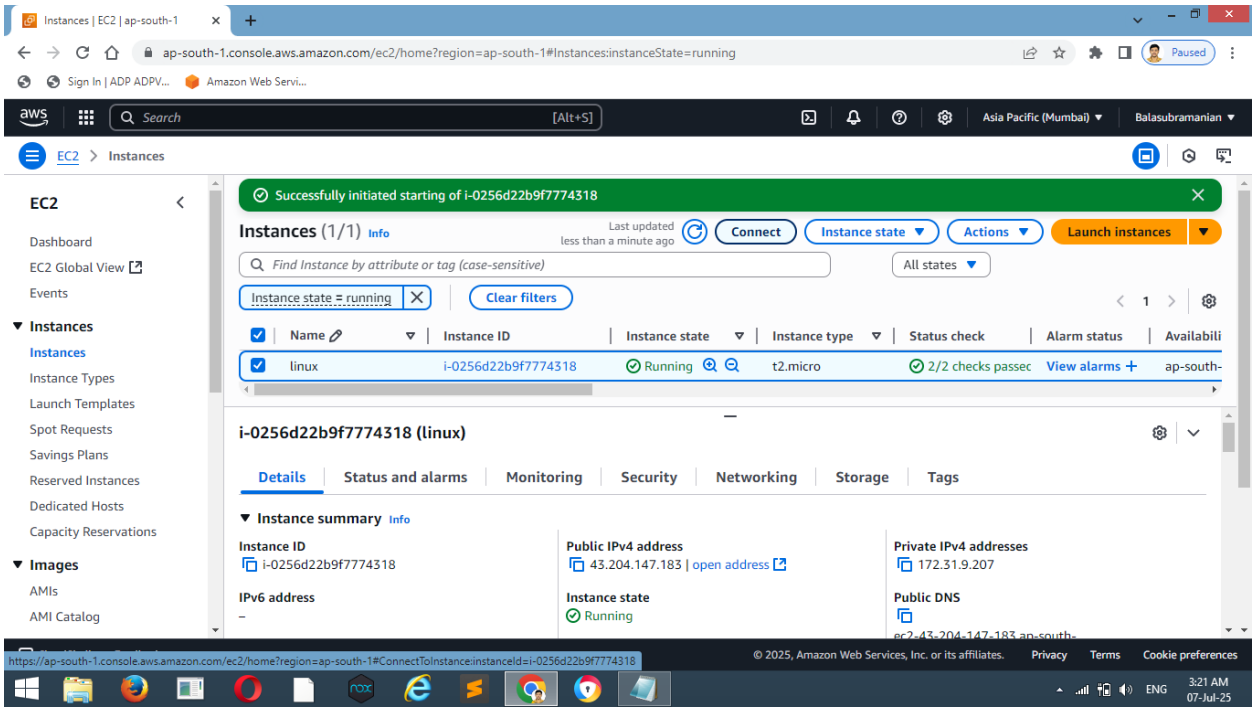
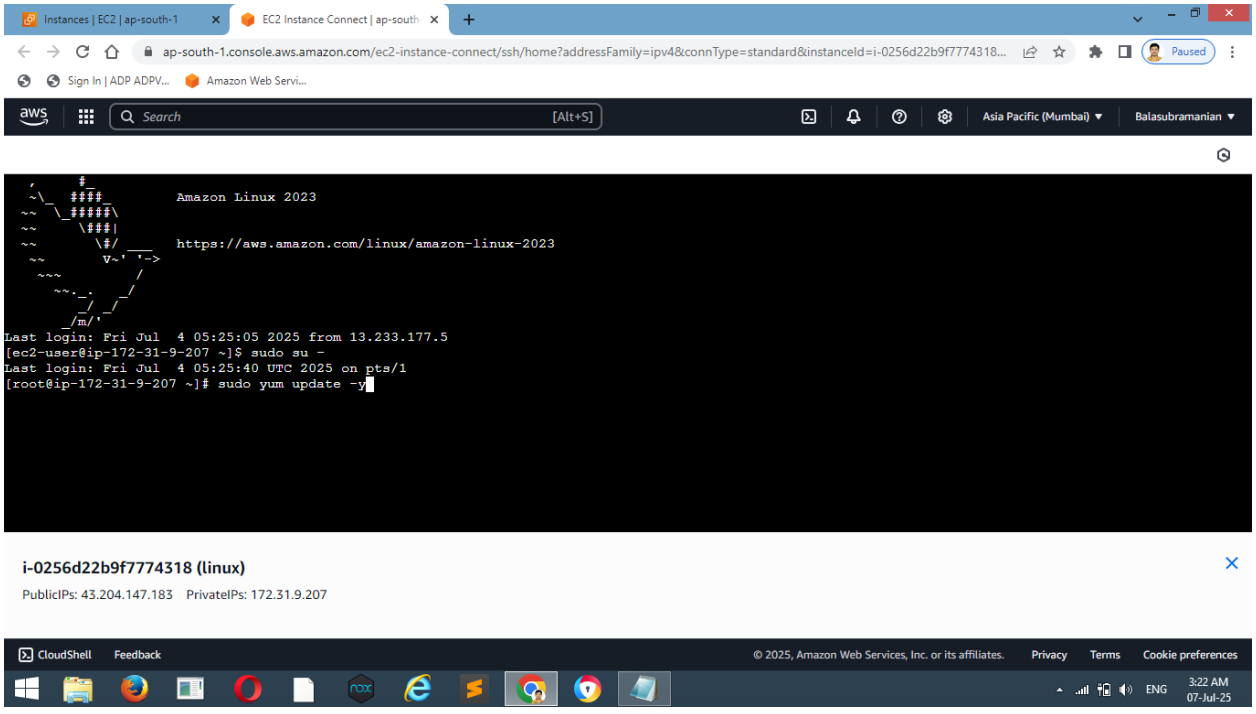
DOCKER CONTAINERIZATION

SUMMARY: CREATED DOCKER IMAGES, RAN CONTAINERS, AND USED DOCKER COMMANDS TO MANAGE CONTAINERIZED APPLICAIONS

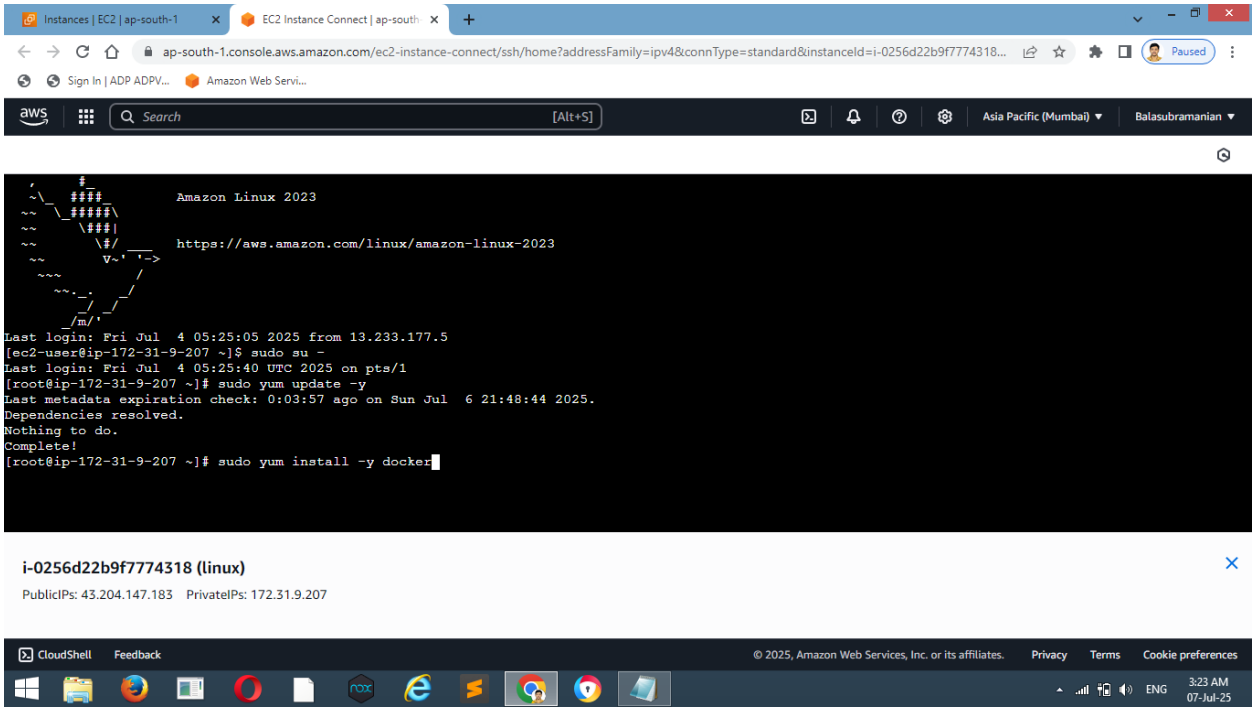
STEP 1: OPEN AWS WEBSITE, GO TO EC2 SERVICE, CONNECT TO AWS LINUX OS

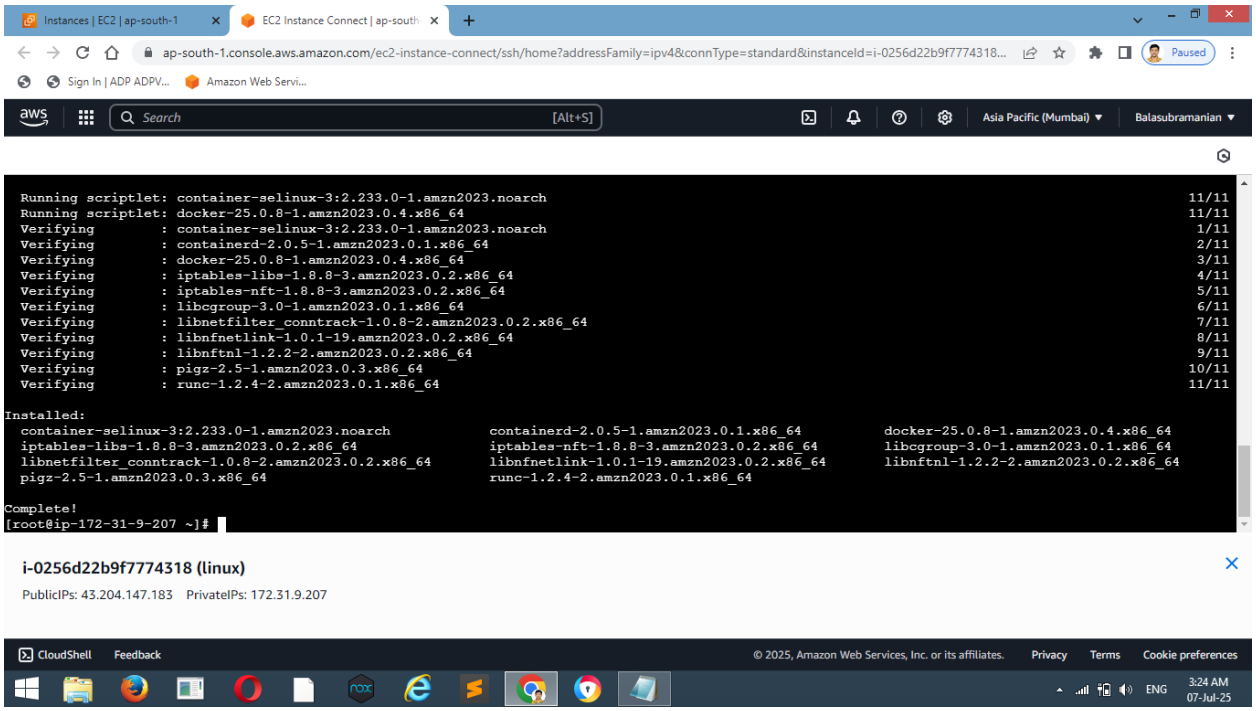


STEP 2: SWITCHES THE USER TO ROOT ACCOUNT AND I WILL UPDATES ALL INSTALLED PACKAGES TO THE LATEST VERSION WITH AUTOMATIC CONFIRMATION

