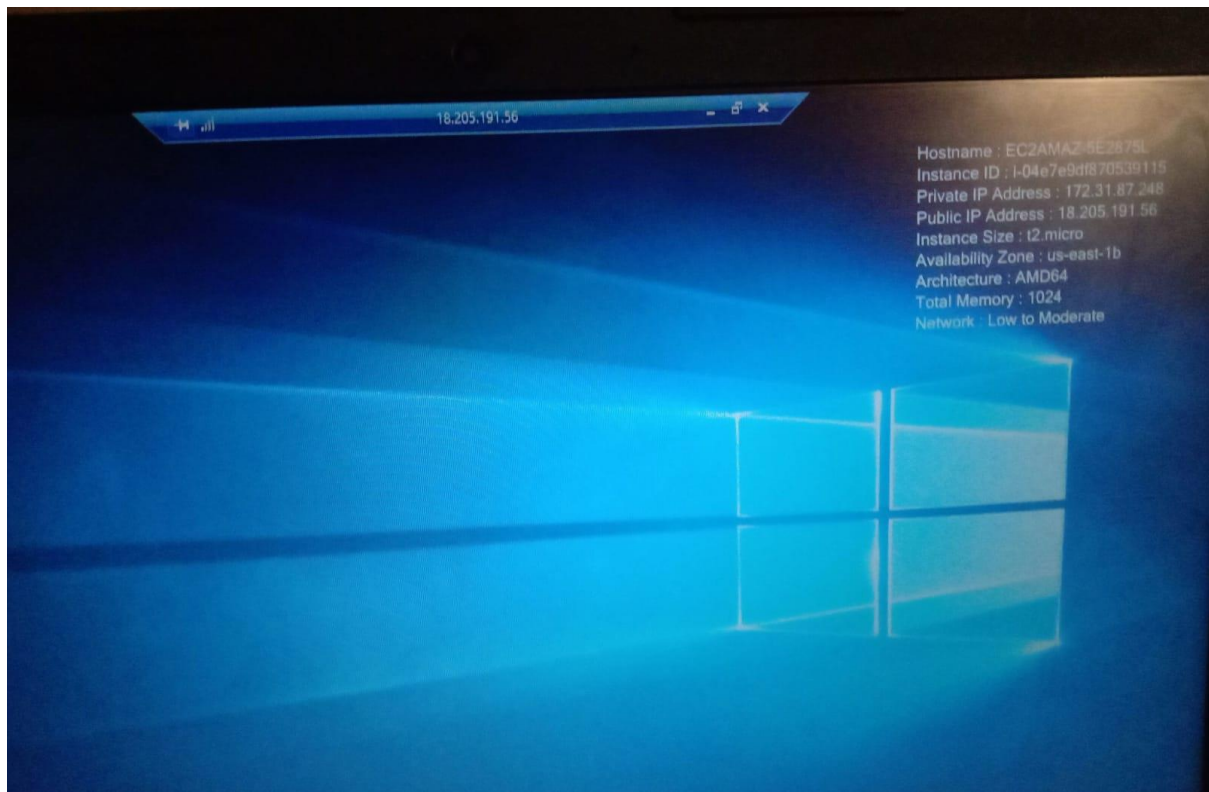
Permissions policy summary

Policy name	Type	Attached as
AmazonS3FullAccess	AWS managed	Permissions policy

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Connect EC2 instance to RDP.



TASK 2

Create an alarm for EC2 CPU utilisation <Firstname_Alarm_MP>

Set Threshold of 85%

Specify metric and conditions

Step 2
Configure actions

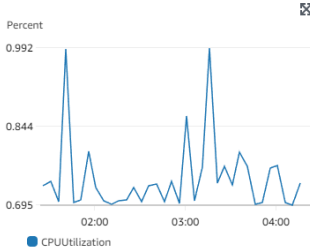
Step 3
Add name and description

Step 4
Preview and create

Metric Edit

Graph
This alarm will trigger when the blue line goes above the red line for 1 datapoints within 1 minute.

Percent



■ CPUUtilization

Namespace
AWS/EC2

Metric name
CPUUtilization

InstanceId
i-04e7e9df870539115

Instance name
hansikamp

Statistic
Average

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Period
1 minute

Conditions

Threshold type

☒ Static
Use a value as a threshold

☐ Anomaly detection
Use a band as a threshold

Whenever CPUUtilization is...

Define the alarm condition.

☐ Greater
> threshold

☒ Greater/Equal
≥ threshold

☐ Lower/Equal
≤ threshold

☐ Lower
< threshold

than...

Define the threshold value.

85

Must be a number

Additional configuration

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Create SNS topic and attach it to alarms
Do not assign any EC2 action.

CloudWatch > Alarms > Create alarm

Step 1
Specify metric and conditions

Step 2
Configure actions

Step 3
Add name and description

Step 4
Preview and create

Configure actions

Notification

Alarm state trigger
Define the alarm state that will trigger this action.

☒ In alarm
The metric or expression is outside of the defined threshold.

☐ OK
The metric or expression is within the defined threshold.

☐ Insufficient data
The alarm has just started or not enough data is available.

Remove

Send a notification to the following SNS topic
Define the SNS (Simple Notification Service) topic that will receive the notification.

☒ Select an existing SNS topic

☐ Create new topic

☐ Use topic ARN to notify other accounts

Send a notification to...

Q firsttopic

Only email lists for this account are available.

