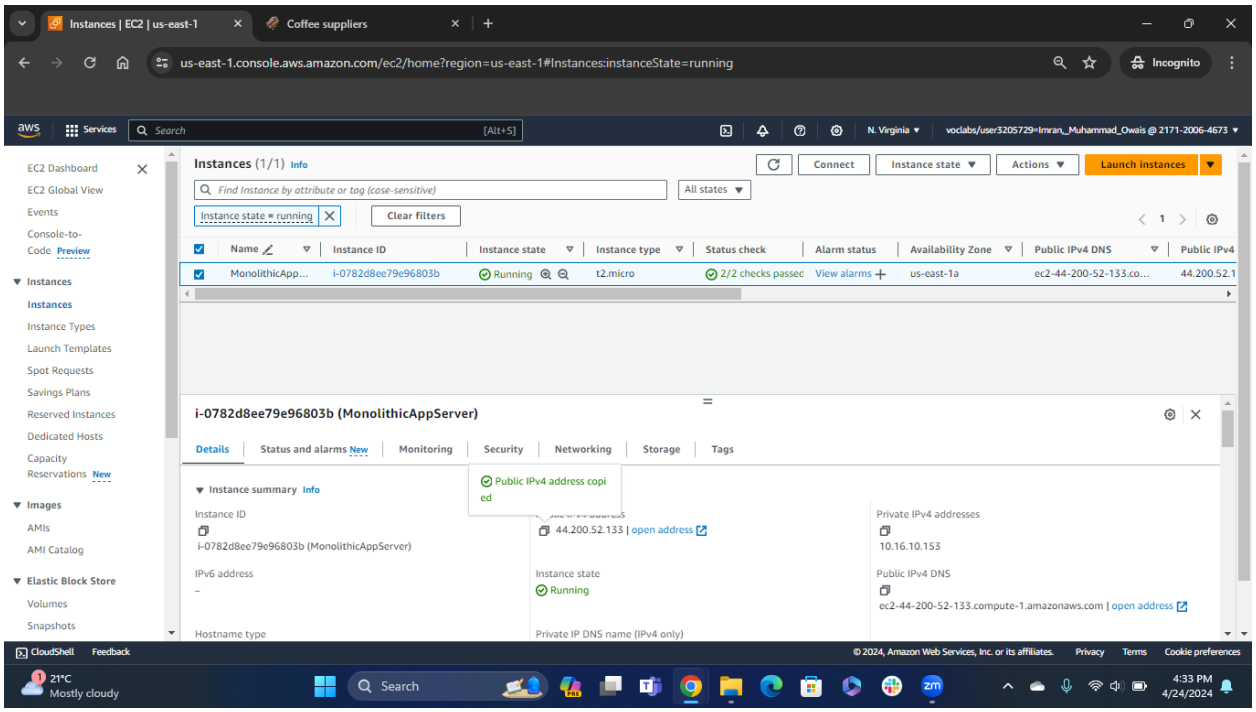
Phase 2: Analyzing the infrastructure of the monolithic application

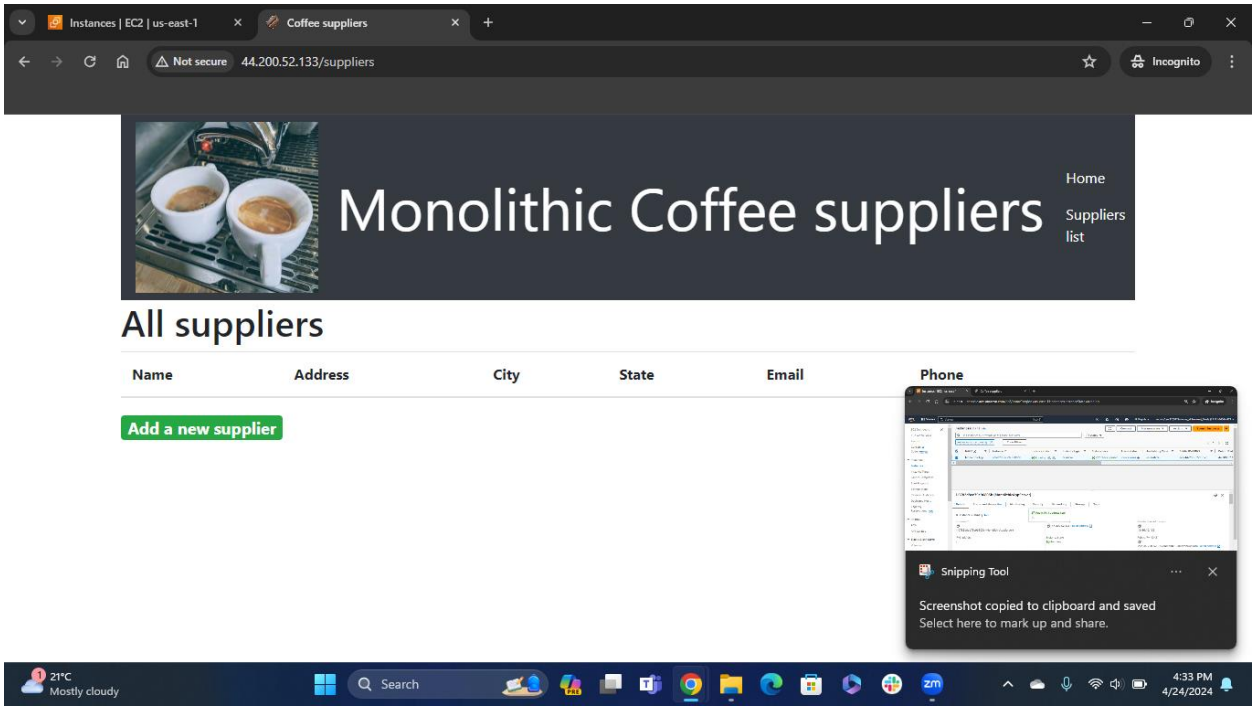
Task 2.1: Verify that the monolithic application is available

1. Configuration of EC2 instance hosting the monolithic web application:

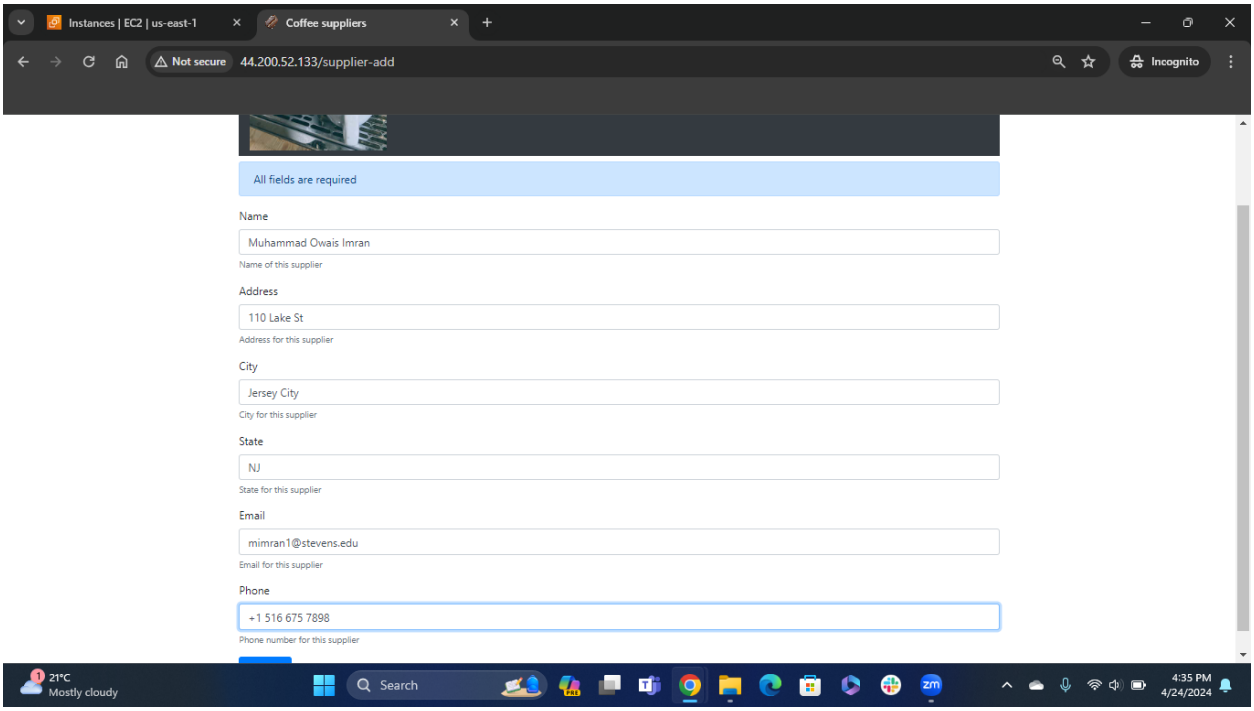


Task 2.2: Test the monolithic web application

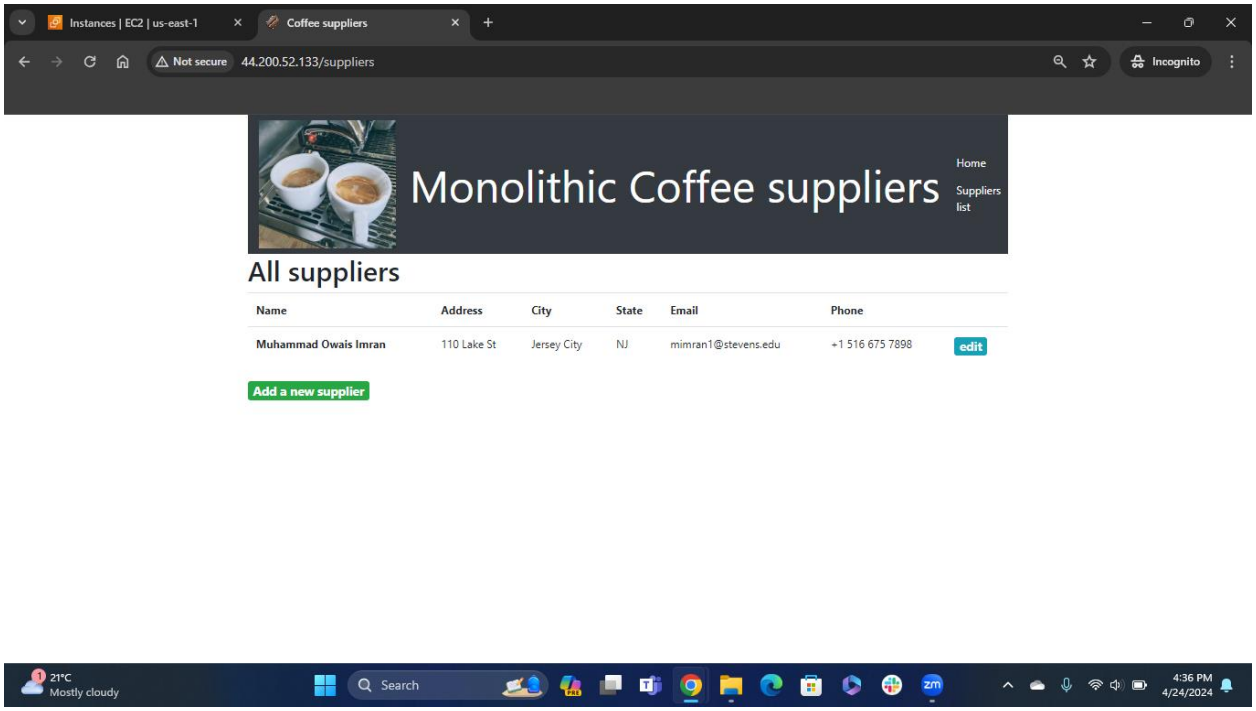
1. List of Suppliers Web Page of monolithic web application:



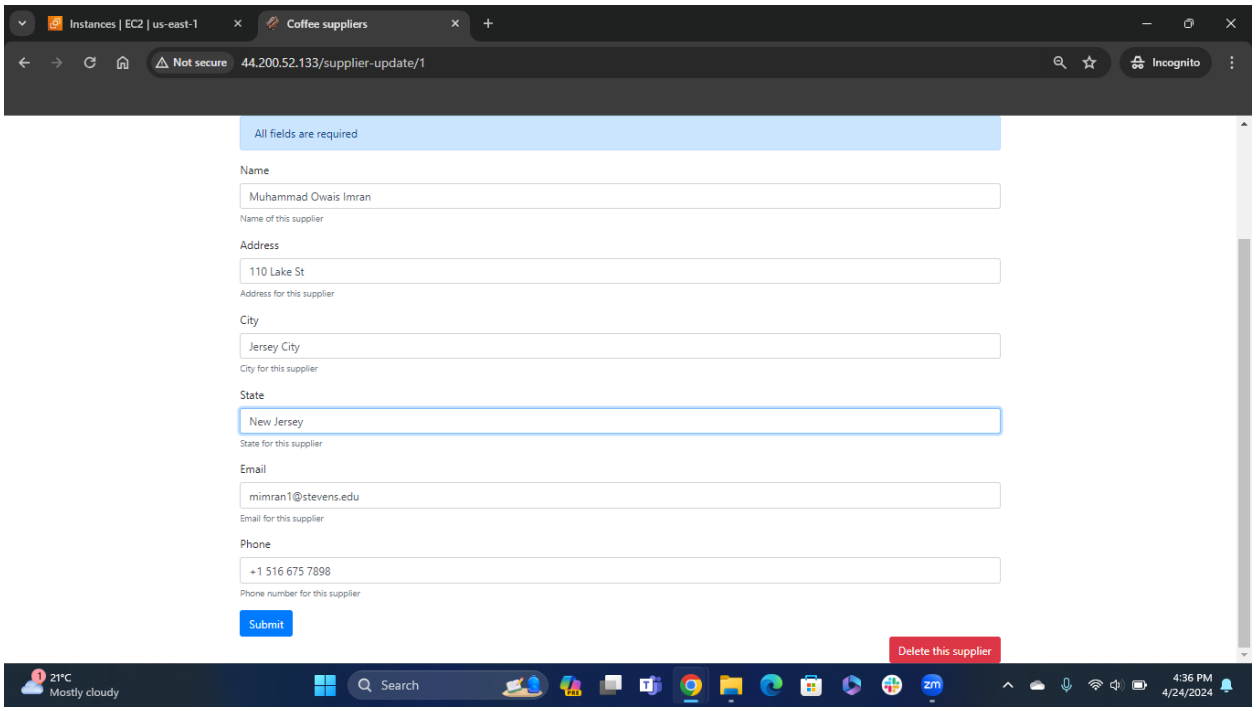
2. Adding a New Supplier:



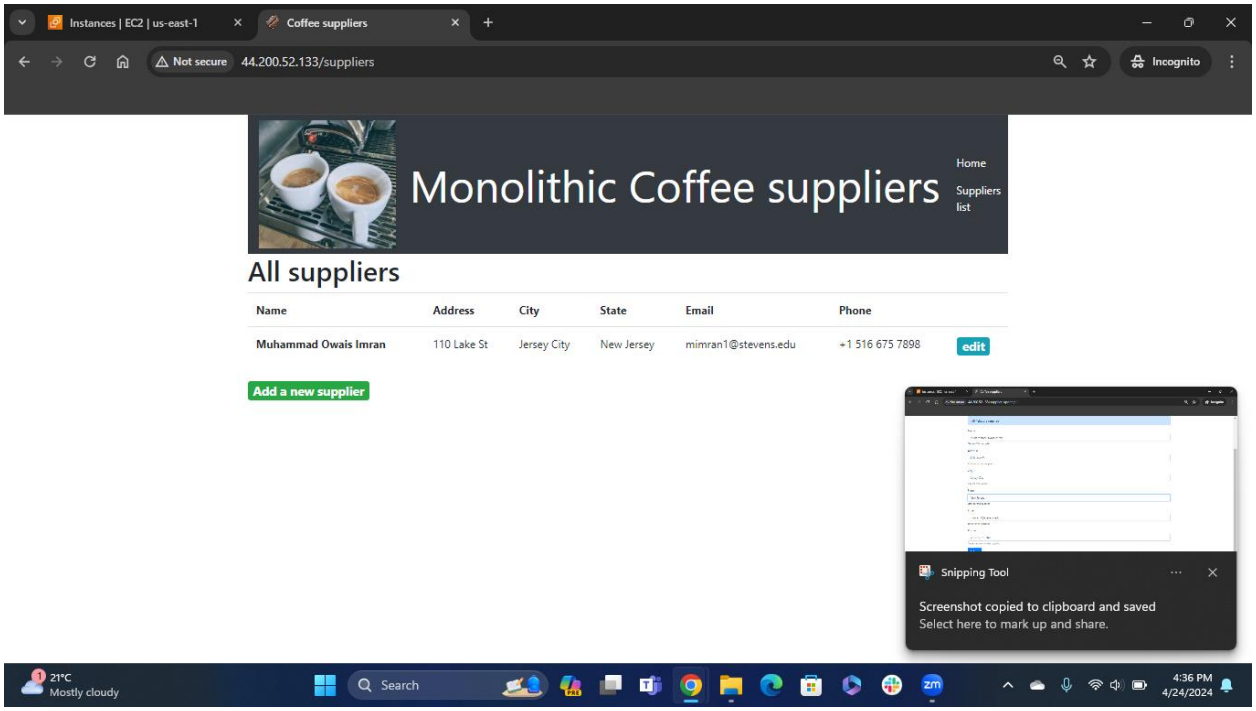
3. Verifying if the supplier is added to the monolithic web application:



4. Editing the newly added supplier state from NJ to New Jersey to check Edit Functionality of Monolithic Web Application:



5. Verifying if the edit is saved successfully:


Instances | EC2 | us-east-1
Coffee suppliers
Not secure
44.200.52.133/suppliers
Incognito
Monolithic Coffee suppliers
Home
Suppliers list
All suppliers
Name
Address
City
State
Email
Phone
Muhammad Owais Imran
110 Lake St
Jersey City
New Jersey
mimran1@stevens.edu
+1 516 675 7898
edit
Add a new supplier
Snipping Tool
Screenshot copied to clipboard and saved
Select here to mark up and share.
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Mostly cloudy
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4:36 PM
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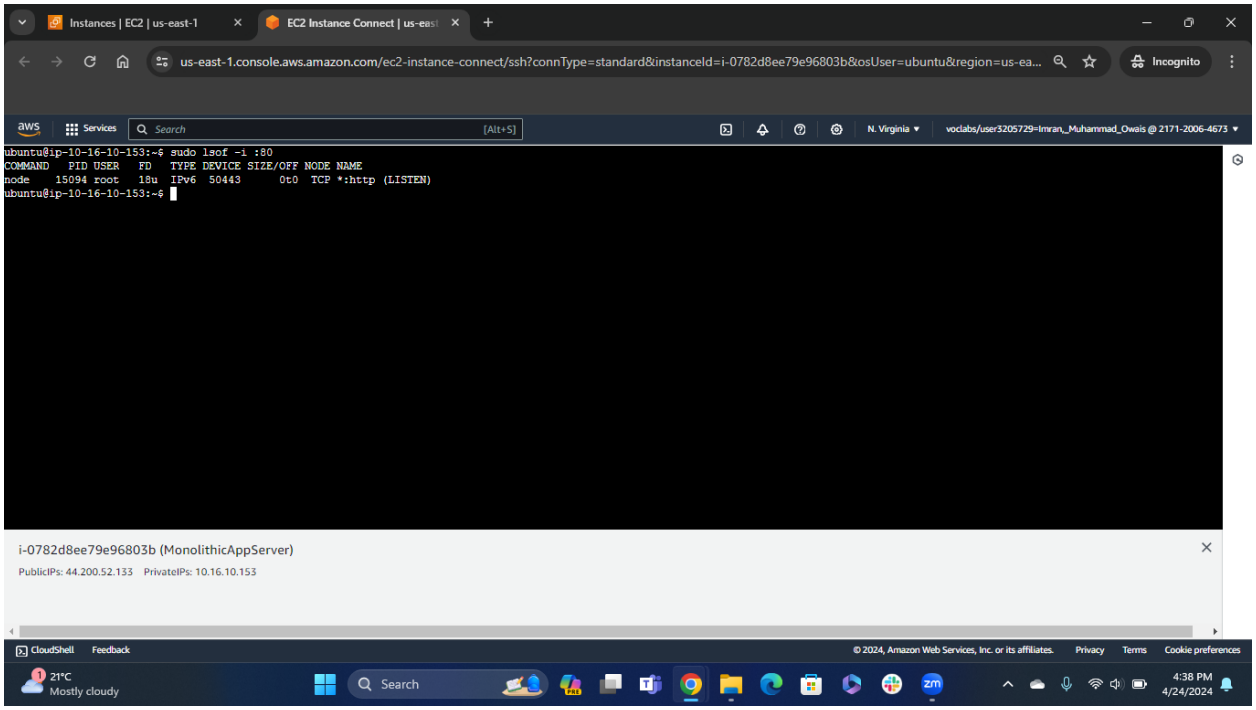
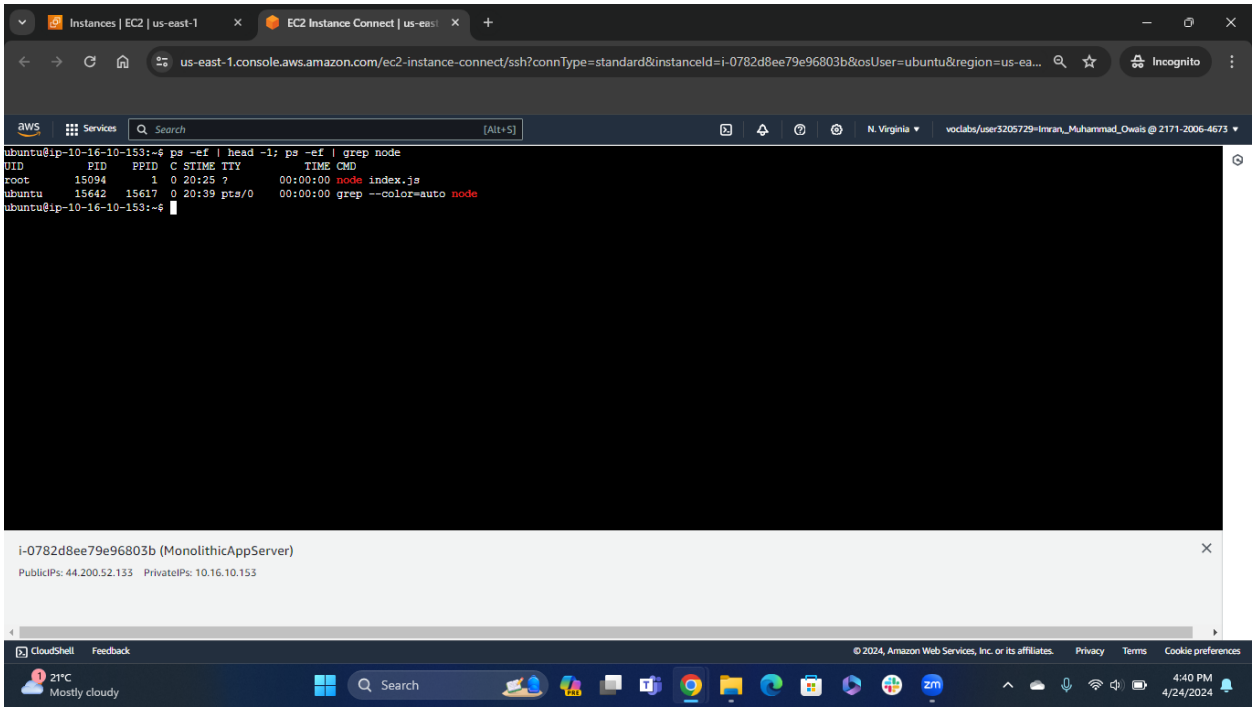
Task 2.3: Analyze how the monolithic application runs

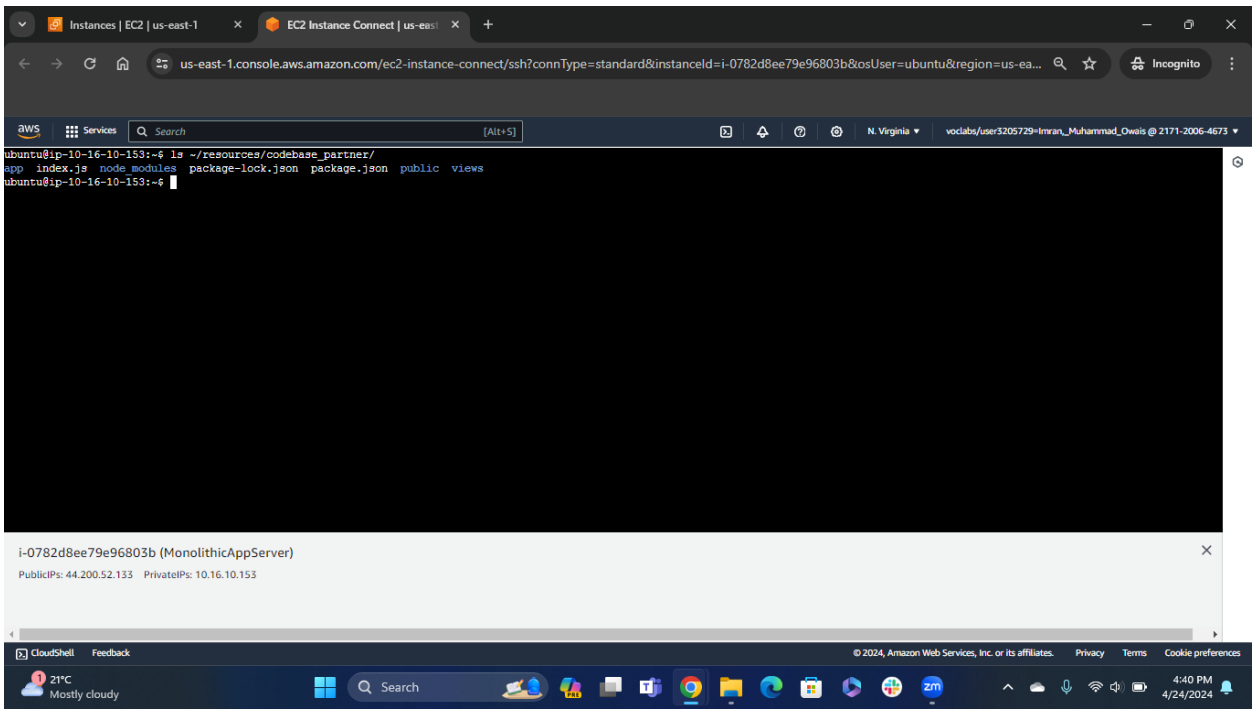
1. After connecting to the ec2 instance using AWS SSH Connect service.
2. Executing `sudo lsof -i :80` , this command shows us the information of the application process executing on port 80



3. Executing `ps -ef | head -1; ps -ef | grep node` this command gives us the information of all pid involved with the process executing node, the PID of process being executed by root matches the PID returned in above step i.e. step 2 of task 2.3.

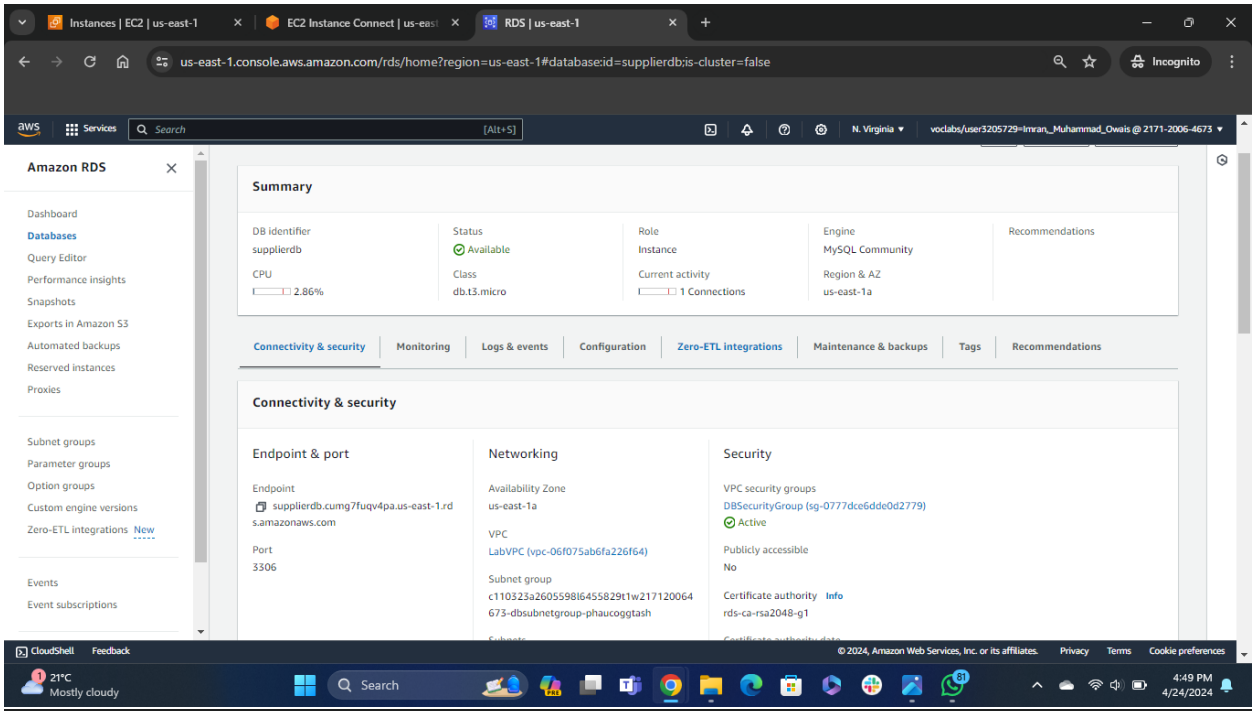


4. Analyzing the Monolithic Application file structure:



Based on the current analysis, we can conclude that a system command is configured to be executed on the ec2 instance which runs the node application as root process on port 80 of the ec2 instance. The application is configured to store data into some remote database.

5. Connecting to MySQL instance to analyze the data by getting the RDS endpoint and exploring the contents present in the database.