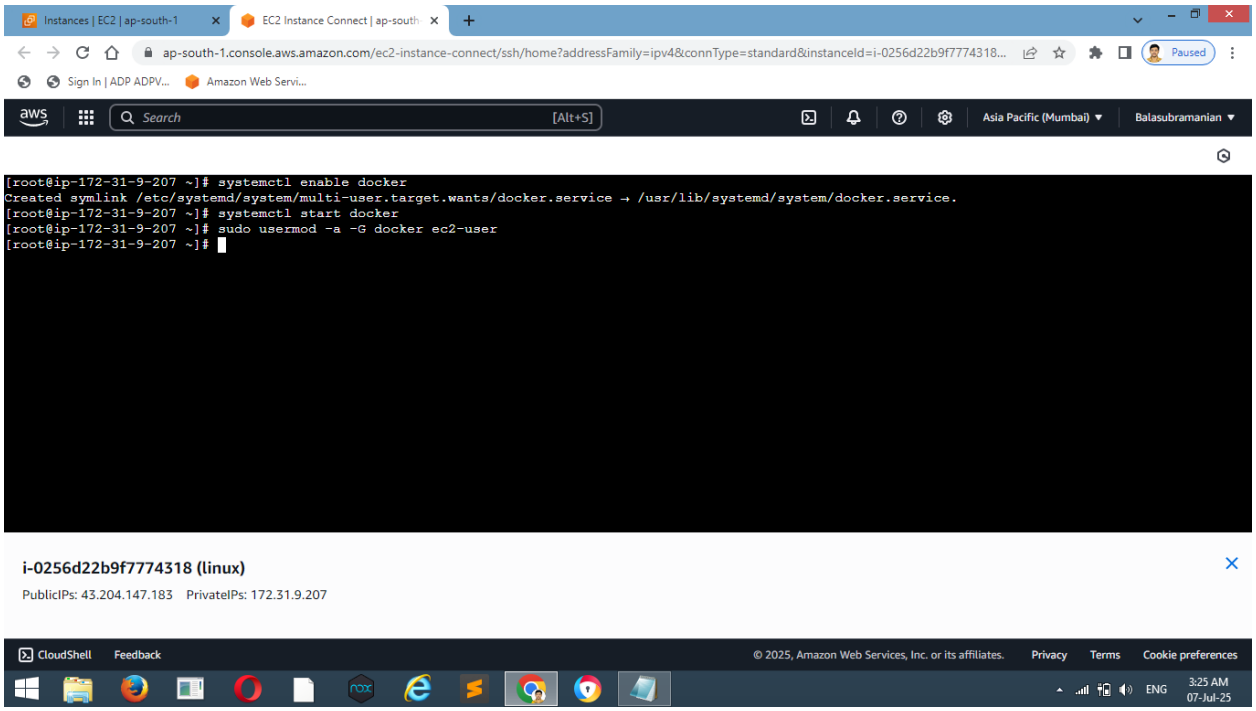


STEP 3: INSTALL DOCKER



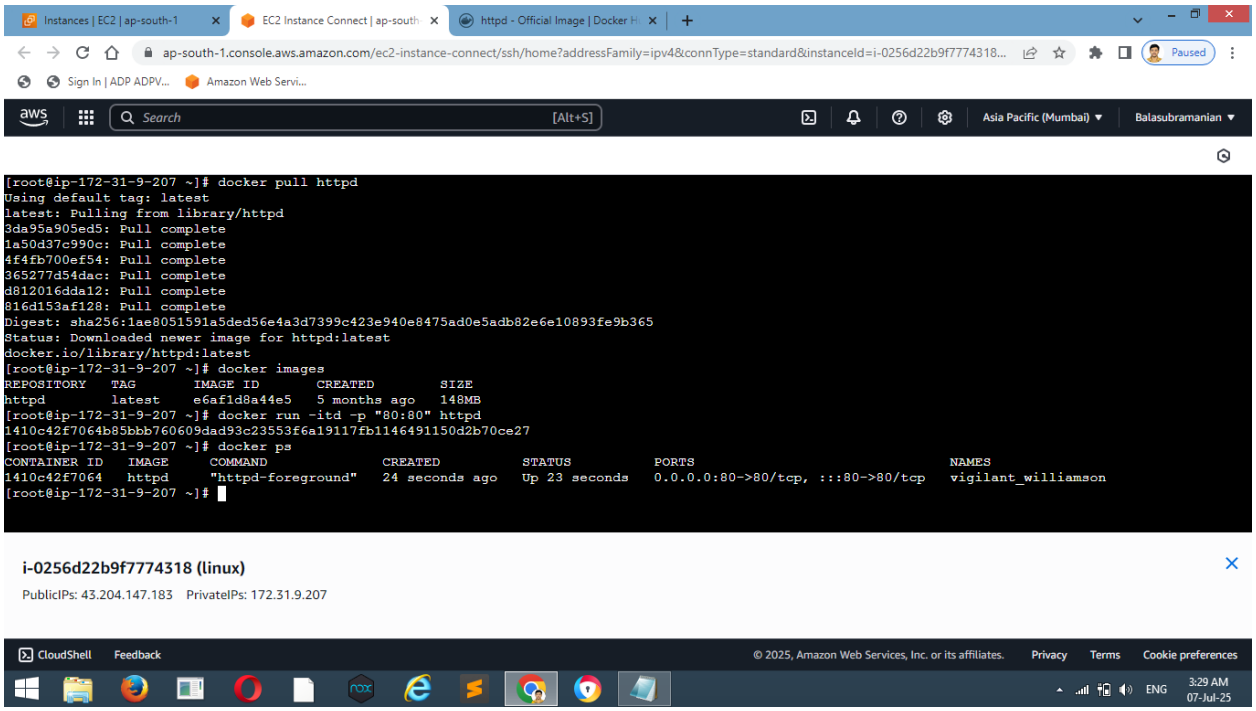


STEP 4: ENABLE AND START THE DOCKER AND ADDS THE EC2-USER TO THE DOCKER GROUP

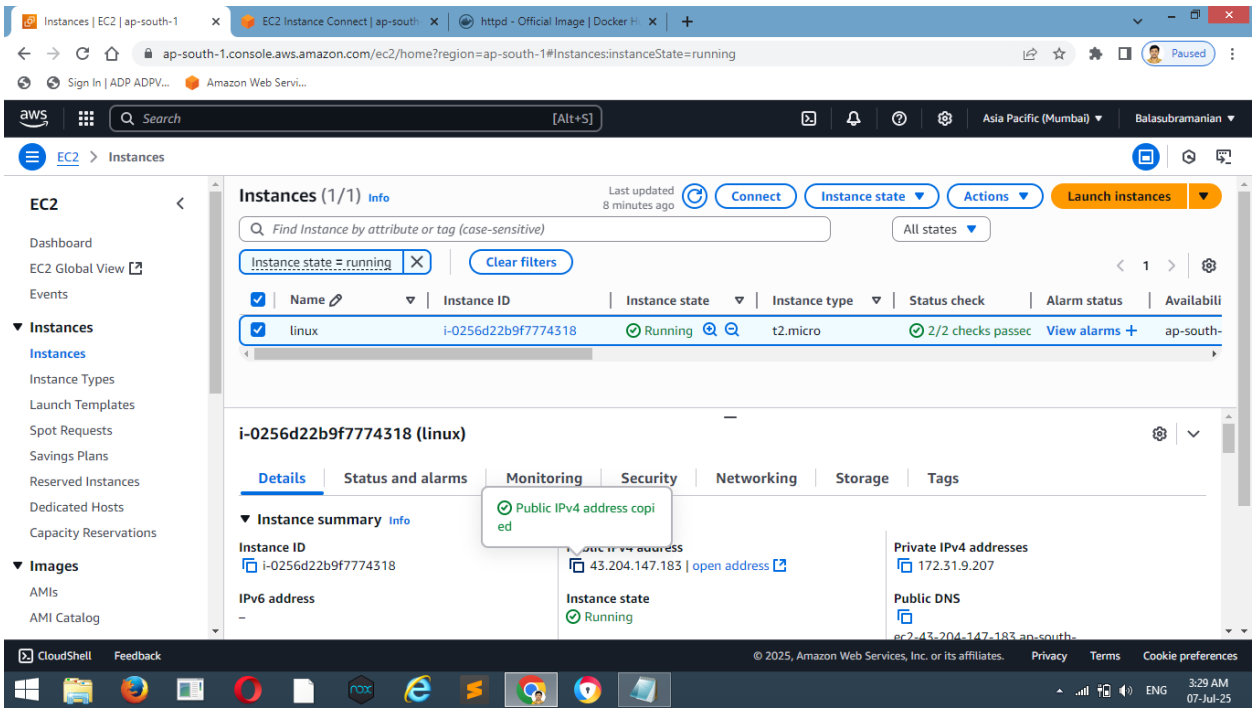


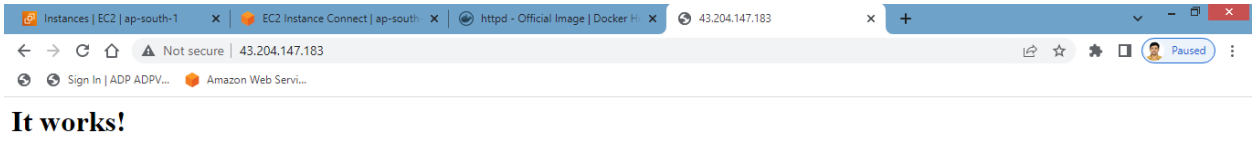
STEP 5: GO TO DOCKER HUB WEBSITE AND COPY THE HTTPD DOCKER COMMENT

STEP 6: I WILL DOWNLOAD THE HTTPD IMAGE FROM DOCKER HUB AND RUN THE HTTPD CONTAINER

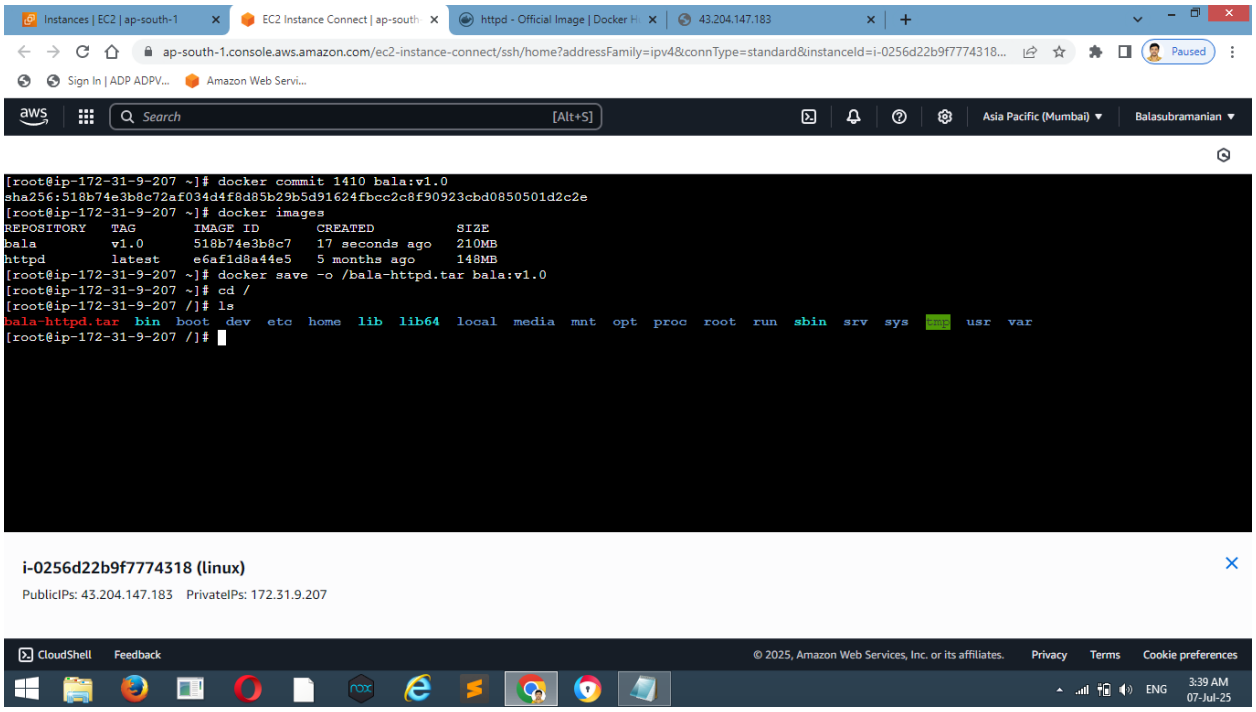


STEP 7: COPY THE PUBLIC IP AND PASTE IT IN THE BROWSER

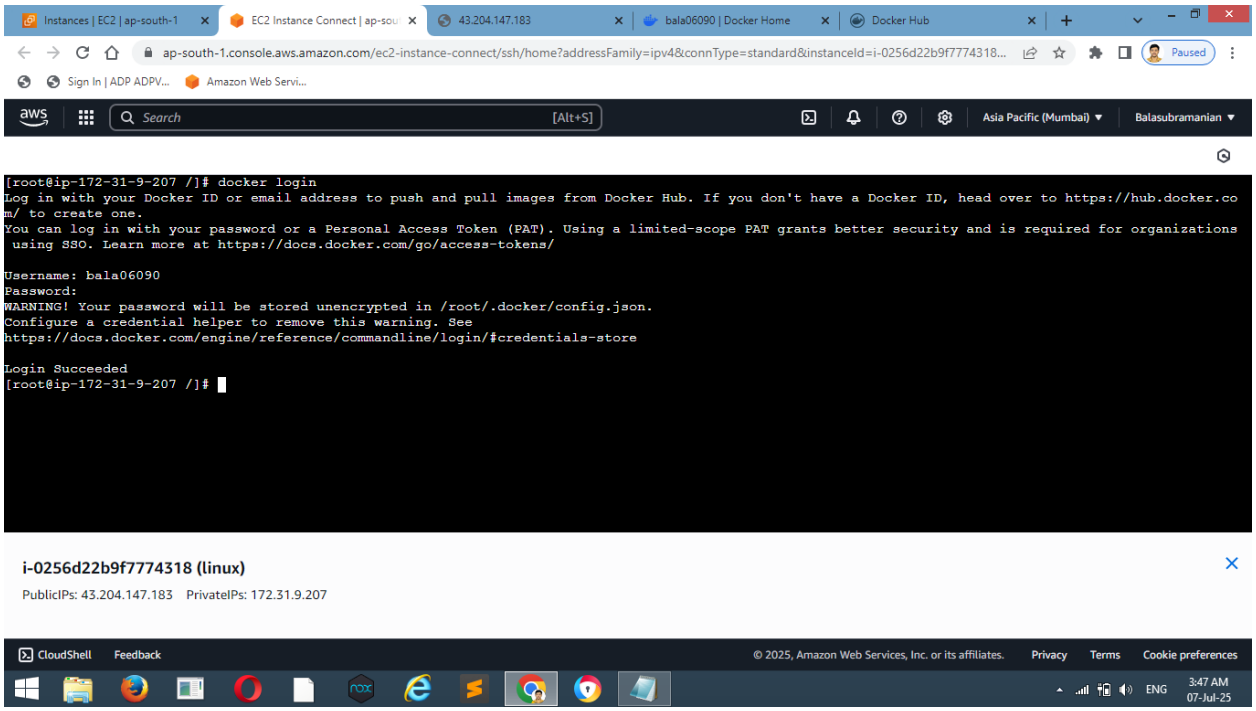


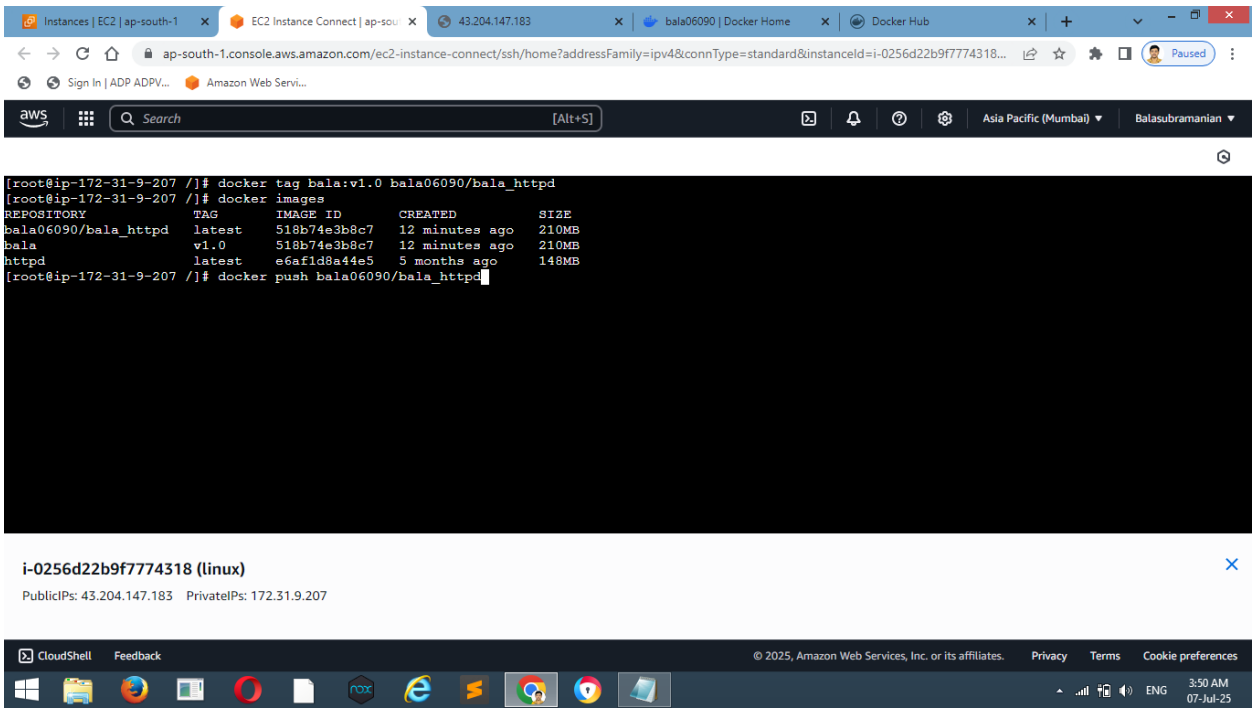


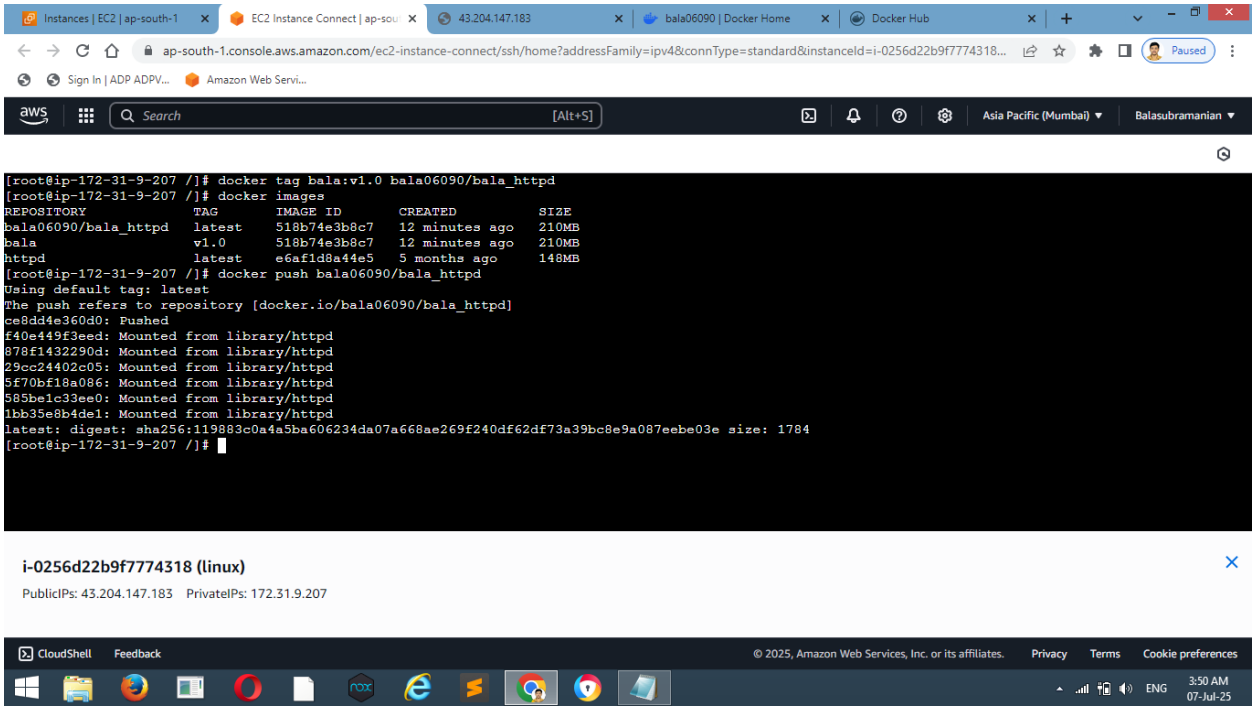
STEP 8: CREATE NEW IMAGE NAMED BALA AND SAVED THE IMAGE AS TAR



STEP 9: LOGIN TO THE DOCKER HUB AND PUSHES THE IMAGES TO THE DOCKER HUB REPOSITORY






Instances | EC2 | ap-south-1
EC2 Instance Connect | ap-sou
43.204.147.183
bala06090 | Docker Home
Docker Hub
ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh/home?addressFamily=ipv4&connType=standard&instanceId=i-0256d22b9f7774318...
Paused
Sign In | ADP ADPV...
Amazon Web Servi...
aws
Search
[Alt+S]
Asia Pacific (Mumbai)
Balasubramanian
[root@ip-172-31-9-207 /]# docker tag bala:v1.0 bala06090/bala_httpd
[root@ip-172-31-9-207 /]# docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
bala06090/bala_httpd latest 518b74e3b8c7 12 minutes ago 210MB
bala v1.0 518b74e3b8c7 12 minutes ago 210MB
httpd latest e6af1d8a44e5 5 months ago 148MB
[root@ip-172-31-9-207 /]# docker push bala06090/bala_httpd
Using default tag: latest
The push refers to repository [docker.io/bala06090/bala_httpd]