Email (endpoints)
hansika768@gmail.com - View in SNS Console

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Auto Scaling action

Add Auto Scaling action

EC2 action

Add EC2 action

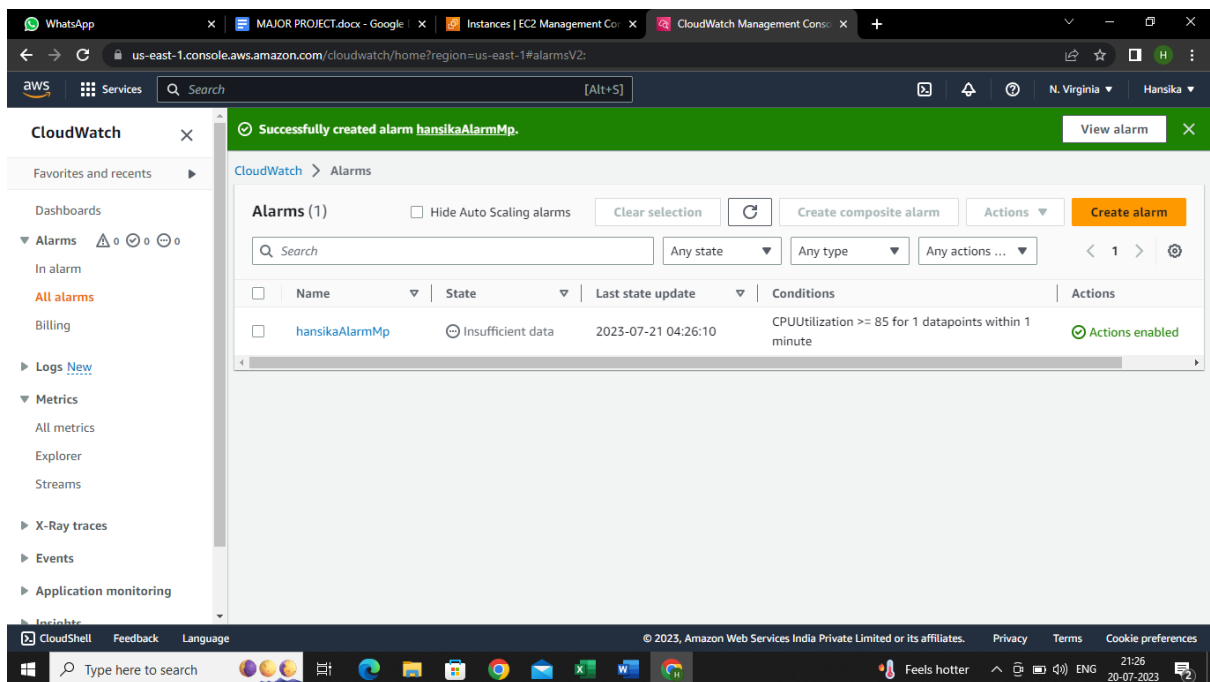
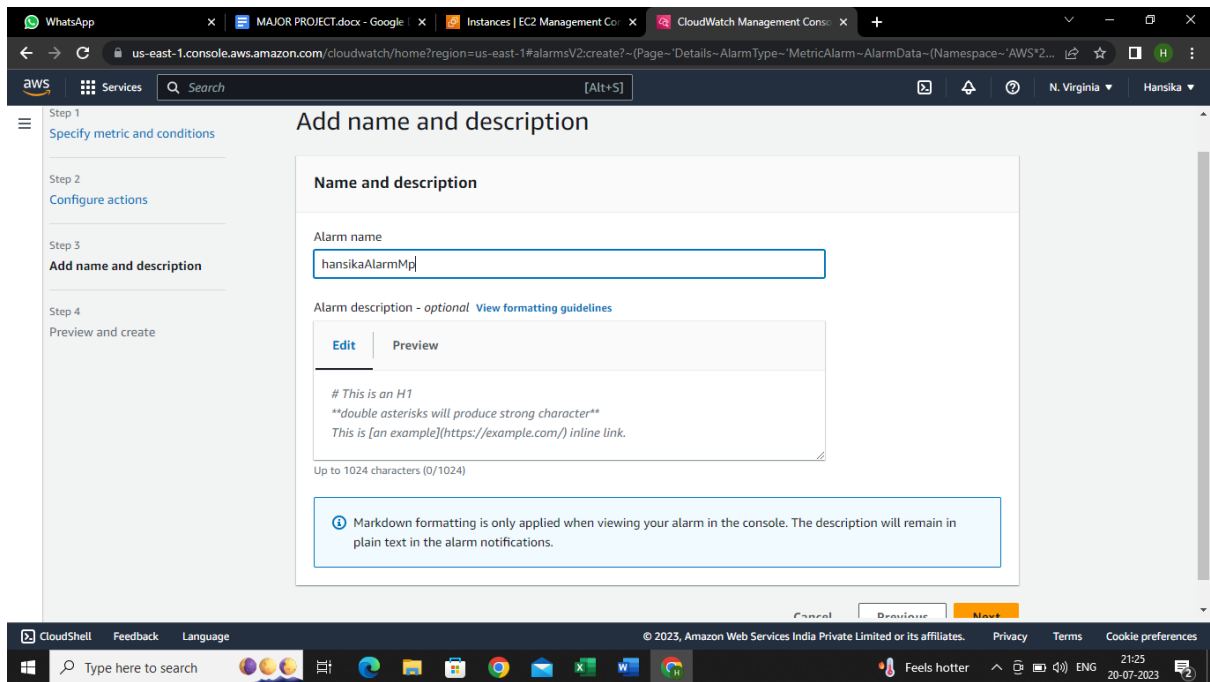
Systems Manager action [Info](#)

This action will create an Incident or Opsitem in Systems Manager when the alarm is **In alarm** state.

Add Systems Manager action

Cancel Previous **Next**

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Create a Dashboard for monitoring (CPU utilisation, Networks, Alarms) <Firstname_Monitoring_MP>

The screenshot displays the AWS CloudWatch dashboard for the 'hanskamp' namespace. The dashboard is titled 'hanskamp' and features a dark theme. At the top, there are navigation tabs for different time ranges: 1h, 3h (selected), 12h, 1d, 3d, 1w, and Custom. There are also buttons for 'Actions', 'Light', and 'Dark' themes. The dashboard contains two main widgets:

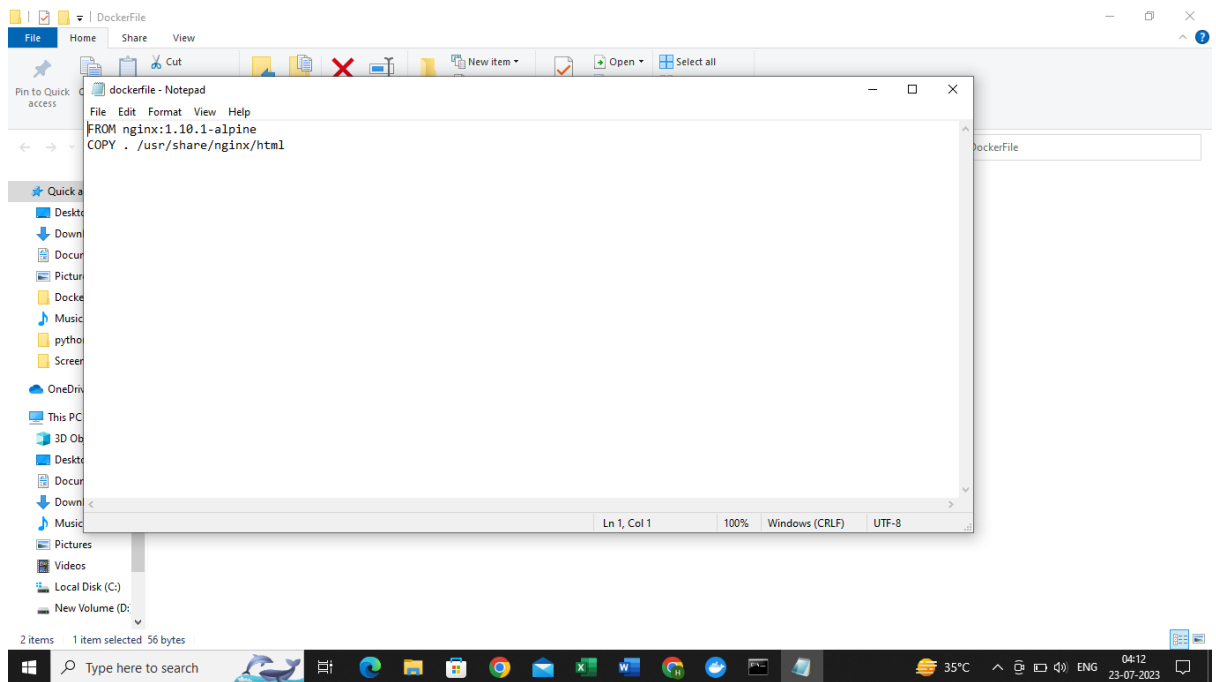
- CPUUtilization:** A line graph showing CPU utilization percentage over time. The y-axis ranges from 0.669 to 0.992. The x-axis shows time from 02:00 to 04:00. The graph shows a significant peak around 03:00.
- Networkin, NetworkOut:** A dual-line graph showing network traffic in bytes. The y-axis ranges from 70.4 to 3.76k. The x-axis shows time from 02:00 to 04:00. The blue line represents 'Networkin' and the orange line represents 'NetworkOut'. Both lines show peaks around 03:00.

A green box highlights a message: 'This widget contains alarm annotations which are not supported in shared dashboards.'

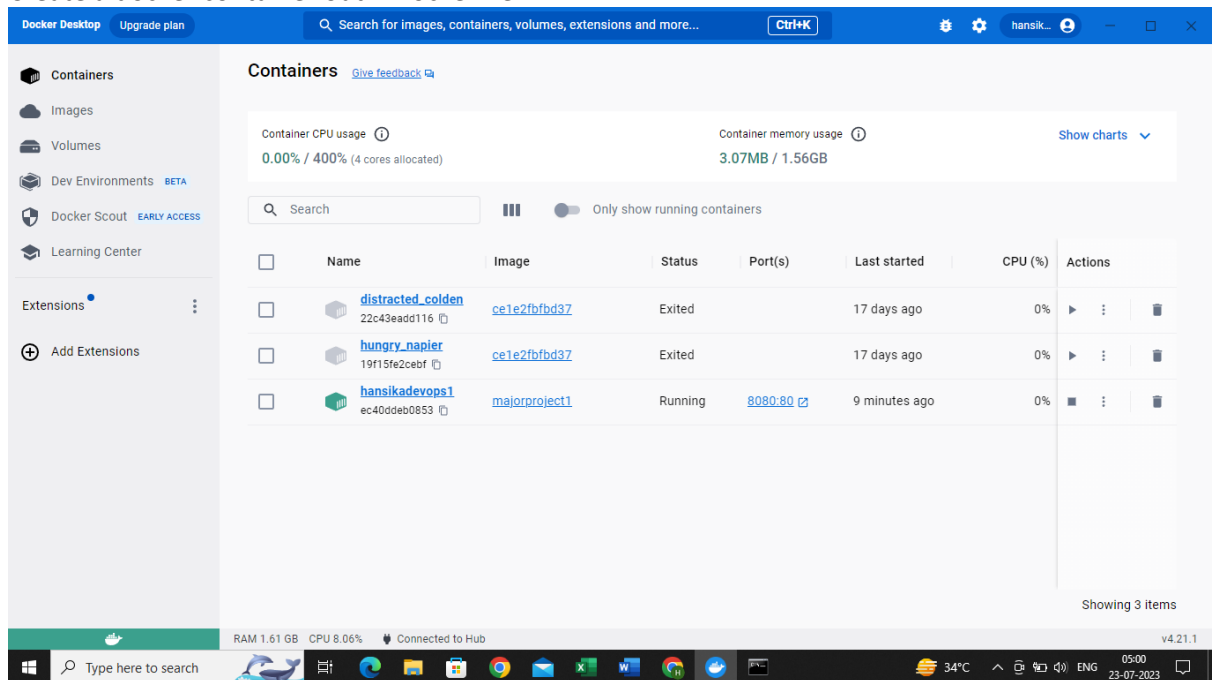
Install Docker on recently created EC2 instance
Install git on EC2
Clone Static website from GitHub and Edit (Name and University Roll Number)