Instances | EC2 | us-east-1
EC2 Instance Connect | us-east
RDS | us-east-1
us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#database:id=supplierdb;is-cluster=false
Incognito
Services
Search
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N. Virginia
voclabs/user3205729=Imran_Muhammad_Owais @ 2171-2006-4673
Amazon RDS
Dashboard
Databases
Query Editor
Performance insights
Snapshots
Exports in Amazon S3
Automated backups
Reserved instances
Proxies
Subnet groups
Parameter groups
Option groups
Custom engine versions
Zero-ETL integrations New
Events
Event subscriptions
Summary
DB identifier
supplierdb
Status
Available
Role
Instance
Engine
MySQL Community
Recommendations
CPU
2.86%
Class
db.t3.micro
Current activity
1 Connections
Region & AZ
us-east-1a
Connectivity & security
Monitoring
Logs & events
Configuration
Zero-ETL integrations
Maintenance & backups
Tags
Recommendations
Connectivity & security
Endpoint & port
Endpoint
supplierdb.cumg7fuqv4pa.us-east-1.rds.amazonaws.com
Port
3306
Networking
Availability Zone
us-east-1a
VPC
LabVPC (vpc-06f075ab6fa226f64)
Subnet group
c110323a2605598l6455829t1w217120064673-dbsubnetgroup-phaucoggtash
Security
VPC security groups
DBSecurityGroup (sg-0777dce6dde0d2779)
Active
Publicly accessible
No
Certificate authority Info
rds-ca-rsa2048-g1
CloudShell
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Mostly cloudy
Search
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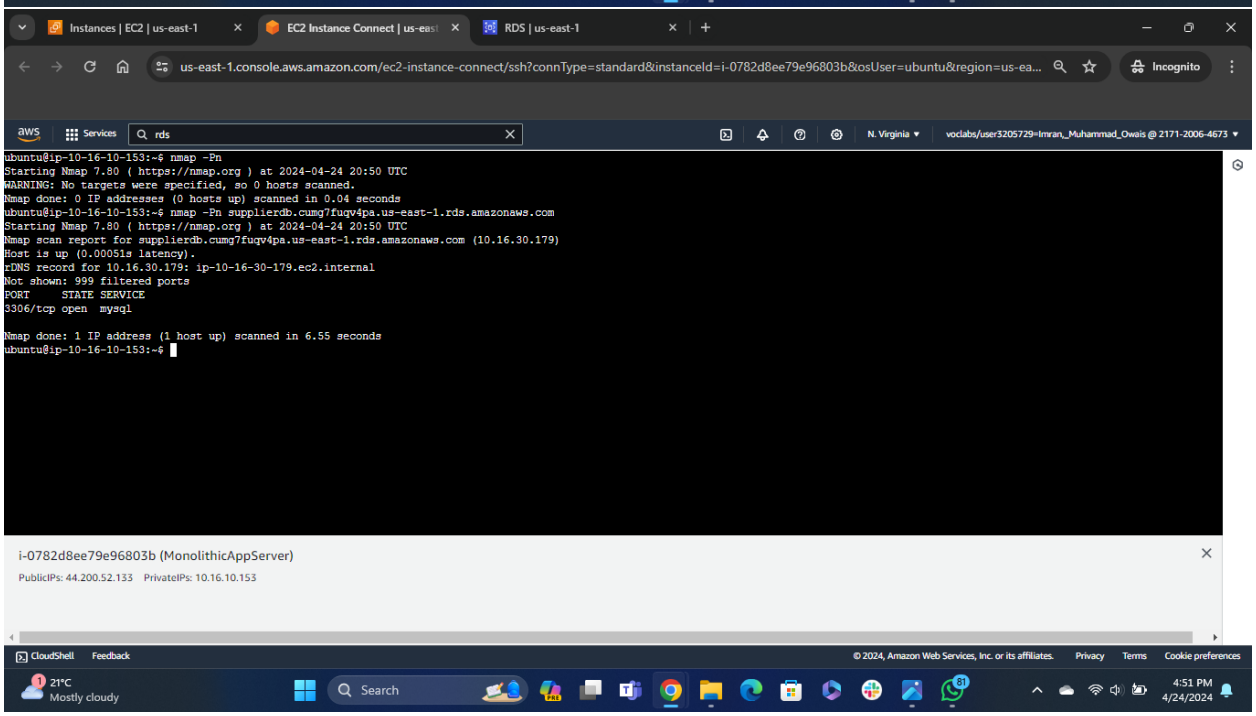
Instances | EC2 | us-east-1
EC2 Instance Connect | us-east
RDS | us-east-1
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-0782d8ee79e96803b&osUser=ubuntu&region=us-ea...
Incognito
Services
rds
N. Virginia
voclabs/user3205729=Imran_Muhammad_Owais @ 2171-2006-4673
ubuntu@ip-10-16-10-153:~$ nmap -Pn
Starting Nmap 7.80 (https://nmap.org) at 2024-04-24 20:50 UTC
WARNING: No targets were specified, so 0 hosts scanned.
Nmap done: 0 IP addresses (0 hosts up) scanned in 0.04 seconds
ubuntu@ip-10-16-10-153:~$ nmap -Pn supplierdb.cumg7fuqv4pa.us-east-1.rds.amazonaws.com
Starting Nmap 7.80 (https://nmap.org) at 2024-04-24 20:50 UTC
Nmap scan report for supplierdb.cumg7fuqv4pa.us-east-1.rds.amazonaws.com (10.16.30.179)
Host is up (0.00051s latency).
rDNS record for 10.16.30.179: ip-10-16-30-179.ec2.internal
Not shown: 999 filtered ports
PORT   STATE SERVICE
3306/tcp open mysql
Nmap done: 1 IP address (1 host up) scanned in 6.55 seconds
ubuntu@ip-10-16-10-153:~$
i-0782d8ee79e96803b (MonolithicAppServer)
PublicIPs: 44.200.52.133 PrivateIPs: 10.16.10.153
CloudShell
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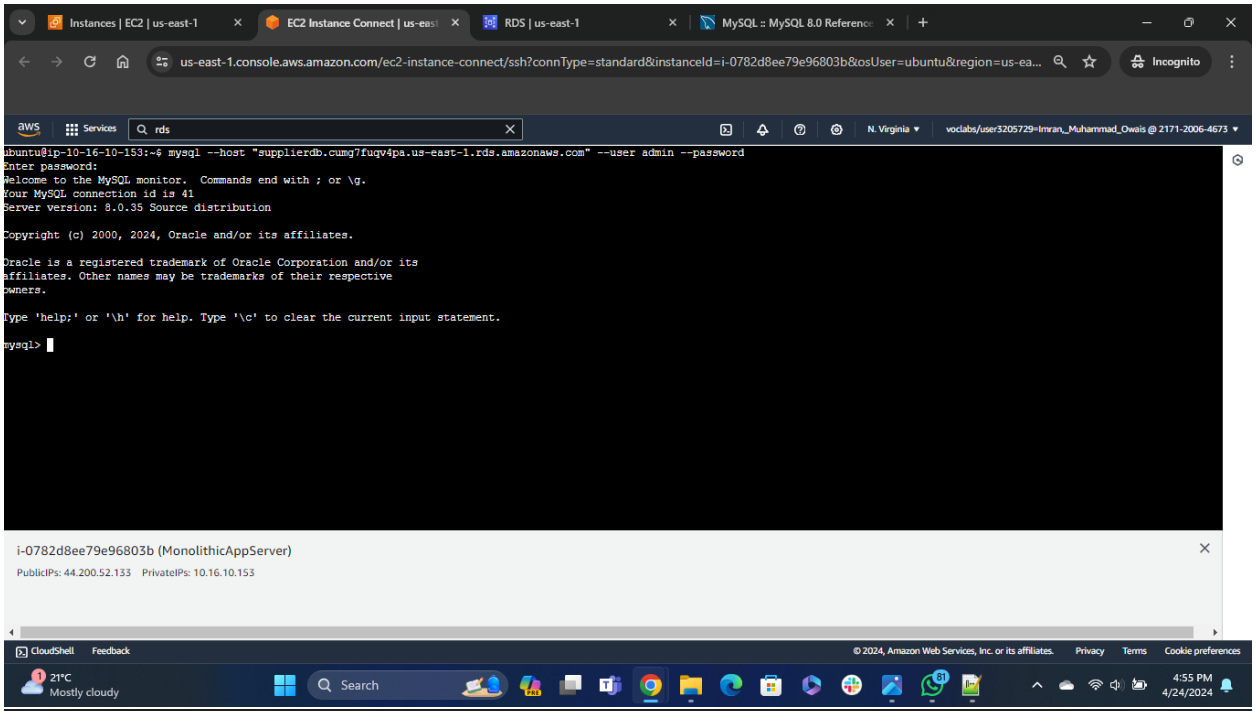
Instances | EC2 | us-east-1
EC2 Instance Connect | us-east
RDS | us-east-1
MySQL :: MySQL 8.0 Reference
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-0782d8ee79e96803b&osUser=ubuntu&region=us-ea...
Incognito
Services
rds
N. Virginia
voclabs/user3205729=Imran_Muhammad_Owais @ 2171-2006-4673
ubuntu@ip-10-16-10-153:~$ mysql --host "supplierdb.cumg7fuqv4pa.us-east-1.rds.amazonaws.com" --user admin --password
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 41
Server version: 8.0.35 Source distribution
Copyright (c) 2000, 2024, Oracle and/or its affiliates.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql>
i-0782d8ee79e96803b (MonolithicAppServer)
PublicIPs: 44.200.52.133 PrivateIPs: 10.16.10.153
CloudShell
Feedback
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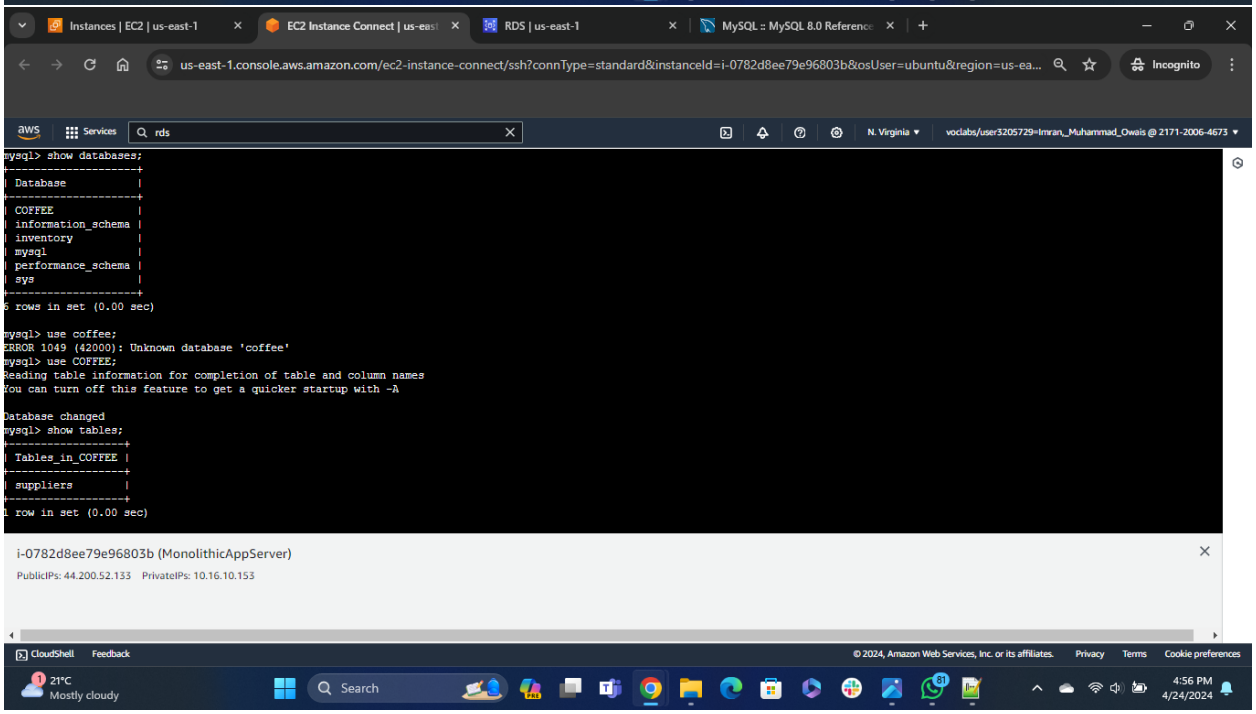
Instances | EC2 | us-east-1
EC2 Instance Connect | us-east
RDS | us-east-1
MySQL :: MySQL 8.0 Reference
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-0782d8ee79e96803b&osUser=ubuntu&region=us-ea...
Incognito
Services
rds
N. Virginia
voclabs/user3205729=Imran_Muhammad_Owais @ 2171-2006-4673
mysql> show databases;
+--------------------+
| Database |
+--------------------+
| COFFEE |
| information_schema |
| inventory |
| mysql |
| performance_schema |
| sys |
+--------------------+
6 rows in set (0.00 sec)
mysql> use coffee;
ERROR 1049 (42000): Unknown database 'coffee'
mysql> use COFFEE;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A
Database changed
mysql> show tables;
+------------------+
| Tables_in_COFFEE |
+------------------+
| suppliers |
+------------------+
1 row in set (0.00 sec)
i-0782d8ee79e96803b (MonolithicAppServer)
PublicIPs: 44.200.52.133 PrivateIPs: 10.16.10.153
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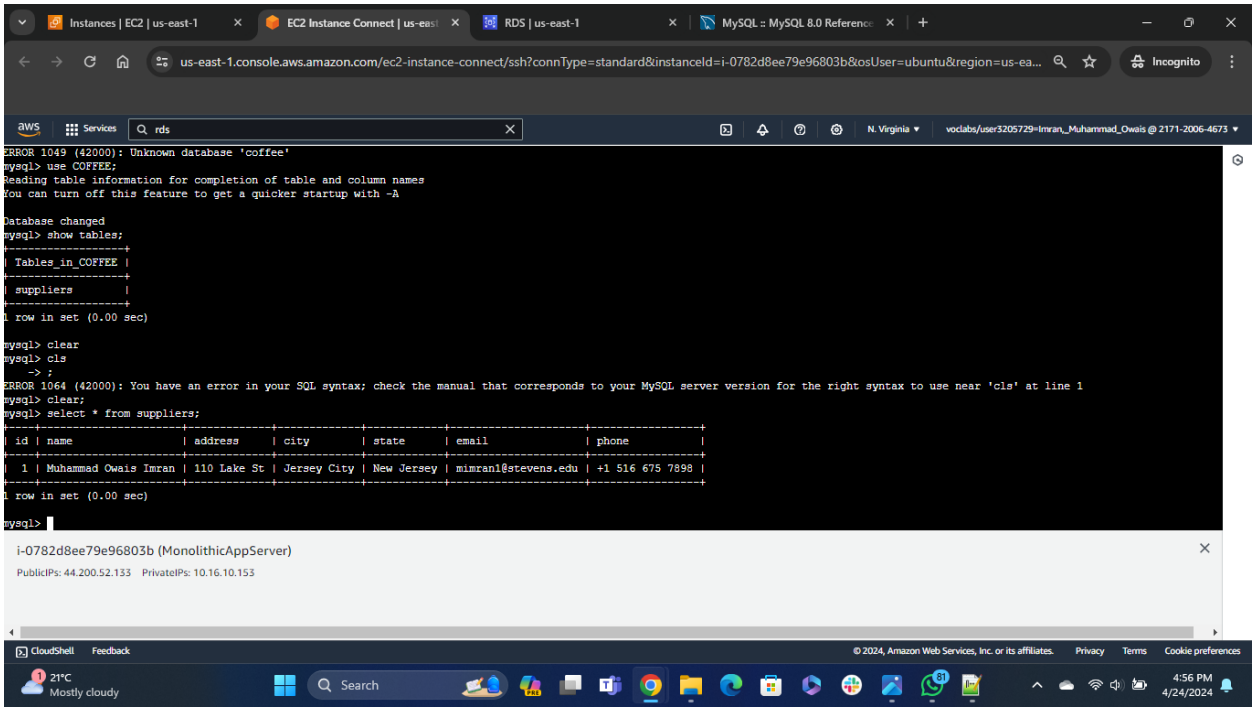
Instances | EC2 | us-east-1
EC2 Instance Connect | us-east
RDS | us-east-1
MySQL :: MySQL 8.0 Reference
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-0782d8ee79e96803b&osUser=ubuntu&region=us-ea...
Incognito
aws
Services
rds
N. Virginia
voclabs/user3205729=Imran_Muhammad_Owais @ 2171-2006-4673
ERROR 1049 (42000): Unknown database 'coffee'
mysql> use COFFEE;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A
Database changed
mysql> show tables;
+----------------+
| Tables_in_COFFEE |
+----------------+
| suppliers |
+----------------+
1 row in set (0.00 sec)
mysql> clear
mysql> cls
-> ;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'cls' at line 1
mysql> clear;
mysql> select * from suppliers;
+----+----------------------+-------------+-------------+-----------+---------------------+-----------------+
| id | name | address | city | state | email | phone |
+----+----------------------+-------------+-------------+-----------+---------------------+-----------------+
| 1 | Muhammad Owais Imran | 110 Lake St | Jersey City | New Jersey | mimran1@stevens.edu | +1 516 675 7898 |
+----+----------------------+-------------+-------------+-----------+---------------------+-----------------+
1 row in set (0.00 sec)
mysql>
i-0782d8ee79e96803b (MonolithicAppServer)
PublicIPs: 44.200.52.133 PrivateIPs: 10.16.10.153
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Significance & Importance of this Task

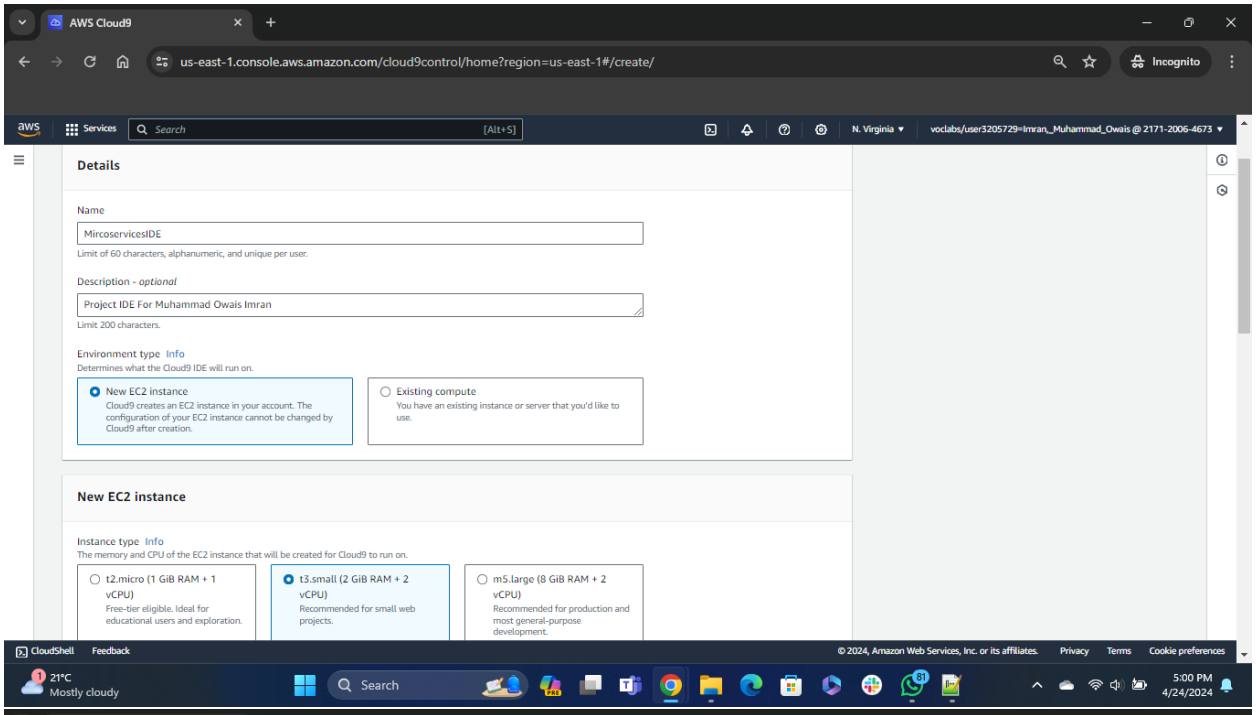
This task helps in determining:

- How the monolithic application works
- Possible ways to identity core services of the monolithic application
- Possible ways to break system into multiple microservices by knowing their dependencies on each other and their workflow pattern

Phase 3: Creating a development environment and checking code into a Git repository

Task 3.1: Create an AWS Cloud9 IDE as your work environment

1. Creating an AWS Cloud9 IDE, and observing the configuration of launched EC2 instance by the Cloud IDE.


AWS Cloud9
us-east-1.console.aws.amazon.com/cloud9control/home?region=us-east-1#/create/
Incognito
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
Details
Name
MircoservicesIDE
Limit of 60 characters, alphanumeric, and unique per user.
Description - optional
Project IDE For Muhammad Owais Imran
Limit 200 characters.
Environment type Info
Determines what the Cloud9 IDE will run on.
New EC2 instance
Cloud9 creates an EC2 instance in your account. The configuration of your EC2 instance cannot be changed by Cloud9 after creation.
Existing compute
You have an existing instance or server that you'd like to use.
New EC2 instance
Instance type Info
The memory and CPU of the EC2 instance that will be created for Cloud9 to run on.
t2.micro (1 GiB RAM + 1 vCPU)
Free-tier eligible. Ideal for educational users and exploration.
t3.small (2 GiB RAM + 2 vCPU)
Recommended for small web projects.
m5.large (8 GiB RAM + 2 vCPU)
Recommended for production and most general-purpose development.
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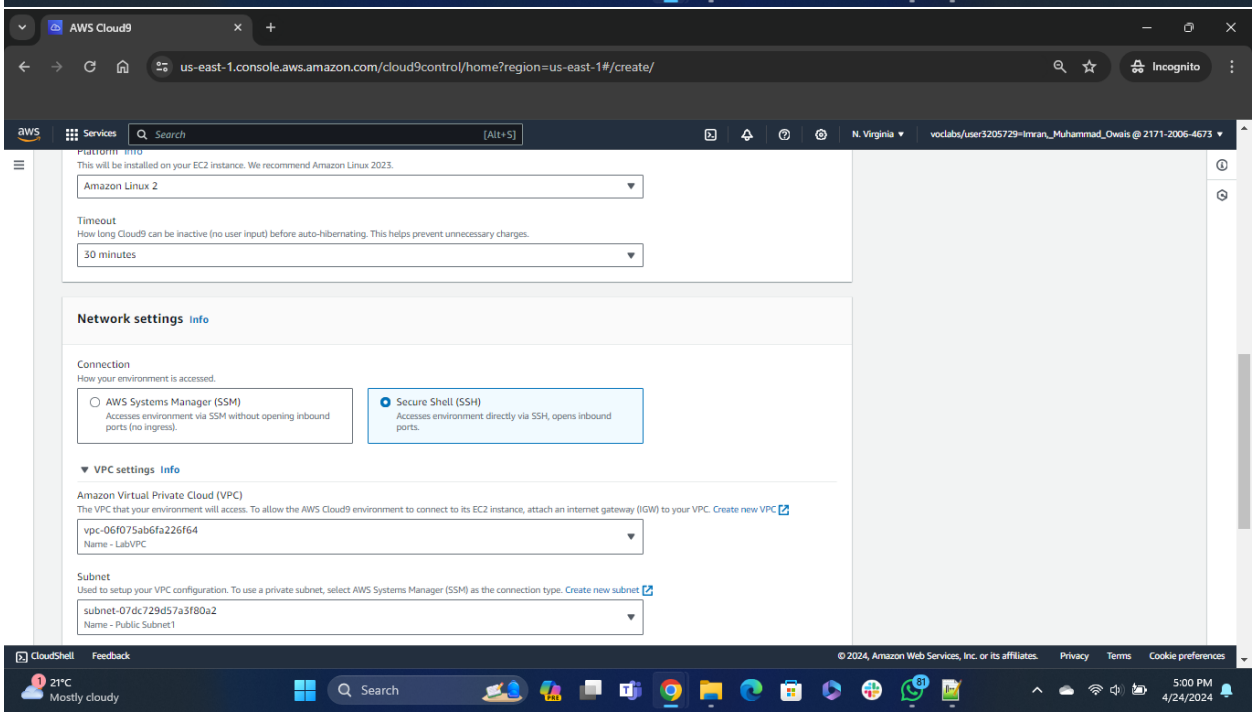
AWS Cloud9
us-east-1.console.aws.amazon.com/cloud9control/home?region=us-east-1#/create/
Incognito
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
This will be installed on your EC2 instance. We recommend Amazon Linux 2023.
Amazon Linux 2
Timeout
How long Cloud9 can be inactive (no user input) before auto-hibernating. This helps prevent unnecessary charges.
30 minutes
Network settings Info
Connection
How your environment is accessed.
AWS Systems Manager (SSM)
Accesses environment via SSM without opening inbound ports (no ingress).
Secure Shell (SSH)
Accesses environment directly via SSH, opens inbound ports.
VPC settings Info
Amazon Virtual Private Cloud (VPC)
The VPC that your environment will access. To allow the AWS Cloud9 environment to connect to its EC2 instance, attach an internet gateway (IGW) to your VPC. Create new VPC
vpc-06f075ab6fa226f64
Name - LabVPC
Subnet
Used to setup your VPC configuration. To use a private subnet, select AWS Systems Manager (SSM) as the connection type. Create new subnet
subnet-07dc729d57a3f80a2
Name - Public Subnet1
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Search
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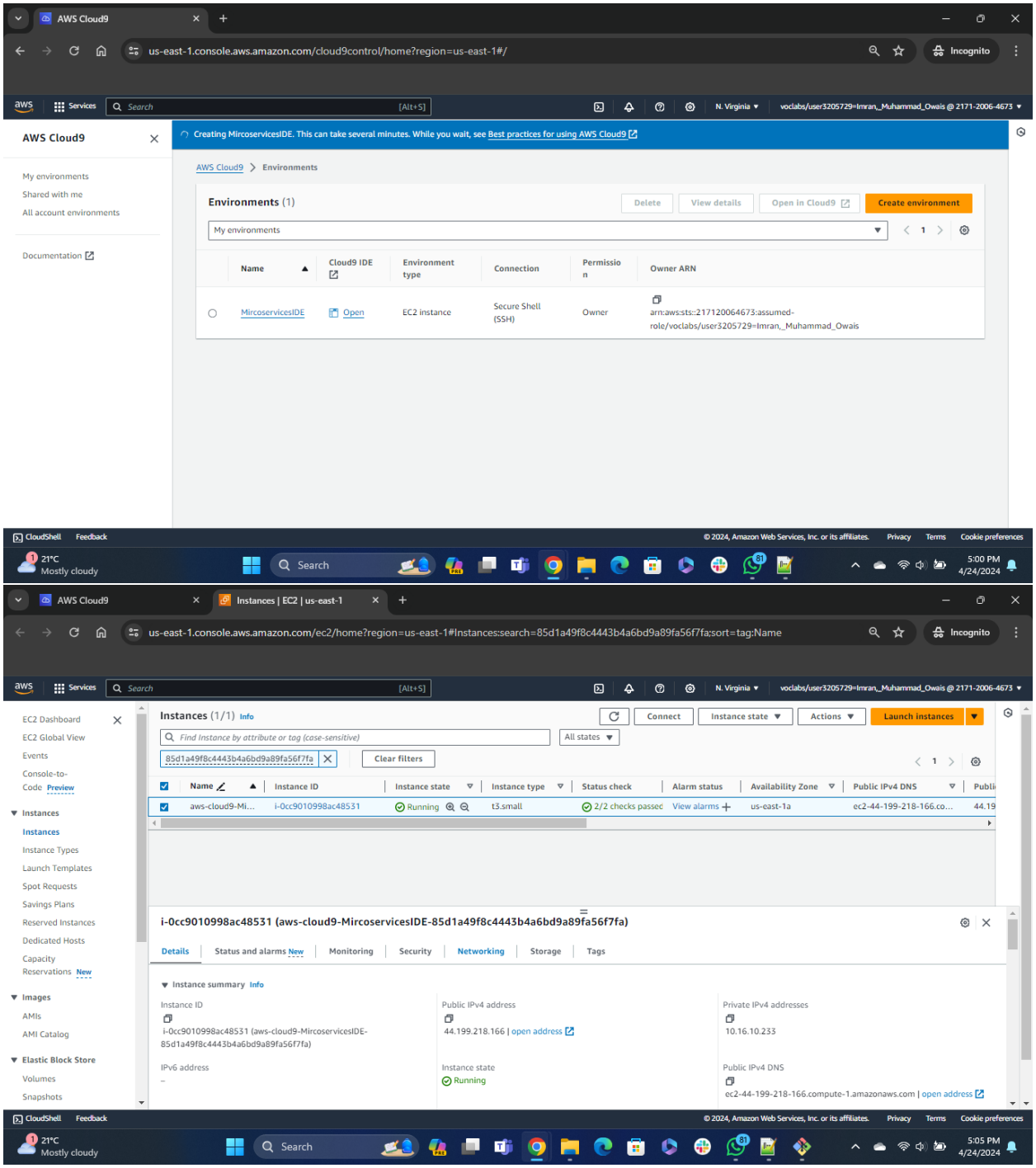
AWS Cloud9
us-east-1.console.aws.amazon.com/cloud9control/home?region=us-east-1#/
Incognito
Services
Search
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N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
AWS Cloud9
Creating MircoservicesIDE. This can take several minutes. While you wait, see Best practices for using AWS Cloud9
My environments
Shared with me
All account environments
Documentation
AWS Cloud9 > Environments
Environments (1)
Delete
View details
Open in Cloud9
Create environment
My environments
Name
Cloud9 IDE
Environment type
Connection
Permissio n
Owner ARN
MircoservicesIDE
Open
EC2 instance
Secure Shell (SSH)
Owner
arn:aws:sts::217120064673:assumed-role/voclabs/user3205729=Imran,_Muhammad_Owais
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Search
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AWS Cloud9
Instances | EC2 | us-east-1
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:search=85d1a49f8c4443b4a6bd9a89fa56f7fa;sort=tag:Name
Incognito
Services
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voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
EC2 Dashboard
EC2 Global View
Events
Console-to-Code Preview
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations New
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Snapshots
Instances (1/1) Info
Connect
Instance state
Actions
Launch instances
Find instance by attribute or tag (case-sensitive)
All states
85d1a49f8c4443b4a6bd9a89fa56f7fa
Clear filters
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
Availability Zone
Public IPv4 DNS
aws-cloud9-Mi...
i-0cc9010998ac48531
Running
t3.small
2/2 checks passed
View alarms
us-east-1a
ec2-44-199-218-166.co...
i-0cc9010998ac48531 (aws-cloud9-MircoservicesIDE-85d1a49f8c4443b4a6bd9a89fa56f7fa)
Details
Status and alarms New
Monitoring
Security
Networking
Storage
Tags
Instance summary Info
Instance ID
i-0cc9010998ac48531 (aws-cloud9-MircoservicesIDE-85d1a49f8c4443b4a6bd9a89fa56f7fa)
Public IPv4 address
44.199.218.166 | open address
Private IPv4 addresses
10.16.10.233
IPv6 address
Instance state
Running
Public IPv4 DNS
ec2-44-199-218-166.compute-1.amazonaws.com | open address
CloudShell
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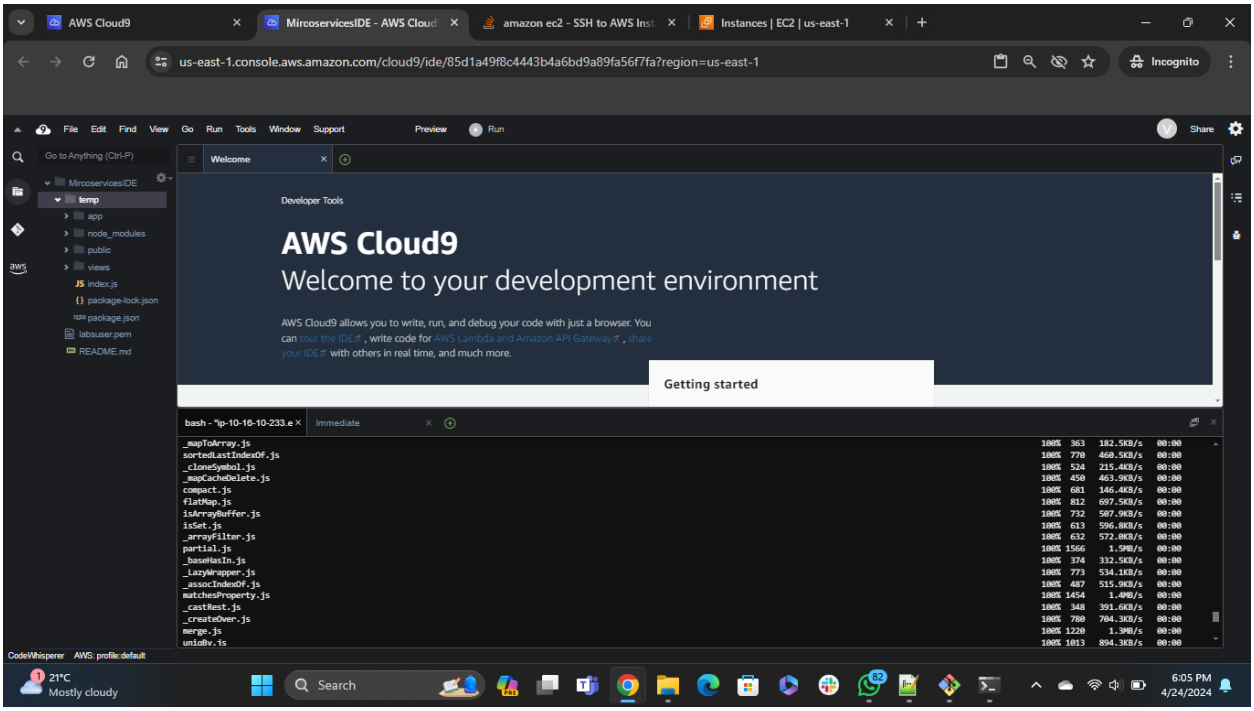
Task 3.2: Copy the application code to your IDE

1. Create a temp directory in Cloud9 IDE, and copying the codebase of Monolithic application by uploading the KeyPair for connecting with the monolithic application ec2 instance to the Cloud9 instance, and the use of scp to copy all the files.
   Following commands were executed to complete the said task:
   - `Download the KeyPair to the local system and uploaded it to cloud9`
   - `Change the permissions of KeyPair file to make it executable using chmod 400 ./labsuser.pem`
   - `scp -r -i ~/environment/labsuser.pem ubuntu@$appServerPrivIp:/home/ubuntu/resources/codebase_partner/* ~/environment/temp/`

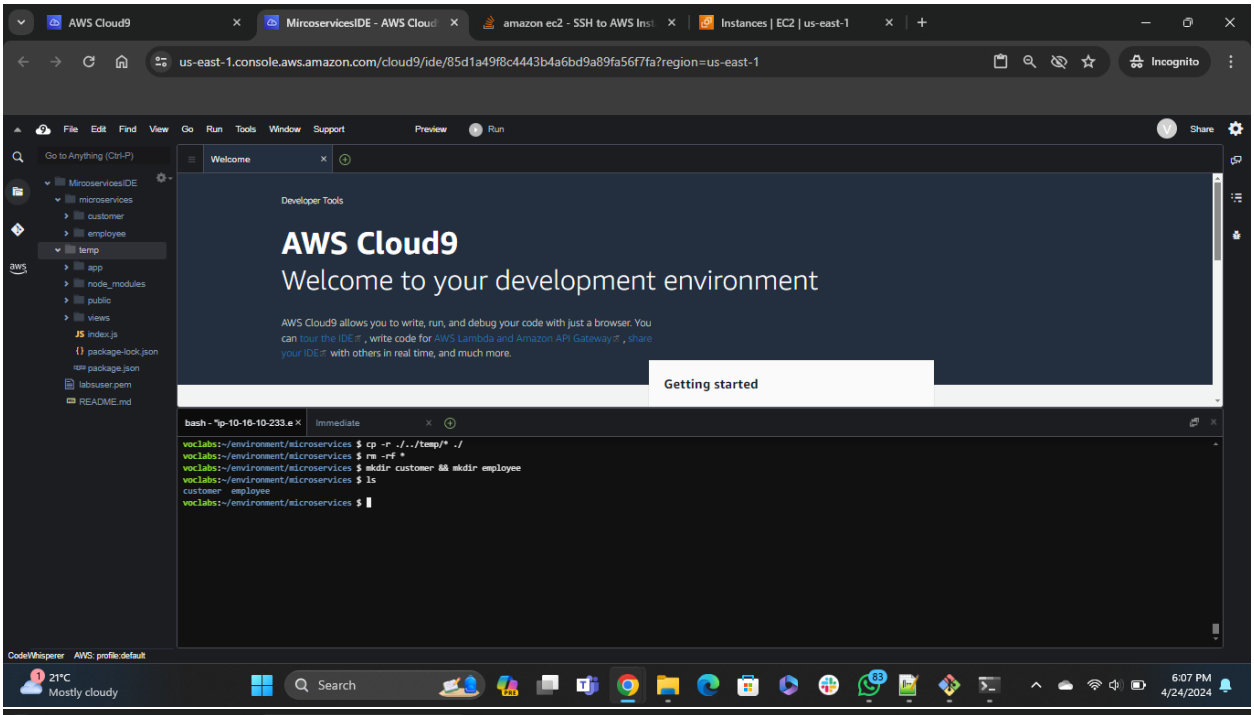


All files of Monolithic Web Application are now copied to the temp directory of Cloud9 IDE.