ce8dd4e360d0: Pushed
f40e449f3eed: Mounted from library/httpd
878f1432290d: Mounted from library/httpd
29cc24402c05: Mounted from library/httpd
5f70bf18a086: Mounted from library/httpd
585be1c33ee0: Mounted from library/httpd
1bb35e8b4de1: Mounted from library/httpd
latest: digest: sha256:119083c0a4a5ba606234da07a668ae269f240df62df73a39bc8e9a087eebe03e size: 1784
[root@ip-172-31-9-207 /]#
i-0256d22b9f7774318 (linux)
PublicIPs: 43.204.147.183 PrivateIPs: 172.31.9.207
CloudShell
Feedback
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Terms
Cookie preferences
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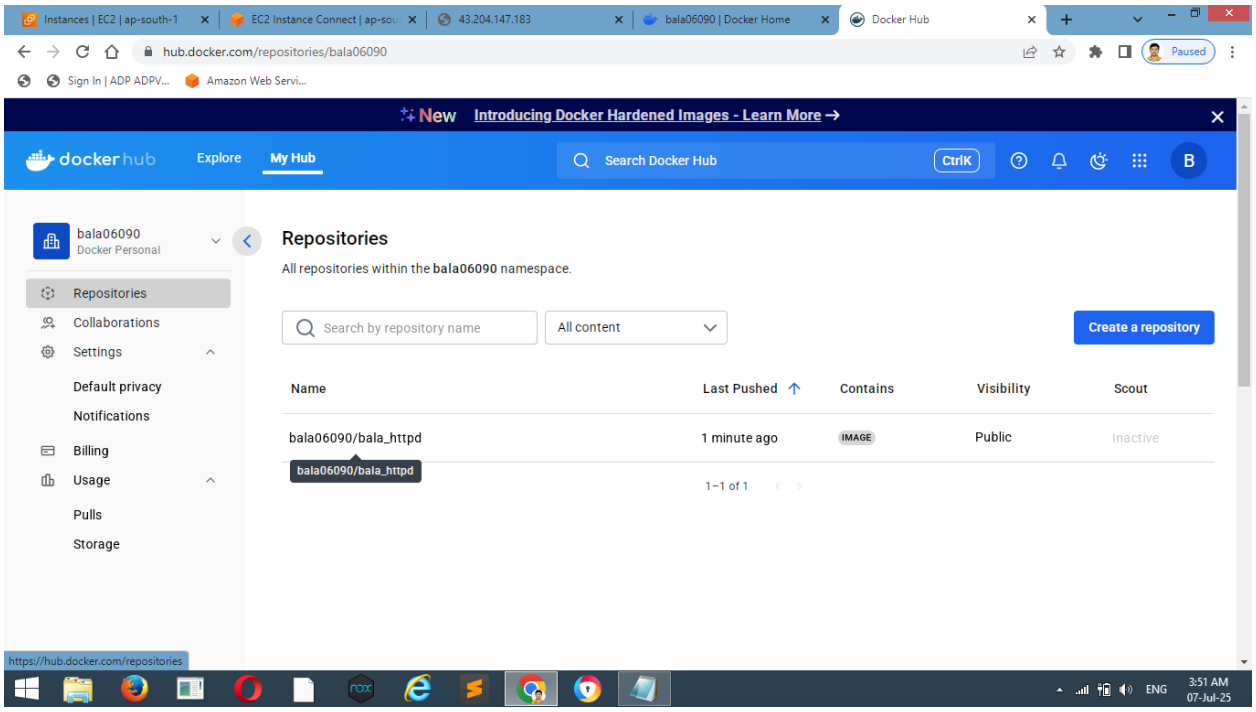
Instances | EC2 | ap-south-1
EC2 Instance Connect | ap-sou
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bala06090 | Docker Home
Docker Hub
hub.docker.com/repositories/bala06090
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New
Introducing Docker Hardened Images - Learn More →
docker hub
Explore
My Hub
Search Docker Hub
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Docker Personal
Repositories
Collaborations
Settings
Default privacy
Notifications
Billing
Usage
Pulls
Storage
Repositories
All repositories within the bala06090 namespace.
Search by repository name
All content
Create a repository
Name
Last Pushed
Contains
Visibility
Scout
bala06090/bala_httpd
1 minute ago
IMAGE
Public
Inactive
bala06090/bala_httpd
1–1 of 1
https://hub.docker.com/repositories
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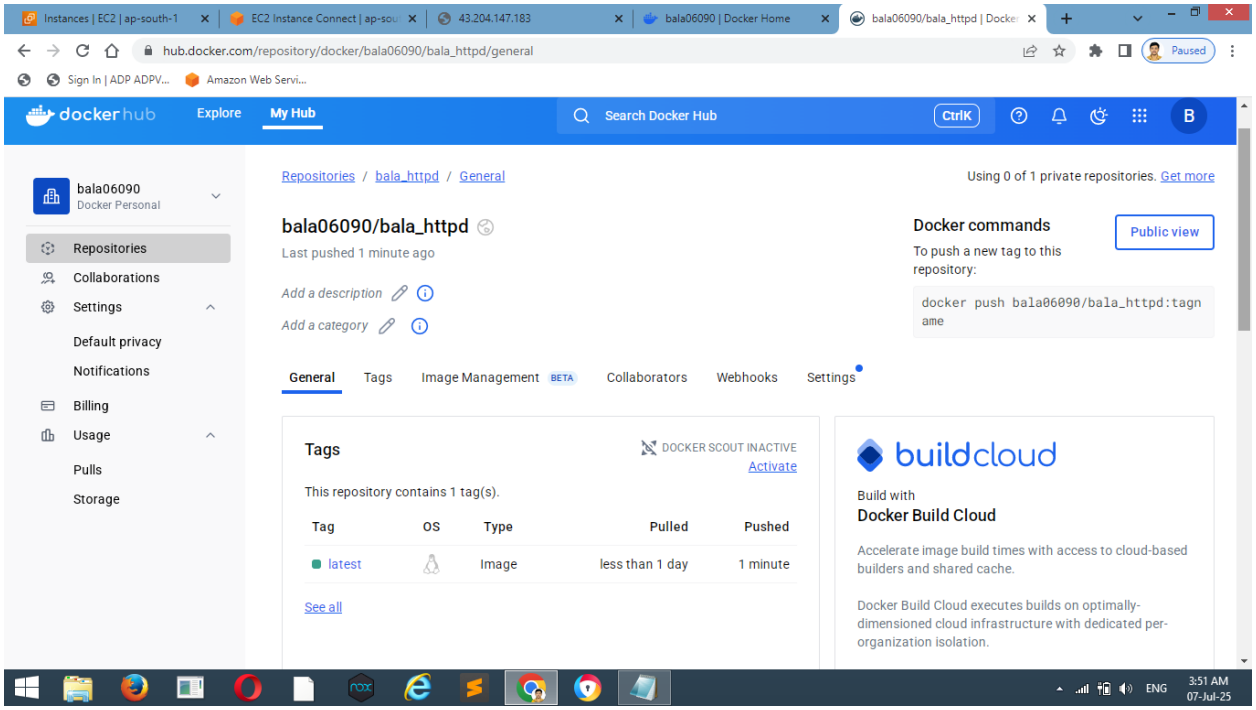
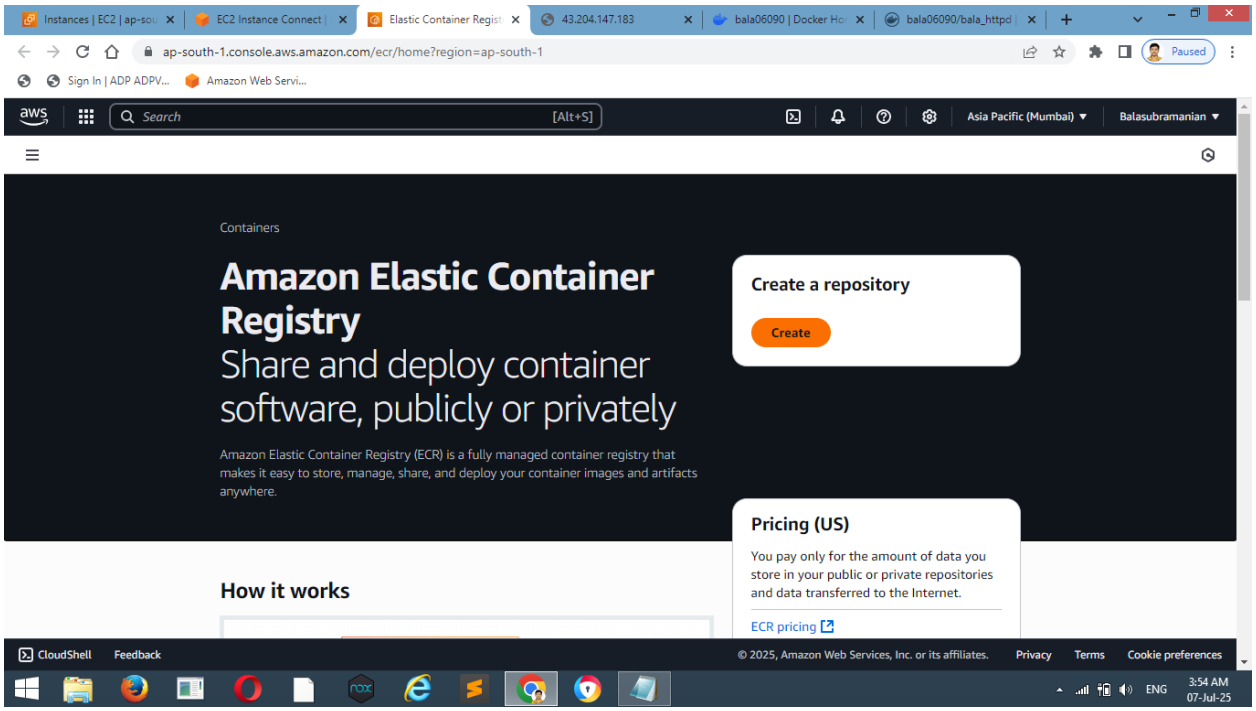
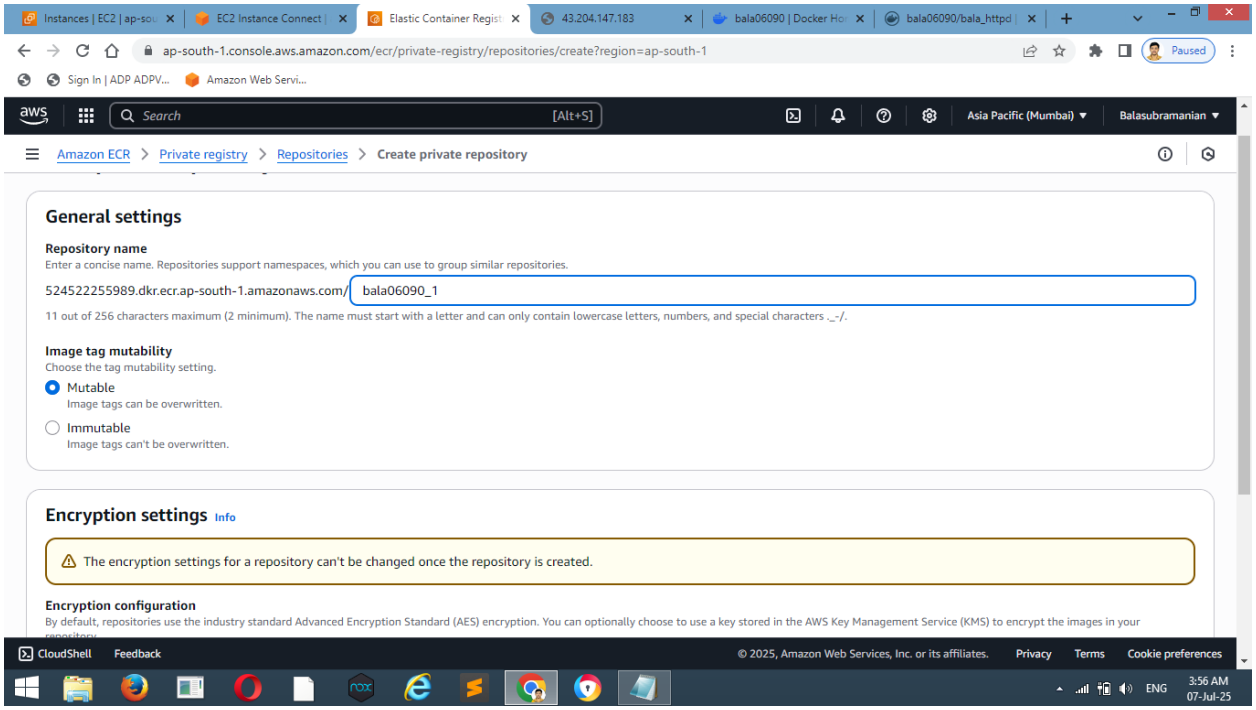