Create a Docker File using NGINX image

Link static website to NGINX dockerfile

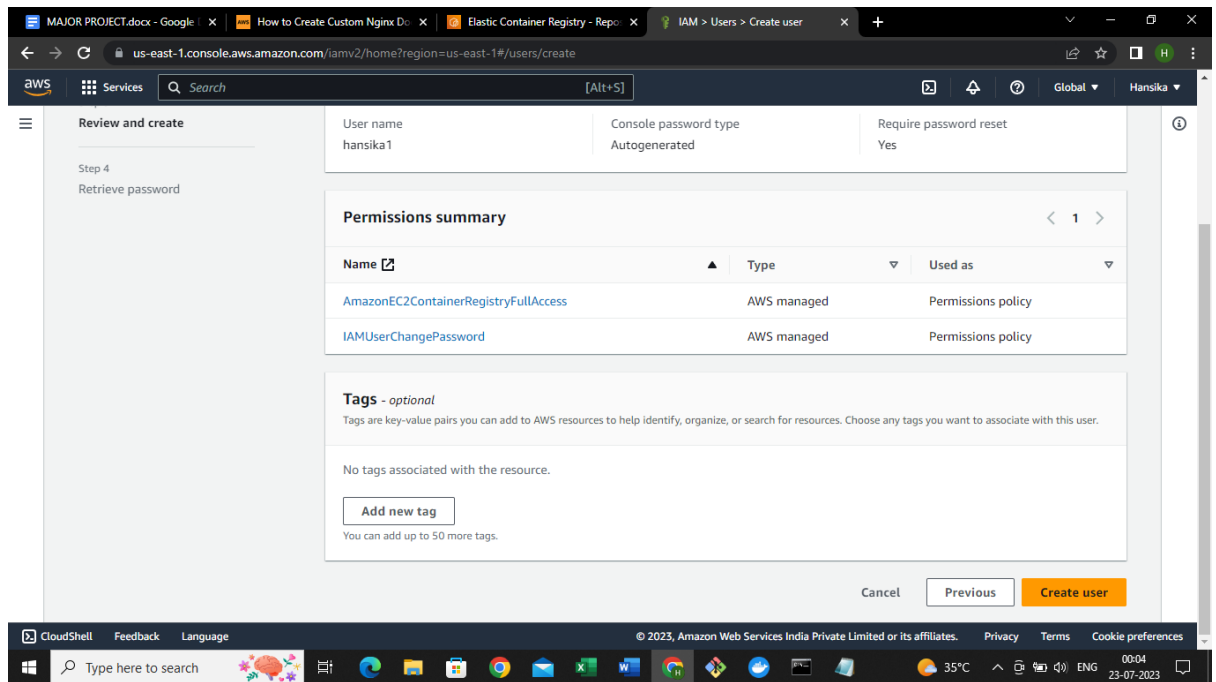


Create a docker container out of Dockerfile

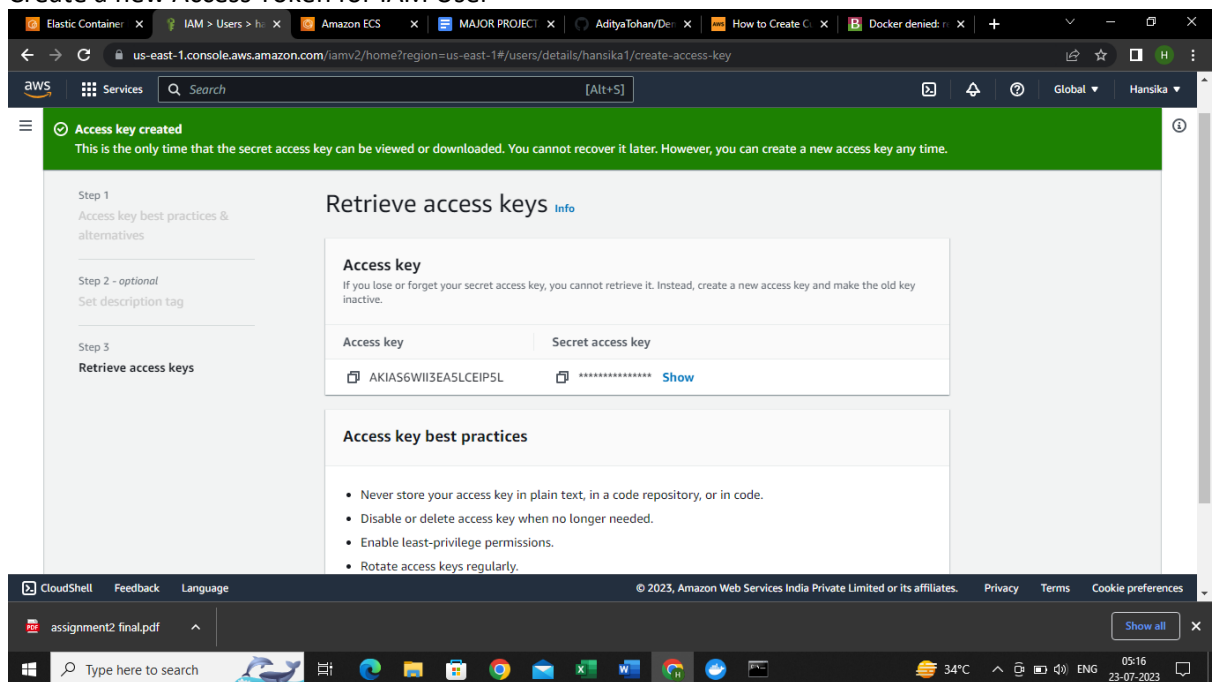


TASK 4

Create an AWS ECR <FirstName_Repo_MP>
Create an IAM User with Registry Full access