Task 3.3: Create working directories with starter code for the two microservices

Execute the following commands to complete this task:

- `cd ~/environment`
- `mkdir microservices && cd microservices`
- `mkdir customer, employee`
- `cd customer && cp -r ./../temp/* ./ && cd ./../`
- `cd employee && cp -r ./../temp/* ./ && cd ./../`
- `rm -rf temp`


AWS Cloud9
MircoservicesIDE - AWS Cloud
amazon ec2 - SSH to AWS Inst
Instances | EC2 | us-east-1
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
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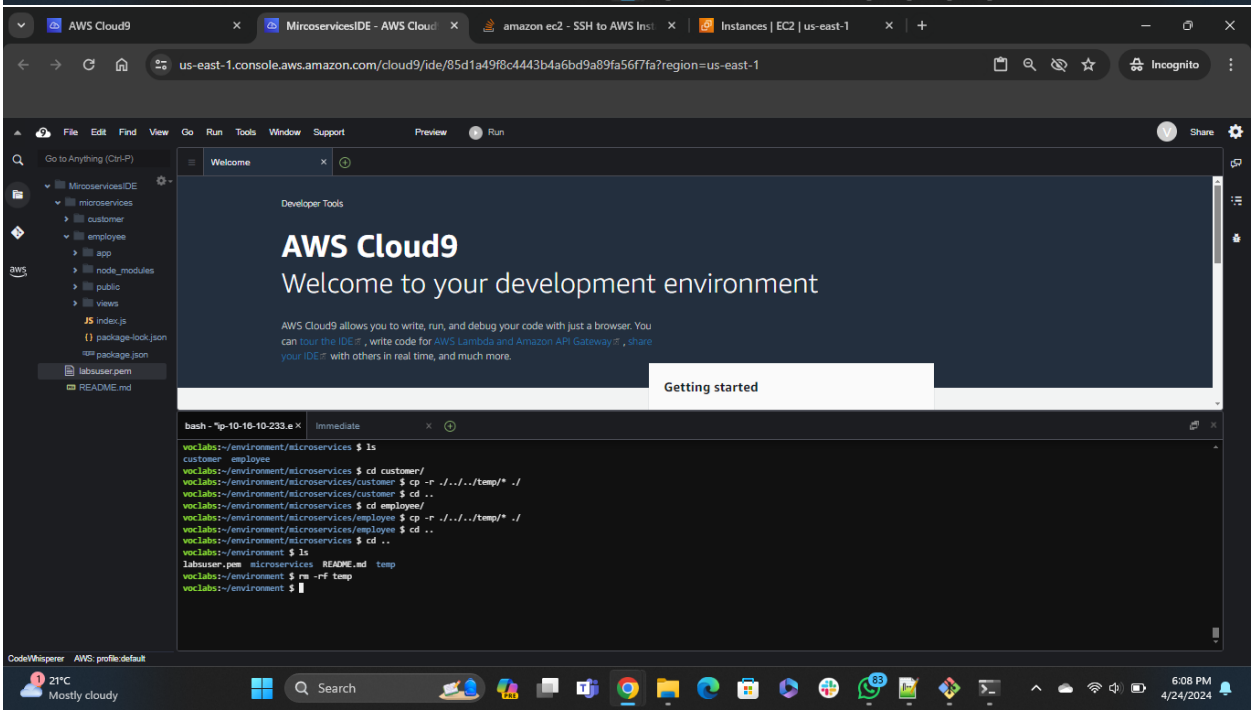
Go to Anything (Ctrl-P)
MircoservicesIDE
microservices
customer
employee
temp
app
node_modules
public
views
index.js
package-lock.json
package.json
labsuser.pem
README.md
Welcome
Developer Tools
AWS Cloud9
Welcome to your development environment
AWS Cloud9 allows you to write, run, and debug your code with just a browser. You can tour the IDE, write code for AWS Lambda and Amazon API Gateway, share your IDE with others in real time, and much more.
Getting started
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment/microservices $ cp -r ./../temp/* ./
voclabs:~/environment/microservices $ rm -rf *
voclabs:~/environment/microservices $ mkdir customer && mkdir employee
voclabs:~/environment/microservices $ ls
customer employee
voclabs:~/environment/microservices $
CodeWhisperer AWS: profile:default
21°C
Mostly cloudy
Search
6:07 PM
4/24/2024


AWS Cloud9
MircoservicesIDE - AWS Cloud
amazon ec2 - SSH to AWS Inst
Instances | EC2 | us-east-1
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito
File Edit Find View Go Run Tools Window Support
Preview
Run
Share
Go to Anything (Ctrl-P)
MircoservicesIDE
microservices
customer
employee
app
node_modules
public
views
index.js
package-lock.json
package.json
labsuser.pem
README.md
Welcome
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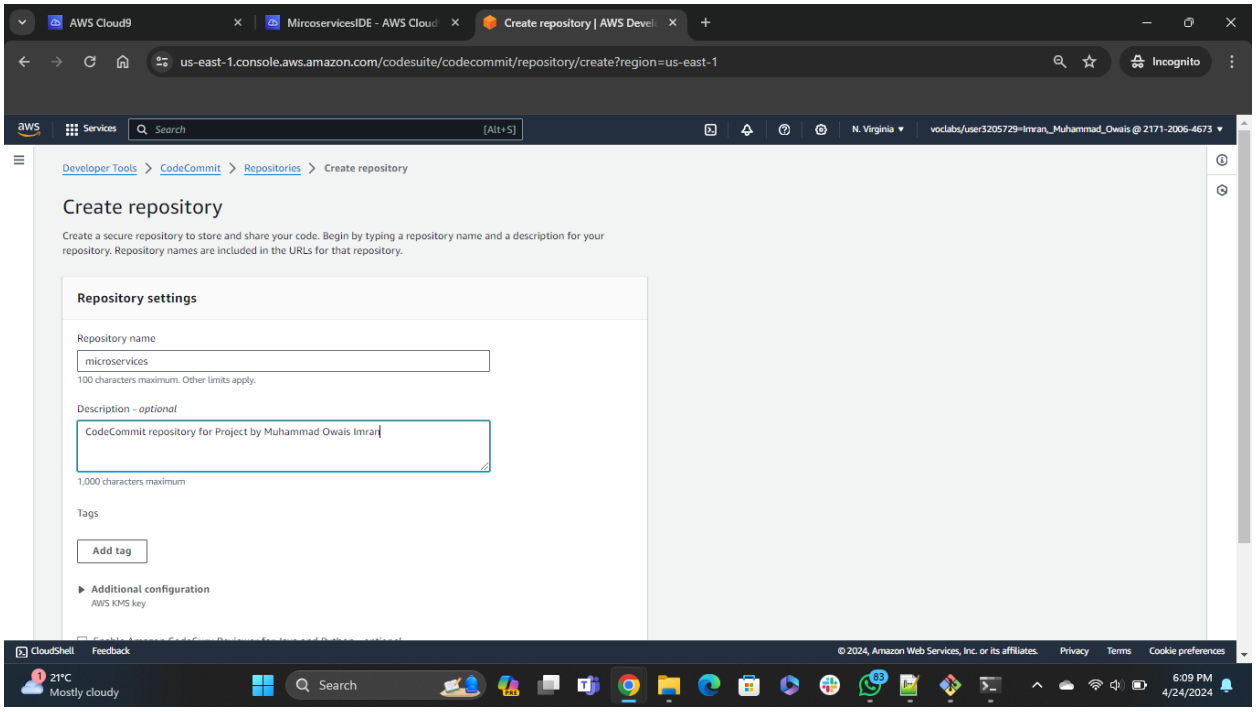
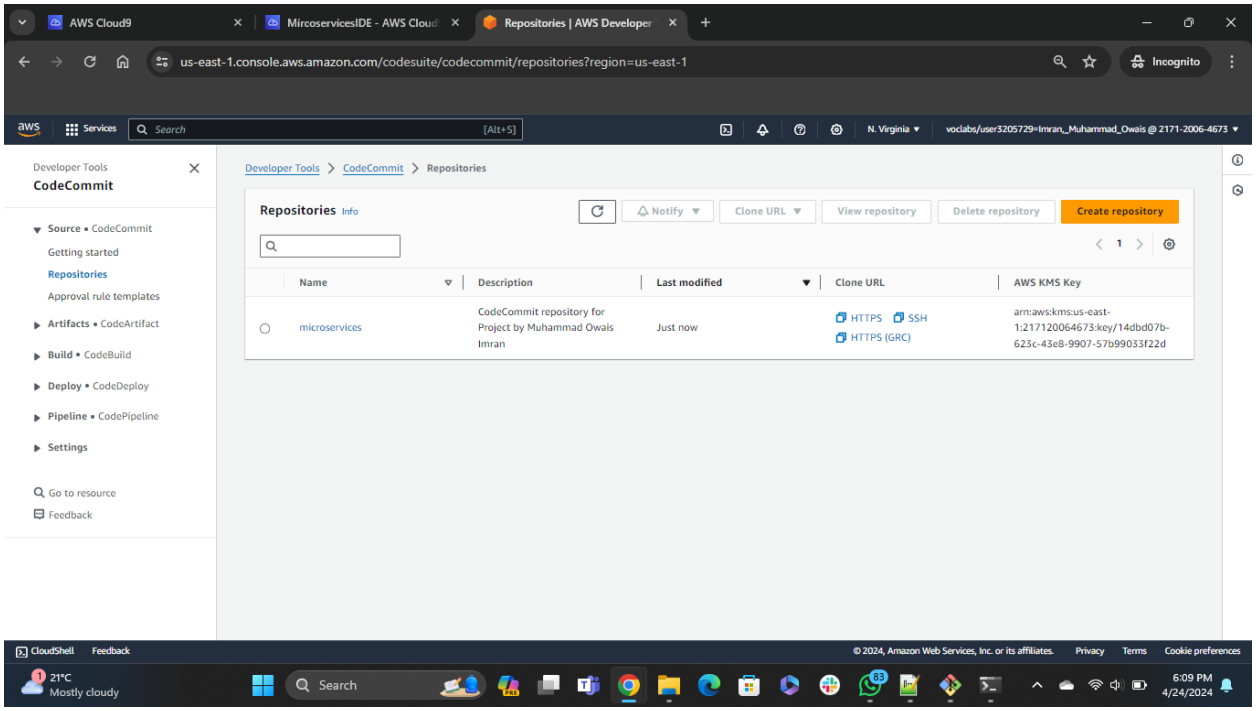
AWS Cloud9
Welcome to your development environment
AWS Cloud9 allows you to write, run, and debug your code with just a browser. You can tour the IDE, write code for AWS Lambda and Amazon API Gateway, share your IDE with others in real time, and much more.
Getting started
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment/microservices $ ls
customer employee
voclabs:~/environment/microservices $ cd customer/
voclabs:~/environment/microservices/customer $ cp -r ./../../temp/* ./
voclabs:~/environment/microservices/customer $ cd ..
voclabs:~/environment/microservices $ cd employee/
voclabs:~/environment/microservices/employee $ cp -r ./../../temp/* ./
voclabs:~/environment/microservices/employee $ cd ..
voclabs:~/environment/microservices $ cd ..
voclabs:~/environment $ ls
labsuser.pem microservices README.md temp
voclabs:~/environment $ rm -rf temp
voclabs:~/environment $
CodeWhisperer AWS: profile:default
21°C
Mostly cloudy
Search
6:08 PM
4/24/2024

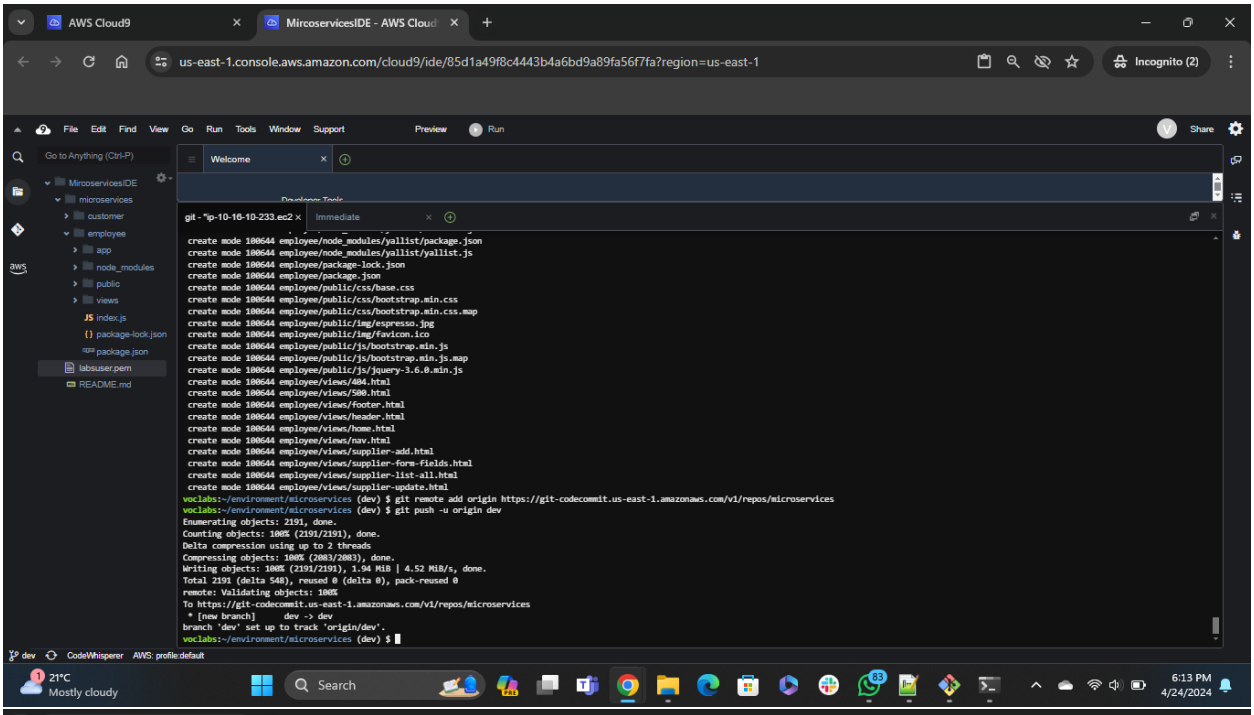
Task 3.4: Create a Git repository for the microservices code and push the code to CodeCommit

1. Create a code commit repository by the name of “microservices” and verifying if code commit repository is created.





2. Executing the following commands to configure this as a git repository on Cloud9 IDE:
   - `git init`
   - `git branch -m dev`
   - `git add .`
   - `git commit -m “two unmodified copies of the application code”`
   - `git remote add origin REMOTE_URL_COPY`
   - `git push origin -u dev`
   - `git config --global user.name “MUHAMMAD_OWAIS_IMRAN”`
   - `git config --global user.email mimran1@stevens.edu`


AWS Cloud9
MircoservicesIDE - AWS Cloud
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
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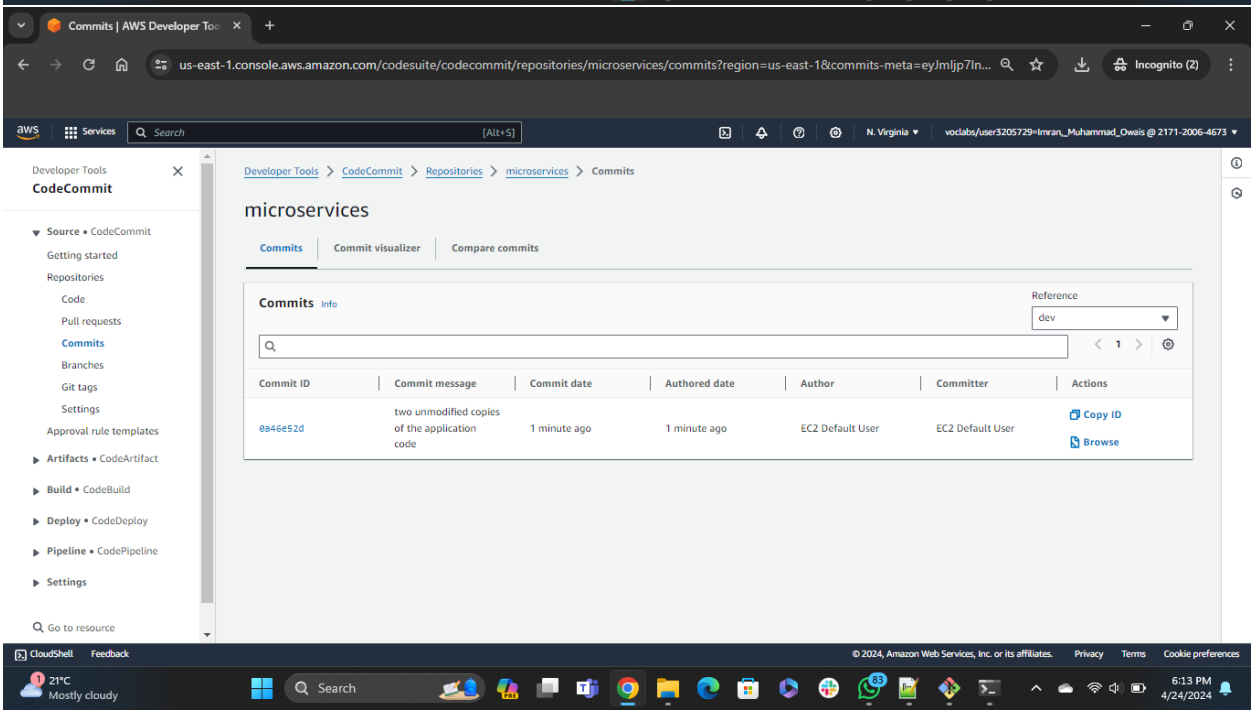
Share
Welcome
MircoservicesIDE
microservices
customer
employee
app
node_modules
public
views
index.js
package-lock.json
package.json
labsuser.pem
README.md
git - "ip-10-16-10-233.ec2
Immediate
create mode 100644 employee/node_modules/yallist/package.json
create mode 100644 employee/node_modules/yallist/yallist.js
create mode 100644 employee/package-lock.json
create mode 100644 employee/package.json
create mode 100644 employee/public/css/base.css
create mode 100644 employee/public/css/bootstrap.min.css
create mode 100644 employee/public/css/bootstrap.min.css.map
create mode 100644 employee/public/img/espresso.jpg
create mode 100644 employee/public/img/favicon.ico
create mode 100644 employee/public/js/bootstrap.min.js
create mode 100644 employee/public/js/bootstrap.min.js.map
create mode 100644 employee/public/js/jquery-3.6.0.min.js
create mode 100644 employee/views/404.html
create mode 100644 employee/views/500.html
create mode 100644 employee/views/footer.html
create mode 100644 employee/views/header.html
create mode 100644 employee/views/home.html
create mode 100644 employee/views/nav.html
create mode 100644 employee/views/supplier-add.html
create mode 100644 employee/views/supplier-form-fields.html
create mode 100644 employee/views/supplier-list-all.html
create mode 100644 employee/views/supplier-update.html
voclabs:~/environment/microservices (dev) $ git remote add origin https://git-codecommit.us-east-1.amazonaws.com/v1/repos/microservices
voclabs:~/environment/microservices (dev) $ git push -u origin dev
Enumerating objects: 2191, done.
Counting objects: 100% (2191/2191), done.
Delta compression using up to 2 threads
Compressing objects: 100% (2083/2083), done.
Writing objects: 100% (2191/2191), 1.94 MiB | 4.52 MiB/s, done.
Total 2191 (delta 548), reused 0 (delta 0), pack-reused 0
remote: Validating objects: 100%
To https://git-codecommit.us-east-1.amazonaws.com/v1/repos/microservices
* [new branch] dev -> dev
branch 'dev' set up to track 'origin/dev'.
voclabs:~/environment/microservices (dev) $
dev
CodeWhisperer
AWS: profile:default
21°C
Mostly cloudy
Search
6:13 PM
4/24/2024


Commits | AWS Developer Too
us-east-1.console.aws.amazon.com/codesuite/codecommit/repositories/microservices/commits?region=us-east-1&commits-meta=eyJmIjp7In...
Incognito (2)
Services
Search
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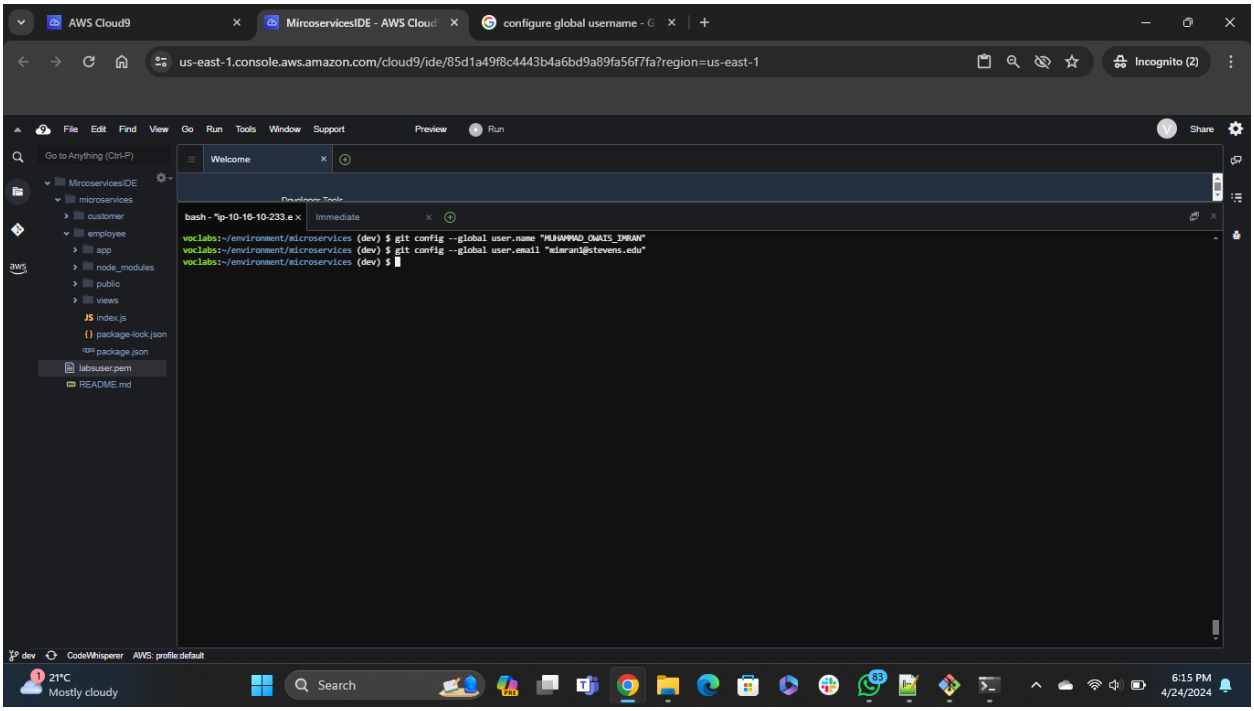
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
Developer Tools
CodeCommit
Source • CodeCommit
Getting started
Repositories
Code
Pull requests
Commits
Branches
Git tags
Settings
Approval rule templates
Artifacts • CodeArtifact
Build • CodeBuild
Deploy • CodeDeploy
Pipeline • CodePipeline
Settings
Go to resource
Developer Tools > CodeCommit > Repositories > microservices > Commits
microservices
Commits
Commit visualizer
Compare commits
Commits Info
Reference
dev
Commit ID
Commit message
Commit date
Authored date
Author
Committer
Actions
0a46e52d
two unmodified copies of the application code
1 minute ago
1 minute ago
EC2 Default User
EC2 Default User
Copy ID
Browse
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
21°C
Mostly cloudy
Search
6:13 PM
4/24/2024


AWS Cloud9
MircoservicesIDE - AWS Cloud
configure global username - G
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito (2)
File Edit Find View Go Run Tools Window Support
Preview
Run
Share
Go to Anything (Ctrl-P)
MircoservicesIDE
microservices
customer
employee
app
node_modules
public
views
index.js
package-lock.json
package.json
labsuser.pem
README.md
Welcome
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment/microservices (dev) $ git config --global user.name "MUHAMMAD_QWAIS_IMRAN"
voclabs:~/environment/microservices (dev) $ git config --global user.email "mimran1@stevens.edu"
voclabs:~/environment/microservices (dev) $
dev
CodeWhisperer
AWS: profile:default
21°C
Mostly cloudy
Search
6:15 PM
4/24/2024

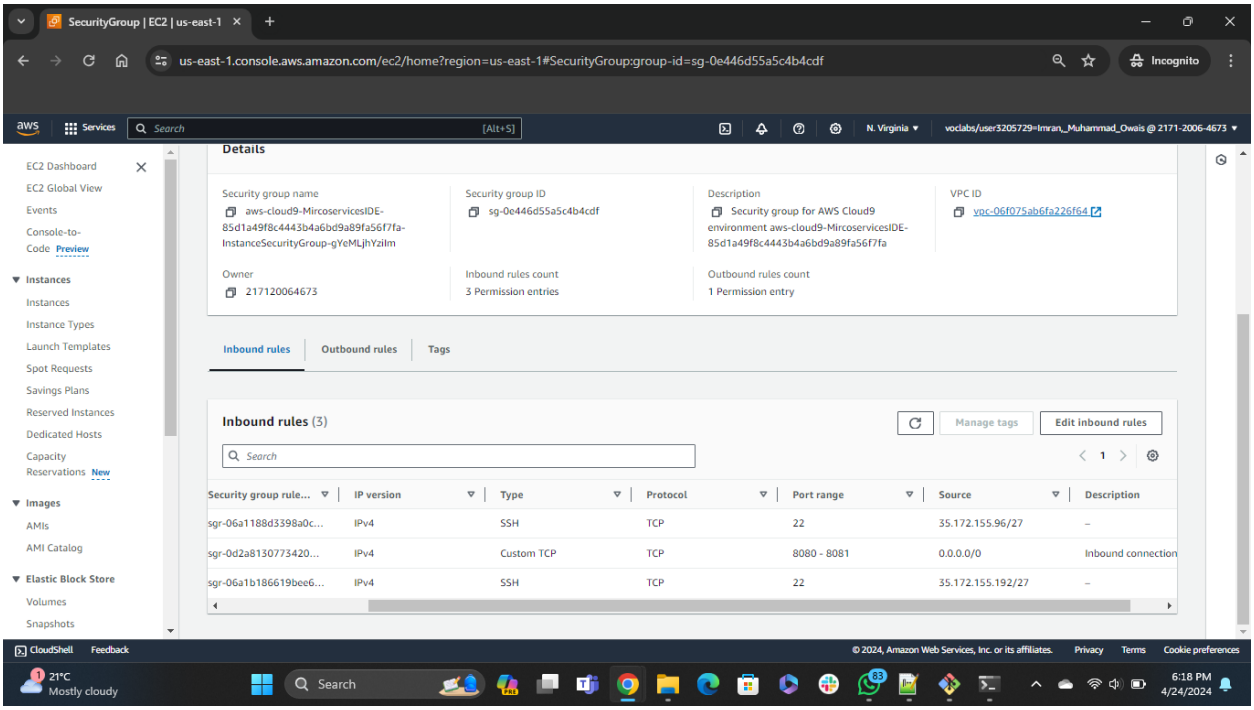
Significance & Importance of this Task

This task helps us to determine:

- How cloud-based IDE can help in code sharing
- How to use Git for version control and code control
- Use case for AWS Cloud9 and CodeCommit

Phase 4: Configuring the application as two microservices and testing them in Docker containers

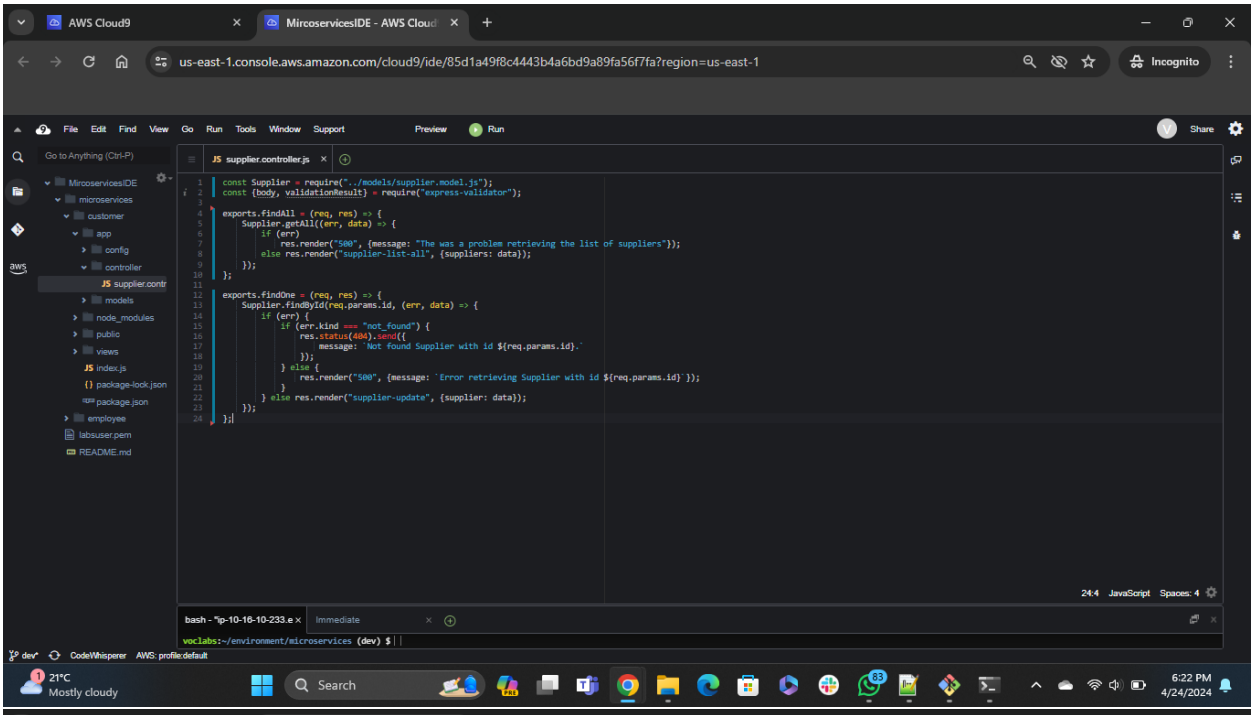
Task 4.1: Adjust the AWS Cloud9 instance security group settings

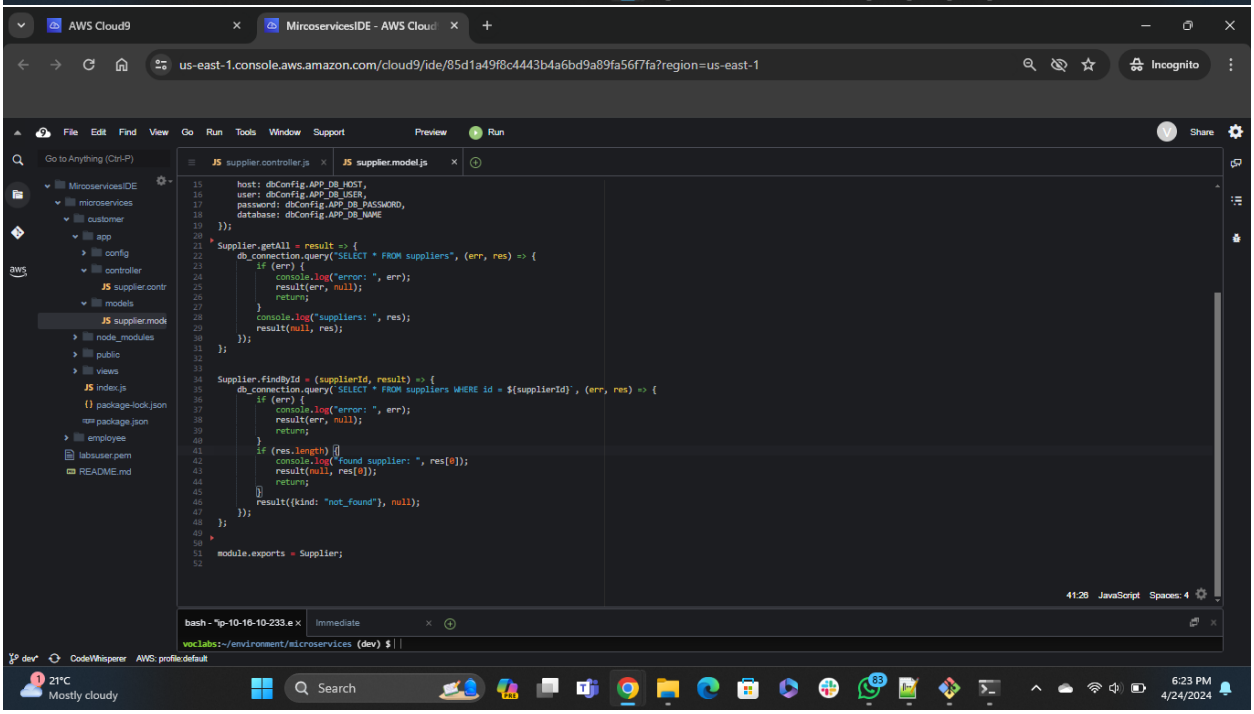


Task 4.2: Modify the source code of the *customer* microservice

1. Edit the customer/app/controller/supplier.controller.js file so that the remaining functions provide only the read-only actions that you want customers to be able to perform.
2. Edit the customer/app/models/supplier.model.js file. Delete the unnecessary functions in it so that what remains are only read-only functions.
3. Later in the project, when you deploy the microservices behind an Application Load Balancer, you will want employees to be able to navigate from the main customer page to the area of the web application where they can add, edit, or delete supplier entries. To support this, edit the customer/views/nav.html file
4. You don't want customers to see the Add a new supplier button or any edit buttons next to supplier rows. To implement these changes, edit the customer/views/supplier-list-all.html file
5. Because the customer microservice doesn't need to support read-write actions, DELETE the following .html files from the customer/views directory
6. Edit the customer/index.js file as needed to account for the fact that the node application will now run on Docker containers

Screenshots of all steps attached:


AWS Cloud9
MircoservicesIDE - AWS Cloud
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito
File Edit Find View Go Run Tools Window Support Preview Run
Share
Go to Anything (Ctrl-P)
supplier.controller.js
const Supplier = require("../models/supplier.model.js");
const {body, validationResult} = require("express-validator");
exports.findAll = (req, res) => {
Supplier.getAll((err, data) => {
if (err)
res.render("500", {message: "The was a problems retrieving the list of suppliers"});
else res.render("supplier-list-all", {suppliers: data});
});
};
exports.findOne = (req, res) => {
Supplier.findById(req.params.id, (err, data) => {
if (err) {
if (err.kind === "not_found") {
res.status(404).send({
message: `Not found Supplier with id ${req.params.id}.`
});
} else {
res.render("500", {message: `Error retrieving Supplier with id ${req.params.id}`});
}
} else res.render("supplier-update", {supplier: data});
});
};
MircoservicesIDE
microservices
customer
app
config
controller
supplier.contr
models
node_modules
public
views
index.js
package-lock.json
package.json
employee
labsuser.pem
README.md
24:4 JavaScript Spaces: 4
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment/microservices (dev) $
dev
CodeWhisperer
AWS: profile:default
21°C
Mostly cloudy
Search
6:22 PM
4/24/2024