STEP 10: GO TO AWS ECR SERVICE AND CREATE REPOSITORY




ap-south-1.console.aws.amazon.com/ecr/private-registry/repositories/create?region=ap-south-1
Search
[Alt+S]
Asia Pacific (Mumbai)
Balasubramanian
Amazon ECR > Private registry > Repositories > Create private repository
General settings
Repository name
Enter a concise name. Repositories support namespaces, which you can use to group similar repositories.
524522255989.dkr.ecr.ap-south-1.amazonaws.com/
bala06090_1
11 out of 256 characters maximum (2 minimum). The name must start with a letter and can only contain lowercase letters, numbers, and special characters ._-/.
Image tag mutability
Choose the tag mutability setting.
Mutable
Image tags can be overwritten.
Immutable
Image tags can't be overwritten.
Encryption settings Info
The encryption settings for a repository can't be changed once the repository is created.
Encryption configuration
CloudShell
Feedback
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Terms
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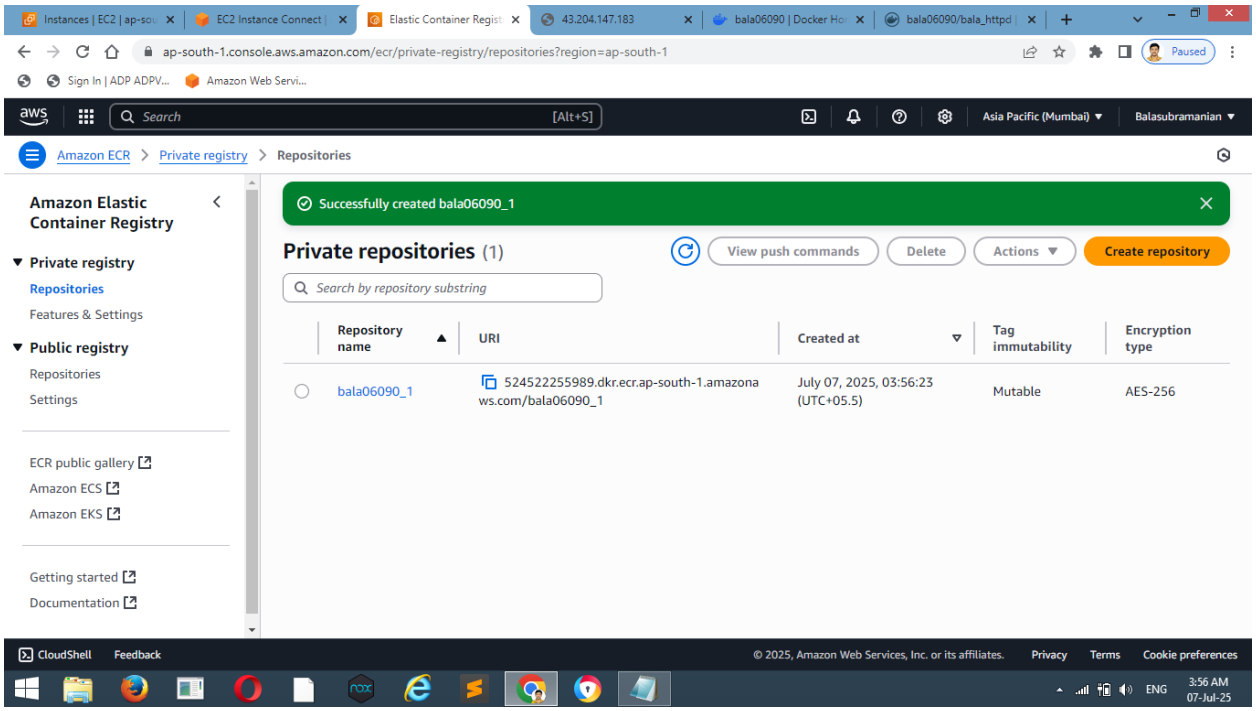
ap-south-1.console.aws.amazon.com/ecr/private-registry/repositories?region=ap-south-1
Search
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Asia Pacific (Mumbai)
Balasubramanian
Amazon ECR > Private registry > Repositories
Amazon Elastic Container Registry
Private registry
Repositories
Features & Settings
Public registry
Repositories
Settings
ECR public gallery
Amazon ECS
Amazon EKS
Getting started
Documentation
Successfully created bala06090_1
Private repositories (1)
View push commands
Delete
Actions
Create repository
Search by repository substring
Repository name
URI
Created at
Tag immutability
Encryption type
bala06090_1
524522255989.dkr.ecr.ap-south-1.amazonaws.com/bala06090_1
July 07, 2025, 03:56:23 (UTC+05.5)
Mutable
AES-256
CloudShell
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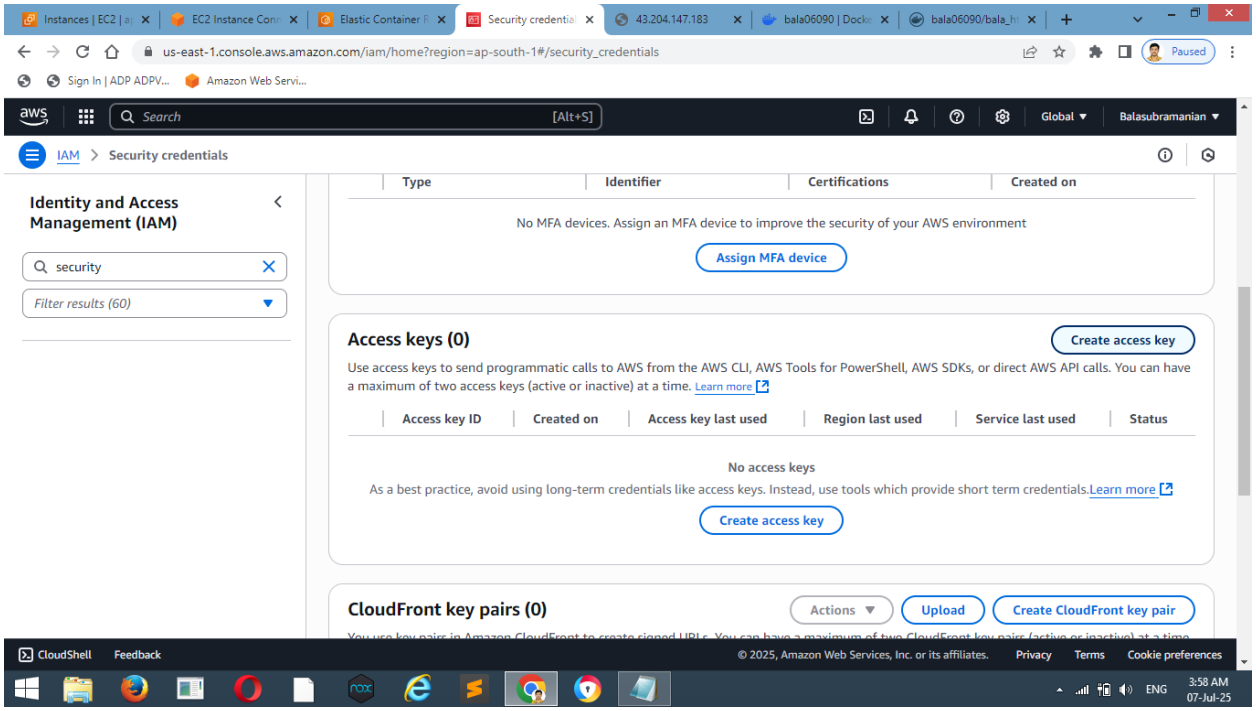
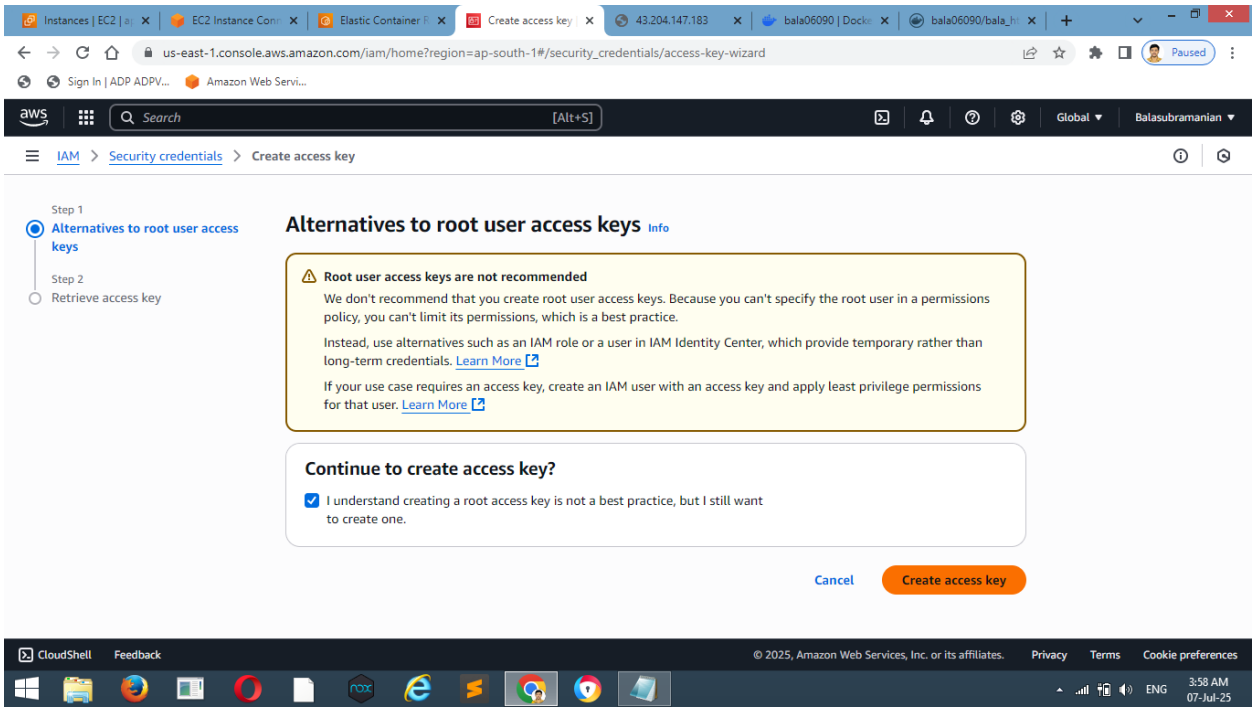
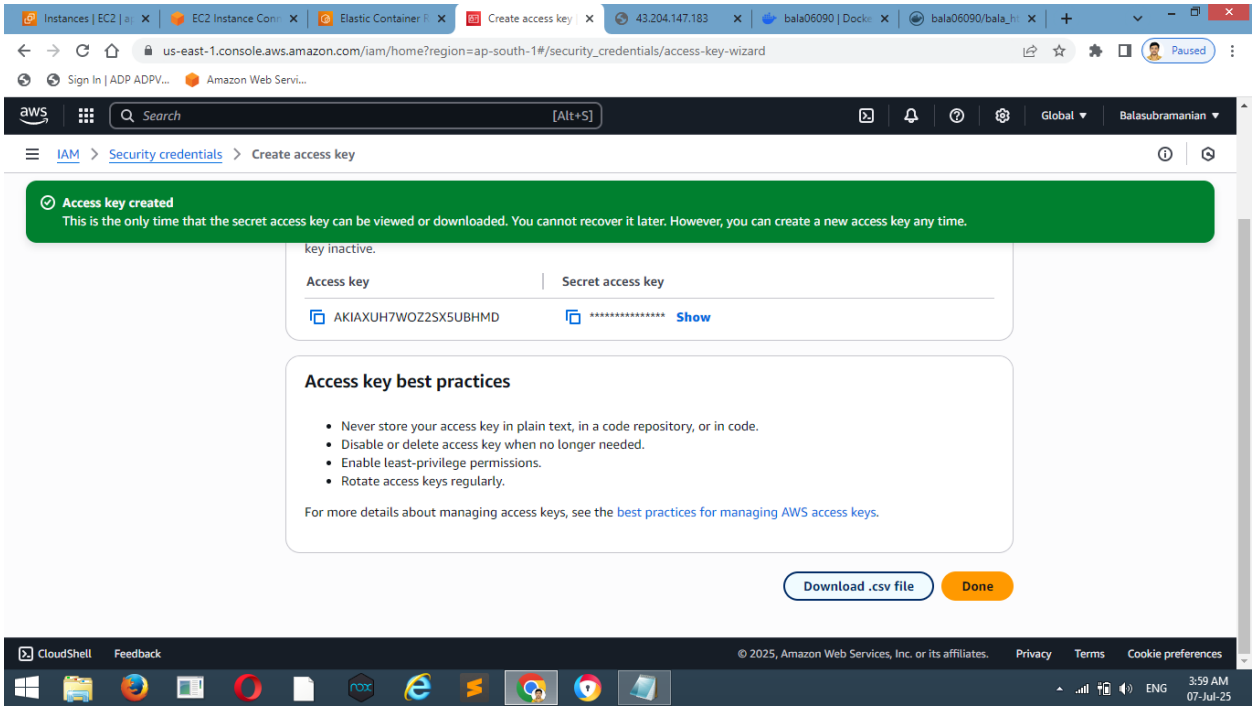
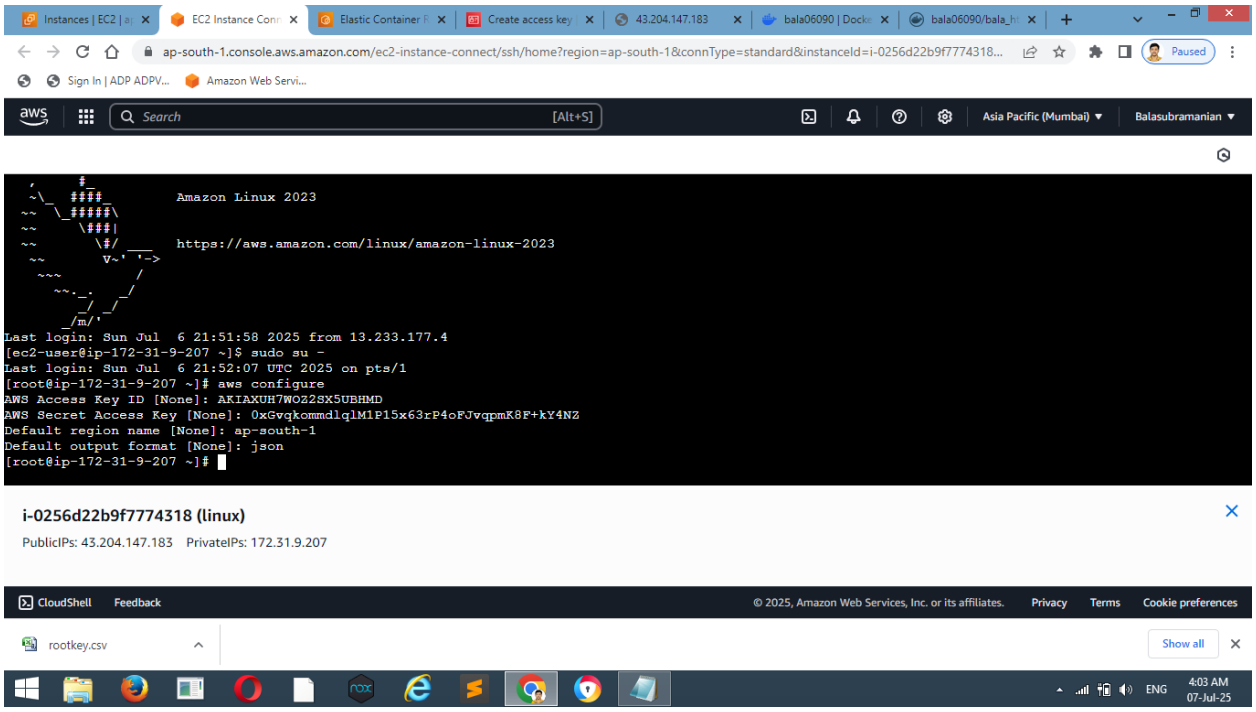
STEP 11: GO TO AWS IAM SERVICE AND CREATE ACCESS KEY