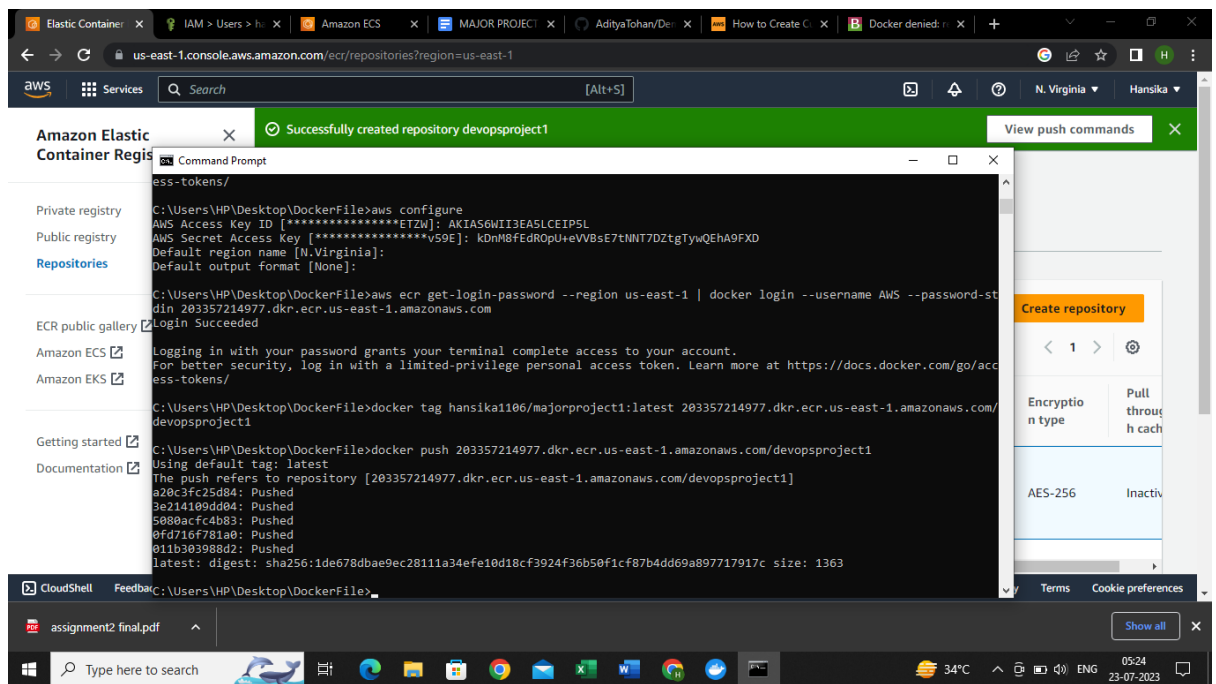


Create a new Access Token for IAM User



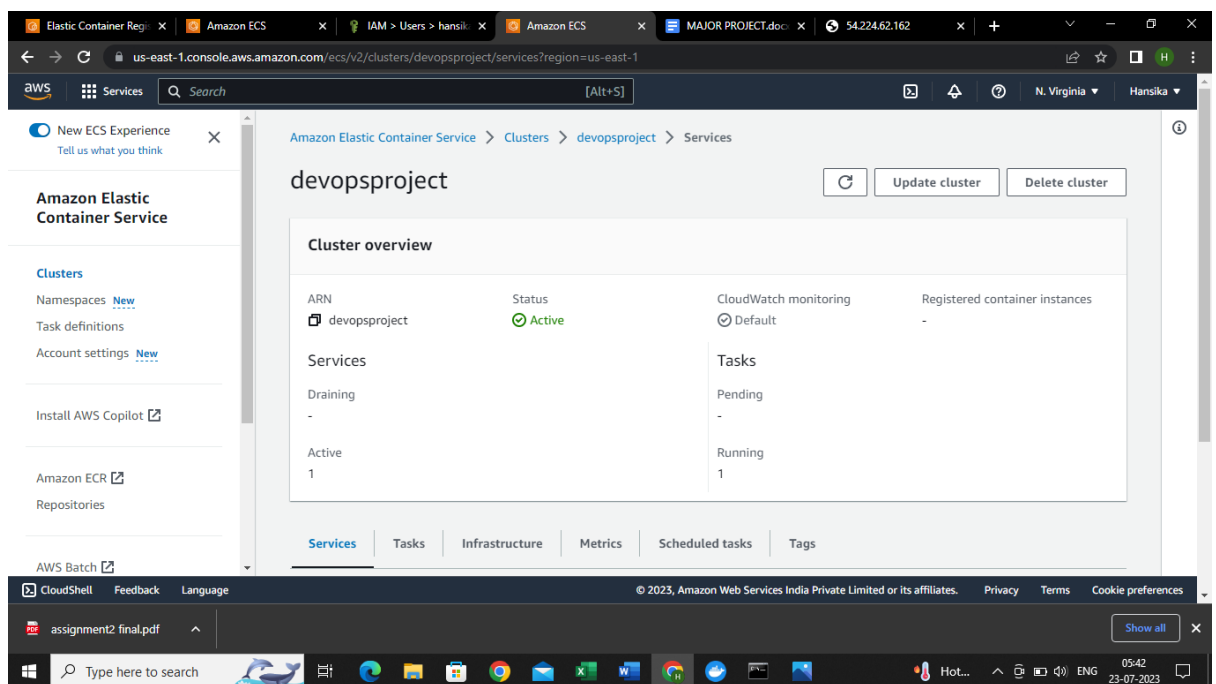
Install AWS CLI using CLI

Run AWS ECR push commands to push docker container into ECR



TASK 5

Create an ECS Fargate Cluster <FirstName_Cluster_MP>

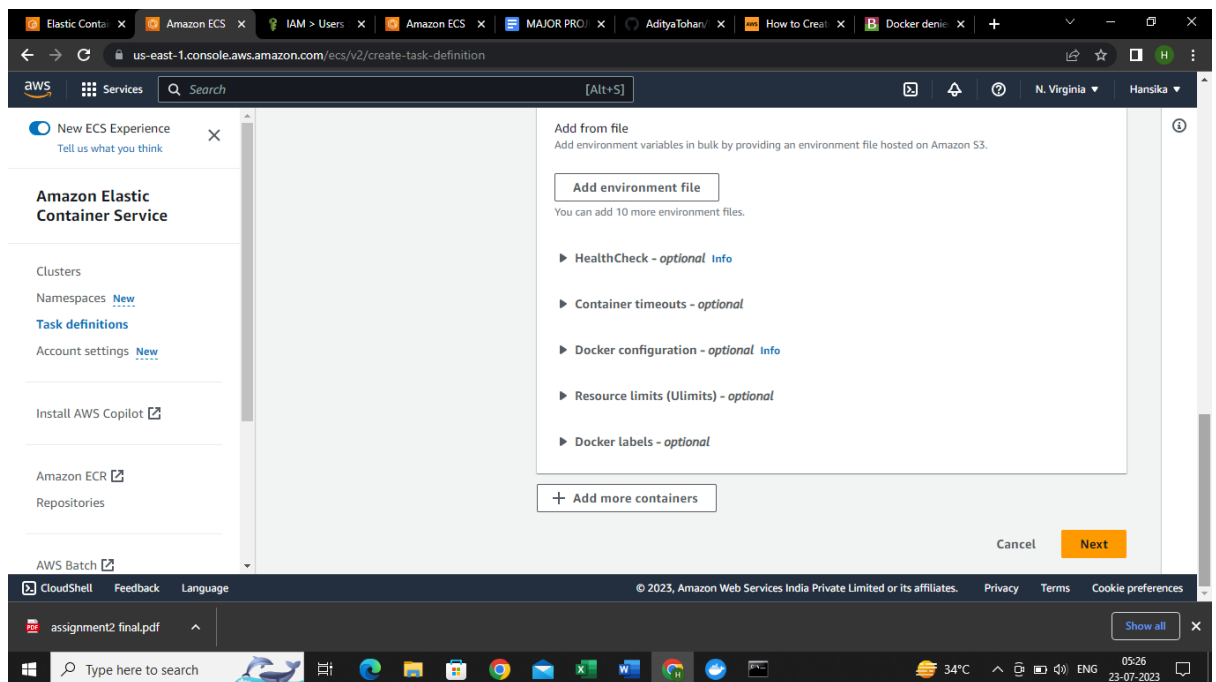
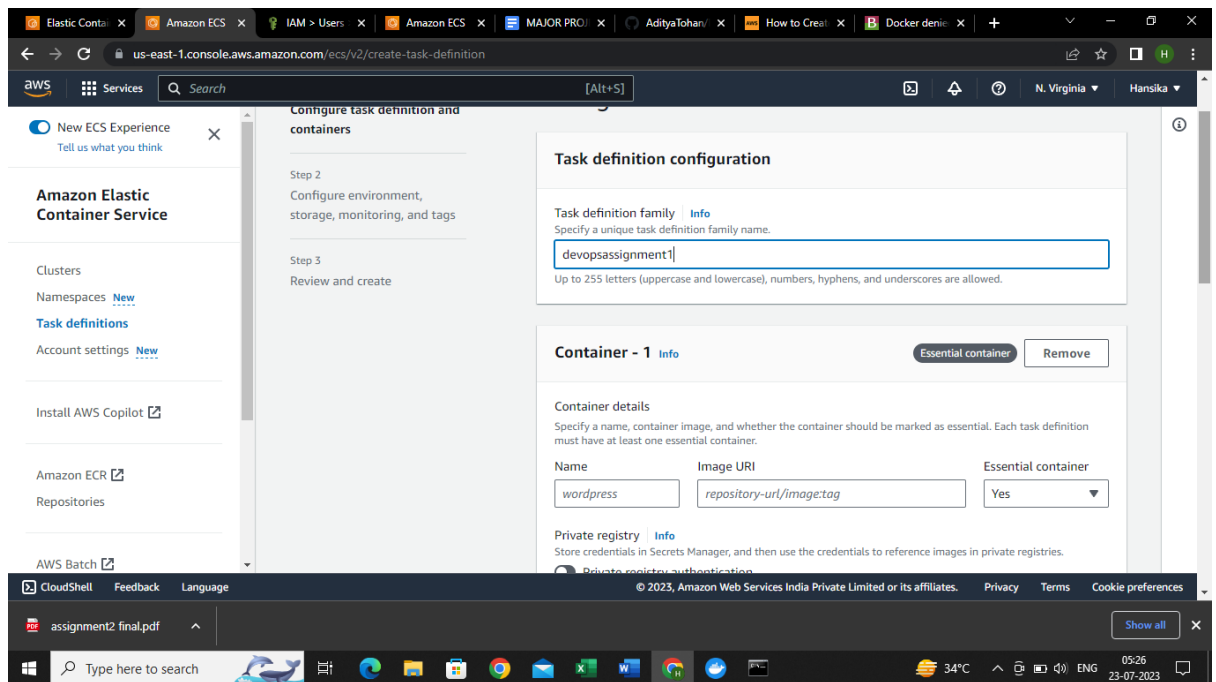