AWS Cloud9
MircoservicesIDE - AWS Cloud
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito
File Edit Find View Go Run Tools Window Support Preview Run
Share
Go to Anything (Ctrl-P)
supplier.controller.js
supplier.model.js
host: dbConfig.APP_DB_HOST,
user: dbConfig.APP_DB_USER,
password: dbConfig.APP_DB_PASSWORD,
database: dbConfig.APP_DB_NAME
});
Supplier.getAll = result => {
db_connection.query("SELECT * FROM suppliers", (err, res) => {
if (err) {
console.log("error: ", err);
result(err, null);
return;
}
console.log("suppliers: ", res);
result(null, res);
});
};
Supplier.findById = (supplierId, result) => {
db_connection.query(`SELECT * FROM suppliers WHERE id = ${supplierId}`, (err, res) => {
if (err) {
console.log("error: ", err);
result(err, null);
return;
}
if (res.length) {
console.log("found supplier: ", res[0]);
result(null, res[0]);
return;
}
result({kind: "not_found"}, null);
});
};
module.exports = Supplier;
MircoservicesIDE
microservices
customer
app
config
controller
supplier.contr
models
supplier.mode
node_modules
public
views
index.js
package-lock.json
package.json
employee
labsuser.pem
README.md
41:26 JavaScript Spaces: 4
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment/microservices (dev) $
dev
CodeWhisperer
AWS: profile:default
21°C
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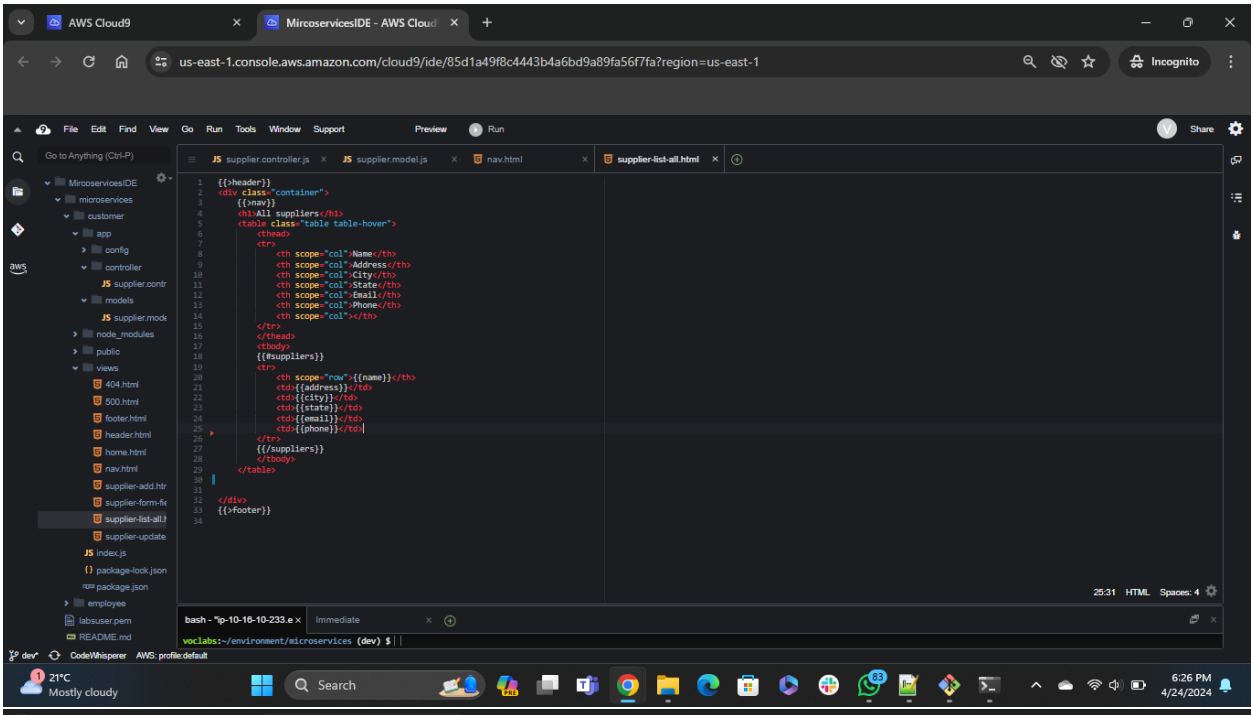
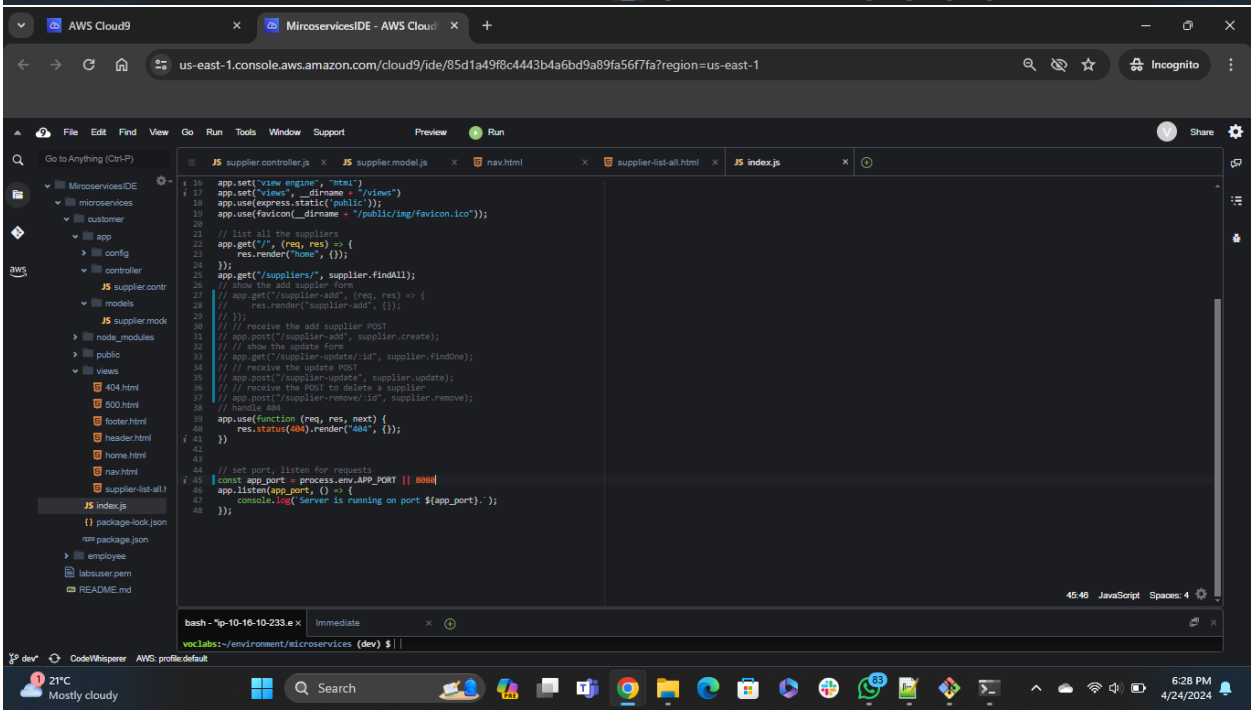
4/24/2024


AWS Cloud9
MircoservicesIDE - AWS Cloud
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito
File Edit Find View Go Run Tools Window Support Preview Run
Share
Go to Anything (Ctrl-P)
supplier.controller.js
supplier.model.js
nav.html
supplier-list-all.html
{{>header}}

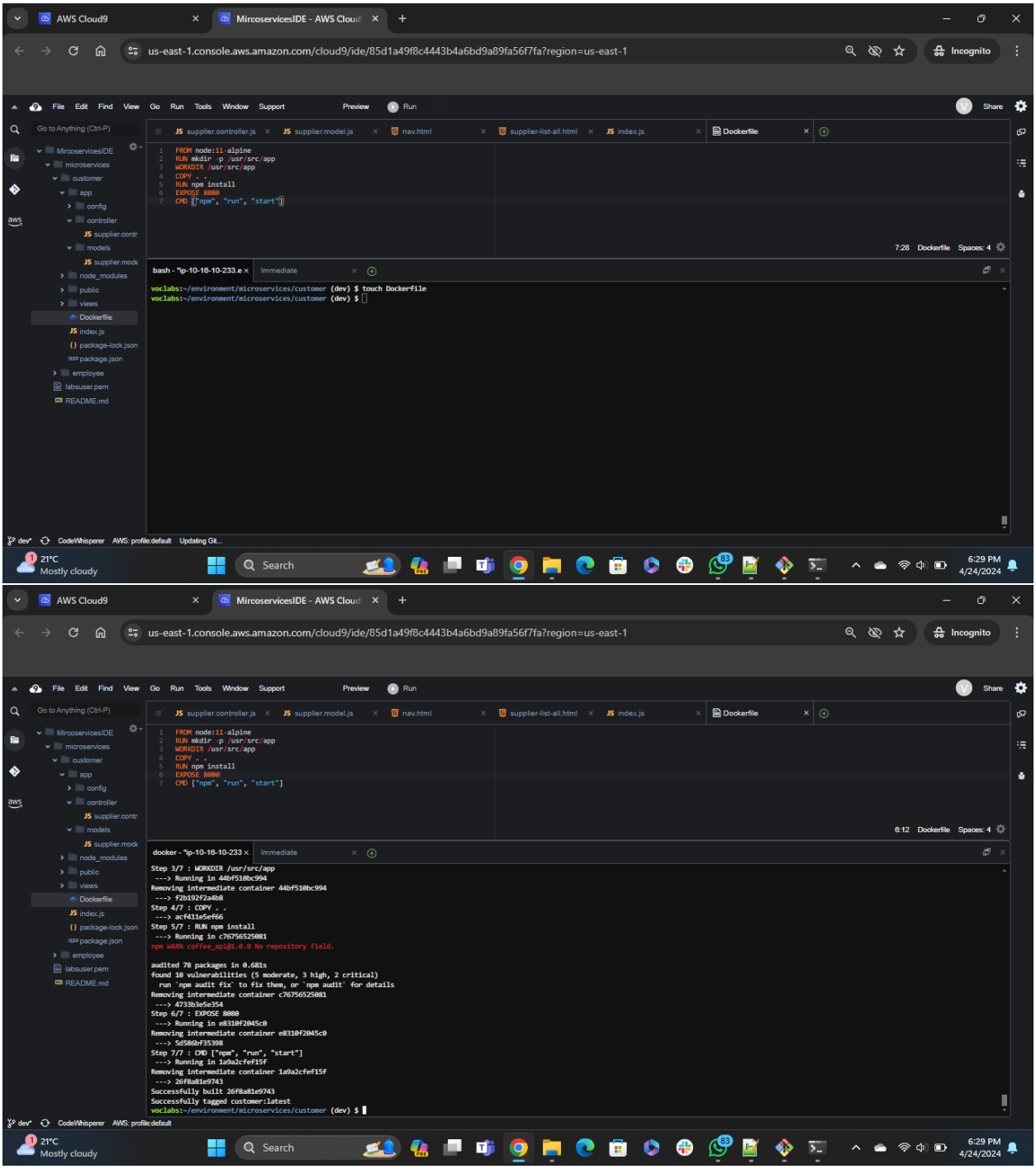
{{>nav}}
<h1>All suppliers</h1>
<table class="table table-hover">
<thead>
<tr>
<th scope="col">Name</th>
<th scope="col">Address</th>
<th scope="col">City</th>
<th scope="col">State</th>
<th scope="col">Email</th>
<th scope="col">Phone</th>
<th scope="col"></th>
</tr>
</thead>
<tbody>
{{#suppliers}}
<tr>
<th scope="row">{{name}}</th>
<td>{{address}}</td>
<td>{{city}}</td>
<td>{{state}}</td>
<td>{{email}}</td>
<td>{{phone}}</td>
</tr>
{{/suppliers}}
</tbody>
</table>

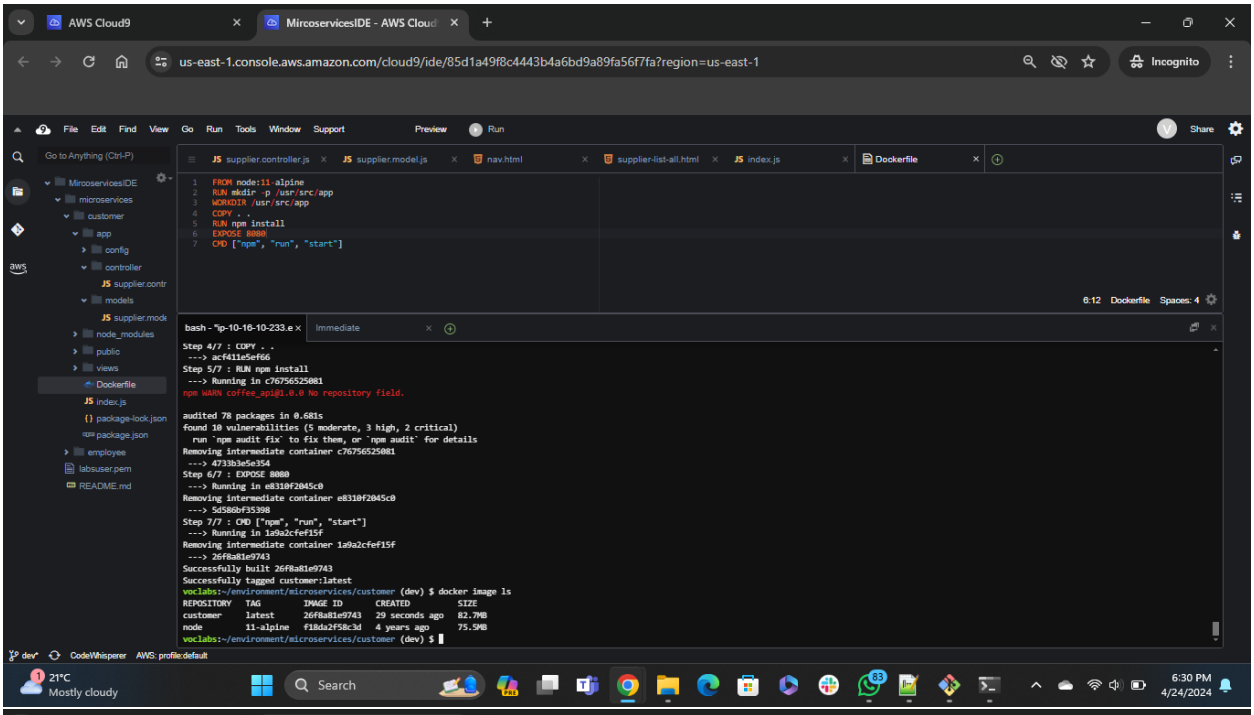
{{>footer}}
25:31 HTML Spaces: 4
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment/microservices (dev) $
dev
CodeWhisperer
AWS: profile:default
21°C
Mostly cloudy
Search
6:26 PM
4/24/2024


AWS Cloud9
MircoservicesIDE - AWS Cloud
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito
File Edit Find View Go Run Tools Window Support Preview Run
Share
Go to Anything (Ctrl-P)
supplier.controller.js
supplier.model.js
nav.html
supplier-list-all.html
index.js
app.set("view engine", "html")
app.set("views", __dirname + "/views")
app.use(express.static('public'));
app.use(favicon(__dirname + "/public/img/favicon.ico"));
// list all the suppliers
app.get("/", (req, res) => {
res.render("home", {});
});
app.get("/suppliers/", supplier.findAll);
// show the add supplier form
// app.get("/supplier-add", (req, res) => {
// res.render("supplier-add", {});
// });
// // receive the add supplier POST
// app.post("/supplier-add", supplier.create);
// // show the update form
// app.get("/supplier-update/:id", supplier.findOne);
// // receive the update POST
// app.post("/supplier-update", supplier.update);
// // receive the POST to delete a supplier
// app.post("/supplier-remove/:id", supplier.remove);
// handle 404
app.use(function (req, res, next) {
res.status(404).render("404", {});
})
// set port, listen for requests
const app_port = process.env.APP_PORT || 8080
app.listen(app_port, () => {
console.log(`Server is running on port ${app_port}.`);
});
45:46 JavaScript Spaces: 4
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment/microservices (dev) $
dev
CodeWhisperer
AWS: profile:default
21°C
Mostly cloudy
Search
6:28 PM
4/24/2024

Task 4.3: Create the *customer* microservice Dockerfile and launch a test container

1. Create a Dockerfile for customer, Build it, run to launch a test container, and test the application if customer microservice is working as expected.




AWS Cloud9
MircoservicesIDE - AWS Cloud
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
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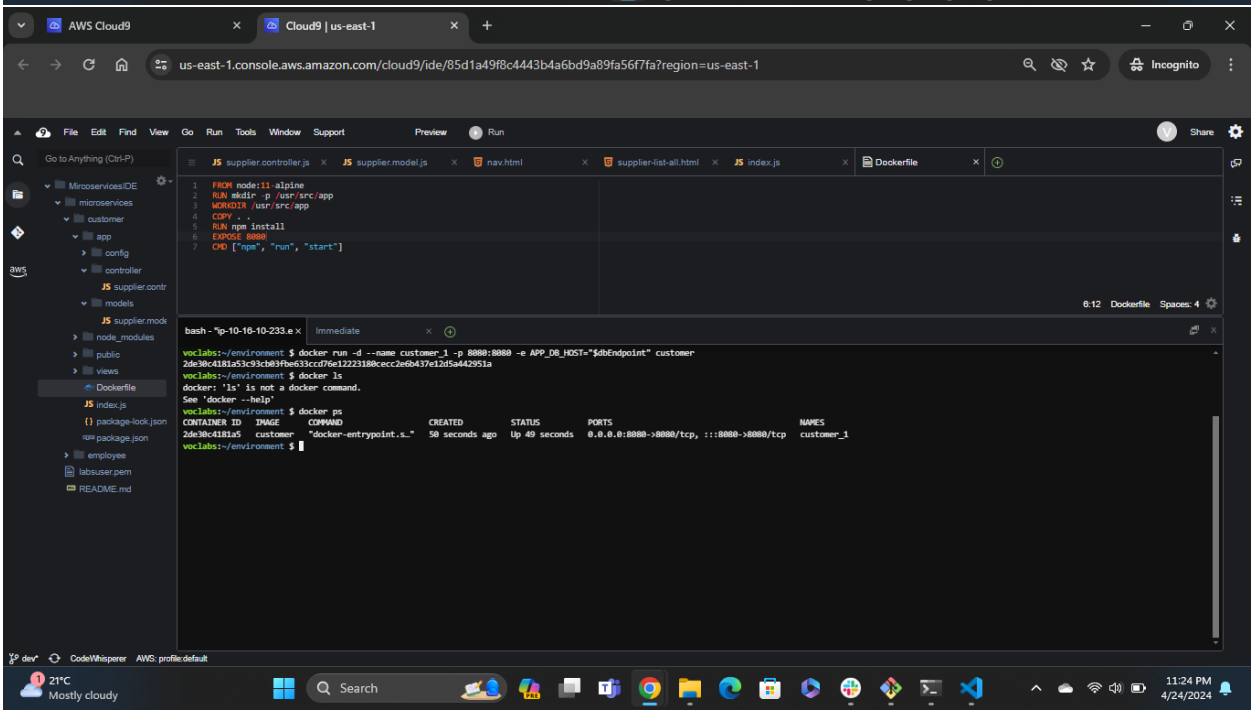
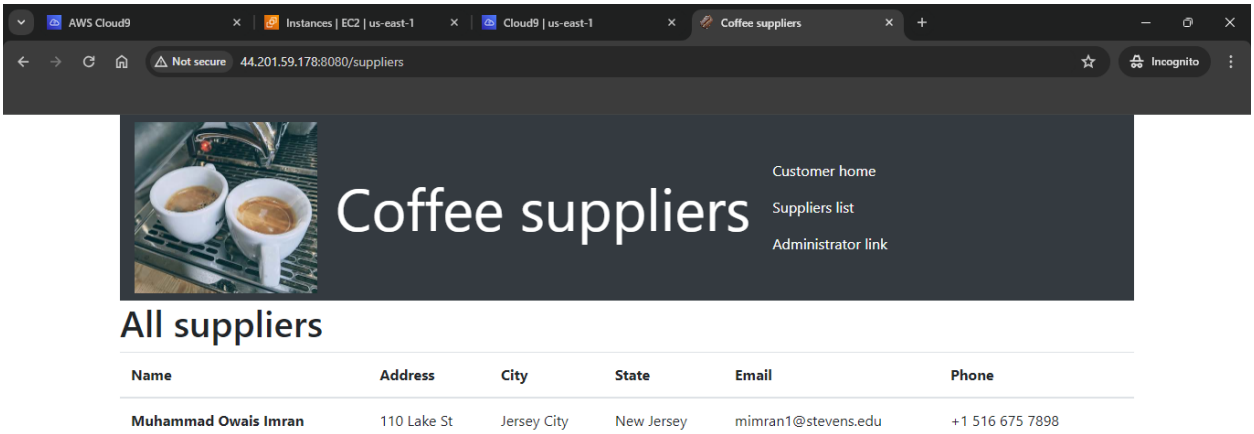
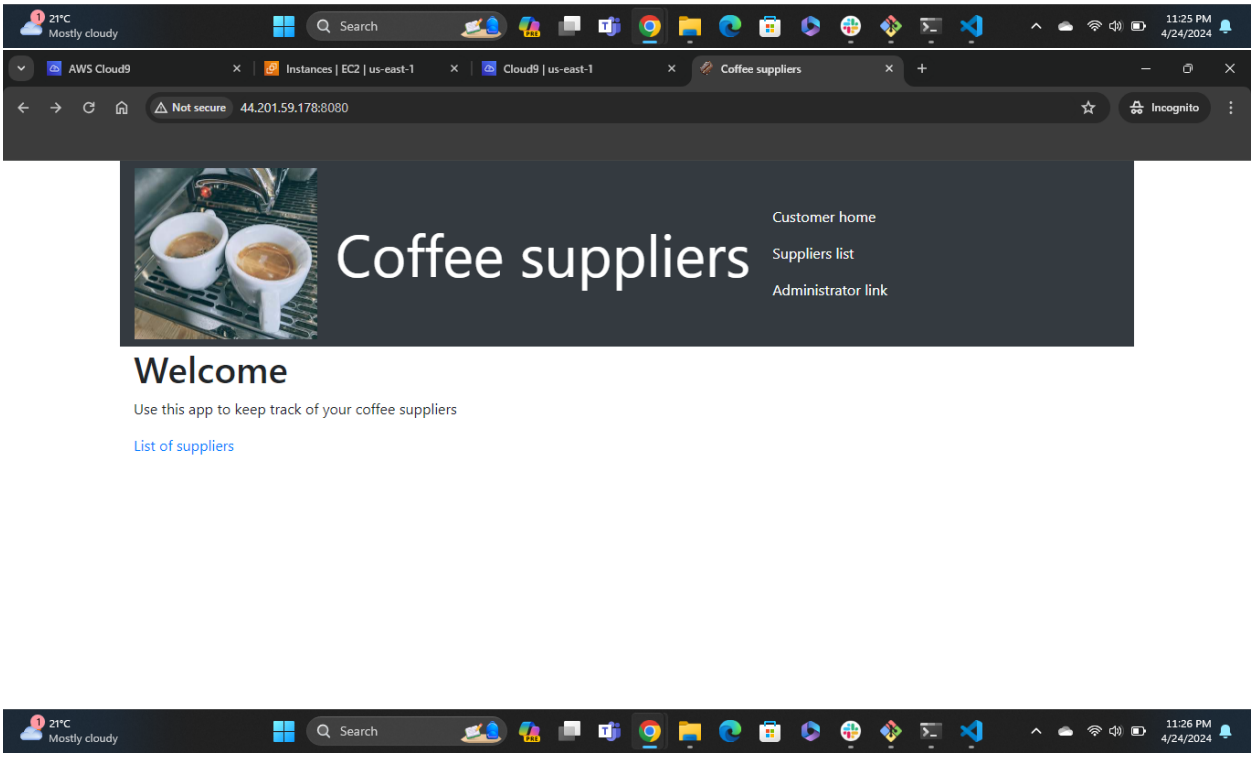
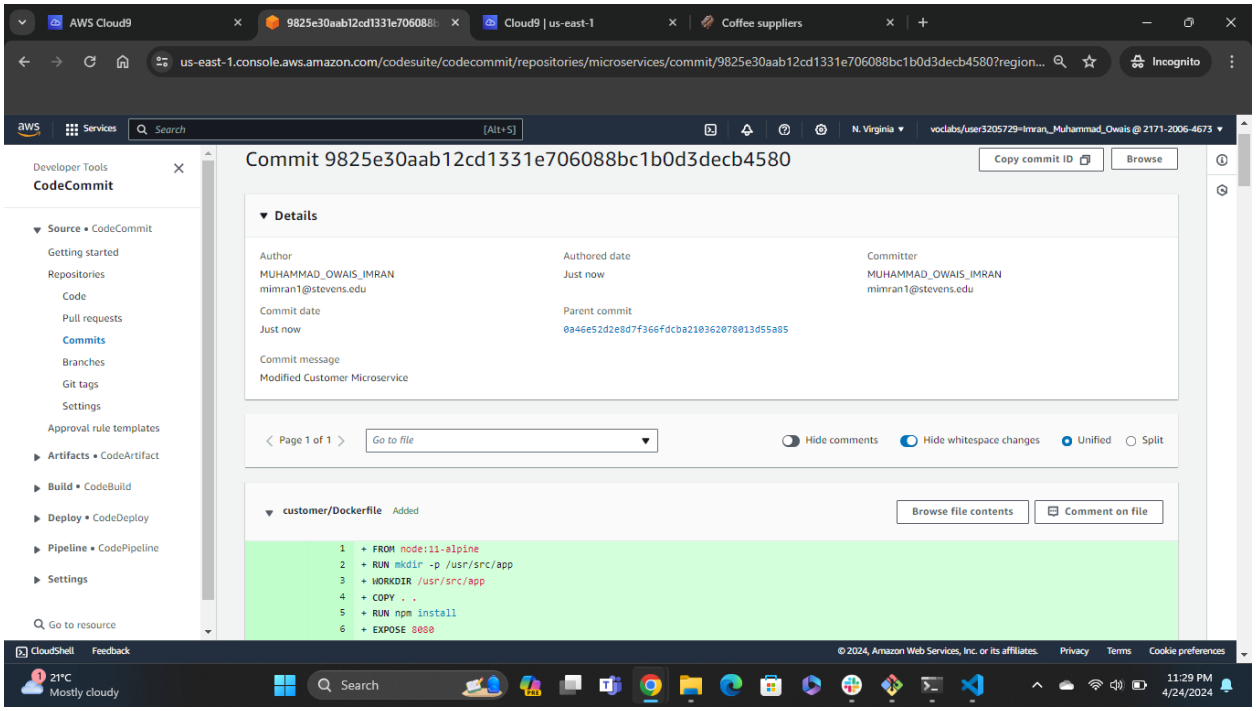
File Edit Find View Go Run Tools Window Support Preview Run
Share
Go to Anything (Ctrl-P)
supplier.controller.js
supplier.model.js
nav.html
supplier-list-all.html
index.js
Dockerfile
FROM node:11-alpine
RUN mkdir -p /usr/src/app
WORKDIR /usr/src/app
COPY . .
RUN npm install
EXPOSE 8080
CMD ["npm", "run", "start"]
6:12 Dockerfile Spaces: 4
bash - "ip-10-16-10-233.e
Immediate
Step 4/7 : COPY . .
---> acf411e5ef66
Step 5/7 : RUN npm install
---> Running in c76756525081
npm WARN coffee_api@1.0.0 No repository field.
audited 78 packages in 0.681s
found 10 vulnerabilities (5 moderate, 3 high, 2 critical)
run `npm audit fix` to fix them, or `npm audit` for details
Removing intermediate container c76756525081
---> 4733b3e5e354
Step 6/7 : EXPOSE 8080
---> Running in e8310f2045c0
Removing intermediate container e8310f2045c0
---> 5d586bf35398
Step 7/7 : CMD ["npm", "run", "start"]
---> Running in 1a9a2cfef15f
Removing intermediate container 1a9a2cfef15f
---> 26f8a81e9743
Successfully built 26f8a81e9743
Successfully tagged customer:latest
voclabs:~/environment/microservices/customer (dev) $ docker image ls
REPOSITORY TAG IMAGE ID CREATED SIZE
customer latest 26f8a81e9743 29 seconds ago 82.7MB
node 11-alpine f18da2f58c3d 4 years ago 75.5MB
voclabs:~/environment/microservices/customer (dev) $
dev*
CodeWhisperer
AWS: profile:default
21°C
Mostly cloudy
Search
6:30 PM
4/24/2024


AWS Cloud9
Cloud9 | us-east-1
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito
File Edit Find View Go Run Tools Window Support Preview Run
Share
Go to Anything (Ctrl-P)
supplier.controller.js
supplier.model.js
nav.html
supplier-list-all.html
index.js
Dockerfile
FROM node:11-alpine
RUN mkdir -p /usr/src/app
WORKDIR /usr/src/app
COPY . .
RUN npm install
EXPOSE 8080
CMD ["npm", "run", "start"]
6:12 Dockerfile Spaces: 4
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment $ docker run -d --name customer_1 -p 8080:8080 -e APP_DB_HOST="$dbEndpoint" customer
2de30c4181a53c93cb03fbe633ccd76e12223180cecc2e6b437e12d5a442951a
voclabs:~/environment $ docker ls
docker: 'ls' is not a docker command.
See 'docker --help'
voclabs:~/environment $ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
2de30c4181a5 customer "docker-entrypoint.s…" 50 seconds ago Up 49 seconds 0.0.0.0:8080->8080/tcp, :::8080->8080/tcp customer_1
voclabs:~/environment $
dev*
CodeWhisperer
AWS: profile:default
21°C
Mostly cloudy
Search
11:24 PM
4/24/2024





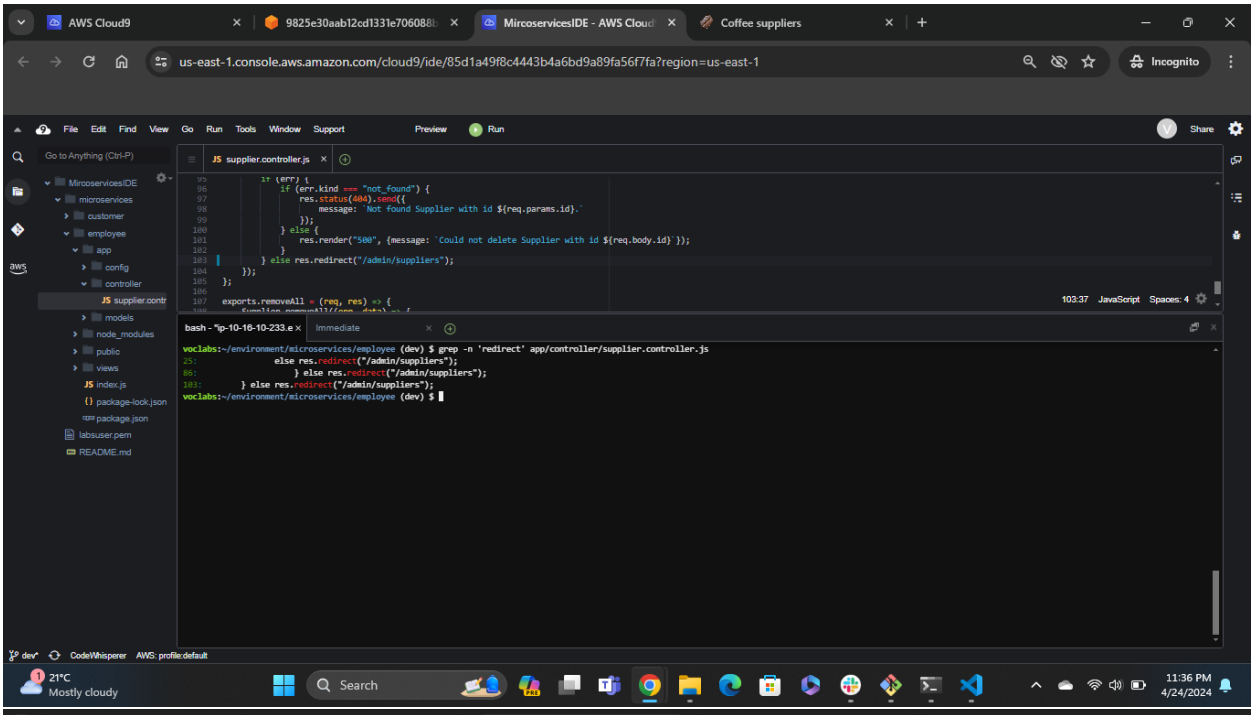
2. Commit the code onto Github and verify if it is updated on Codecommit

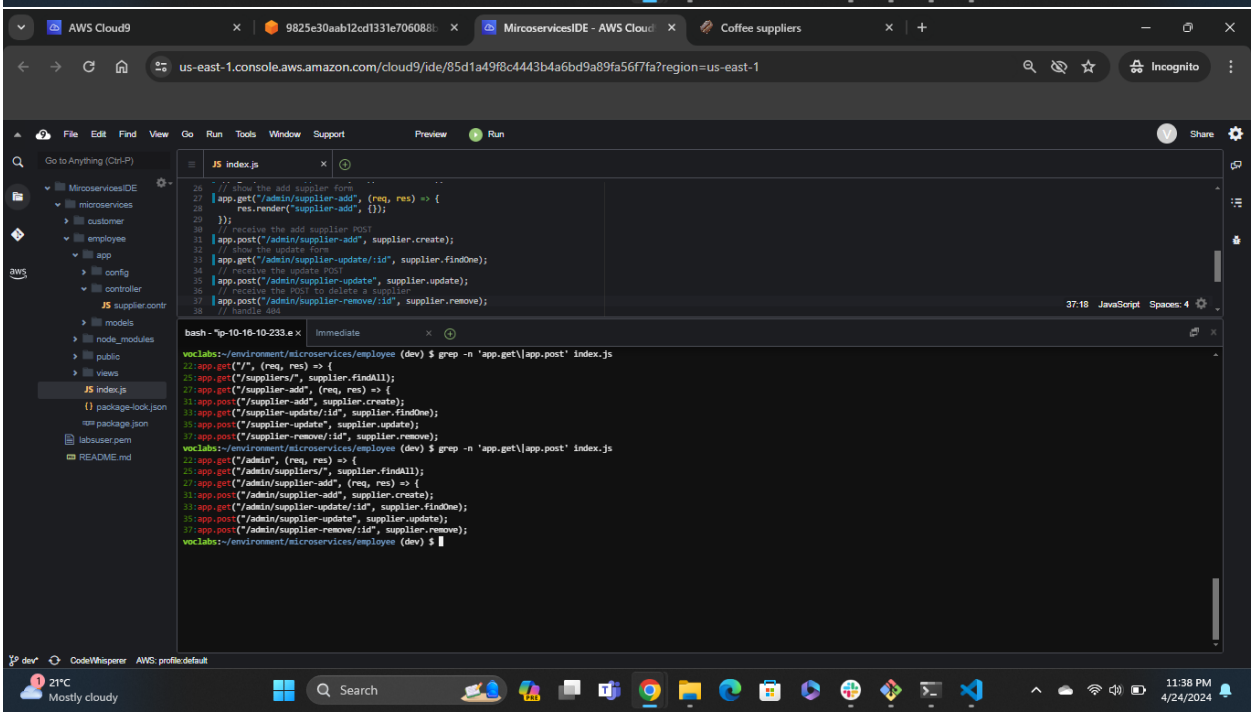

AWS Cloud9
Cloud9 | us-east-1
Coffee suppliers
us-east-1.console.aws.amazon.com/codesuite/codecommit/repositories/microservices/commit/9825e30aab12cd1331e706088bc1b0d3decb4580?region...
Incognito
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran_Muhammad_Owais @ 2171-2006-4673
Developer Tools
CodeCommit
Source • CodeCommit
Getting started
Repositories
Code
Pull requests
Commits
Branches
Git tags
Settings
Approval rule templates
Artifacts • CodeArtifact
Build • CodeBuild
Deploy • CodeDeploy
Pipeline • CodePipeline
Settings
Go to resource
Commit 9825e30aab12cd1331e706088bc1b0d3decb4580
Copy commit ID
Browse
Details
Author
MUHAMMAD_OWAIS_IMRAN
mimran1@stevens.edu
Authored date
Just now
Committer
MUHAMMAD_OWAIS_IMRAN
mimran1@stevens.edu
Commit date
Just now
Parent commit
0a46e52d2e8d7f366fdcba21036207801 3d55a85
Commit message
Modified Customer Microservice
Page 1 of 1
Go to file
Hide comments
Hide whitespace changes
Unified
Split
customer/Dockerfile
Added
Browse file contents
Comment on file
1 + FROM node:11-alpine
2 + RUN mkdir -p /usr/src/app
3 + WORKDIR /usr/src/app
4 + COPY . .
5 + RUN npm install
6 + EXPOSE 8080
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
21°C
Mostly cloudy
Search
11:29 PM
4/24/2024

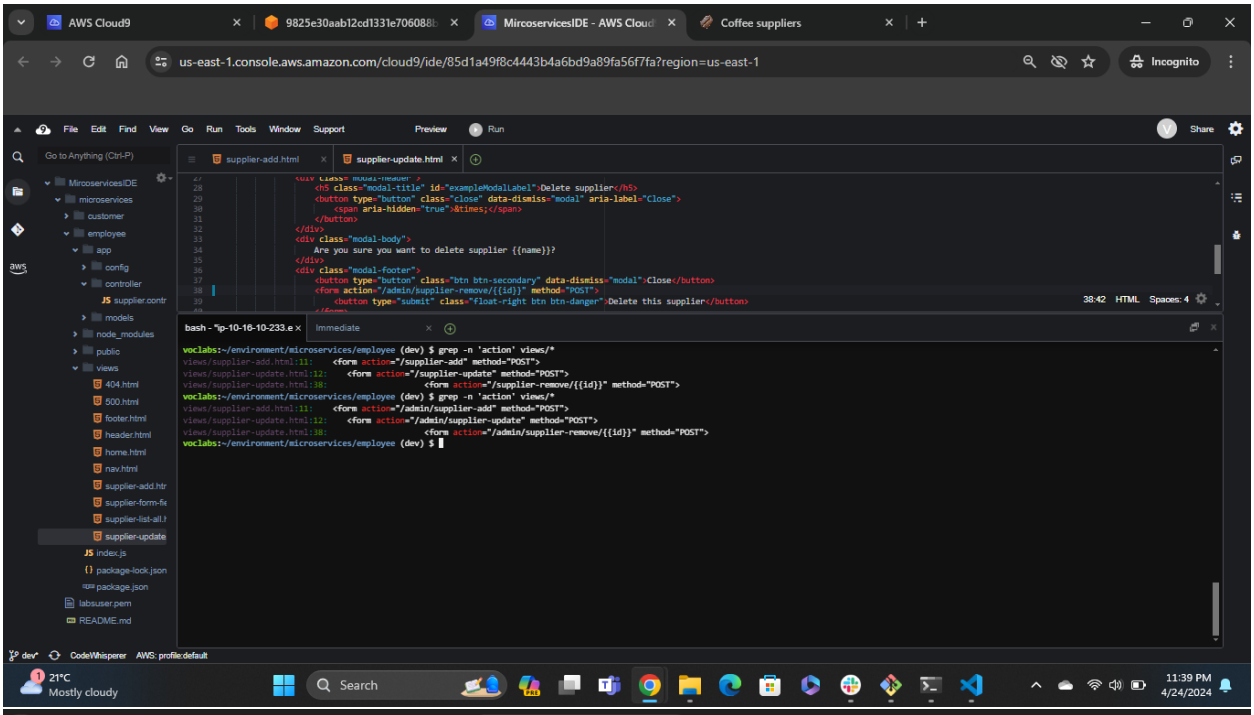
Task 4.4: Modify the source code of the *employee* microservice

1. In the employee/app/controller/supplier.controller.js file, for all the redirect calls, prepend /admin to the path
2. In the employee/index.js file, update the app.get calls, app.post calls, and a port number
3. In the employee/views/supplier-add.html and employee/views/supplier-update.html files, for the form action paths, prepend /admin to the path
4. n the employee/views/supplier-list-all.html and employee/views/home.html files, for the HTML paths, prepend /admin to the path.
5. In the employee/views/header.html file, modify the title to be Manage coffee suppliers
6. Edit the employee/views/nav.html file.