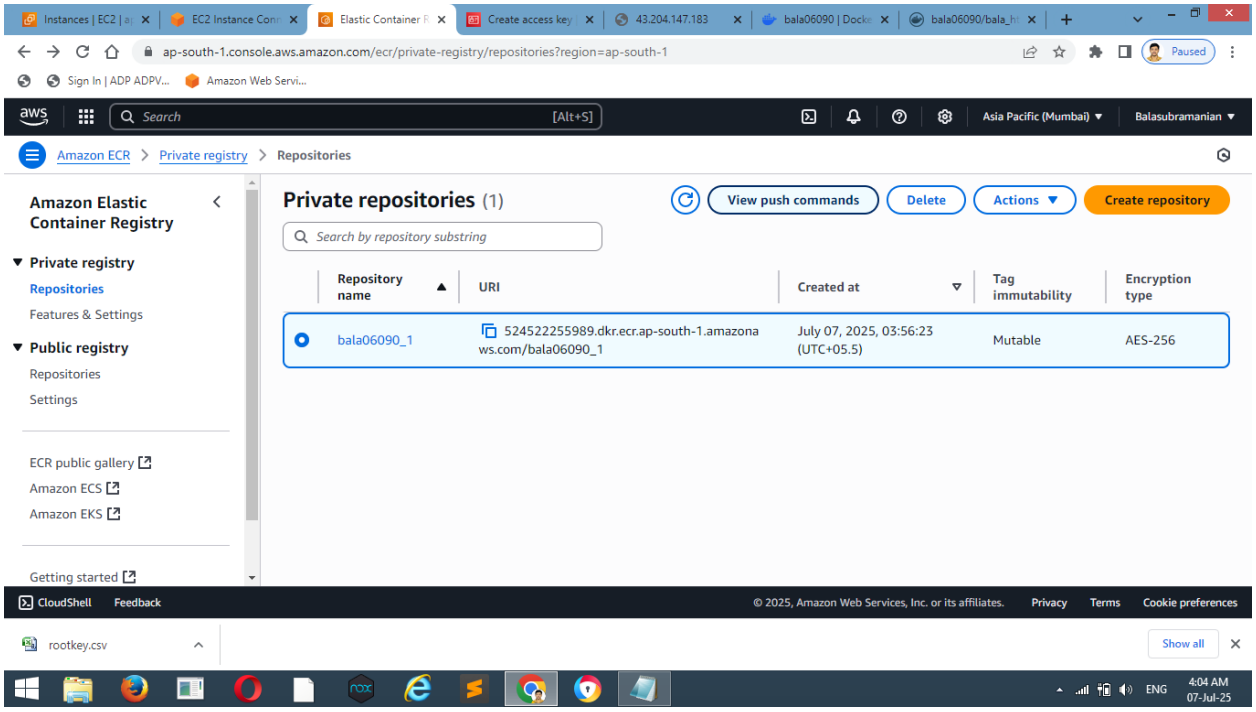


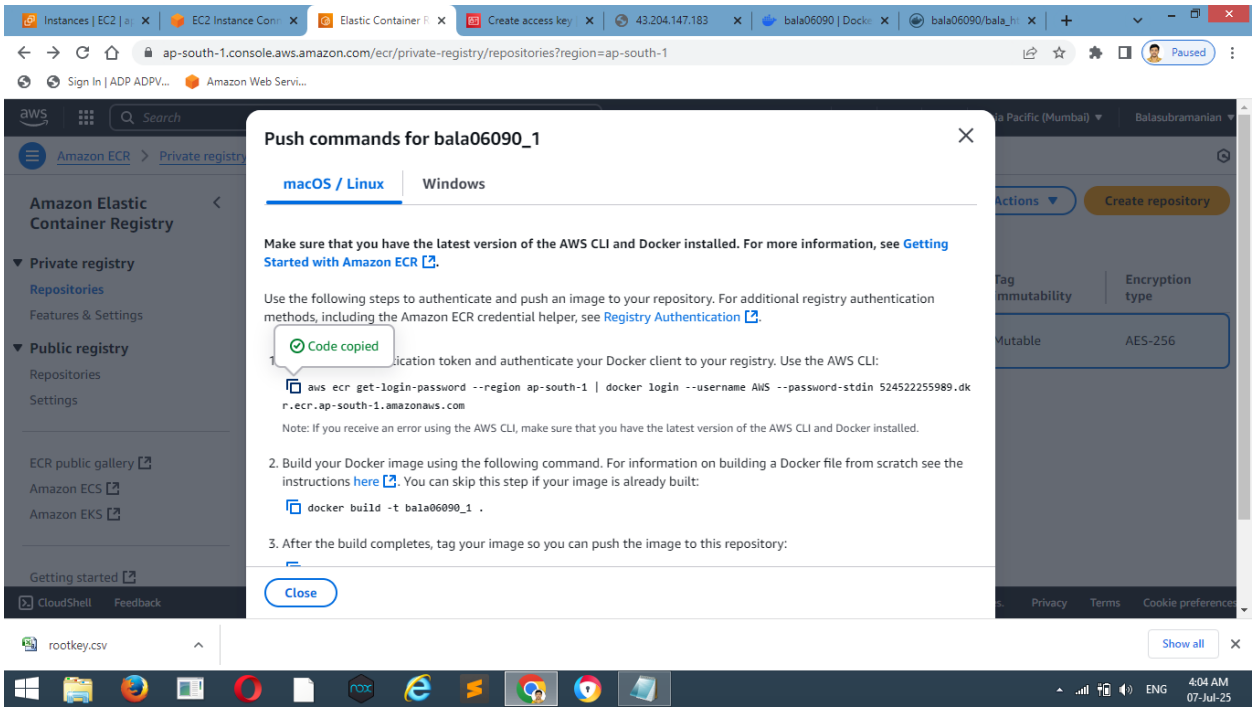


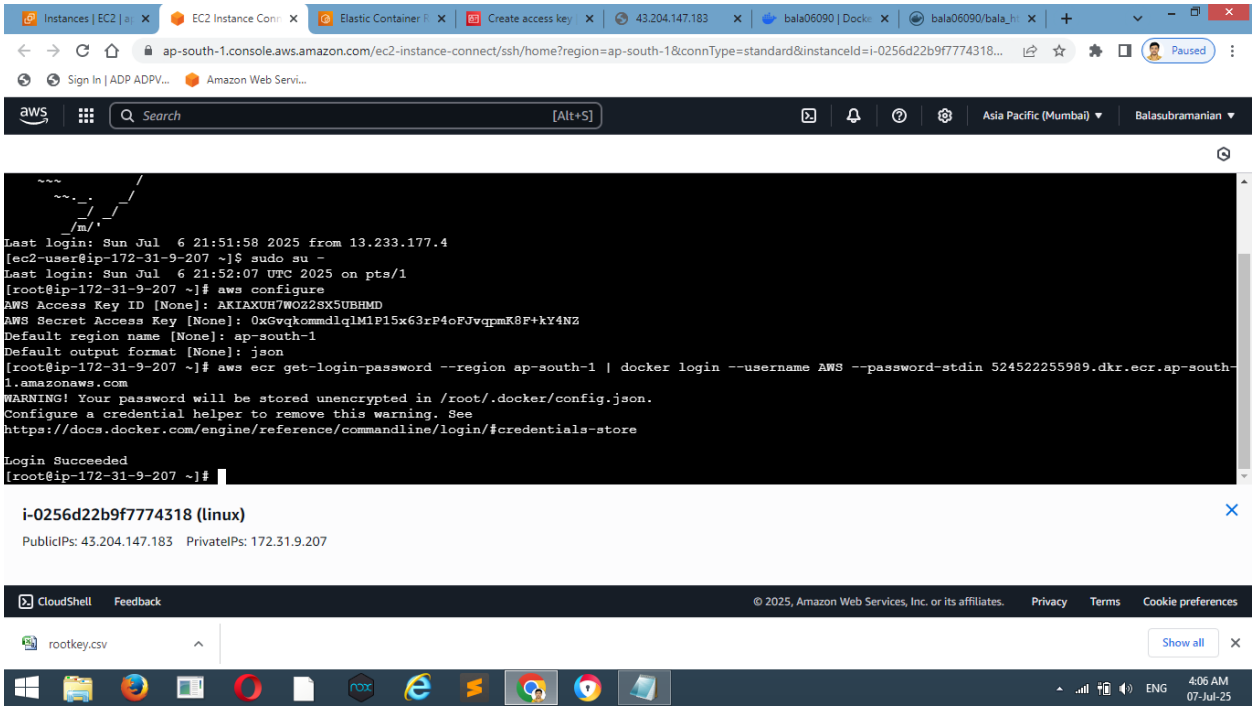
STEP 12: STARTS THE AWS CONFIGURATION PROCESS