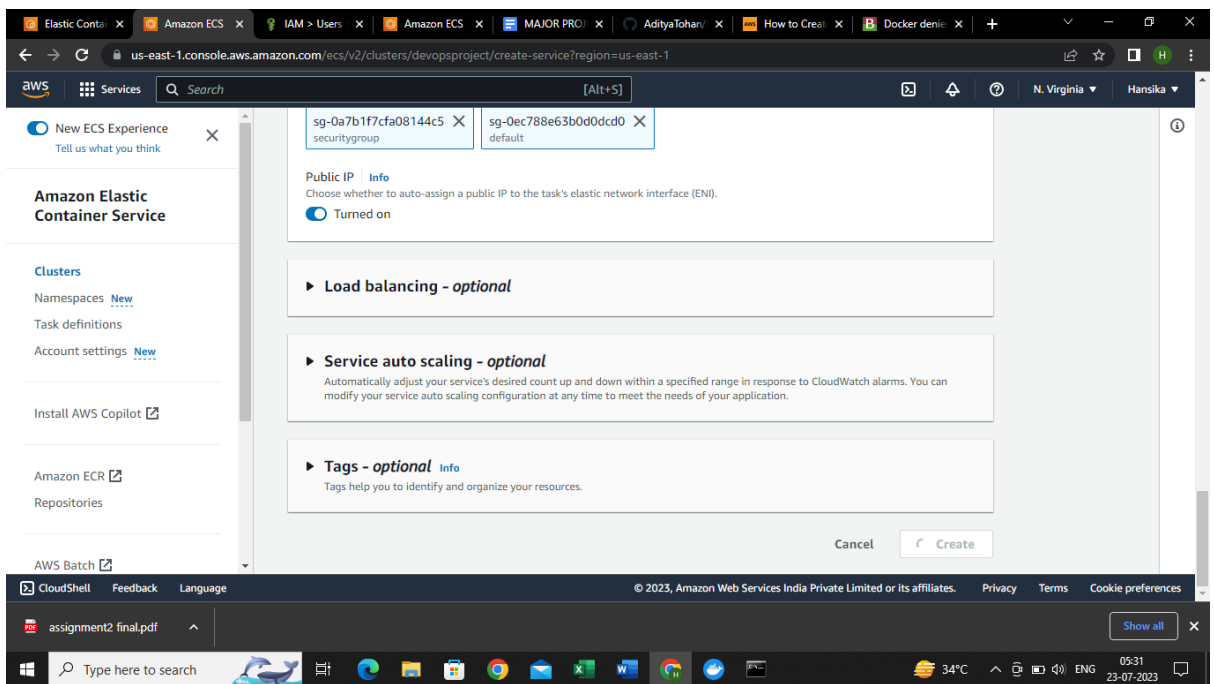
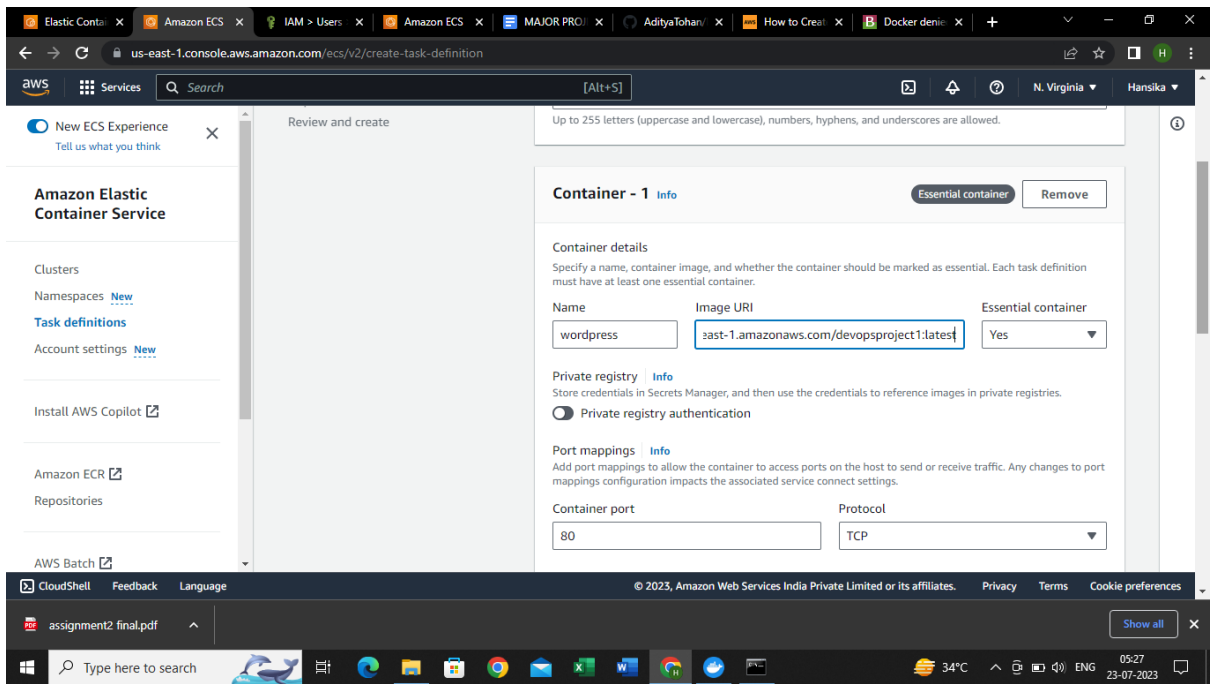
Create a new Task Definition <FirstName_Major-Project>