Screenshots of all steps attached below:

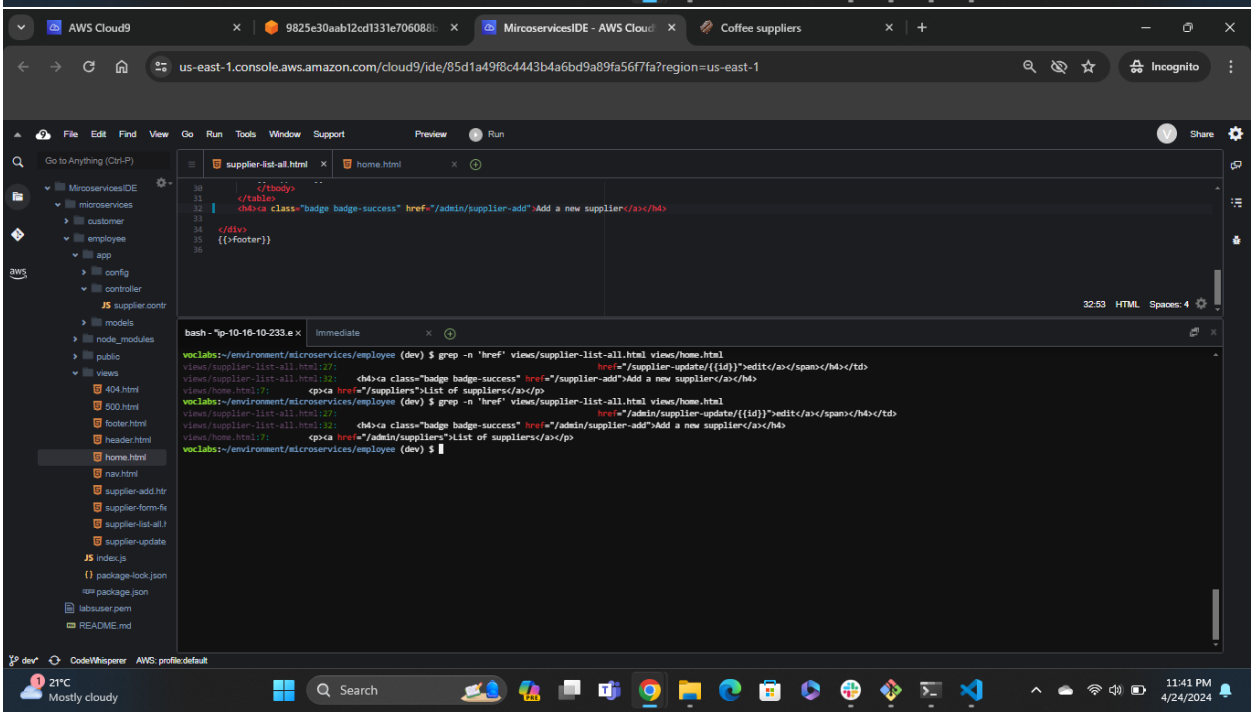

AWS Cloud9
Coffee suppliers
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito
File Edit Find View Go Run Tools Window Support Preview Run
Share
supplier.controller.js
exports.removeAll = (req, res) => {
103:37 JavaScript Spaces: 4
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment/microservices/employee (dev) $ grep -n 'redirect' app/controller/supplier.controller.js
voclabs:~/environment/microservices/employee (dev) $
CodeWhisperer AWS: profile:default
21°C
Mostly cloudy
Search
11:36 PM
4/24/2024


AWS Cloud9
Coffee suppliers
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito
File Edit Find View Go Run Tools Window Support Preview Run
Share
index.js
// show the add supplier form
app.get("/admin/supplier-add", (req, res) => {
res.render("supplier-add", {});
});
// receive the add supplier POST
app.post("/admin/supplier-add", supplier.create);
// show the update form
app.get("/admin/supplier-update/:id", supplier.findOne);
// receive the update POST
app.post("/admin/supplier-update", supplier.update);
// receive the POST to delete a supplier
app.post("/admin/supplier-remove/:id", supplier.remove);
// handle 404
37:18 JavaScript Spaces: 4
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment/microservices/employee (dev) $ grep -n 'app.get\|app.post' index.js
22:app.get("/", (req, res) => {
25:app.get("/suppliers/", supplier.findAll);
27:app.get("/supplier-add", (req, res) => {
31:app.post("/supplier-add", supplier.create);
33:app.get("/supplier-update/:id", supplier.findOne);
35:app.post("/supplier-update", supplier.update);
37:app.post("/supplier-remove/:id", supplier.remove);
voclabs:~/environment/microservices/employee (dev) $ grep -n 'app.get\|app.post' index.js
22:app.get("/admin", (req, res) => {
25:app.get("/admin/suppliers/", supplier.findAll);
27:app.get("/admin/supplier-add", (req, res) => {
31:app.post("/admin/supplier-add", supplier.create);
33:app.get("/admin/supplier-update/:id", supplier.findOne);
35:app.post("/admin/supplier-update", supplier.update);
37:app.post("/admin/supplier-remove/:id", supplier.remove);
voclabs:~/environment/microservices/employee (dev) $
CodeWhisperer AWS: profile:default
21°C
Mostly cloudy
Search
11:38 PM
4/24/2024

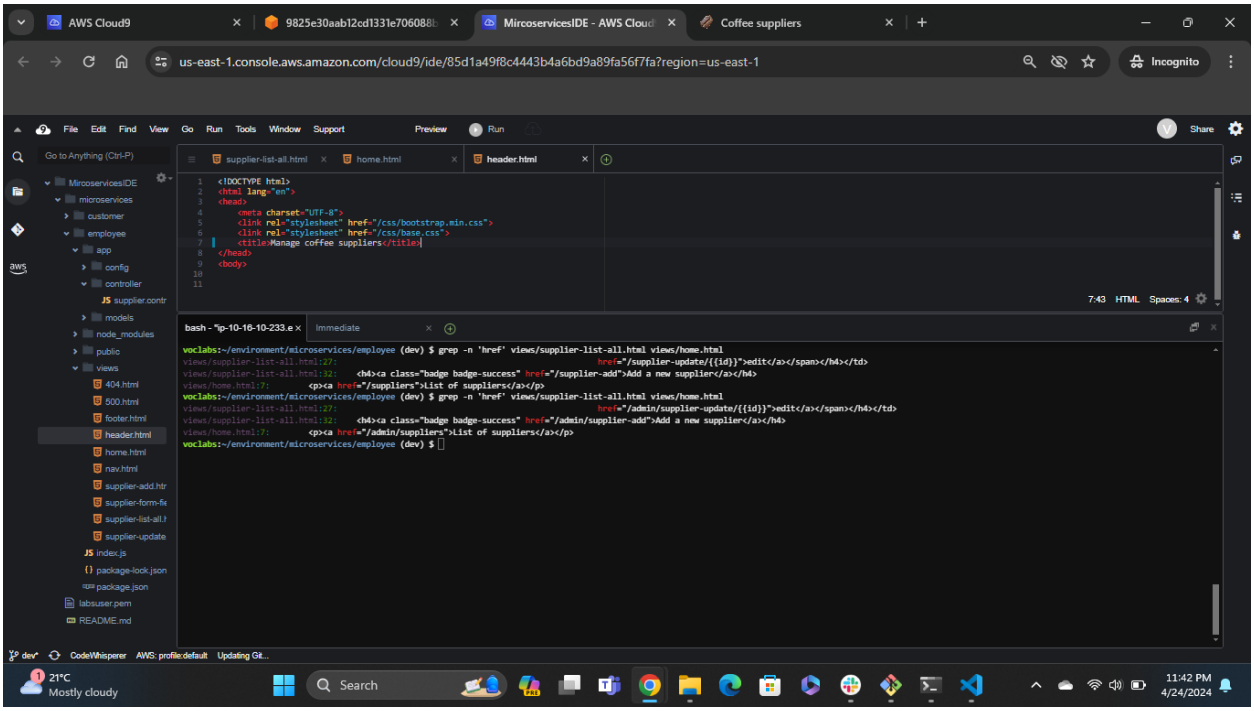

AWS Cloud9
MircoservicesIDE - AWS Cloud
Coffee suppliers
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito
File Edit Find View Go Run Tools Window Support Preview Run
Share
supplier-add.html
supplier-update.html
<h5 class="modal-title" id="exampleModalLabel">Delete supplier</h5>
<button type="button" class="close" data-dismiss="modal" aria-label="Close">
×
</button>

Are you sure you want to delete supplier {{name}}?

<button type="button" class="btn btn-secondary" data-dismiss="modal">Close</button>
<form action="/admin/supplier-remove/{{id}}" method="POST">
<button type="submit" class="float-right btn btn-danger">Delete this supplier</button>
38:42 HTML Spaces: 4
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment/microservices/employee (dev) $ grep -n 'action' views/*
views/supplier-add.html:11: <form action="/supplier-add" method="POST">
views/supplier-update.html:12: <form action="/supplier-update" method="POST">
views/supplier-update.html:38: <form action="/supplier-remove/{{id}}" method="POST">
voclabs:~/environment/microservices/employee (dev) $ grep -n 'action' views/*
views/supplier-add.html:11: <form action="/admin/supplier-add" method="POST">
views/supplier-update.html:12: <form action="/admin/supplier-update" method="POST">
views/supplier-update.html:38: <form action="/admin/supplier-remove/{{id}}" method="POST">
voclabs:~/environment/microservices/employee (dev) $
dev
CodeWhisperer
AWS: profile:default
21°C
Mostly cloudy
Search
11:39 PM
4/24/2024

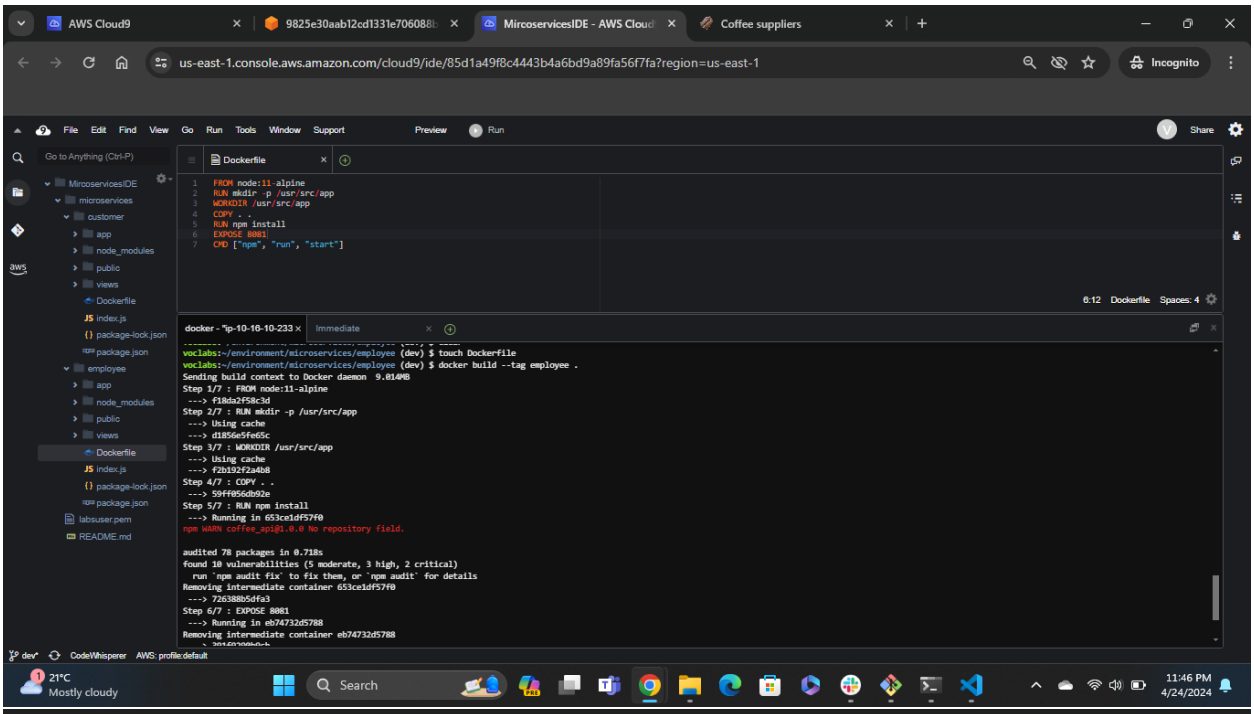

AWS Cloud9
MircoservicesIDE - AWS Cloud
Coffee suppliers
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito
File Edit Find View Go Run Tools Window Support Preview Run
Share
supplier-list-all.html
home.html
</tbody>
</table>
<h4>Add a new supplier</h4>

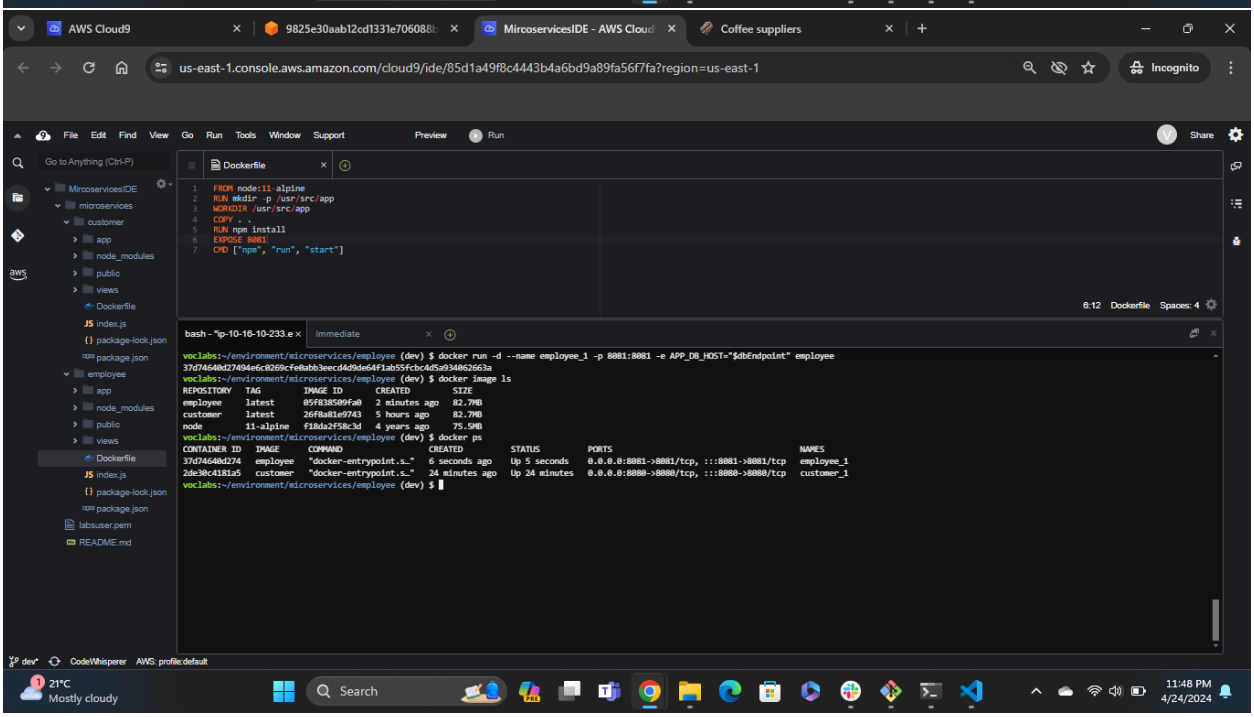
{{>footer}}
32:53 HTML Spaces: 4
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment/microservices/employee (dev) $ grep -n 'href' views/supplier-list-all.html views/home.html
views/supplier-list-all.html:27: href="/supplier-update/{{id}}">edit</h4></td>
views/supplier-list-all.html:32: <h4>Add a new supplier</h4>
views/home.html:7: List of suppliers
voclabs:~/environment/microservices/employee (dev) $ grep -n 'href' views/supplier-list-all.html views/home.html
views/supplier-list-all.html:27: href="/admin/supplier-update/{{id}}">edit</h4></td>
views/supplier-list-all.html:32: <h4>Add a new supplier</h4>
views/home.html:7: List of suppliers
voclabs:~/environment/microservices/employee (dev) $
dev
CodeWhisperer
AWS: profile:default
21°C
Mostly cloudy
Search
11:41 PM
4/24/2024

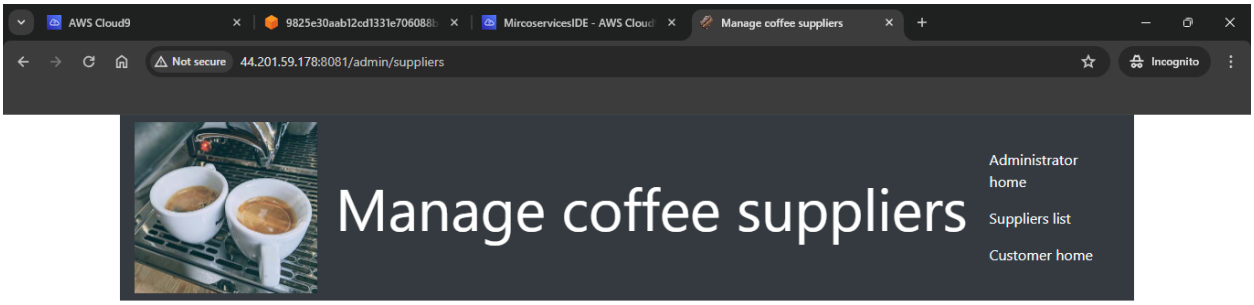

AWS Cloud9
MircoservicesIDE - AWS Cloud
Coffee suppliers
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito
File Edit Find View Go Run Tools Window Support
Preview
Run
Share
Go to Anything (Ctrl-P)
supplier-list-all.html
home.html
header.html
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<link rel="stylesheet" href="/css/bootstrap.min.css">
<link rel="stylesheet" href="/css/base.css">
<title>Manage coffee suppliers</title>
</head>
<body>
7:43 HTML Spaces: 4
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment/microservices/employee (dev) $ grep -n 'href' views/supplier-list-all.html views/home.html
views/supplier-list-all.html:27: href="/supplier-update/{{id}}">edit</h4></td>
views/supplier-list-all.html:32: <h4>Add a new supplier</h4>
views/home.html:7: List of suppliers
voclabs:~/environment/microservices/employee (dev) $ grep -n 'href' views/supplier-list-all.html views/home.html
views/supplier-list-all.html:27: href="/admin/supplier-update/{{id}}">edit</h4></td>
views/supplier-list-all.html:32: <h4>Add a new supplier</h4>
views/home.html:7: List of suppliers
voclabs:~/environment/microservices/employee (dev) $
dev
CodeWhisperer
AWS: profile:default
Updating Git...
21°C
Mostly cloudy
Search
11:42 PM
4/24/2024

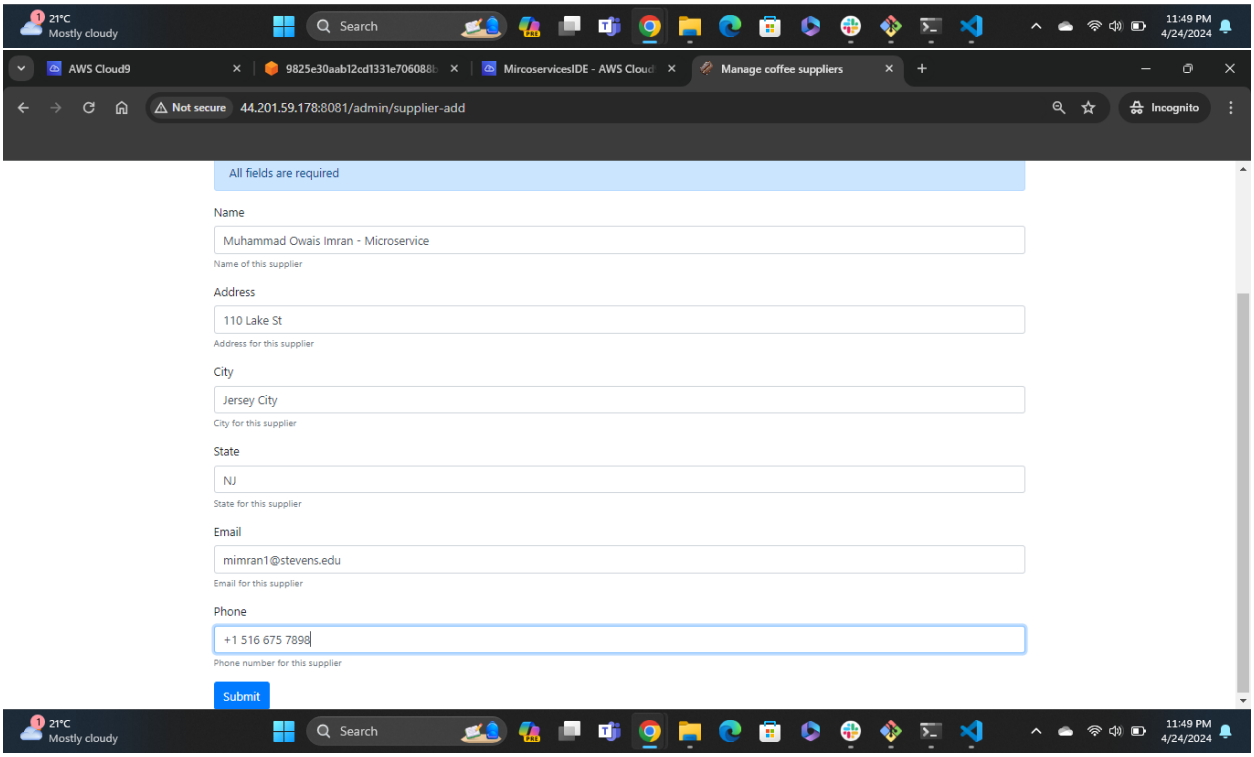
Task 4.5: Create the *employee* microservice Dockerfile and launch a test container

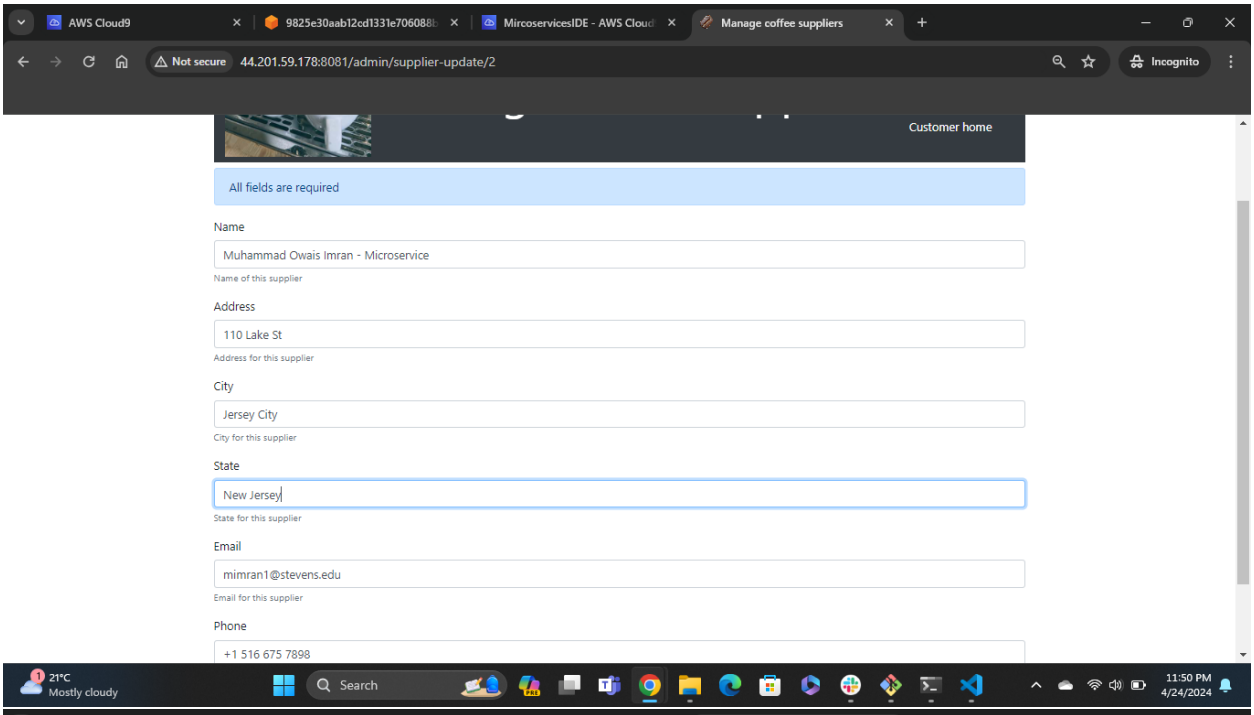
Create a Dockerfile for employee, Build it, run to launch a test container, and test the application if employee microservice is working as expected.

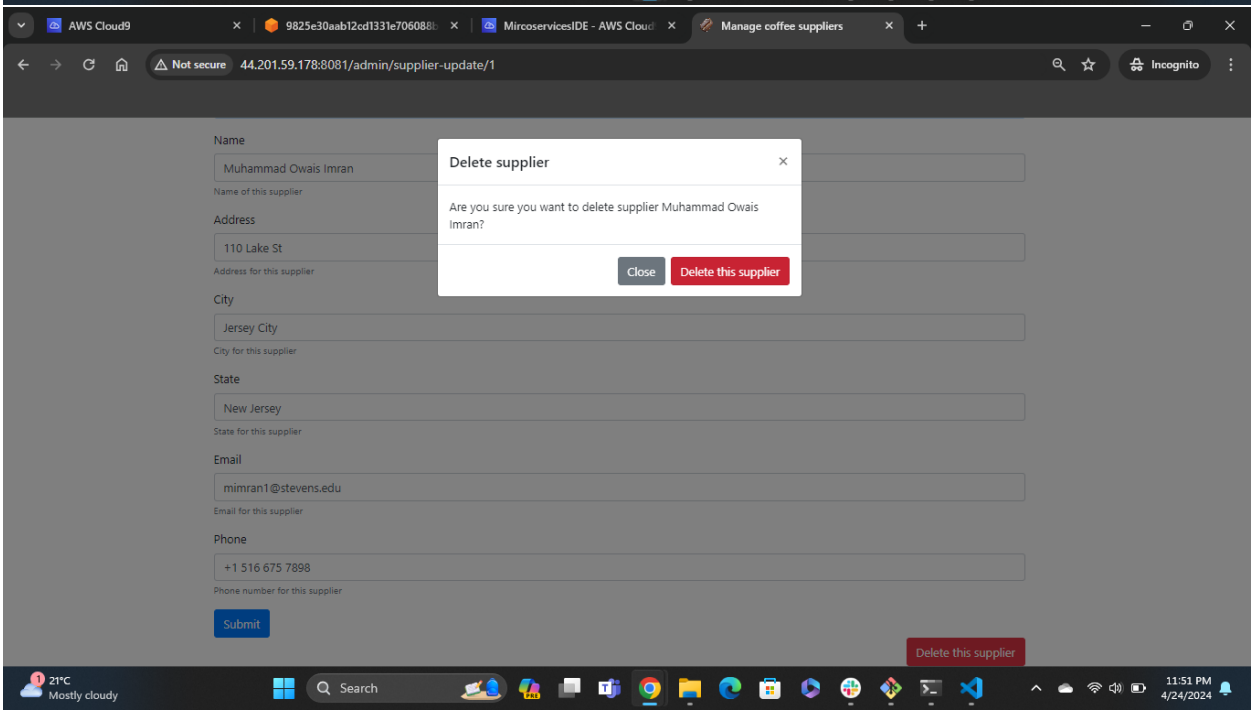


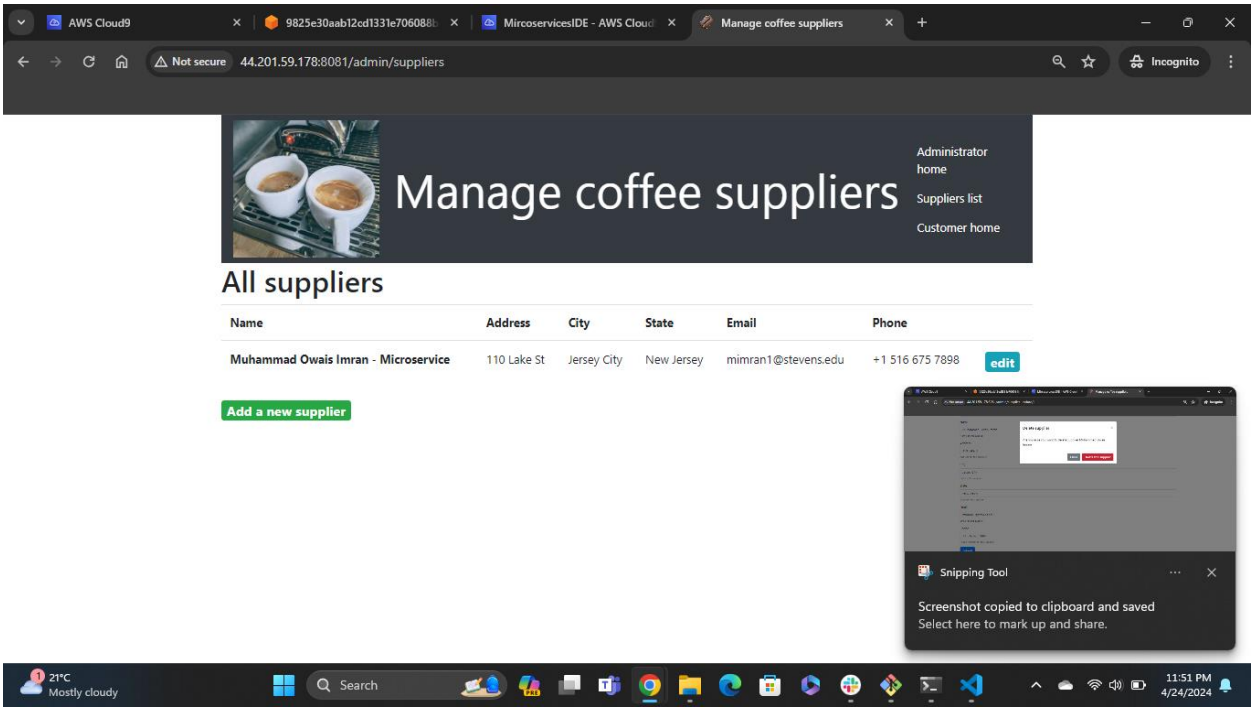



AWS Cloud9
Manage coffee suppliers
Not secure
44.201.59.178:8081/admin/suppliers
Incognito
Manage coffee suppliers
Administrator home
Suppliers list
Customer home
All suppliers
Name
Address
City
State
Email
Phone
Muhammad Owais Imran
110 Lake St
Jersey City
New Jersey
mimran1@stevens.edu
+1 516 675 7898
edit
Add a new supplier