STEP 13: PUSH DOCKER IMAGES TO THE ECR ON THE REPOSITORY



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Paused
ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh/home?region=ap-south-1&connType=standard&instanceId=i-0256d22b9f7774318...
Sign In | ADP ADPV...
Amazon Web Servi...
aws
Search
[Alt+S]
Asia Pacific (Mumbai)
Balasubramanian
Last login: Sun Jul 6 21:51:58 2025 from 13.233.177.4
[ec2-user@ip-172-31-9-207 ~]$ sudo su -
Last login: Sun Jul 6 21:52:07 UTC 2025 on pts/1
[root@ip-172-31-9-207 ~]# aws configure
AWS Access Key ID [None]: AKIAXUH7WOZ2SX5UBHMD
AWS Secret Access Key [None]: 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
Default region name [None]: ap-south-1
Default output format [None]: json
[root@ip-172-31-9-207 ~]# aws ecr get-login-password --region ap-south-1 | docker login --username AWS --password-stdin 524522255989.dkr.ecr.ap-south-1.amazonaws.com
WARNING! Your password will be stored unencrypted in /root/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store
Login Succeeded
[root@ip-172-31-9-207 ~]#
i-0256d22b9f7774318 (linux)
PublicIPs: 43.204.147.183 PrivateIPs: 172.31.9.207
CloudShell
Feedback
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Privacy
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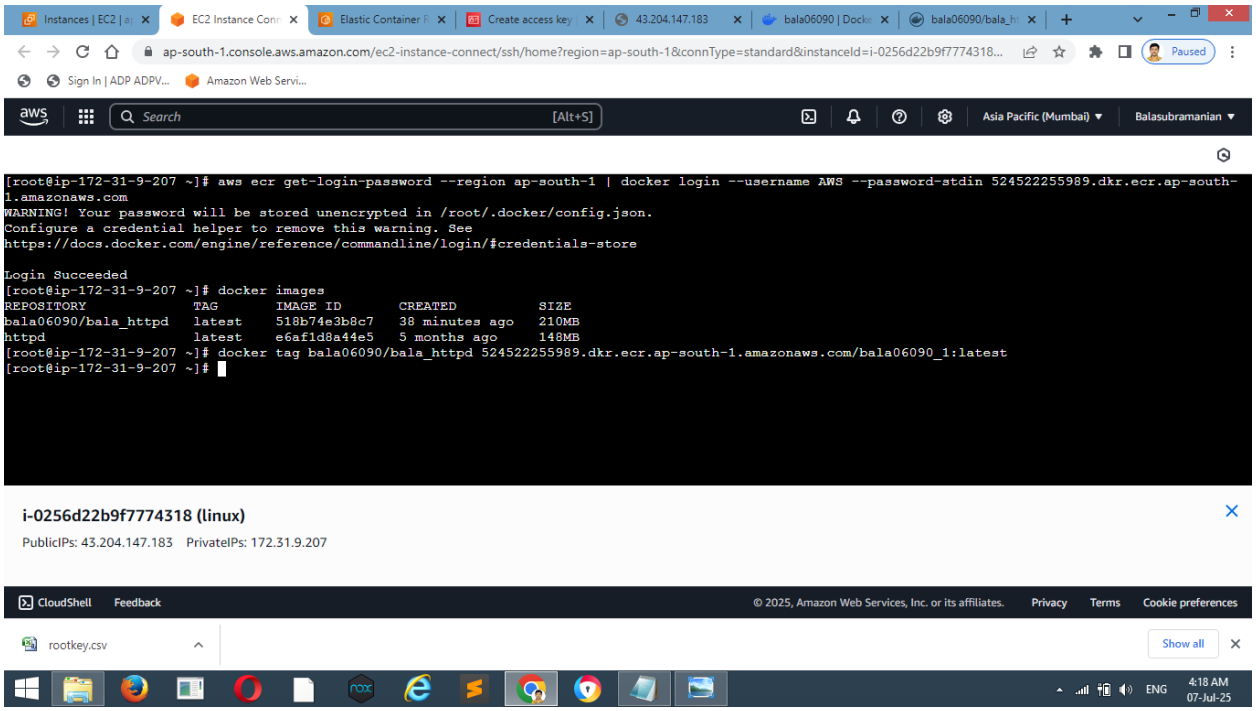
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EC2 Instance Conn
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Create access key
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ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh/home?region=ap-south-1&connType=standard&instanceId=i-0256d22b9f7774318...
Sign In | ADP ADPV...
Amazon Web Servi...
aws
Search
[Alt+S]
Asia Pacific (Mumbai)
Balasubramanian
[root@ip-172-31-9-207 ~]# aws ecr get-login-password --region ap-south-1 | docker login --username AWS --password-stdin 524522255989.dkr.ecr.ap-south-1.amazonaws.com