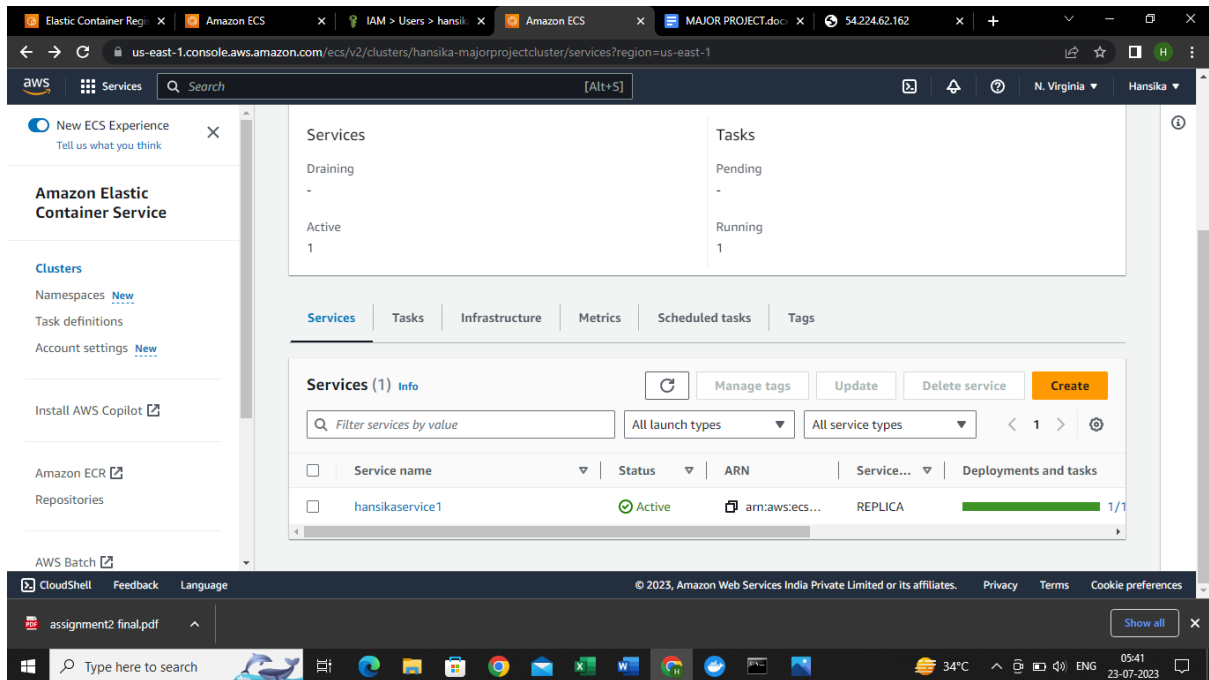
Copy Image URL from your ECR with 1vcpu & 3GB Memory

Create a new Service using *Launch type*. And add family name.

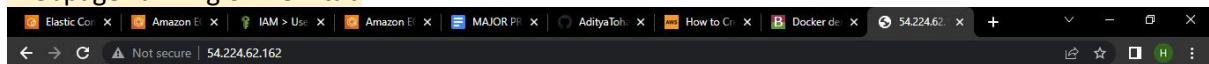
Add Security Group <SG_FirstName> Ports: SSH, HTTP, HTTPS, All