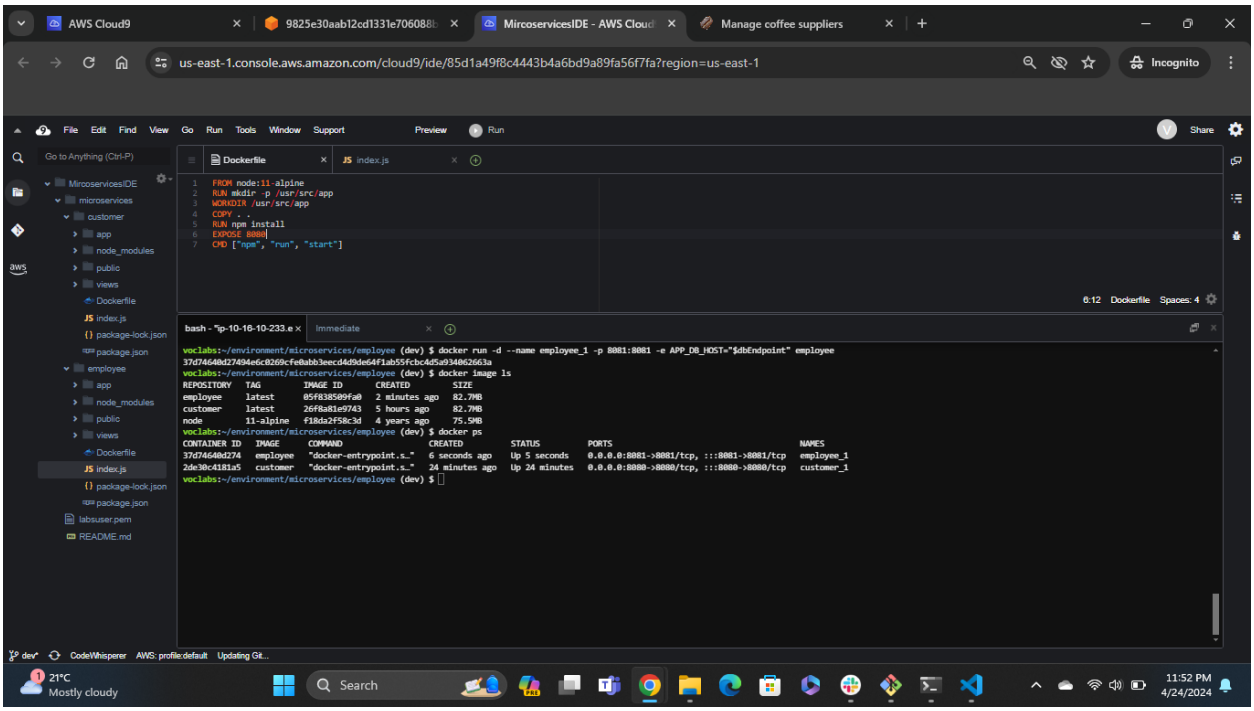

21°C
Mostly cloudy
Search
11:49 PM
4/24/2024
AWS Cloud9
Manage coffee suppliers
Not secure
44.201.59.178:8081/admin/supplier-add
Incognito
All fields are required
Name
Muhammad Owais Imran - Microservice
Name of this supplier
Address
110 Lake St
Address for this supplier
City
Jersey City
City for this supplier
State
NJ
State for this supplier
Email
mimran1@stevens.edu
Email for this supplier
Phone
+1 516 675 7898
Phone number for this supplier
Submit


AWS Cloud9
Manage coffee suppliers
Not secure
44.201.59.178:8081/admin/supplier-update/2
Incognito
Customer home
All fields are required
Name
Muhammad Owais Imran - Microservice
Name of this supplier
Address
110 Lake St
Address for this supplier
City
Jersey City
City for this supplier
State
New Jersey
State for this supplier
Email
mimran1@stevens.edu
Email for this supplier
Phone
+1 516 675 7898
21°C
Mostly cloudy
Search
11:50 PM
4/24/2024


AWS Cloud9
Manage coffee suppliers
Not secure
44.201.59.178:8081/admin/supplier-update/1
Incognito
Name
Muhammad Owais Imran
Name of this supplier
Address
110 Lake St
Address for this supplier
City
Jersey City
City for this supplier
State
New Jersey
State for this supplier
Email
mimran1@stevens.edu
Email for this supplier
Phone
+1 516 675 7898
Phone number for this supplier
Submit
Delete this supplier
Delete supplier
Are you sure you want to delete supplier Muhammad Owais Imran?
Close
Delete this supplier
21°C
Mostly cloudy
Search
11:51 PM
4/24/2024

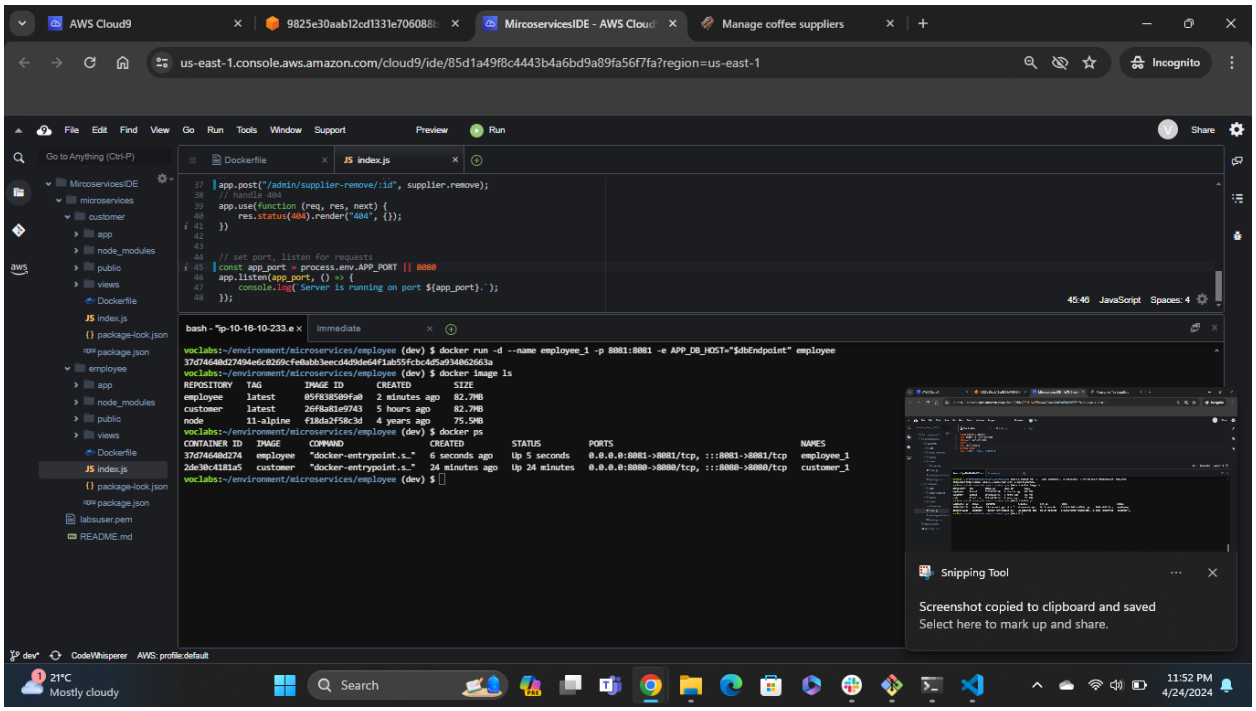


Verifying the status of all the containers with the command `docker ps`:

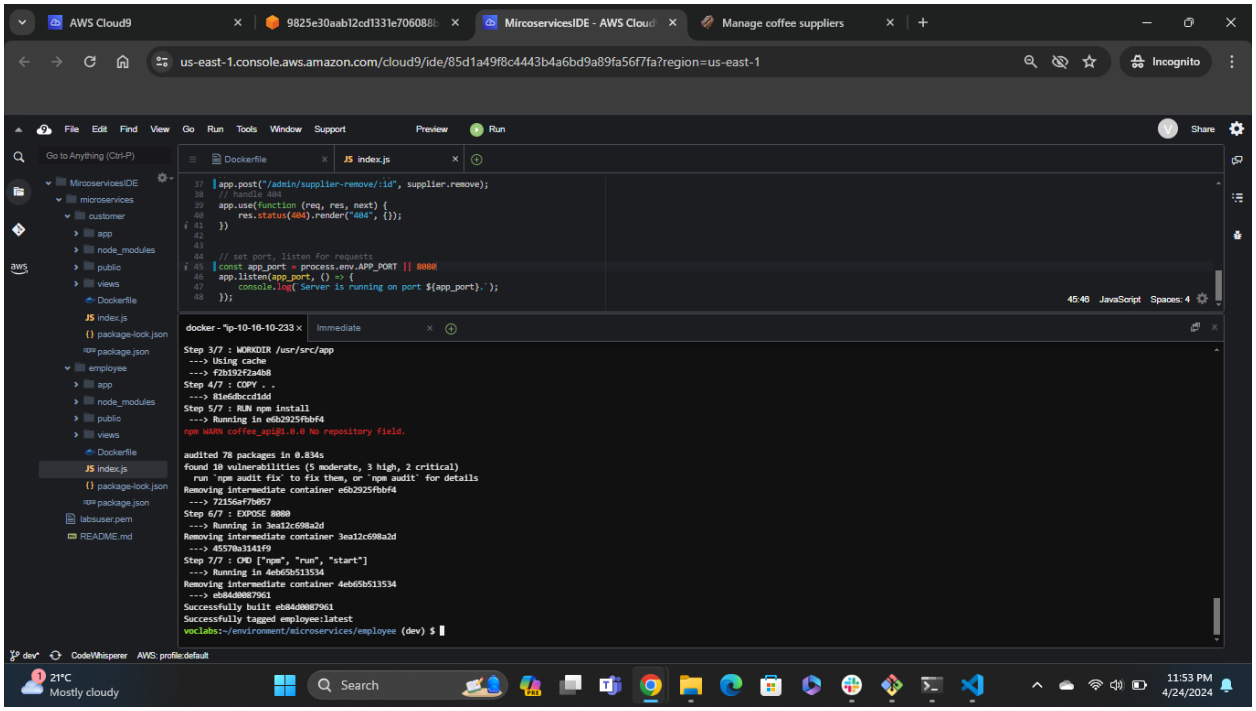


Task 4.6: Adjust the *employee* microservice port and rebuild the image

1. Edit the employee/index.js and employee/Dockerfile files to change the port from 8081 to 8080

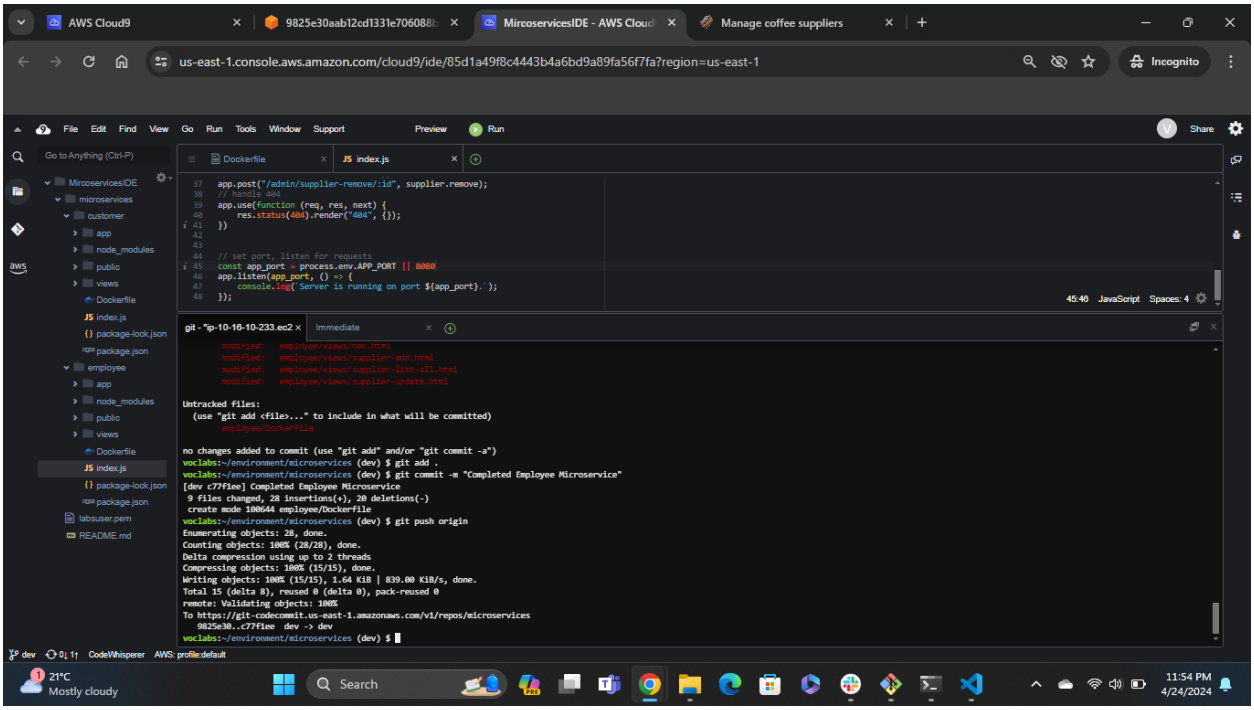


2. Rebuild the Docker image for the employee microservice

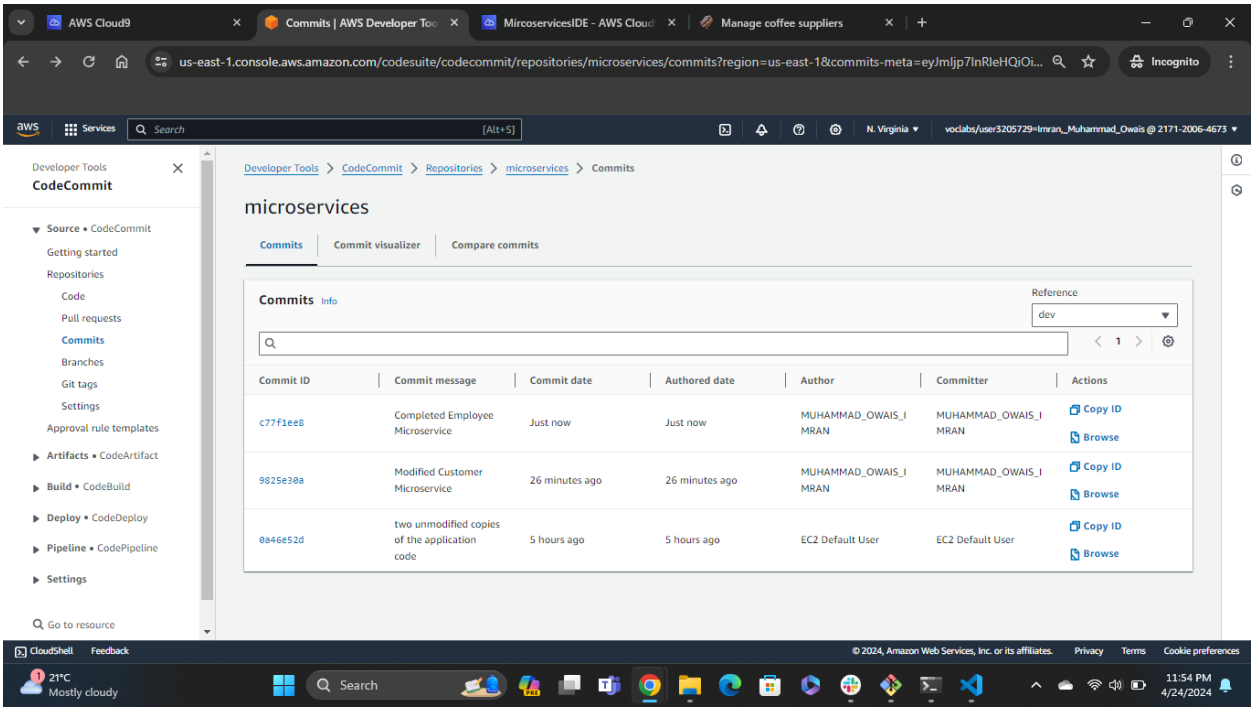

AWS Cloud9
MircoservicesIDE - AWS Cloud
Manage coffee suppliers
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito
File Edit Find View Go Run Tools Window Support Preview Run
Share
Go to Anything (Ctrl-P)
MircoservicesIDE
microservices
customer
app
node_modules
public
views
Dockerfile
index.js
package-lock.json
package.json
employee
app
node_modules
public
views
Dockerfile
index.js
package-lock.json
package.json
labsuser.pem
README.md
Dockerfile
index.js
app.post("/admin/supplier-remove/:id", supplier.remove);
// handle 404
app.use(function (req, res, next) {
res.status(404).render("404", {});
})
// set port, listen for requests
const app_port = process.env.APP_PORT || 8080
app.listen(app_port, () => {
console.log(`Server is running on port ${app_port}.`);
});
45:46 JavaScript Spaces: 4
docker - "ip-10-16-10-233
Immediate
Step 3/7 : WORKDIR /usr/src/app
---> Using cache
---> f2b192f2a4b8
Step 4/7 : COPY . .
---> 81e6dbccd1dd
Step 5/7 : RUN npm install
---> Running in e6b2925fbbf4
npm WARN coffee_api@1.0.0 No repository field.
audited 78 packages in 0.834s
found 10 vulnerabilities (5 moderate, 3 high, 2 critical)
run `npm audit fix` to fix them, or `npm audit` for details
Removing intermediate container e6b2925fbbf4
---> 72156af7b057
Step 6/7 : EXPOSE 8080
---> Running in 3ea12c698a2d
Removing intermediate container 3ea12c698a2d
---> 45570a3141f9
Step 7/7 : CMD ["npm", "run", "start"]
---> Running in 4eb65b513534
Removing intermediate container 4eb65b513534
---> eb84d0087961
Successfully built eb84d0087961
Successfully tagged employee:latest
voclabs:~/environment/microservices/employee (dev) $
dev*
CodeWhisperer
AWS: profile:default
21°C
Mostly cloudy
Search
11:53 PM
4/24/2024

Task 4.7: Check code into CodeCommit

Push the updated code on to Code Commit



Verifying the code update on CodeCommit



Significance & Importance of this Task

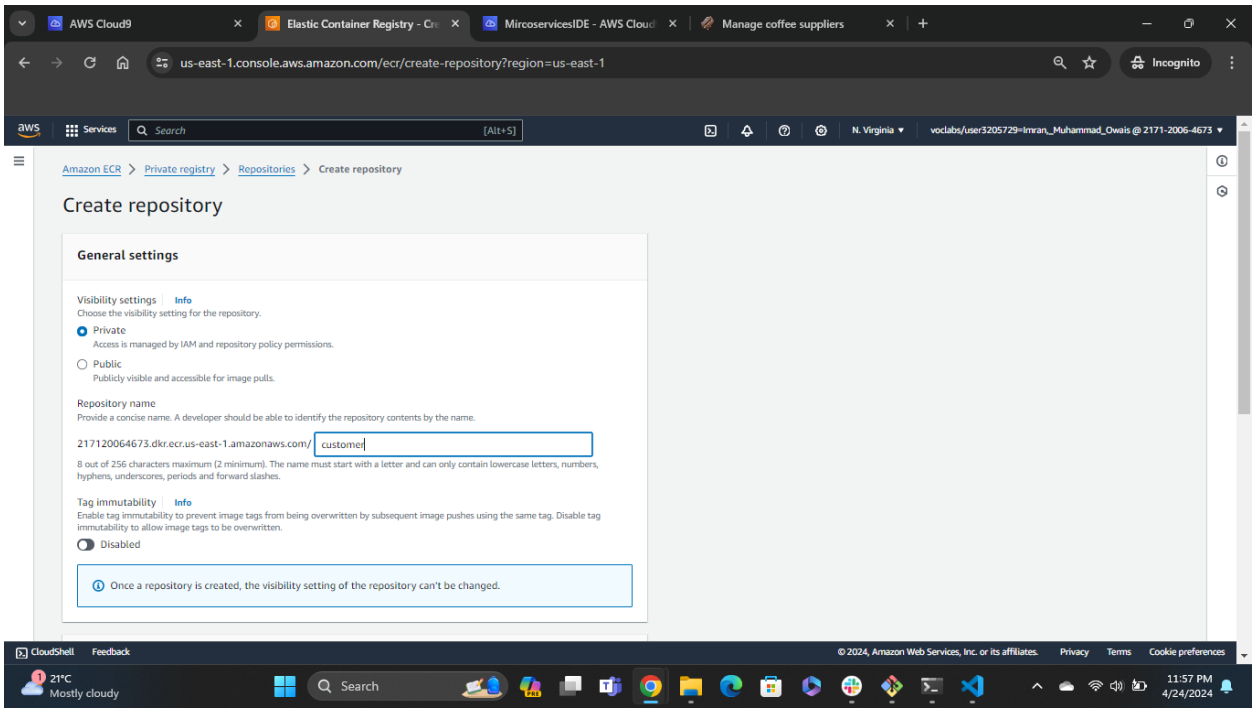
This task helps us in learning:

- How to use the EC2 instance as a source for running docker containers and use various port of the EC2 instance for hosting different parts of application traffic.
- How Security groups can help in controlling traffic access to/from EC2 instance.
- Basic strategy of how microservice should work and communicate with other microservices.

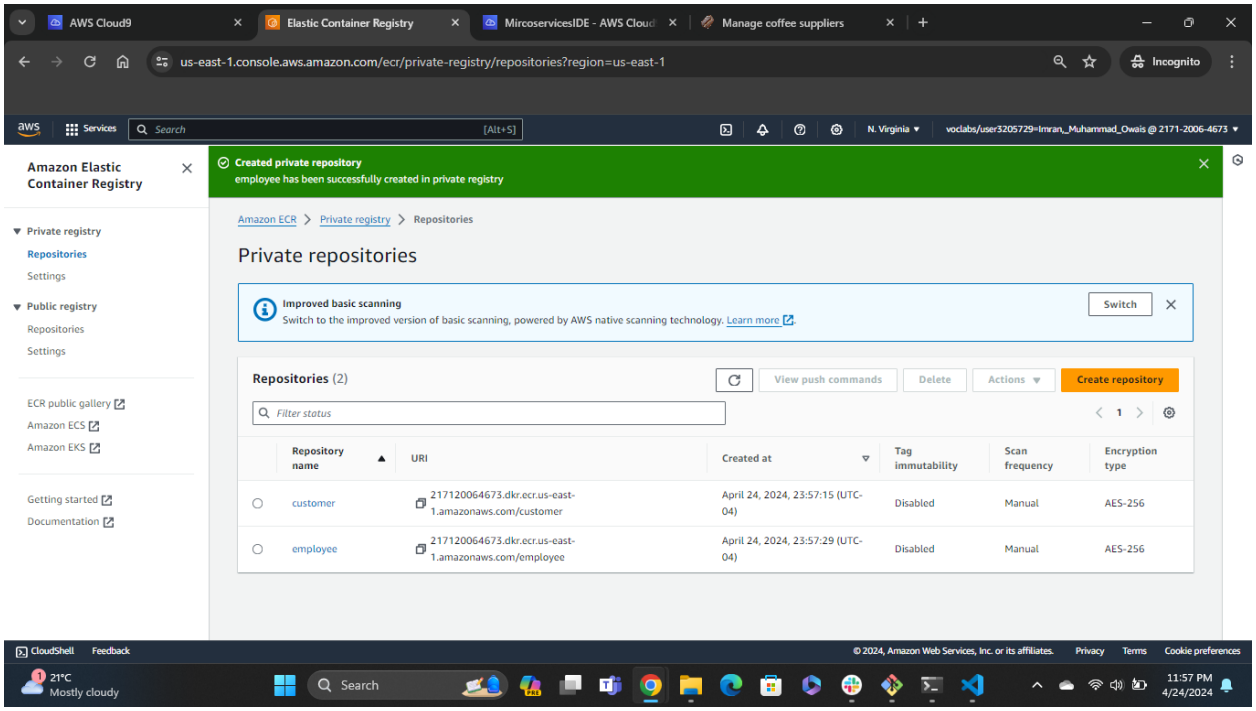
Phase 5: Creating ECR repositories, an ECS cluster, task definitions, and AppSpec files

Task 5.1: Create ECR repositories and upload the Docker images

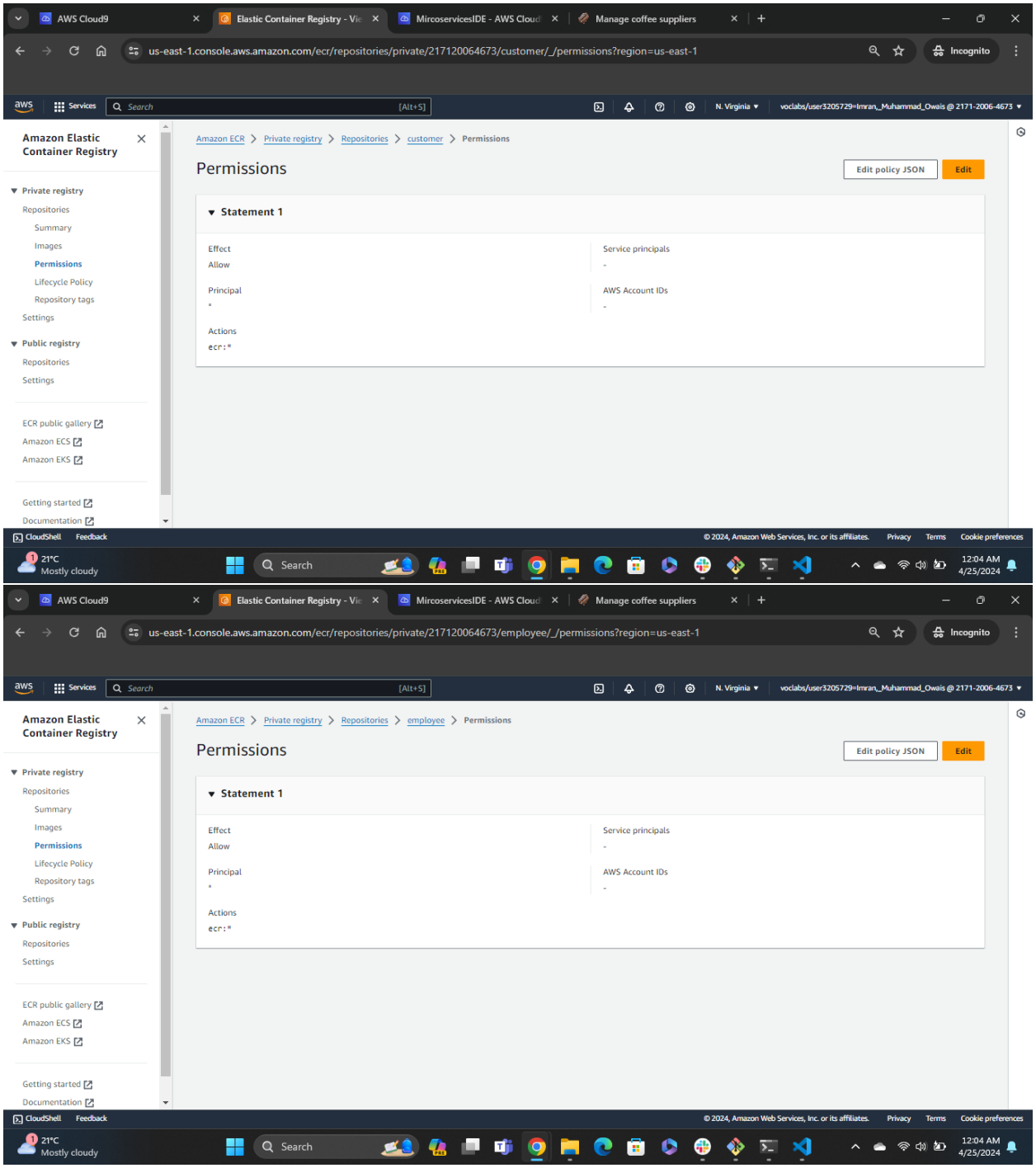
1. Create ECR Repositories for storing docker image of employee and customer microservices, screenshot of creating ECR for customer attached, same procedure followed for employee as well



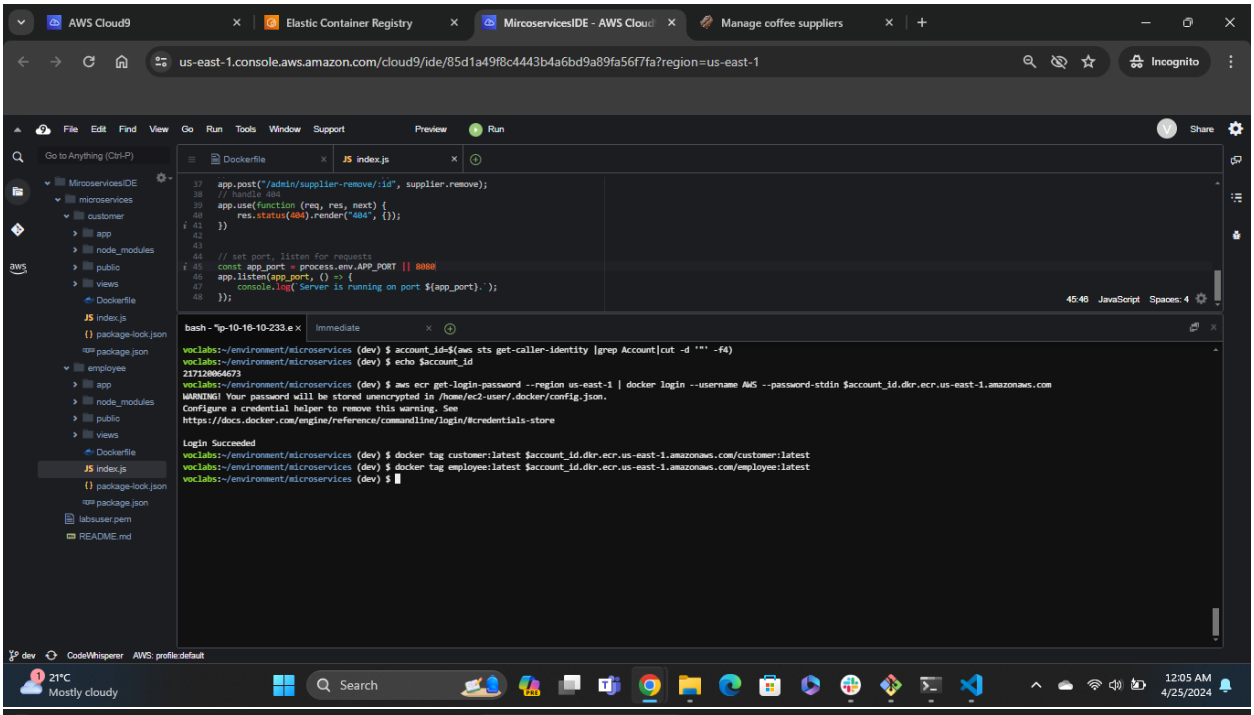
2. Verifying if the ECR are created.

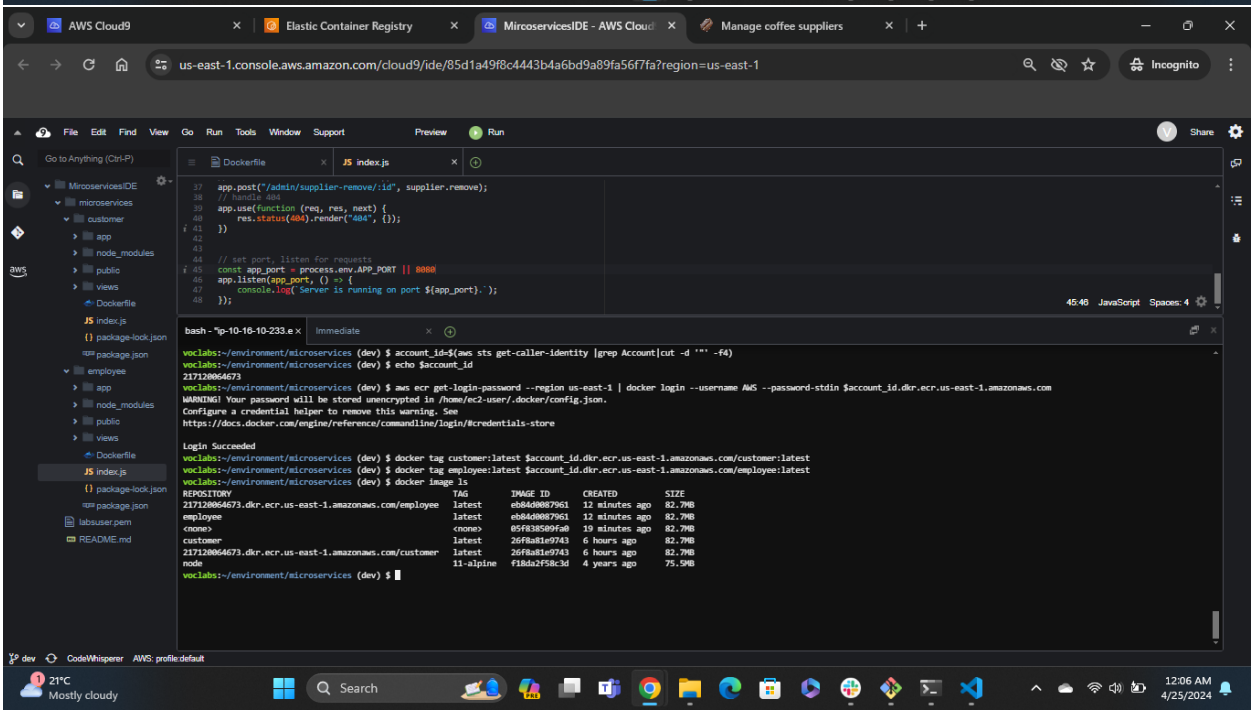


3. Updating Push policy for ECR repositories so that CodePipeline can push new build onto ECR.



4. Tag the images created for customer (Task4.3) and employee (Task4.6), and push them onto relevant ECR repositories, and verify if image is pushed onto ECR with latest tag.