WARNING! Your password will be stored unencrypted in /root/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store
Login Succeeded
[root@ip-172-31-9-207 ~]# docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
bala06090/bala_httpd latest 518b74e3b8c7 38 minutes ago 210MB
httpd latest e6af1d8a44e5 5 months ago 148MB
[root@ip-172-31-9-207 ~]# docker tag bala06090/bala_httpd 524522255989.dkr.ecr.ap-south-1.amazonaws.com/bala06090_1:latest
[root@ip-172-31-9-207 ~]#
i-0256d22b9f7774318 (linux)
PublicIPs: 43.204.147.183 PrivateIPs: 172.31.9.207
CloudShell
Feedback
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Privacy
Terms
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rootkey.csv
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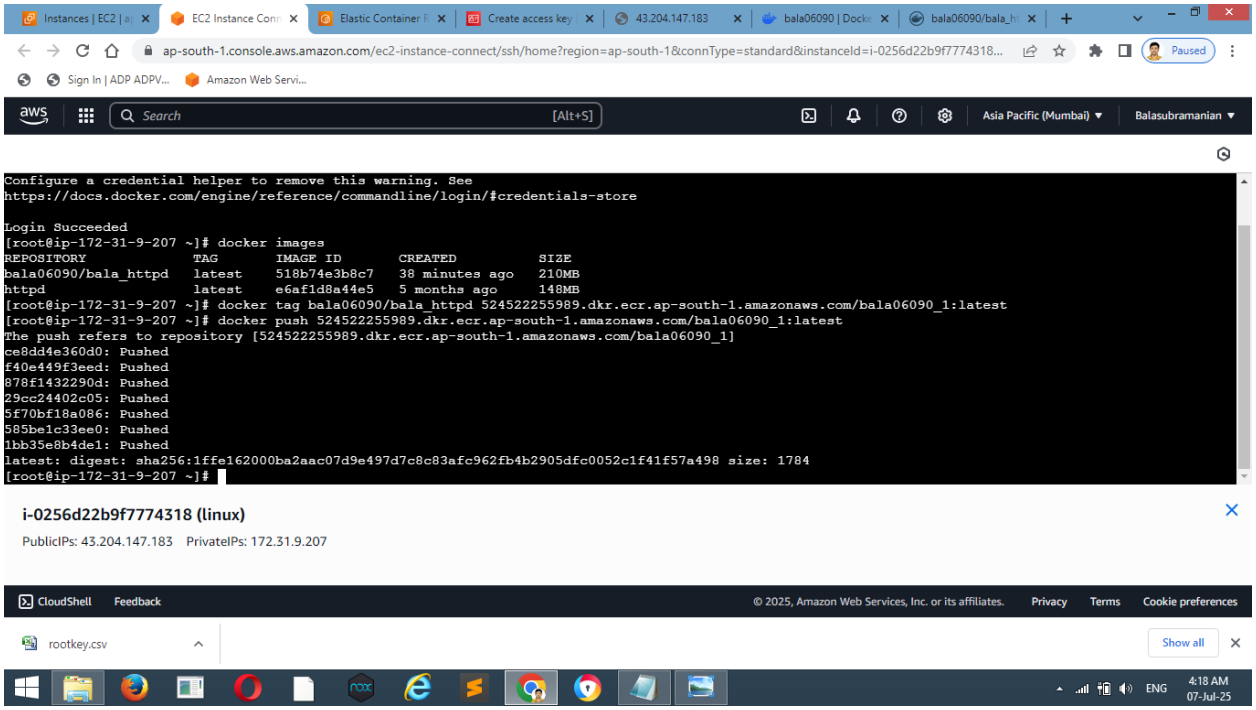
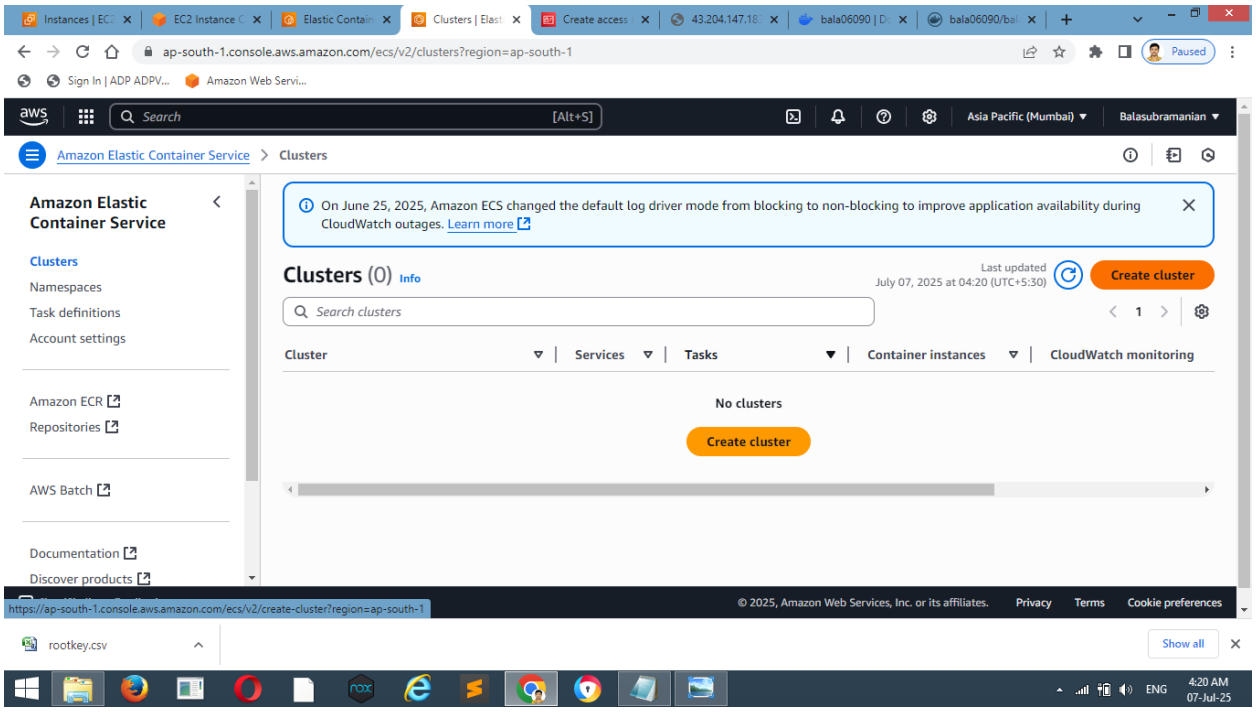
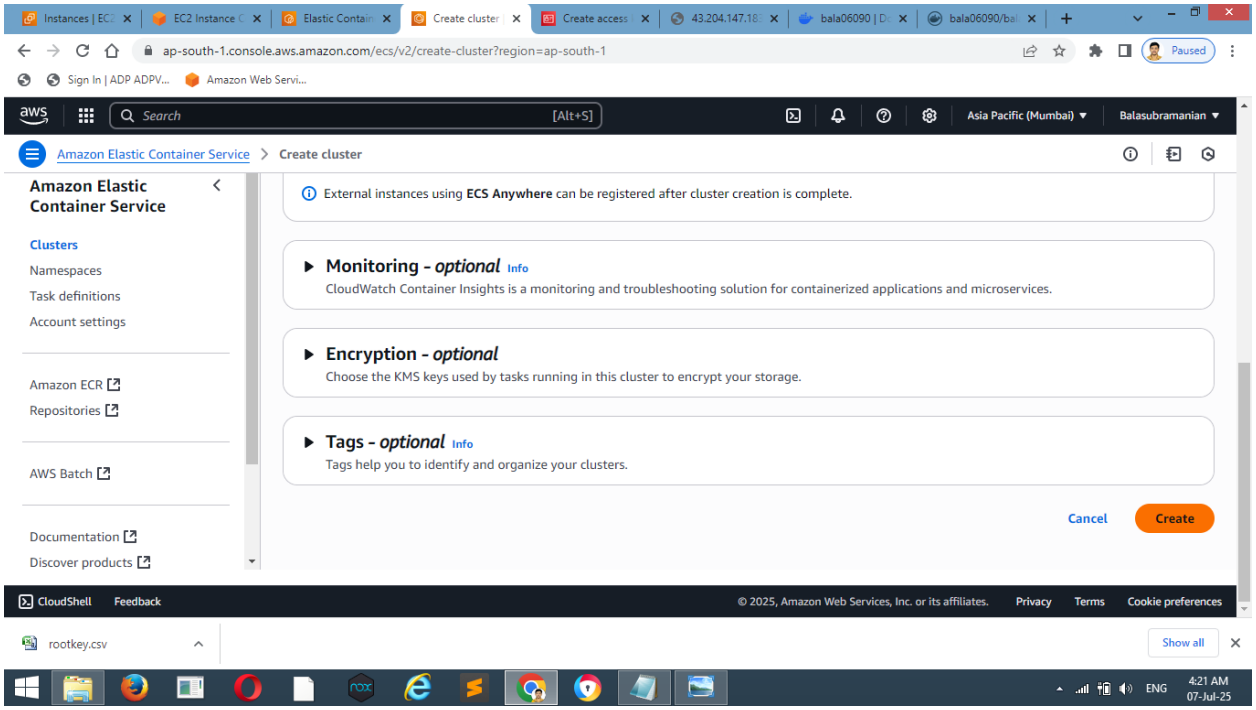


STEP 14: GO TO AWS ECS SERVICE AND CREATE CLUSTER




ap-south-1.console.aws.amazon.com/ecs/v2/create-cluster?region=ap-south-1
Search
[Alt+S]
Asia Pacific (Mumbai)
Balasubramanian
Amazon Elastic Container Service
Create cluster
Amazon Elastic Container Service
Clusters
Namespaces
Task definitions
Account settings
Amazon ECR
Repositories
AWS Batch
Documentation
Discover products
External instances using ECS Anywhere can be registered after cluster creation is complete.
Monitoring - optional Info
CloudWatch Container Insights is a monitoring and troubleshooting solution for containerized applications and microservices.
Encryption - optional
Choose the KMS keys used by tasks running in this cluster to encrypt your storage.
Tags - optional Info
Tags help you to identify and organize your clusters.
Cancel
Create
CloudShell
Feedback
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Privacy
Terms
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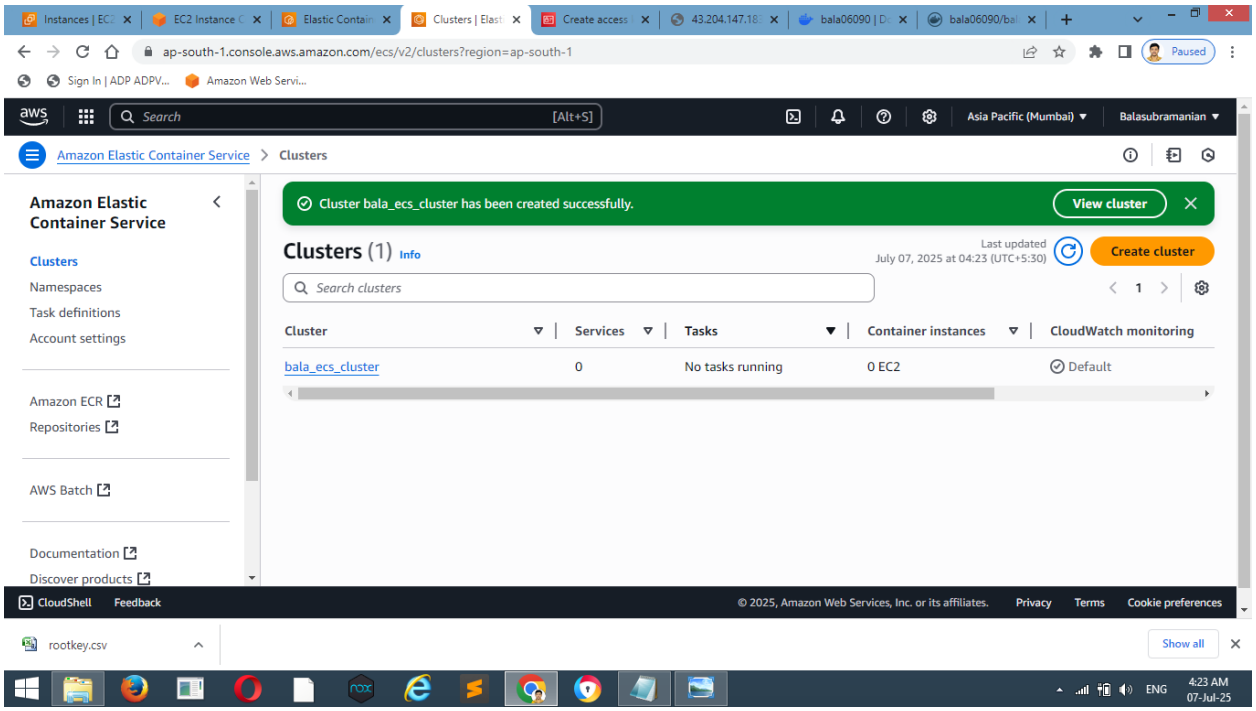
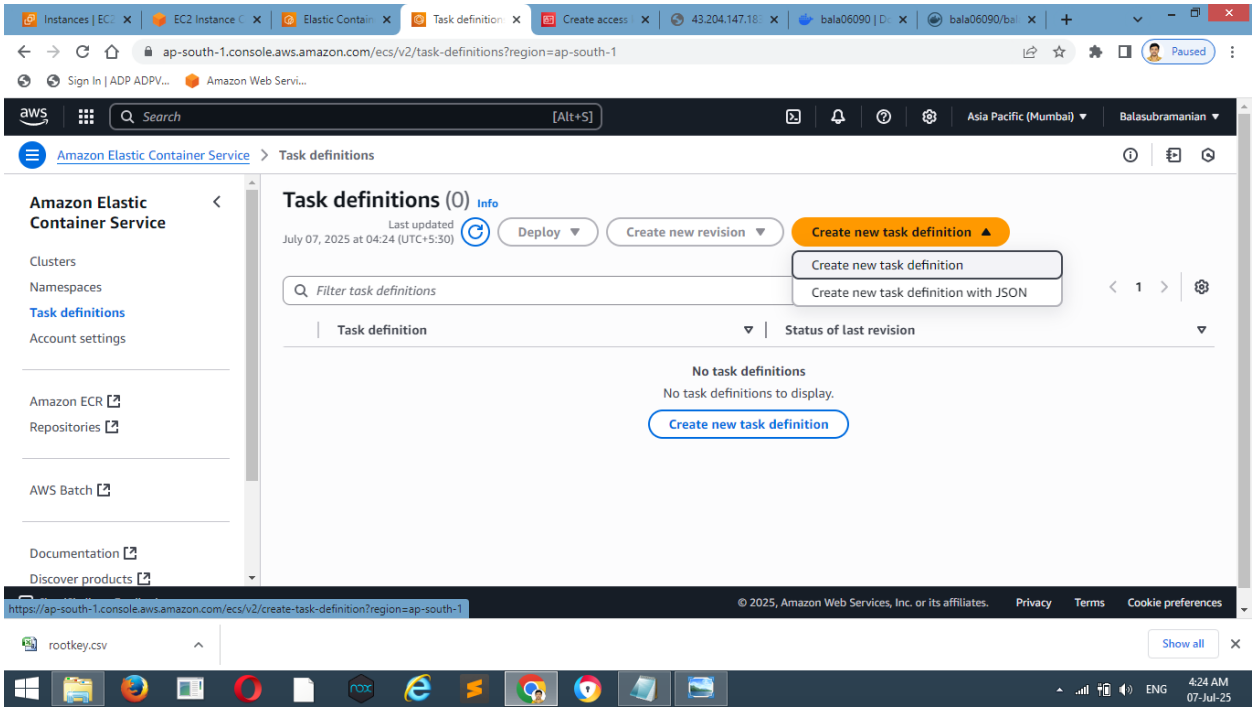
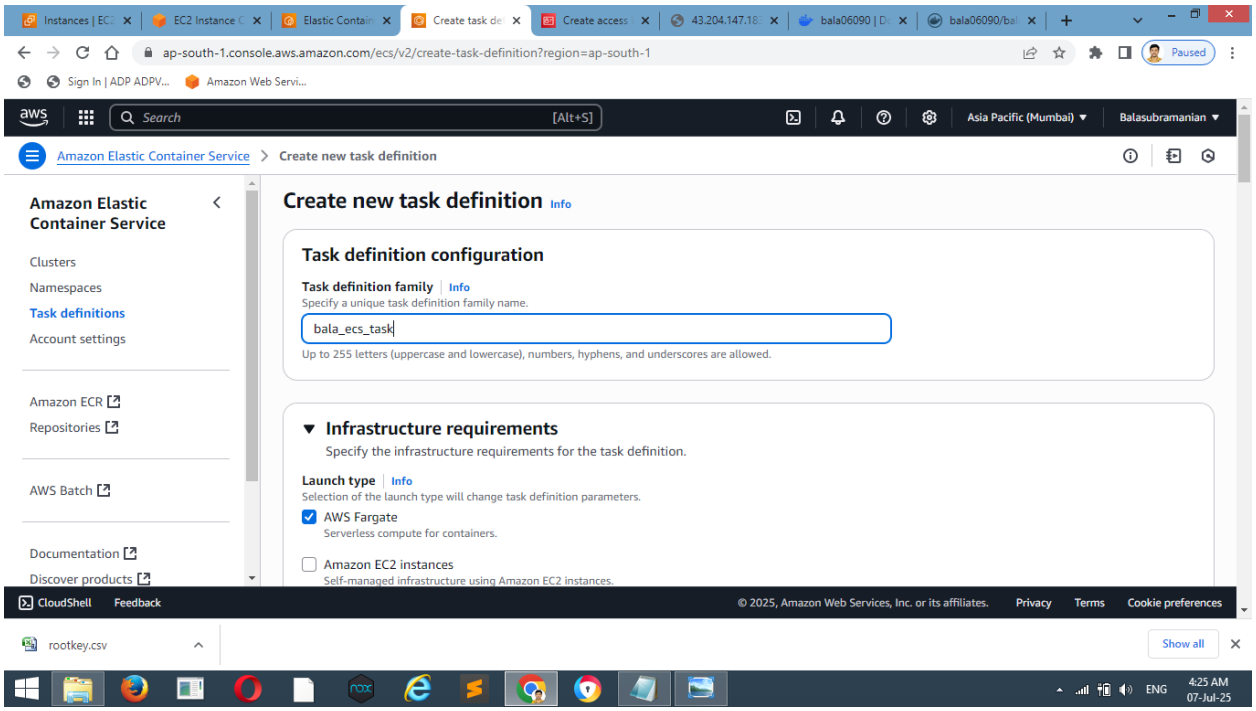
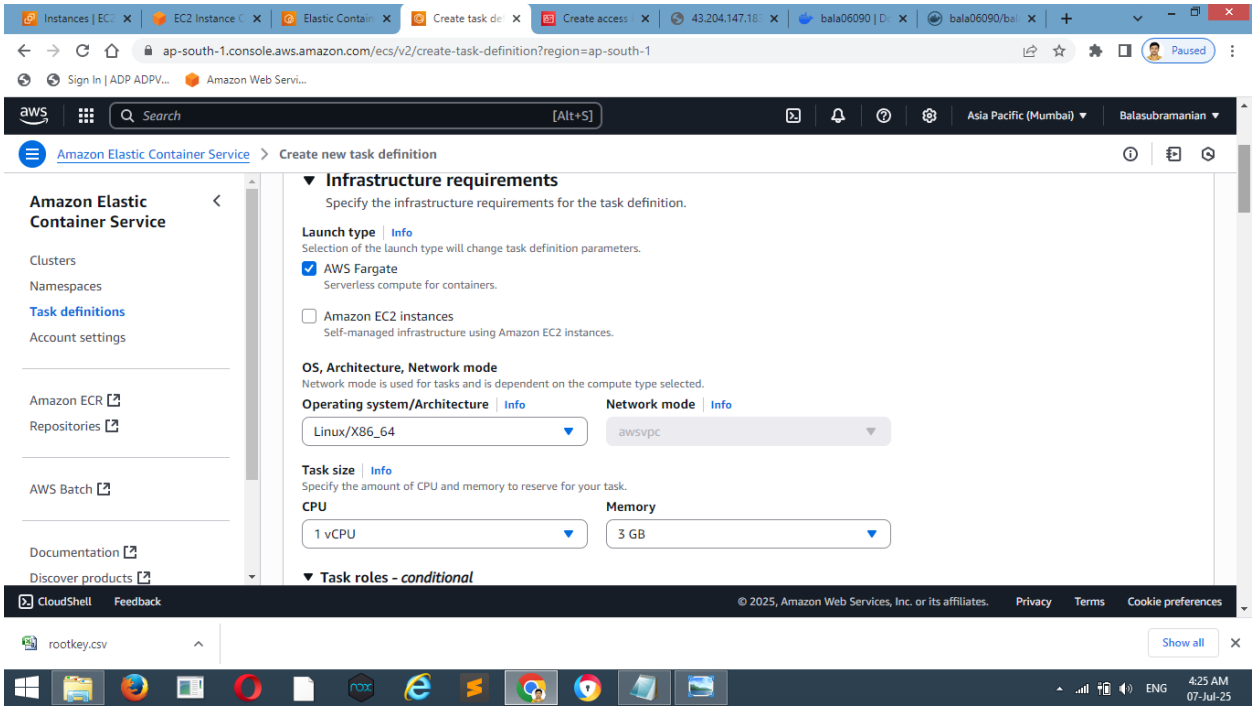