Webpage running on new tab



Major Assignment

JoVAC DevOps

hansika

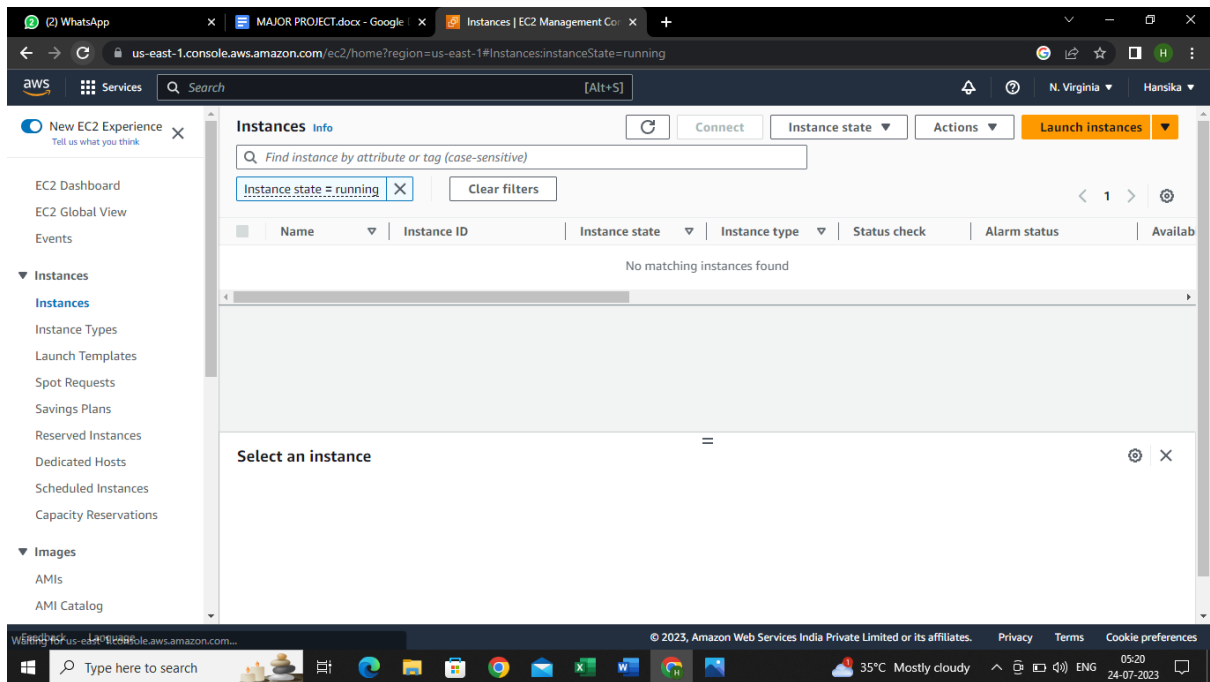
2115100013

Submitted To : ADITYA TOHAN

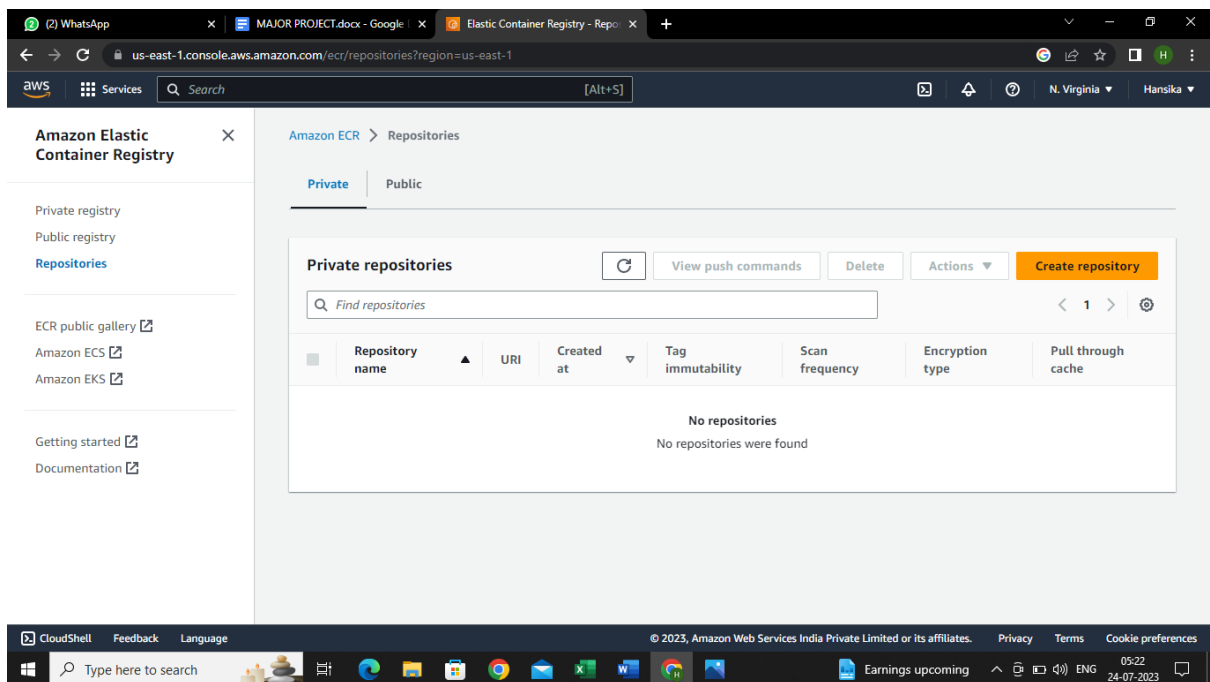


TASK 6

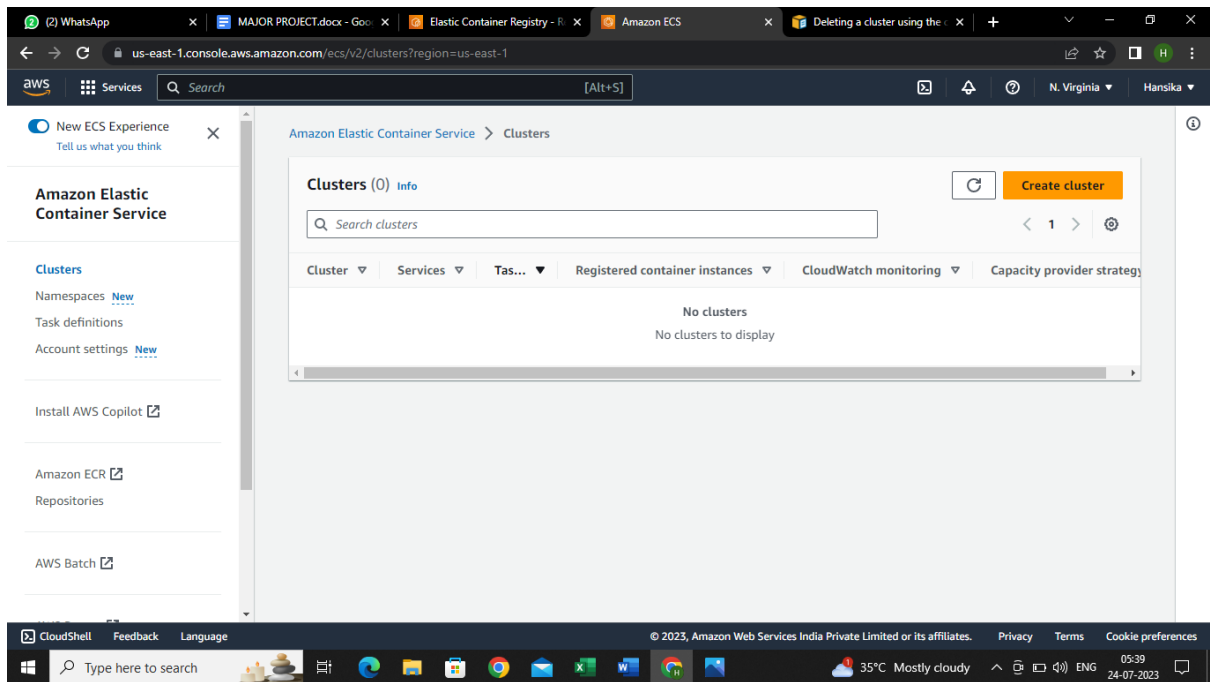
Deleted ec2 instance



Deleted repository



Deleted cluster



Submitted by

Hansika

2115100013