AWS Cloud9
Elastic Container Registry
MircoservicesIDE - AWS Cloud
Manage coffee suppliers
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito
File Edit Find View Go Run Tools Window Support Preview Run
Share
Go to Anything (Ctrl-P)
Dockerfile
index.js
MircoservicesIDE
microservices
customer
employee
app
node_modules
public
views
package-lock.json
package.json
labsuser.pem
README.md
app.post("/admin/supplier-remove/:id", supplier.remove);
// handle 404
app.use(function (req, res, next) {
res.status(404).render("404", {});
})
// set port, listen for requests
const app_port = process.env.APP_PORT || 8080
app.listen(app_port, () => {
console.log(`Server is running on port ${app_port}.`);
});
45:46 JavaScript Spaces: 4
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment/microservices (dev) $ account_id=$(aws sts get-caller-identity |grep Account|cut -d '"' -f4)
voclabs:~/environment/microservices (dev) $ echo $account_id
217120064673
voclabs:~/environment/microservices (dev) $ aws ecr get-login-password --region us-east-1 | docker login --username AWS --password-stdin $account_id.dkr.ecr.us-east-1.amazonaws.com
WARNING! Your password will be stored unencrypted in /home/ec2-user/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store
Login Succeeded
voclabs:~/environment/microservices (dev) $ docker tag customer:latest $account_id.dkr.ecr.us-east-1.amazonaws.com/customer:latest
voclabs:~/environment/microservices (dev) $ docker tag employee:latest $account_id.dkr.ecr.us-east-1.amazonaws.com/employee:latest
voclabs:~/environment/microservices (dev) $
dev
CodeWhisperer
AWS: profile:default
21°C
Mostly cloudy
Search
12:05 AM
4/25/2024


AWS Cloud9
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MircoservicesIDE - AWS Cloud
Manage coffee suppliers
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
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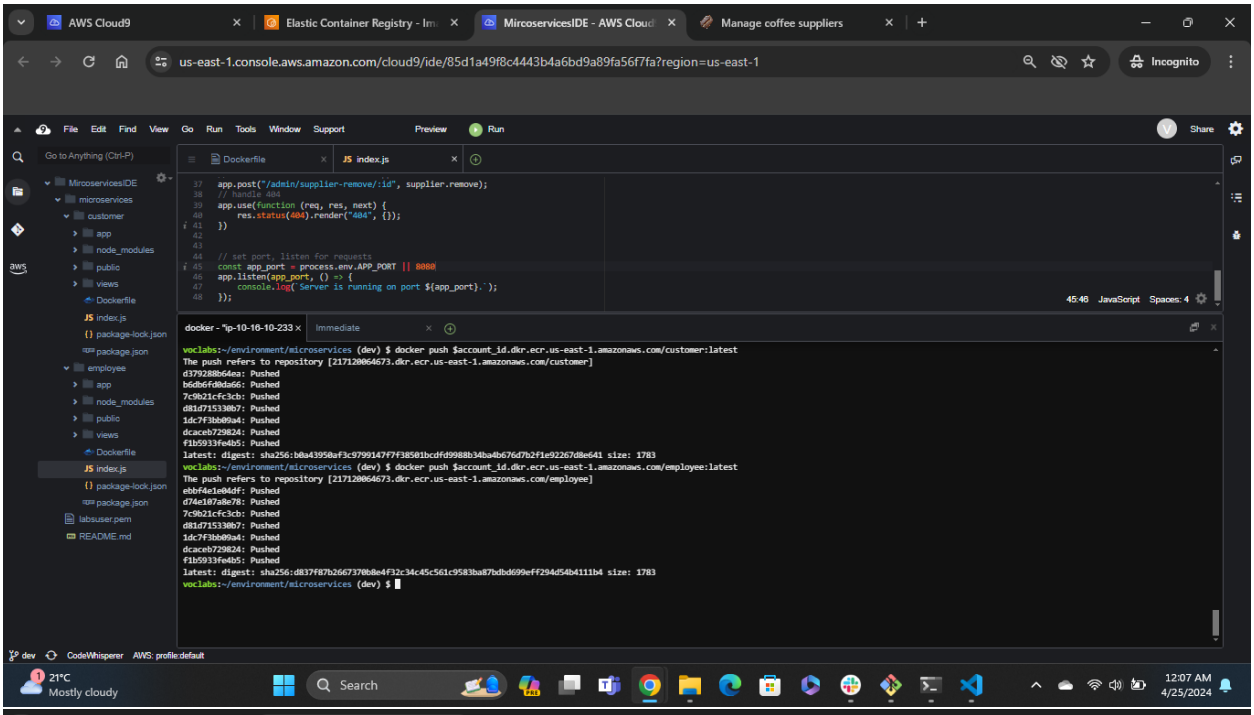
File Edit Find View Go Run Tools Window Support Preview Run
Share
Go to Anything (Ctrl-P)
Dockerfile
index.js
MircoservicesIDE
microservices
customer
employee
app
node_modules
public
views
package-lock.json
package.json
labsuser.pem
README.md
app.post("/admin/supplier-remove/:id", supplier.remove);
// handle 404
app.use(function (req, res, next) {
res.status(404).render("404", {});
})
// set port, listen for requests
const app_port = process.env.APP_PORT || 8080
app.listen(app_port, () => {
console.log(`Server is running on port ${app_port}.`);
});
45:46 JavaScript Spaces: 4
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment/microservices (dev) $ account_id=$(aws sts get-caller-identity |grep Account|cut -d '"' -f4)
voclabs:~/environment/microservices (dev) $ echo $account_id
217120064673
voclabs:~/environment/microservices (dev) $ aws ecr get-login-password --region us-east-1 | docker login --username AWS --password-stdin $account_id.dkr.ecr.us-east-1.amazonaws.com
WARNING! Your password will be stored unencrypted in /home/ec2-user/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store
Login Succeeded
voclabs:~/environment/microservices (dev) $ docker tag customer:latest $account_id.dkr.ecr.us-east-1.amazonaws.com/customer:latest
voclabs:~/environment/microservices (dev) $ docker tag employee:latest $account_id.dkr.ecr.us-east-1.amazonaws.com/employee:latest
voclabs:~/environment/microservices (dev) $ docker image ls
REPOSITORY TAG IMAGE ID CREATED SIZE
217120064673.dkr.ecr.us-east-1.amazonaws.com/employee latest eb84d0087961 12 minutes ago 82.7MB
employee latest eb84d0087961 12 minutes ago 82.7MB
<none> <none> 05f838589fa0 19 minutes ago 82.7MB
customer latest 26f8a81e9743 6 hours ago 82.7MB
217120064673.dkr.ecr.us-east-1.amazonaws.com/customer latest 26f8a81e9743 6 hours ago 82.7MB
node 11-alpine f18da2f58c3d 4 years ago 75.5MB
voclabs:~/environment/microservices (dev) $
dev
CodeWhisperer
AWS: profile:default
21°C
Mostly cloudy
Search
12:06 AM
4/25/2024


AWS Cloud9
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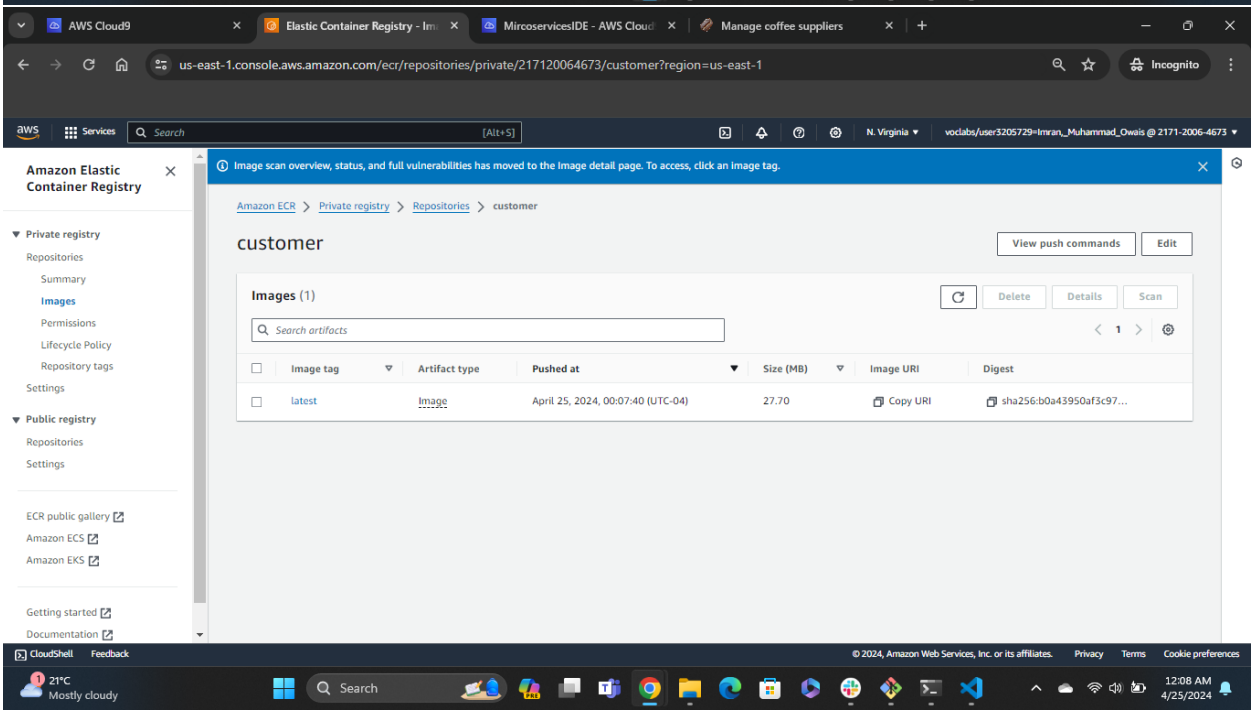
microservices
customer
app
node_modules
public
views
Dockerfile
index.js
package-lock.json
package.json
employee
app
node_modules
public
views
Dockerfile
index.js
package-lock.json
package.json
labsuser.pem
README.md
Dockerfile
index.js
app.post("/admin/supplier-remove/:id", supplier.remove);
// handle 404
app.use(function (req, res, next) {
res.status(404).render("404", {});
})
// set port, listen for requests
const app_port = process.env.APP_PORT || 8080
app.listen(app_port, () => {
console.log(`Server is running on port ${app_port}.`);
});
45:46 JavaScript Spaces: 4
docker - "ip-10-16-10-233
Immediate
voclabs:~/environment/microservices (dev) $ docker push $account_id.dkr.ecr.us-east-1.amazonaws.com/customer:latest
The push refers to repository [217120064673.dkr.ecr.us-east-1.amazonaws.com/customer]
d379288b64ea: Pushed
b6db6fd0da66: Pushed
7c9b21cfc3cb: Pushed
d81d715330b7: Pushed
1dc7f3bb09a4: Pushed
dcaceb729824: Pushed
f1b5933fe4b5: Pushed
latest: digest: sha256:b0a43950af3c9799147f7f38501bcdfd9988b34ba4b676d7b2f1e92267d8e641 size: 1783
voclabs:~/environment/microservices (dev) $ docker push $account_id.dkr.ecr.us-east-1.amazonaws.com/employee:latest
The push refers to repository [217120064673.dkr.ecr.us-east-1.amazonaws.com/employee]
ebbf4e1e04df: Pushed
d74e187a8e78: Pushed
7c9b21cfc3cb: Pushed
d81d715330b7: Pushed
1dc7f3bb09a4: Pushed
dcaceb729824: Pushed
f1b5933fe4b5: Pushed
latest: digest: sha256:d837f87b2667370b8e4f32c34c45c561c9583ba87bdbd699eff294d54b4111b4 size: 1783
voclabs:~/environment/microservices (dev) $
dev
CodeWhisperer
AWS: profile:default
21°C
Mostly cloudy
Search
12:07 AM
4/25/2024


AWS Cloud9
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MircoservicesIDE - AWS Cloud
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us-east-1.console.aws.amazon.com/ecr/repositories/private/217120064673/customer?region=us-east-1
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voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
Amazon Elastic Container Registry
Private registry
Repositories
Summary
Images
Permissions
Lifecycle Policy
Repository tags
Settings
Public registry
Repositories
Settings
ECR public gallery
Amazon ECS
Amazon EKS
Getting started
Documentation
Image scan overview, status, and full vulnerabilities has moved to the Image detail page. To access, click an image tag.
Amazon ECR > Private registry > Repositories > customer
customer
View push commands
Edit
Images (1)
Delete
Details
Scan
Search artifacts
1
Image tag
Artifact type
Pushed at
Size (MB)
Image URI
Digest
latest
Image
April 25, 2024, 00:07:40 (UTC-04)
27.70
Copy URI
sha256:b0a43950af3c97...
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
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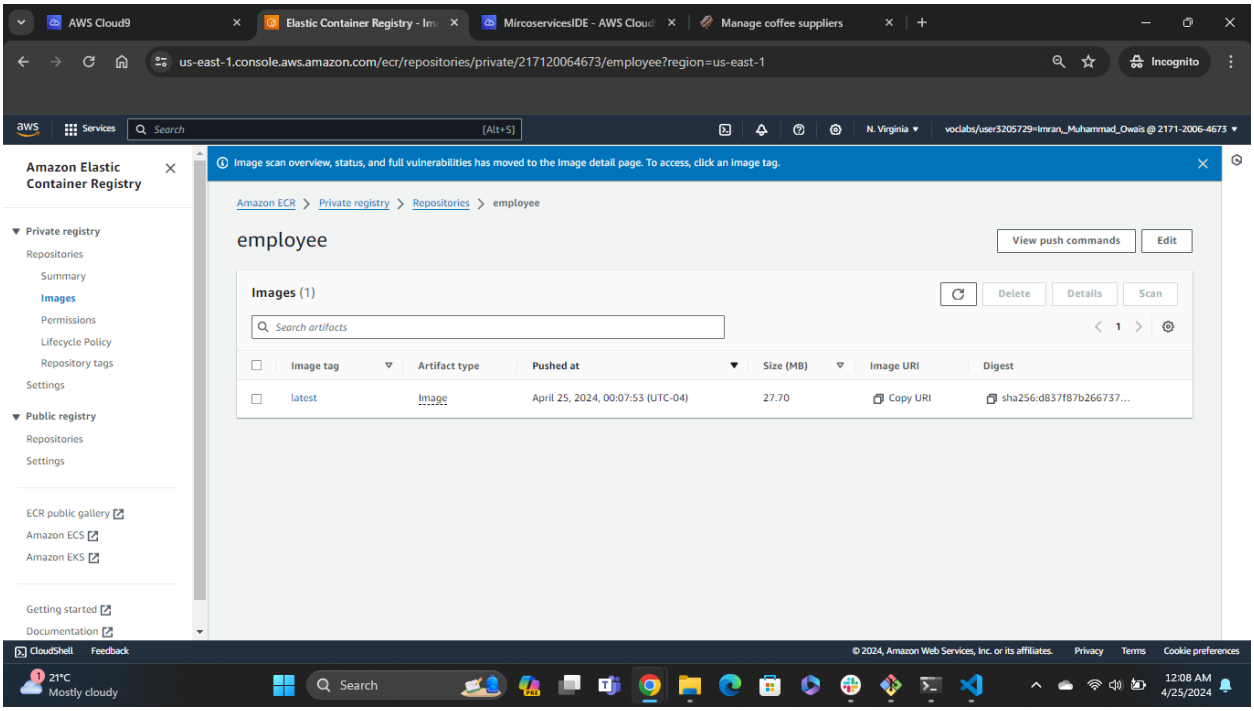
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MircoservicesIDE - AWS Cloud
Manage coffee suppliers
us-east-1.console.aws.amazon.com/ecr/repositories/private/217120064673/employee?region=us-east-1
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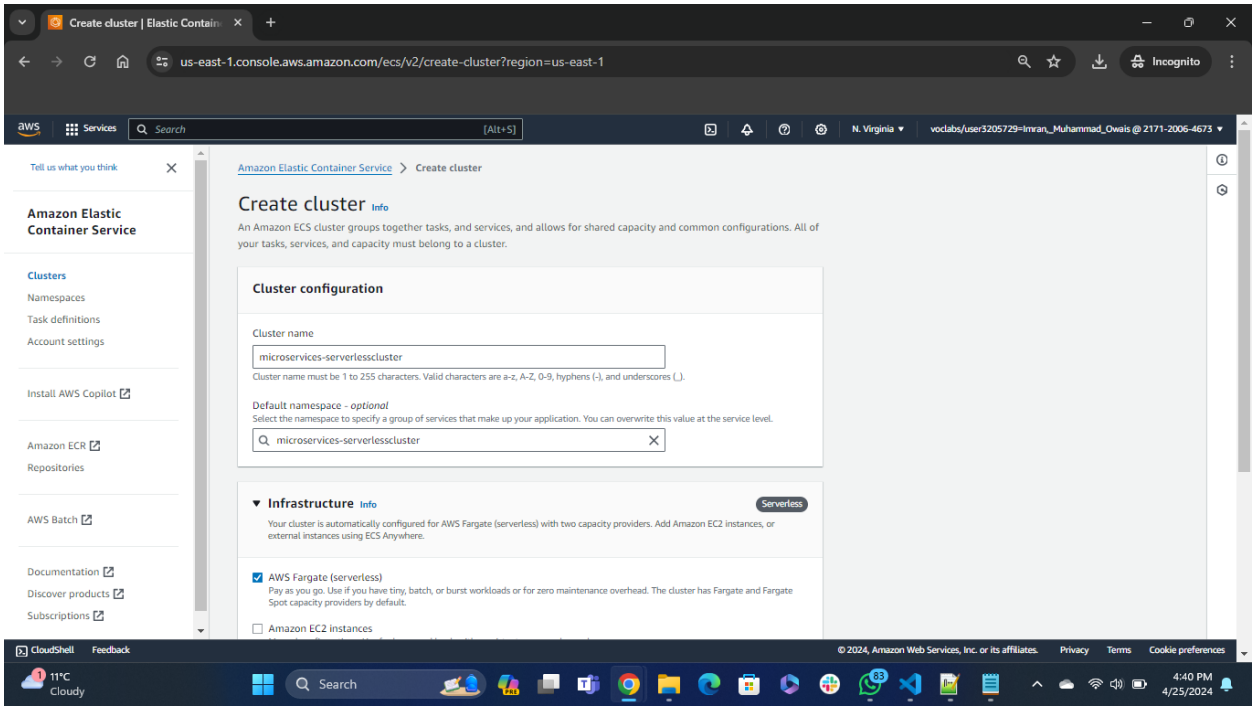
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
Amazon Elastic Container Registry
Private registry
Repositories
Summary
Images
Permissions
Lifecycle Policy
Repository tags
Settings
Public registry
Repositories
Settings
ECR public gallery
Amazon ECS
Amazon EKS
Getting started
Documentation
Image scan overview, status, and full vulnerabilities has moved to the Image detail page. To access, click an image tag.
Amazon ECR
Private registry
Repositories
employee
employee
View push commands
Edit
Images (1)
Delete
Details
Scan
Search artifacts
1
Image tag
Artifact type
Pushed at
Size (MB)
Image URI
Digest
latest
Image
April 25, 2024, 00:07:53 (UTC-04)
27.70
Copy URI
sha256:d837f87b266737...
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
21°C
Mostly cloudy
Search
12:08 AM
4/25/2024

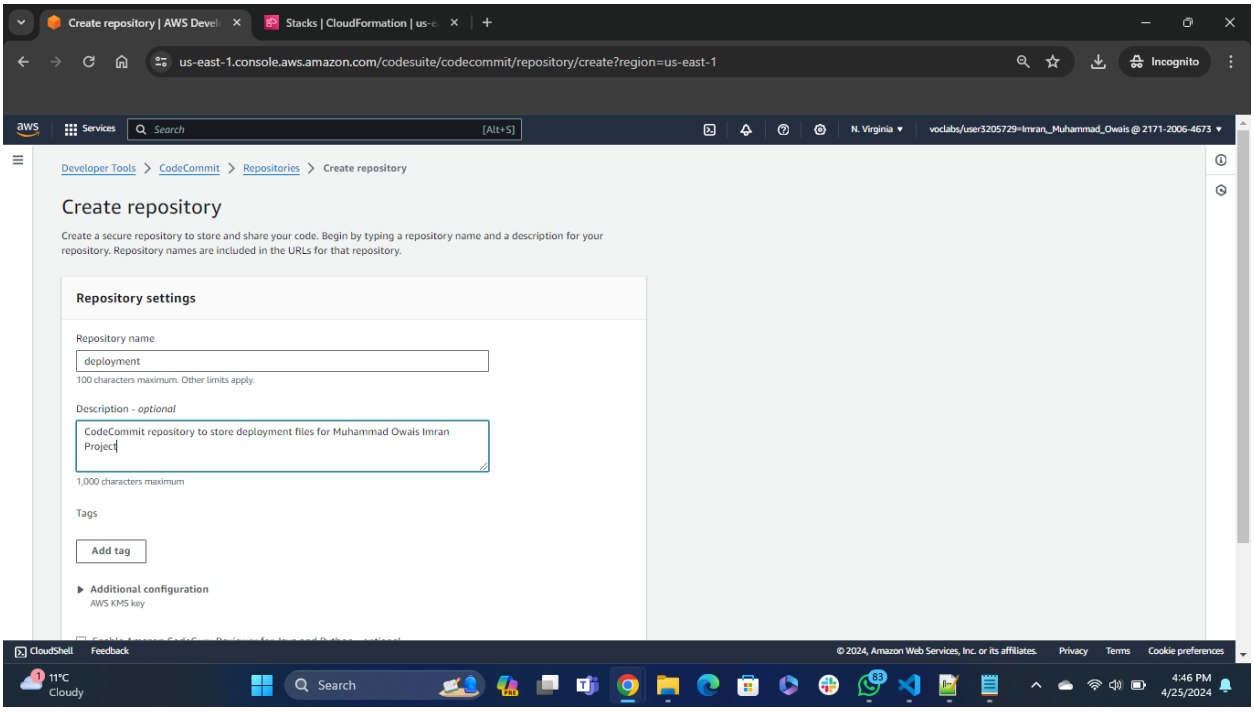
Task 5.2: Create an ECS cluster

1. Create a serverless AWS Fargate cluster that is named microservices-serverlesscluster

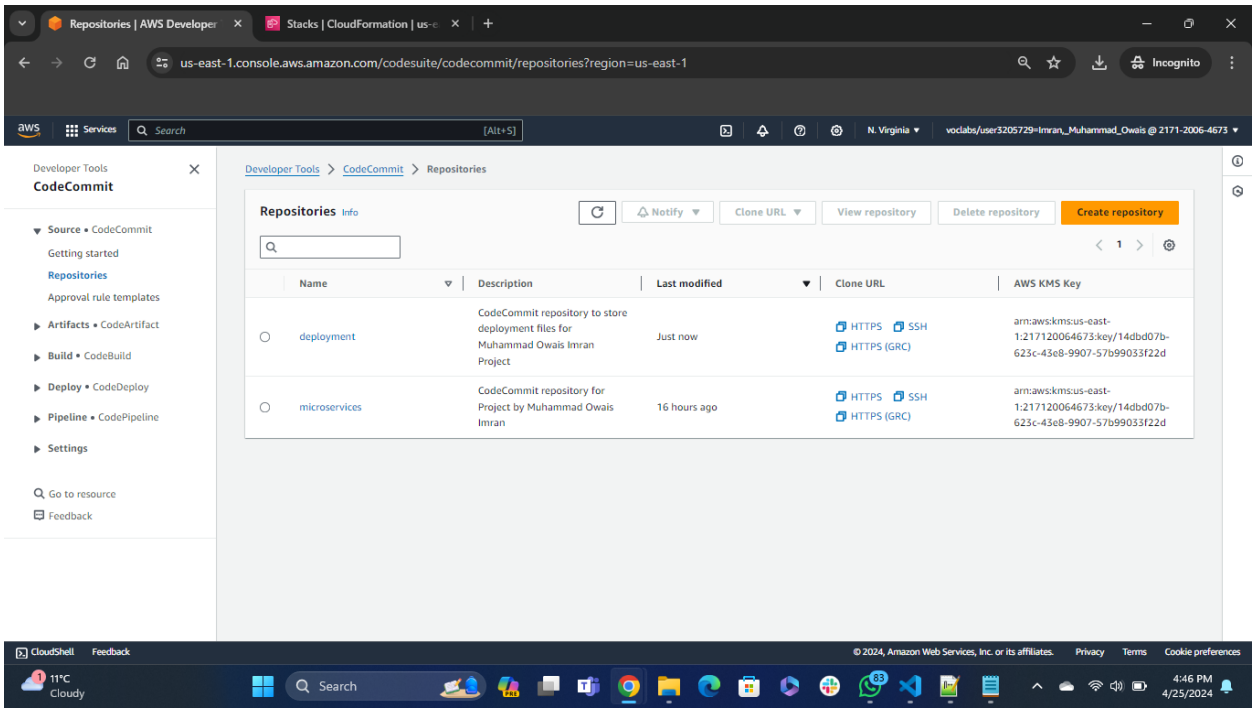


Task 5.3: Create a CodeCommit repository to store deployment files

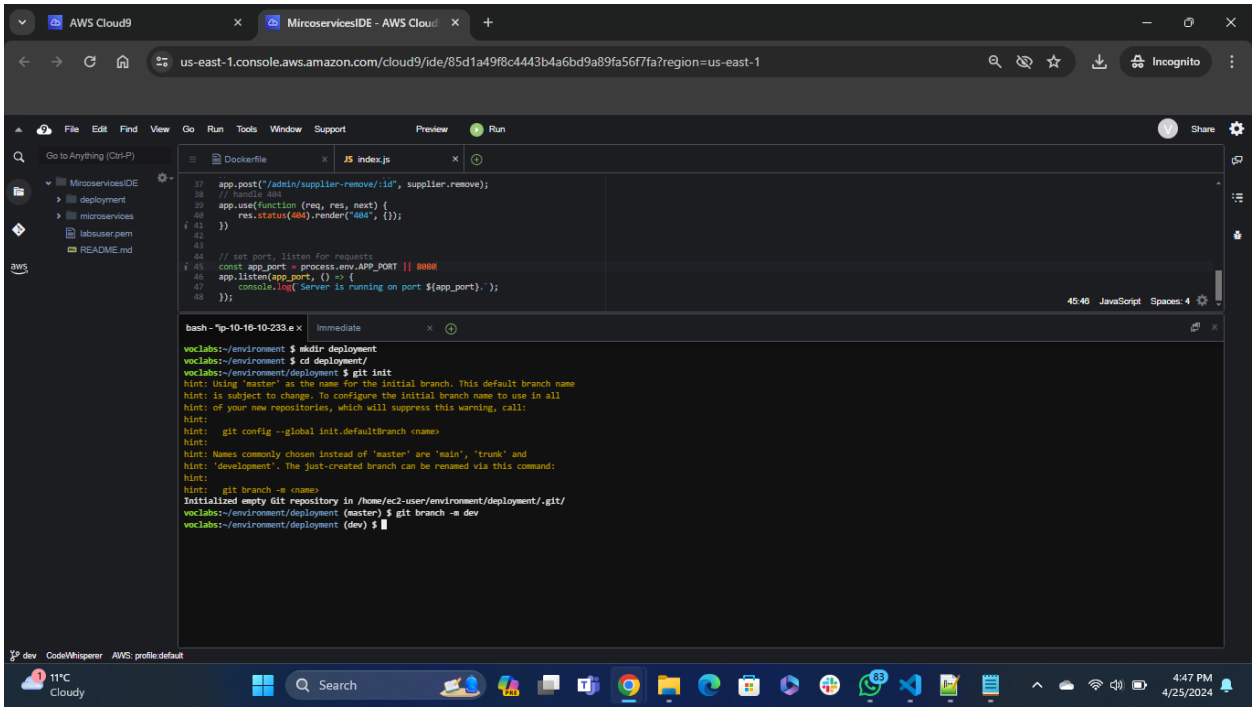
1. Create a code commit repository by the name of deployment



2. Verifying if the repository is created.

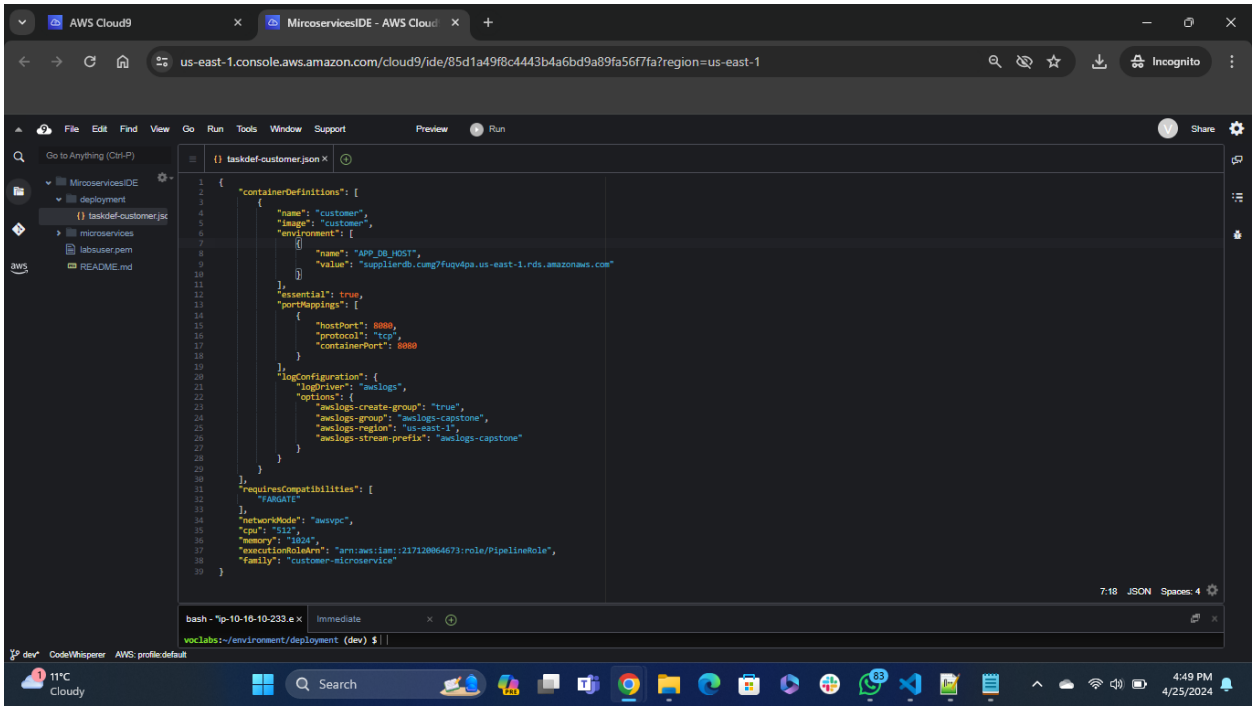


3. Initialize an empty git repository and creating a branch named dev.

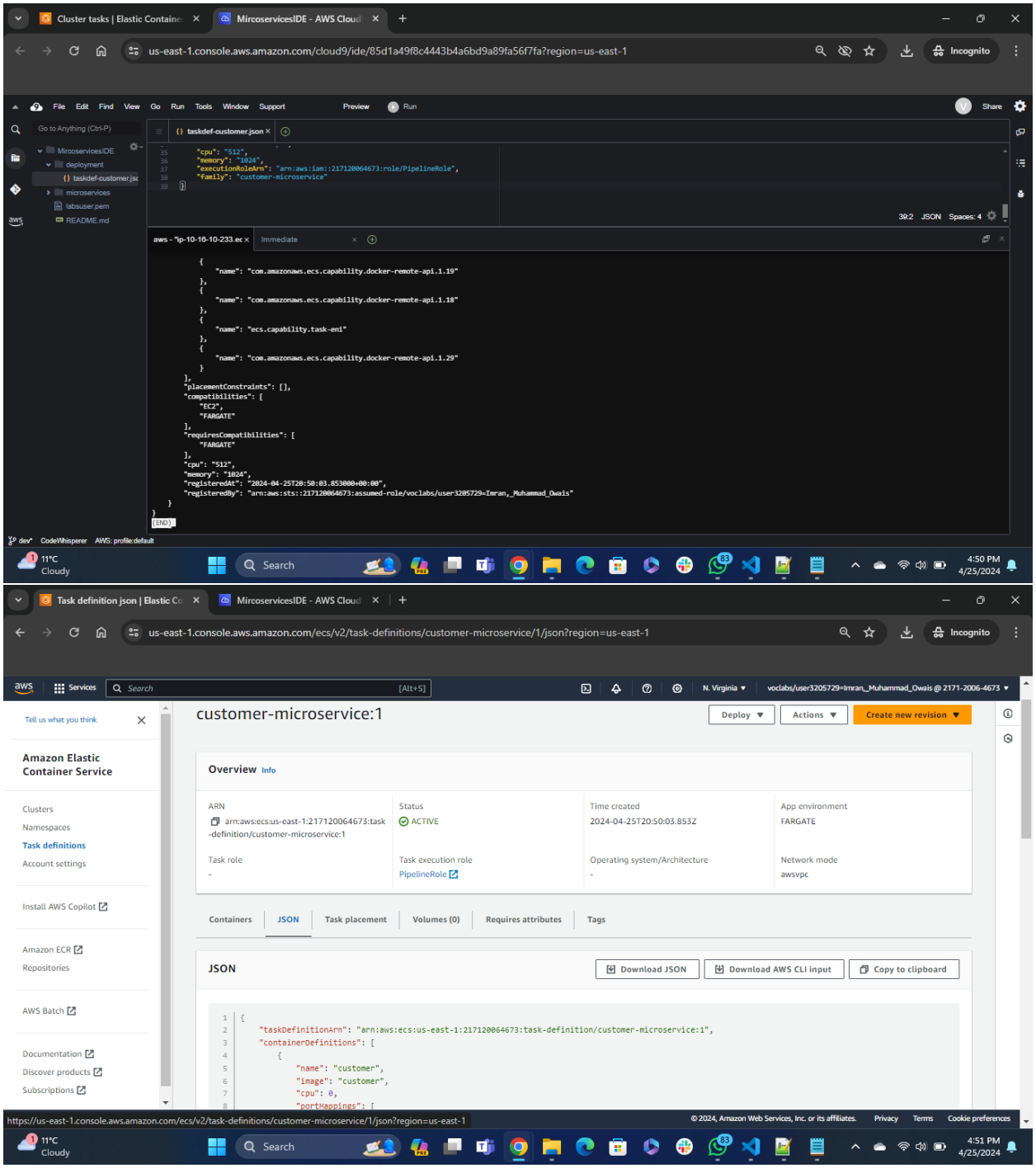


Task 5.4: Create task definition files for each microservice and register them with Amazon ECS

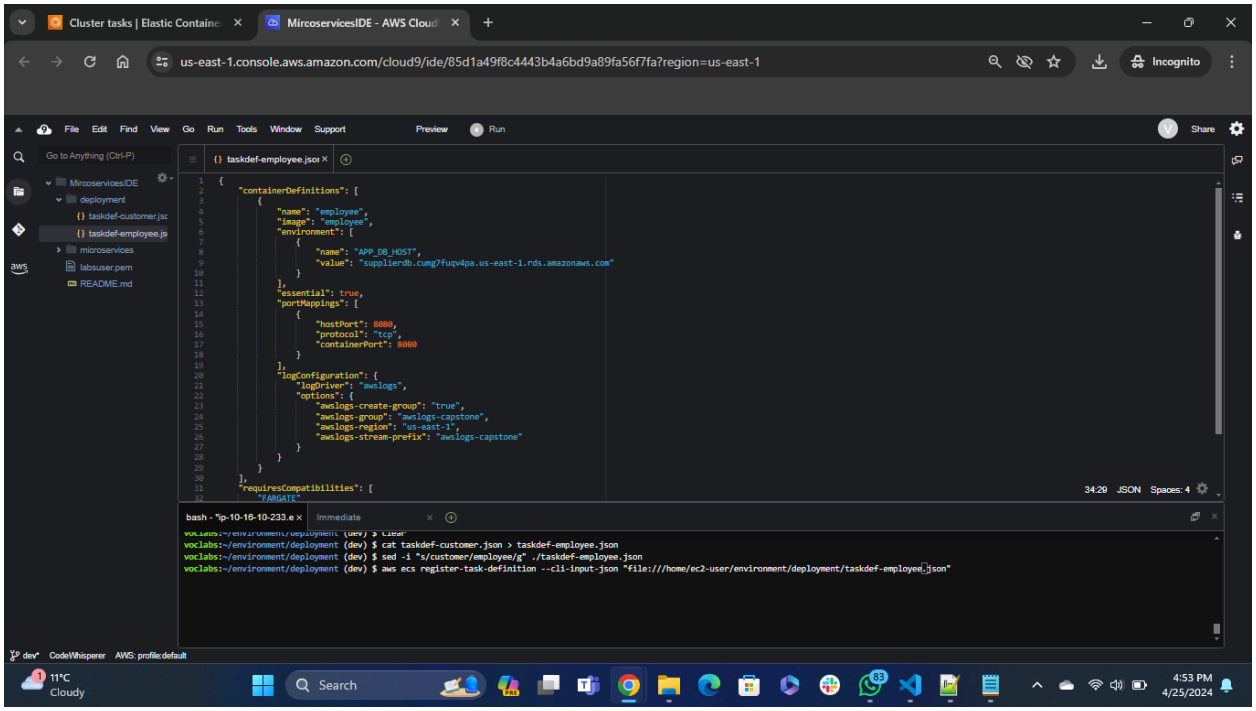
1. In the AWS Cloud9 IDE, create a new directory by the name of deployment on ~/environment
2. Create a file taskdef-customer.json



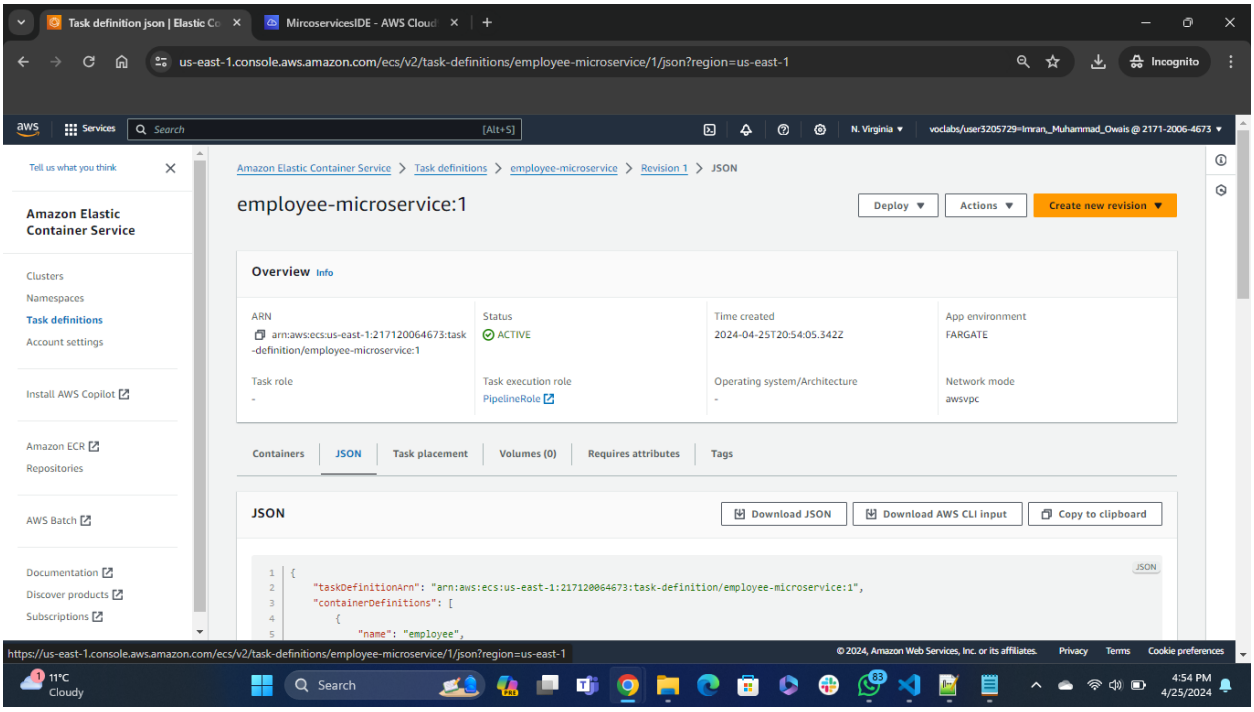
3. Register this service onto ECR, and verify.