ap-south-1.console.aws.amazon.com/ecs/v2/clusters?region=ap-south-1
Search
[Alt+S]
Asia Pacific (Mumbai)
Balasubramanian
Amazon Elastic Container Service
Clusters
Amazon Elastic Container Service
Clusters
Namespaces
Task definitions
Account settings
Amazon ECR
Repositories
AWS Batch
Documentation
Discover products
Cluster bala_ecs_cluster has been created successfully.
View cluster
Clusters (1) Info
Last updated
July 07, 2025 at 04:23 (UTC+5:30)
Create cluster
Search clusters
Cluster
Services
Tasks
Container instances
CloudWatch monitoring
bala_ecs_cluster
0
No tasks running
0 EC2
Default
CloudShell
Feedback
© 2025, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
rootkey.csv
Show all
ENG
4:23 AM
07-Jul-25

STEP 15: CREATE NEW TASK DEFINITION






ap-south-1.console.aws.amazon.com/ecs/v2/create-task-definition?region=ap-south-1
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Infrastructure requirements
Specify the infrastructure requirements for the task definition.
Launch type | Info
Selection of the launch type will change task definition parameters.
AWS Fargate
Serverless compute for containers.
Amazon EC2 instances
Self-managed infrastructure using Amazon EC2 instances.
OS, Architecture, Network mode
Network mode is used for tasks and is dependent on the compute type selected.
Operating system/Architecture | Info
Linux/X86_64
Network mode | Info
awsvpc
Task size | Info
Specify the amount of CPU and memory to reserve for your task.
CPU
1 vCPU
Memory
3 GB
Task roles - conditional
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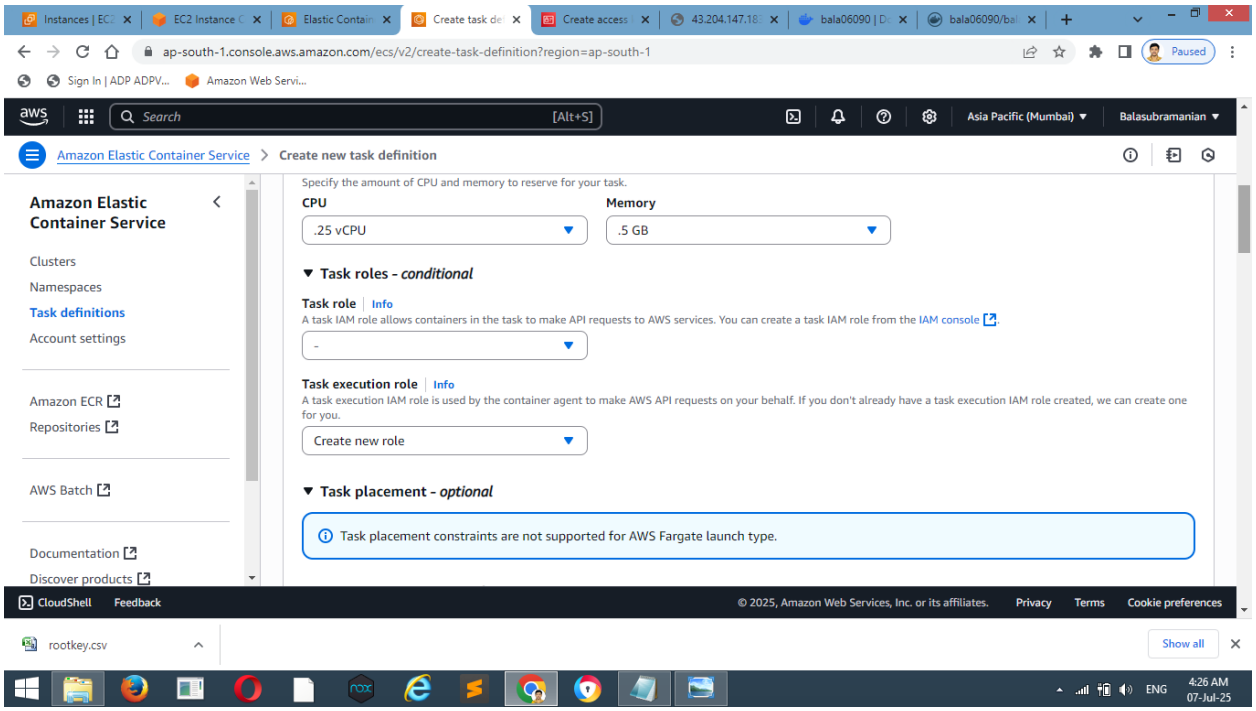
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Specify the amount of CPU and memory to reserve for your task.
CPU
.25 vCPU
Memory
.5 GB
Task roles - conditional
Task role | Info
A task IAM role allows containers in the task to make API requests to AWS services. You can create a task IAM role from the IAM console.
-
Task execution role | Info
A task execution IAM role is used by the container agent to make AWS API requests on your behalf. If you don't already have a task execution IAM role created, we can create one for you.
Create new role
Task placement - optional
Task placement constraints are not supported for AWS Fargate launch type.
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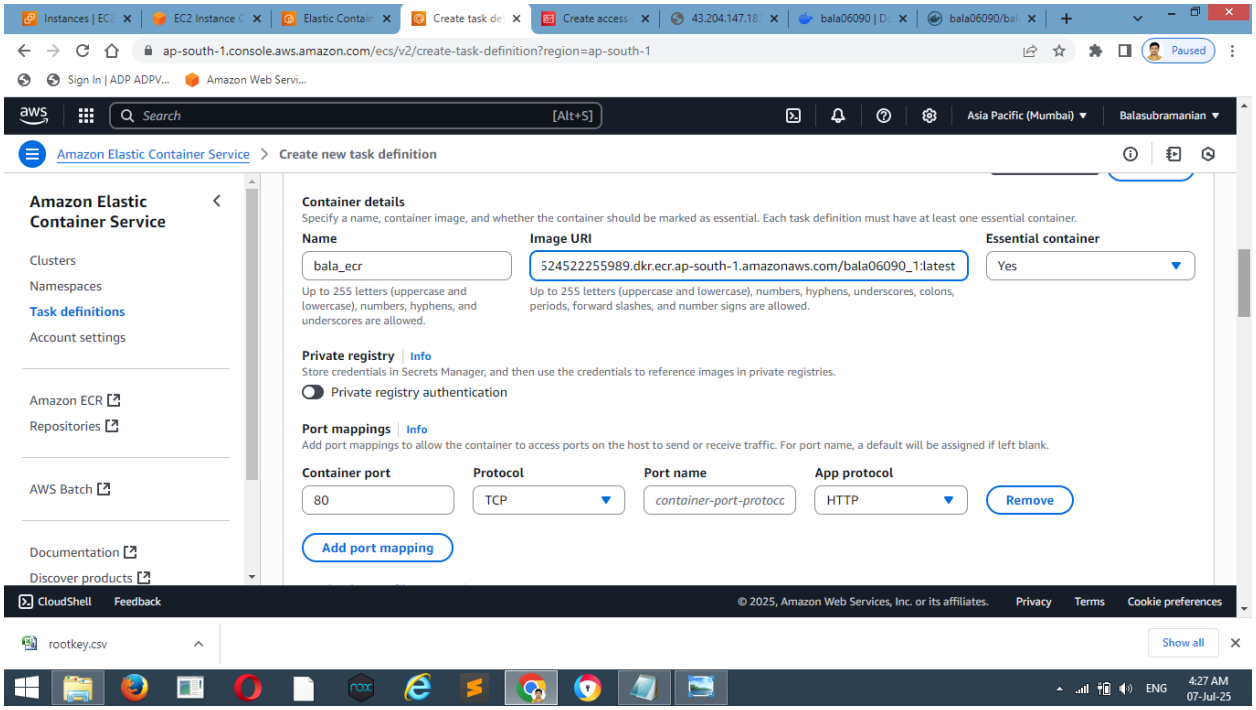
ap-south-1.console.aws.amazon.com/ecs/v2/create-task-definition?region=ap-south-1
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Container details
Specify a name, container image, and whether the container should be marked as essential. Each task definition must have at least one essential container.
Name
bala_ecr
Up to 255 letters (uppercase and lowercase), numbers, hyphens, and underscores are allowed.
Image URI
524522255989.dkr.ecr.ap-south-1.amazonaws.com/bala06090_1:latest
Up to 255 letters (uppercase and lowercase), numbers, hyphens, underscores, colons, periods, forward slashes, and number signs are allowed.
Essential container
Yes
Private registry | Info
Store credentials in Secrets Manager, and then use the credentials to reference images in private registries.
Private registry authentication
Port mappings | Info
Add port mappings to allow the container to access ports on the host to send or receive traffic. For port name, a default will be assigned if left blank.
Container port
80
Protocol
TCP
Port name
container-port-protocc
App protocol
HTTP
Remove
Add port mapping
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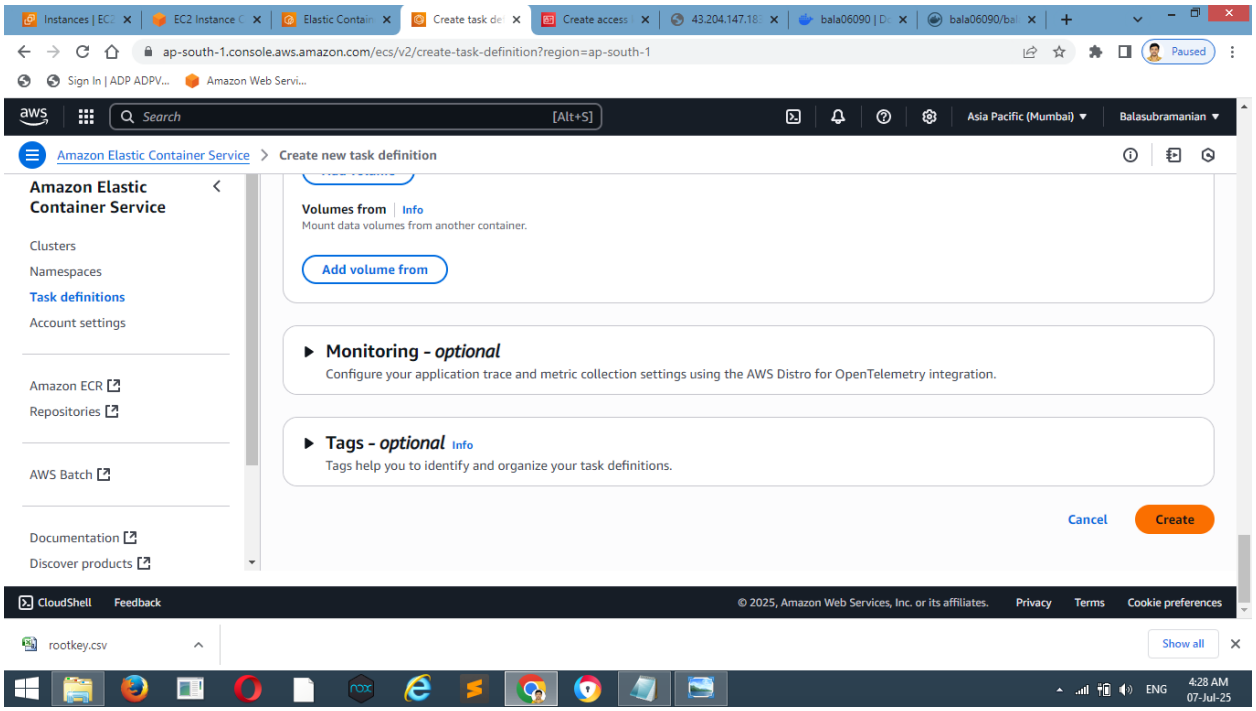
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Volumes from | Info
Mount data volumes from another container.
Add volume from
Monitoring - optional
Configure your application trace and metric collection settings using the AWS Distro for OpenTelemetry integration.
Tags - optional Info
Tags help you to identify and organize your task definitions.
Cancel
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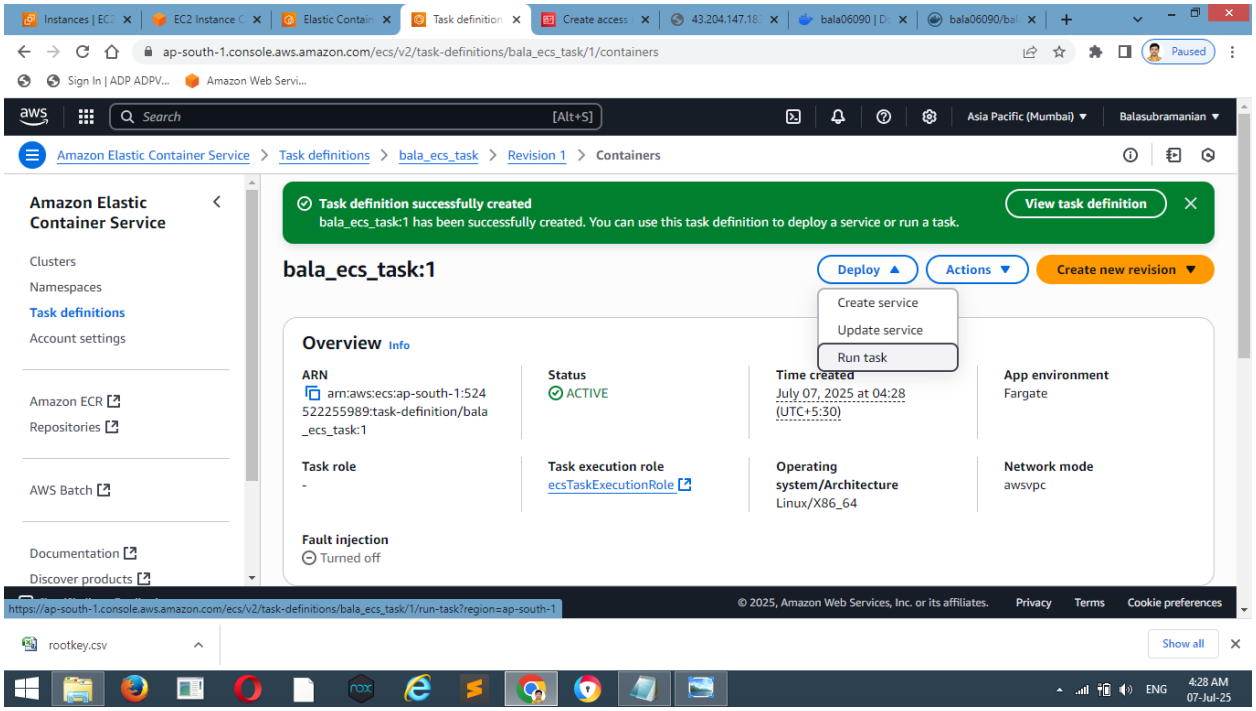
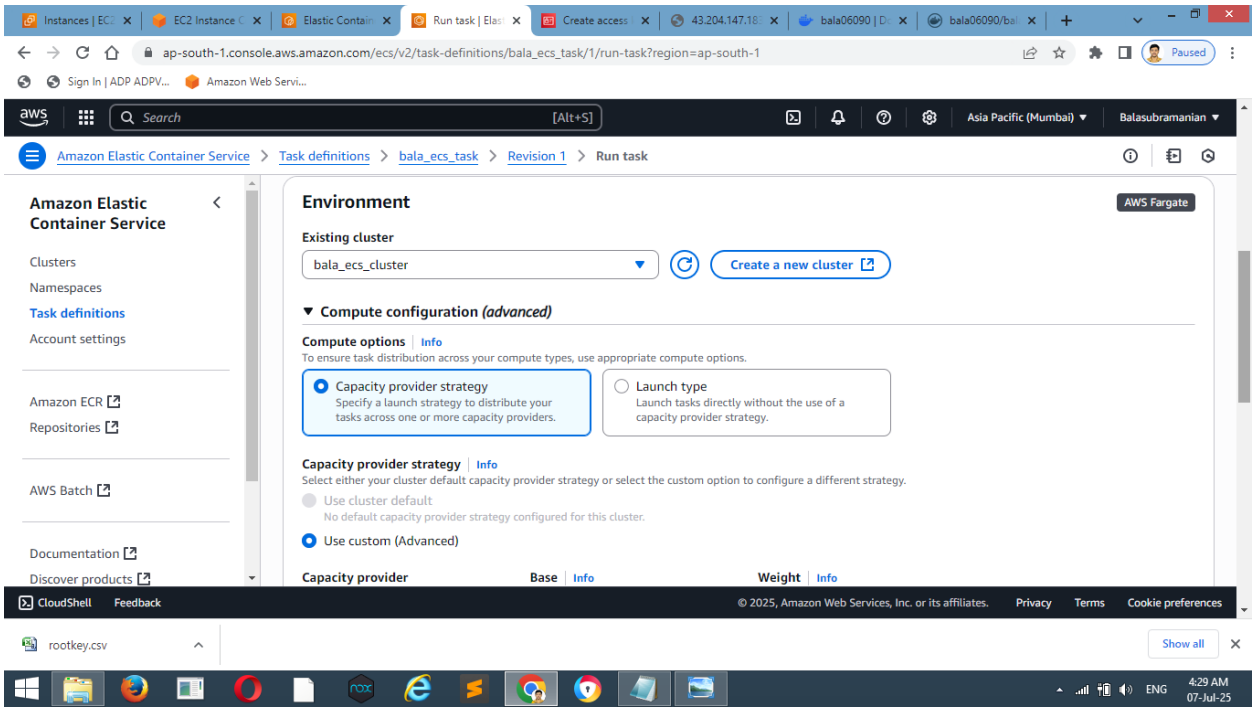
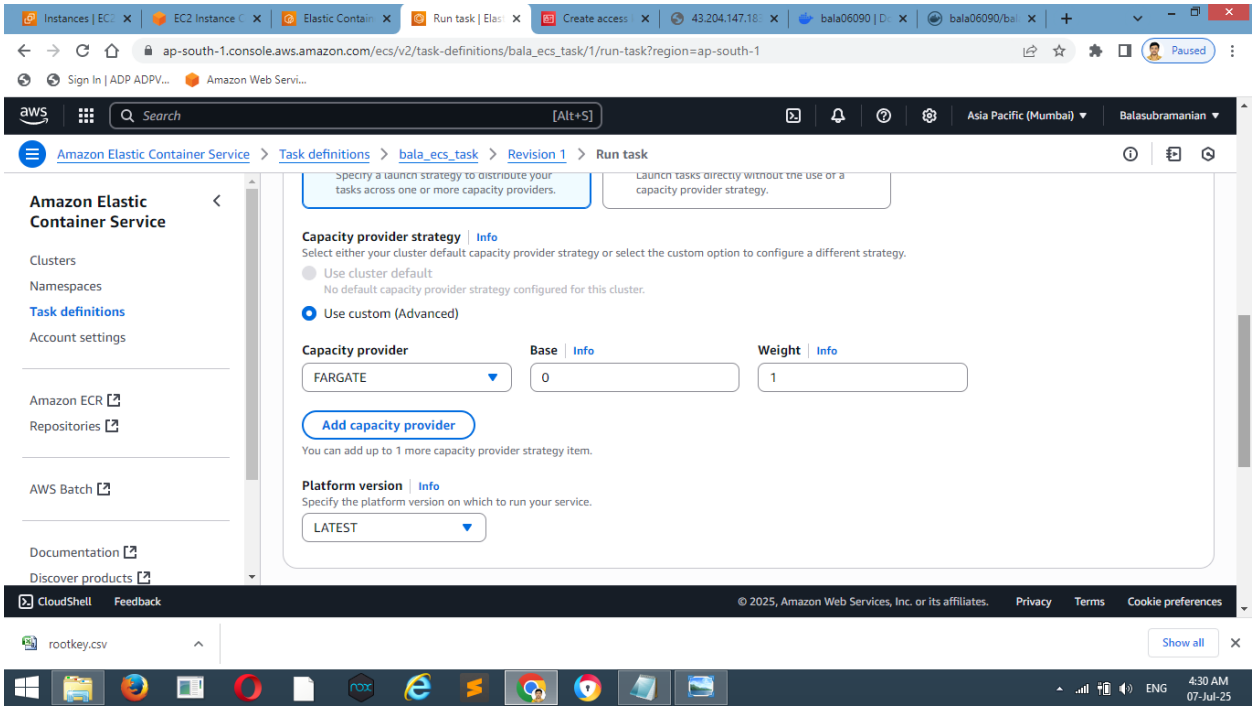
STEP 16: PUSH RUN RASK PROCESS IN ECS






ap-south-1.console.aws.amazon.com/ecs/v2/task-definitions/bala_ecs_task/1/run-task?region=ap-south-1
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Amazon Elastic Container Service > Task definitions > bala_ecs_task > Revision 1 > Run task
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Capacity provider strategy | Info
Select either your cluster default capacity provider strategy or select the custom option to configure a different strategy.
Use cluster default
No default capacity provider strategy configured for this cluster.
Use custom (Advanced)
Capacity provider
FARGATE
Base | Info
0
Weight | Info
1
Add capacity provider
You can add up to 1 more capacity provider strategy item.
Platform version | Info
Specify the platform version on which to run your service.
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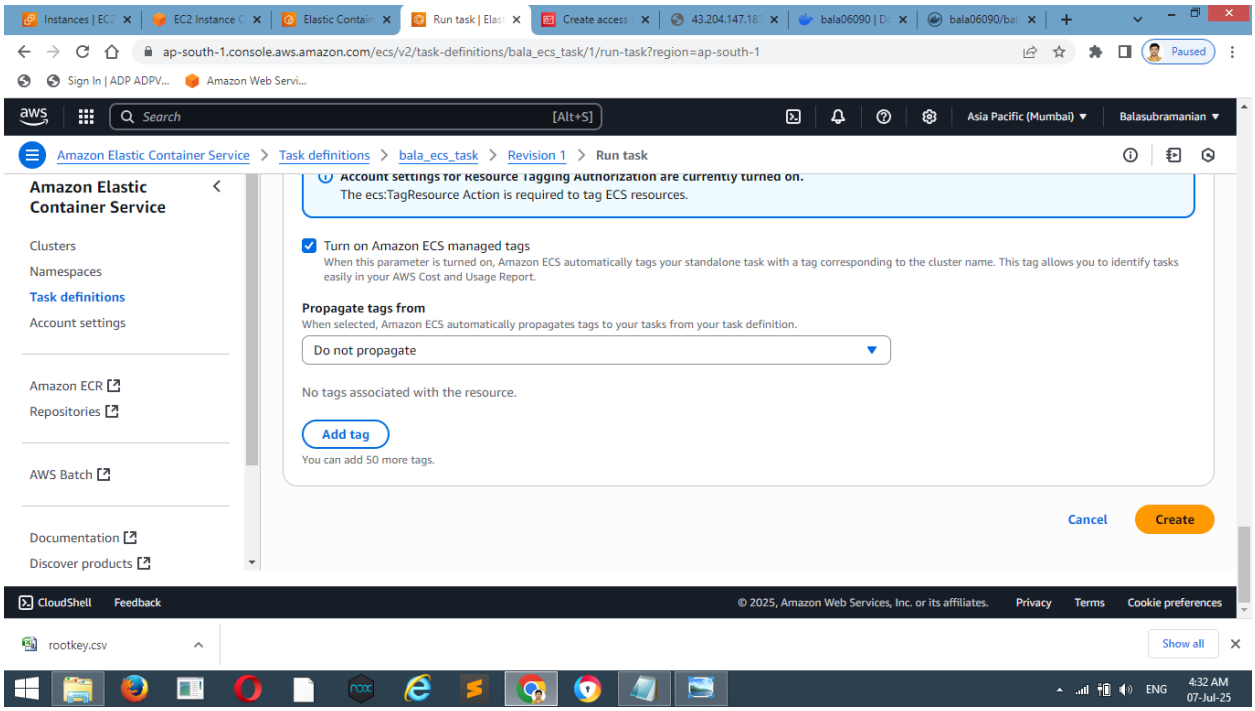
ap-south-1.console.aws.amazon.com/ecs/v2/task-definitions/bala_ecs_task/1/run-task?region=ap-south-1
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The ecs:TagResource Action is required to tag ECS resources.
Turn on Amazon ECS managed tags
When this parameter is turned on, Amazon ECS automatically tags your standalone task with a tag corresponding to the cluster name. This tag allows you to identify tasks easily in your AWS Cost and Usage Report.
Propagate tags from
When selected, Amazon ECS automatically propagates tags to your tasks from your task definition.
Do not propagate
No tags associated with the resource.
Add tag
You can add 50 more tags.
Cancel
Create
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STEP 17: COPY THE PUBLIC IP ADDRESS IN ECS SERVICE AND PASTE IT IN THE BROWSER AND FINALLY PUSHED SUCCESSFULLY