4. Create a file for taskdef-employee.json and copy the contents of taskdef-customer. After you paste in the code, change the three occurrences of customer to employee, and register the service onto ECS. Copy and replace is done using the following commands:
   - `cat taskdef-customer.json > taskdef-employee.json`
   - `sed -i “s/customer/employee/g” ./taskdef-employee.json`

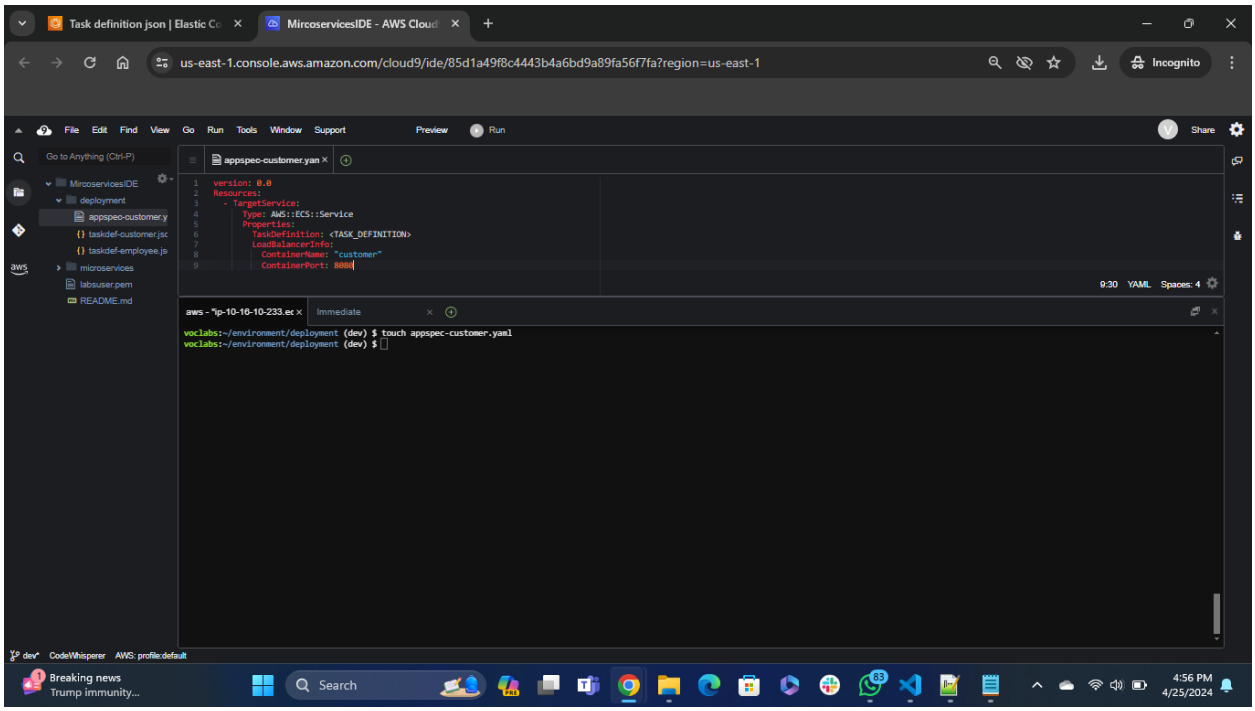


Verify if the service was registered successfully onto ECR.

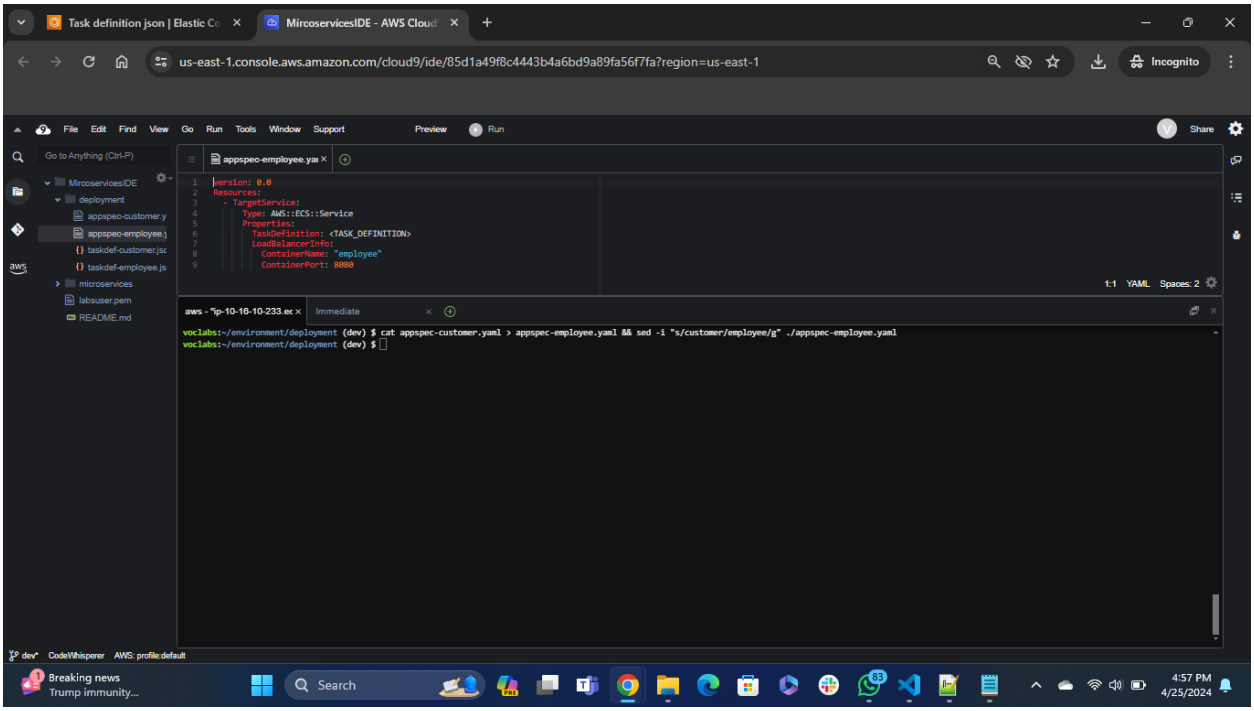


Task 5.5: Create AppSpec files for CodeDeploy for each microservice

1. Create an AppSpec file for the customer microservice
    a. In the deployment directory, create a new file named appspec-customer.yaml



2. Create an AppSpec file for the employee microservice
    a. Name the file appspec-employee.yaml
    b. The contents of the file should be the same as the appspec-customer.yaml file. However, change customer`` on thecontainerNameline to be employee


Task definition json | Elastic Co
MircoservicesIDE - AWS Cloud
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito
File Edit Find View Go Run Tools Window Support
Preview
Run
Share
Go to Anything (Ctrl-P)
MircoservicesIDE
deployment
appspec-customer.y
appspec-employee.y
taskdef-customer.jsc
taskdef-employee.js
microservices
labsuser.pem
README.md
appspec-employee.yaml
version: 0.0
Resources:
- TargetService:
Type: AWS::ECS::Service
Properties:
TaskDefinition: <TASK_DEFINITION>
LoadBalancerInfo:
ContainerName: "employee"
ContainerPort: 8080
1:1 YAML Spaces: 2
aws - "ip-10-16-10-233.ec
Immediate
voclabs:~/environment/deployment (dev) $ cat appspec-customer.yaml > appspec-employee.yaml && sed -i "s/customer/employee/g" ./appspec-employee.yaml
voclabs:~/environment/deployment (dev) $
dev*
CodeWhisperer
AWS: profile:default
Breaking news
Trump immunity...
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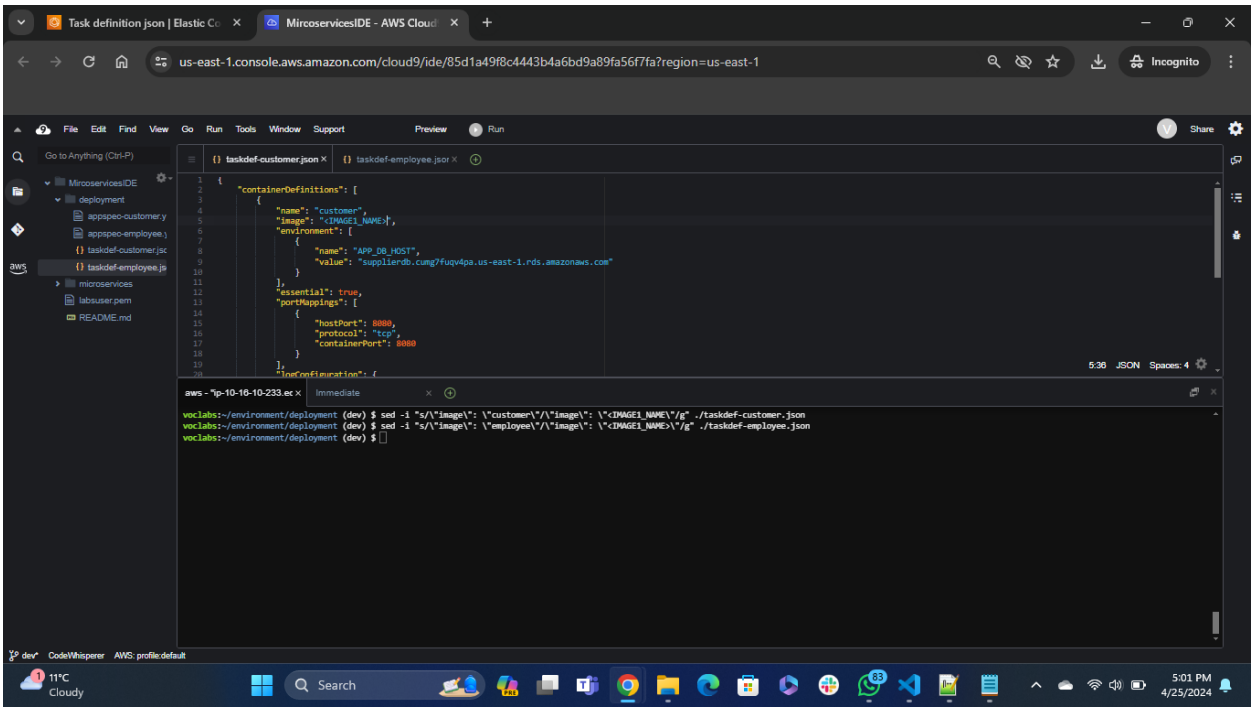
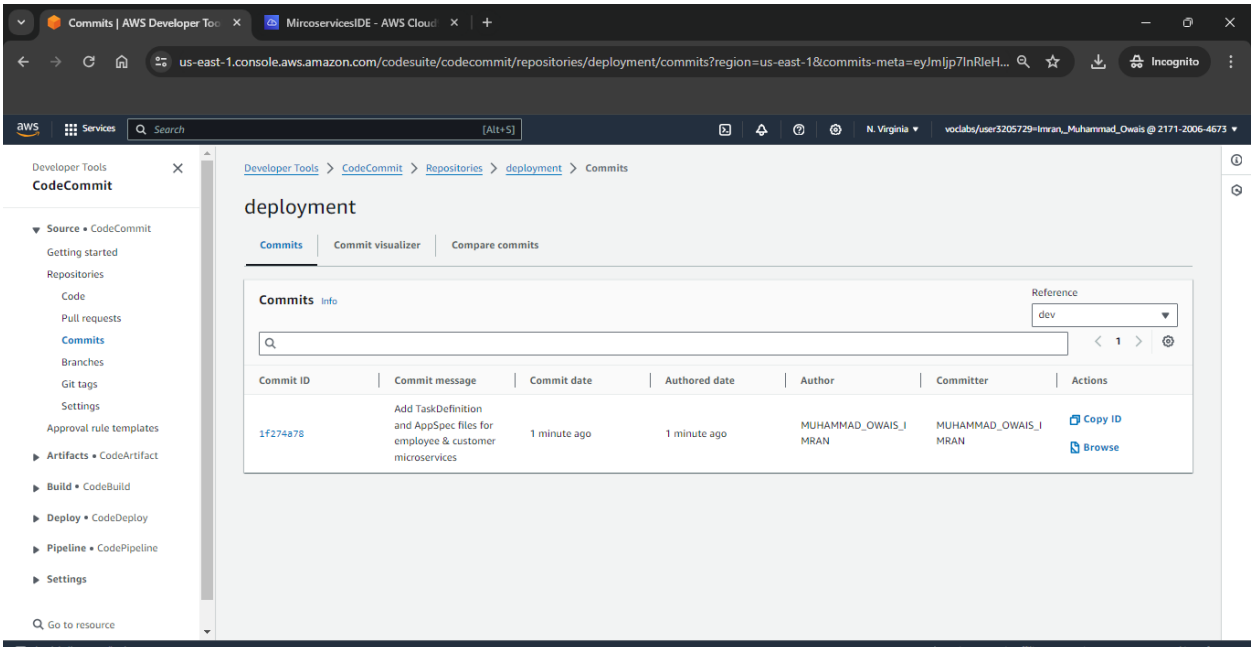
4:57 PM
4/25/2024

Task 5.6: Update files and check them into CodeCommit

Edit the file taskdef-customer.json and taskdef-employee.json and replace image field value with “IMAGE1_NAME”. This value will be updated automatically by the codepipeline which will be created in the later steps.



Commit the code onto code commit.


Commits | AWS Developer Too
MircoservicesIDE - AWS Cloud
us-east-1.console.aws.amazon.com/codesuite/codecommit/repositories/deployment/commits?region=us-east-1&commits-meta=eyJmIjp7InRleH...
Incognito
Services
Search
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N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
Developer Tools
CodeCommit
Source • CodeCommit
Getting started
Repositories
Code
Pull requests
Commits
Branches
Git tags
Settings
Approval rule templates
Artifacts • CodeArtifact
Build • CodeBuild
Deploy • CodeDeploy
Pipeline • CodePipeline
Settings
Go to resource
Developer Tools > CodeCommit > Repositories > deployment > Commits
deployment
Commits
Commit visualizer
Compare commits
Commits Info
Reference
dev
Commit ID
Commit message
Commit date
Authored date
Author
Committer
Actions
1f274a78
Add TaskDefinition and AppSpec files for employee & customer microservices
1 minute ago
1 minute ago
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Pollen tomorrow
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5:03 PM
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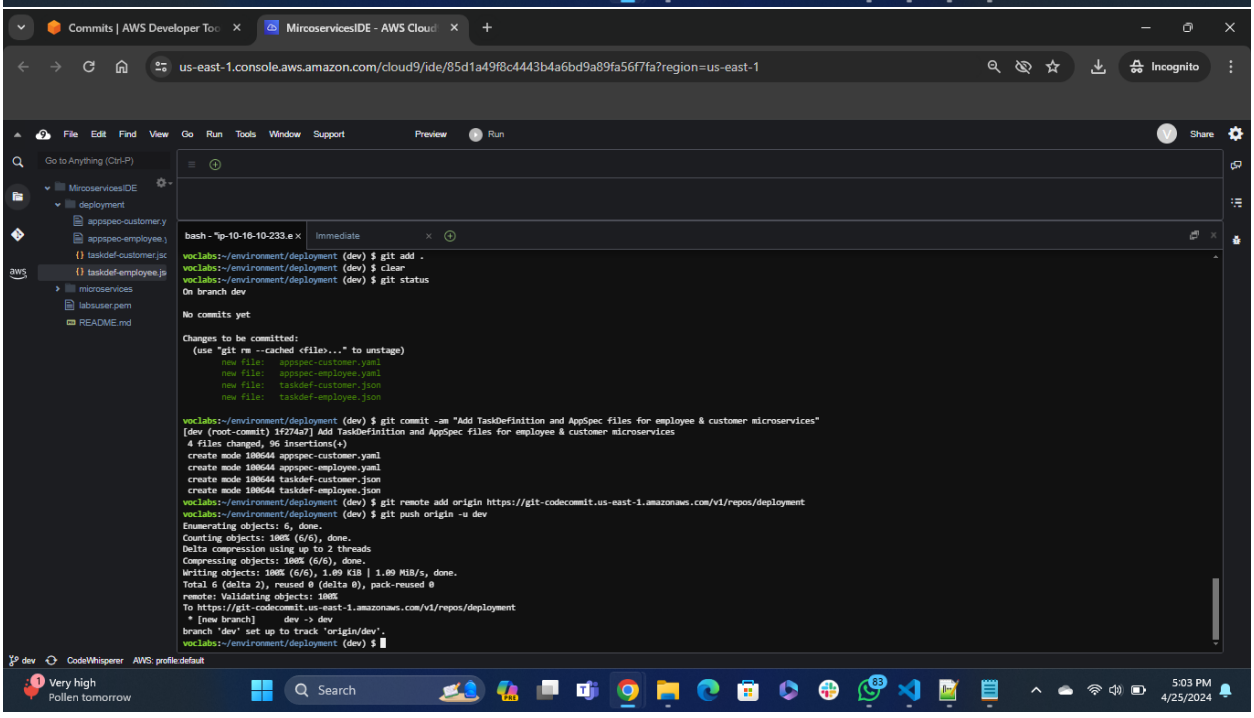
Commits | AWS Developer Too
MircoservicesIDE - AWS Cloud
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito
File Edit Find View Go Run Tools Window Support
Preview
Run
Share
Go to Anything (Ctrl-P)
MircoservicesIDE
deployment
appspec-customer.y
appspec-employee.y
taskdef-customer.jsc
taskdef-employee.js
microservices
labsuser.pem
README.md
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment/deployment (dev) $ git add .
voclabs:~/environment/deployment (dev) $ clear
voclabs:~/environment/deployment (dev) $ git status
On branch dev
No commits yet
Changes to be committed:
(use "git rm --cached <file>..." to unstage)
new file: appspec-customer.yaml
new file: appspec-employee.yaml
new file: taskdef-customer.json
new file: taskdef-employee.json
voclabs:~/environment/deployment (dev) $ git commit -am "Add TaskDefinition and AppSpec files for employee & customer microservices"
[dev (root-commit) 1f274a7] Add TaskDefinition and AppSpec files for employee & customer microservices
4 files changed, 96 insertions(+)
create mode 100644 appspec-customer.yaml
create mode 100644 appspec-employee.yaml
create mode 100644 taskdef-customer.json
create mode 100644 taskdef-employee.json
voclabs:~/environment/deployment (dev) $ git remote add origin https://git-codecommit.us-east-1.amazonaws.com/v1/repos/deployment
voclabs:~/environment/deployment (dev) $ git push origin -u dev
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 2 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (6/6), 1.09 KiB | 1.09 MiB/s, done.
Total 6 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Validating objects: 100%
To https://git-codecommit.us-east-1.amazonaws.com/v1/repos/deployment
* [new branch] dev -> dev
branch 'dev' set up to track 'origin/dev'.
voclabs:~/environment/deployment (dev) $
dev
CodeWhisperer
AWS: profile:default
Very high
Pollen tomorrow
Search
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Significance & Importance of this Task

This task has the following outcomes:

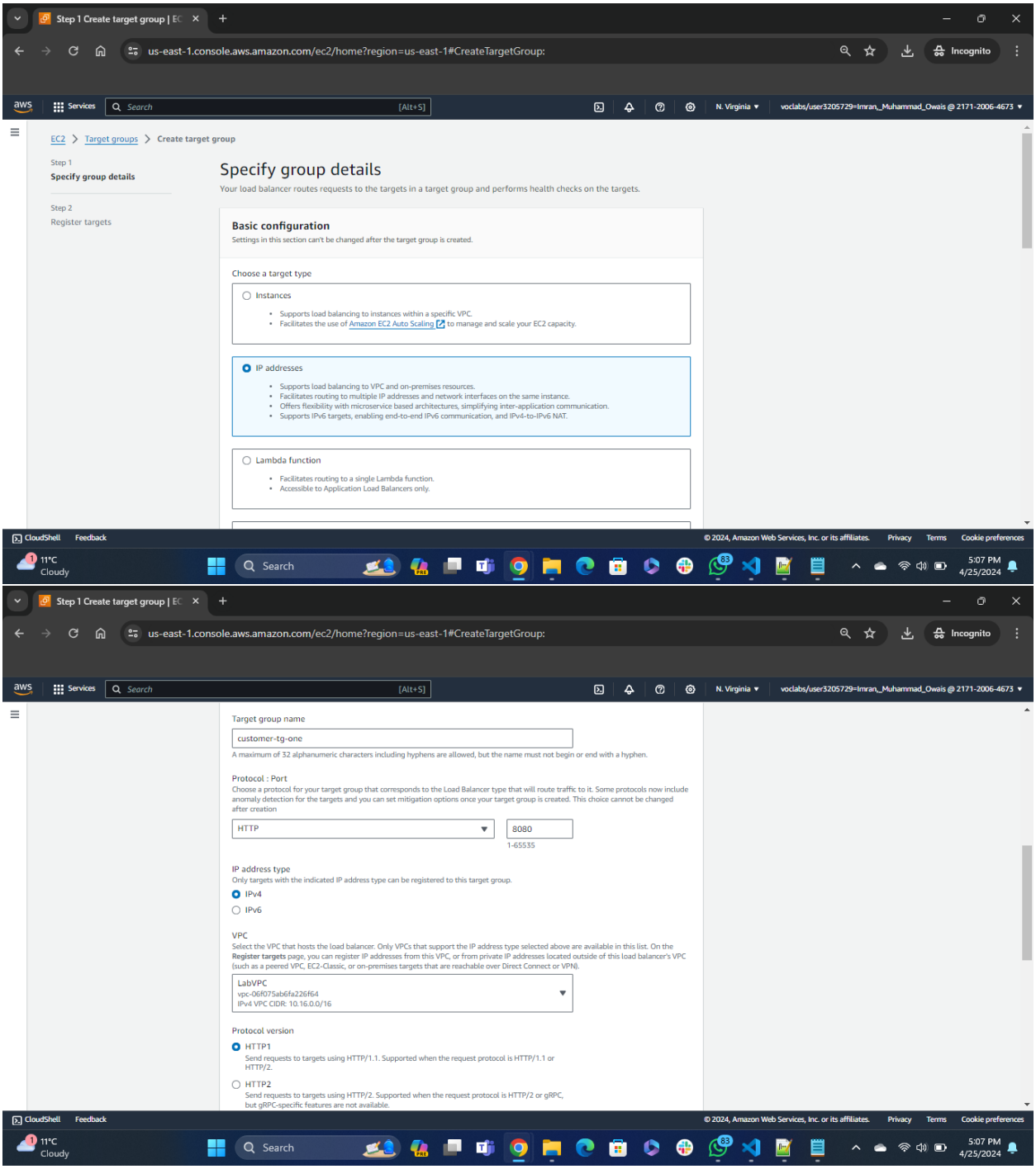
- Learning the use case of ECR
- How to create an ECS cluster
- Difference between Task and Service of an ECS
- How to Define AppSpec for CodeDeployment, and Task Definition for ECS
- How CodeDeployment helps in achieving CI/CD in an application Development to Deployment lifecycle

Phase 6: Creating target groups and an Application Load Balancer

Task 6.1: Create four target groups

1. For customer-microservice create target group with this config
   ```
   Target Group Type: IP address
   Target Group Name: customer-tg-one/customer-tg-two
   Protocol: HTTP
   Port: 8080
   VPC: LabVPC
   Health check path: /
   ```

2. For employee-microservice create target group with this config
   ```
   Target Group Type: IP address
   Target Group Name: employee-tg-one/employee-tg-two
   Protocol: HTTP
   Port: 8081
   VPC: LabVPC
   Health check path: /admin/suppliers
   ```


Step 1 Create target group | EC
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTargetGroup:
Incognito
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
EC2 > Target groups > Create target group
Step 1
Specify group details
Step 2
Register targets
Specify group details
Your load balancer routes requests to the targets in a target group and performs health checks on the targets.
Basic configuration
Settings in this section can't be changed after the target group is created.
Choose a target type
Instances
Supports load balancing to instances within a specific VPC.
Facilitates the use of Amazon EC2 Auto Scaling to manage and scale your EC2 capacity.
IP addresses
Supports load balancing to VPC and on-premises resources.
Facilitates routing to multiple IP addresses and network interfaces on the same instance.
Offers flexibility with microservice based architectures, simplifying inter-application communication.
Supports IPv6 targets, enabling end-to-end IPv6 communication, and IPv4-to-IPv6 NAT.
Lambda function
Facilitates routing to a single Lambda function.
Accessible to Application Load Balancers only.
CloudShell
Feedback
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Cloudy
Search
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Step 1 Create target group | EC
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTargetGroup:
Incognito
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
Target group name
customer-tg-one
A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.
Protocol : Port
Choose a protocol for your target group that corresponds to the Load Balancer type that will route traffic to it. Some protocols now include anomaly detection for the targets and you can set mitigation options once your target group is created. This choice cannot be changed after creation
HTTP
8080
1-65535
IP address type
Only targets with the indicated IP address type can be registered to this target group.
IPv4
IPv6
VPC
Select the VPC that hosts the load balancer. Only VPCs that support the IP address type selected above are available in this list. On the Register targets page, you can register IP addresses from this VPC, or from private IP addresses located outside of this load balancer's VPC (such as a peered VPC, EC2-Classic, or on-premises targets that are reachable over Direct Connect or VPN).
LabVPC
vpc-06f075ab6fa226f64
IPv4 VPC CIDR: 10.16.0.0/16
Protocol version
HTTP1
Send requests to targets using HTTP/1.1. Supported when the request protocol is HTTP/1.1 or HTTP/2.
HTTP2
Send requests to targets using HTTP/2. Supported when the request protocol is HTTP/2 or gRPC, but gRPC-specific features are not available.
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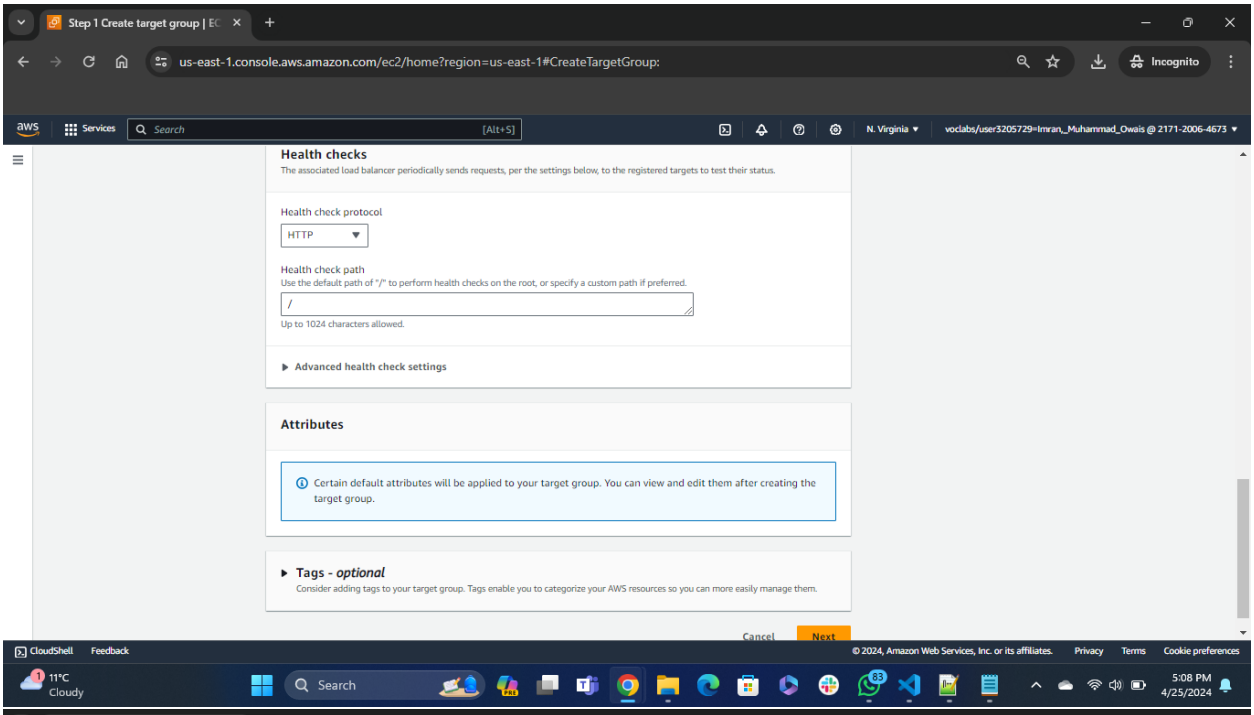
Step 1 Create target group | EC
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTargetGroup:
Incognito
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
Health checks
The associated load balancer periodically sends requests, per the settings below, to the registered targets to test their status.
Health check protocol
HTTP
Health check path
Use the default path of "/" to perform health checks on the root, or specify a custom path if preferred.
/
Up to 1024 characters allowed.
Advanced health check settings
Attributes
Certain default attributes will be applied to your target group. You can view and edit them after creating the target group.
Tags - optional
Consider adding tags to your target group. Tags enable you to categorize your AWS resources so you can more easily manage them.
Cancel
Next
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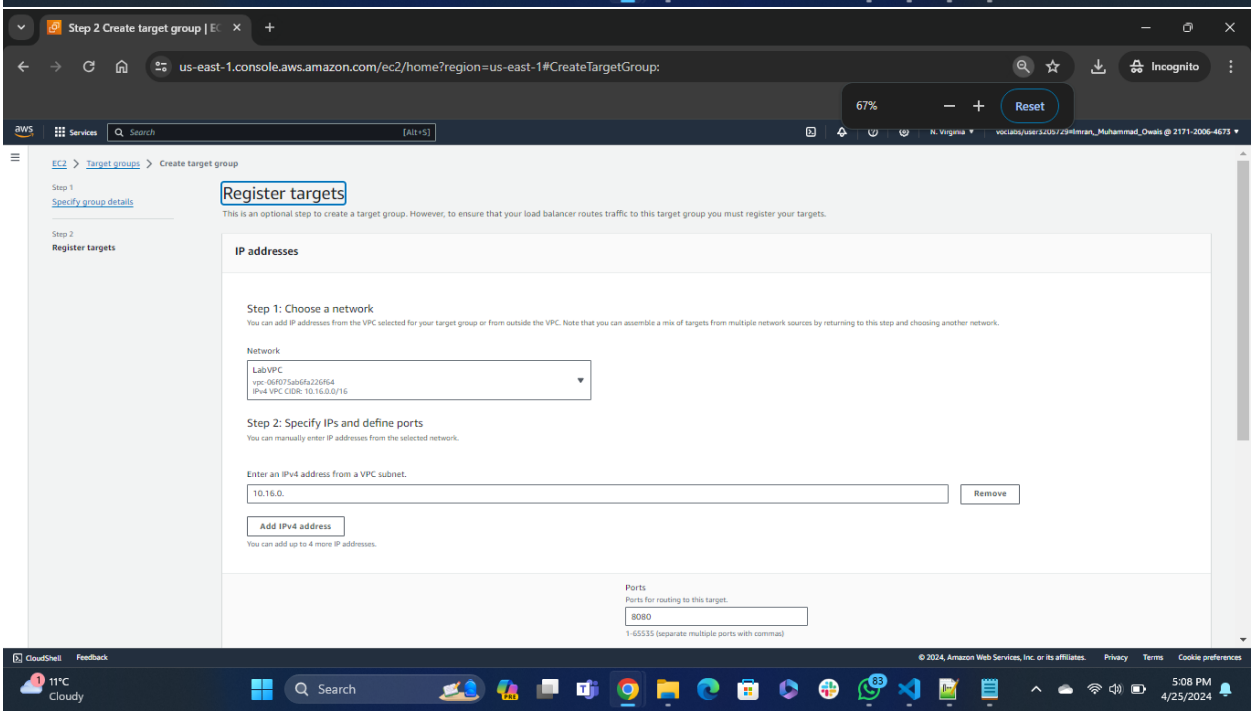
Step 2 Create target group | EC
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTargetGroup:
Incognito
67%
Reset
Services
Search
[Alt+S]
EC2
Target groups
Create target group
Step 1
Specify group details
Step 2
Register targets
Register targets
This is an optional step to create a target group. However, to ensure that your load balancer routes traffic to this target group you must register your targets.
IP addresses
Step 1: Choose a network
You can add IP addresses from the VPC selected for your target group or from outside the VPC. Note that you can assemble a mix of targets from multiple network sources by returning to this step and choosing another network.
Network
LabVPC
vpc-06f07Sab6fa226f64
IPv4 VPC CIDR: 10.16.0.0/16
Step 2: Specify IPs and define ports
You can manually enter IP addresses from the selected network.
Enter an IPv4 address from a VPC subnet.
10.16.0.
Remove
Add IPv4 address
You can add up to 4 more IP addresses.
Ports
Ports for routing to this target.
8080
1-65535 (separate multiple ports with commas)
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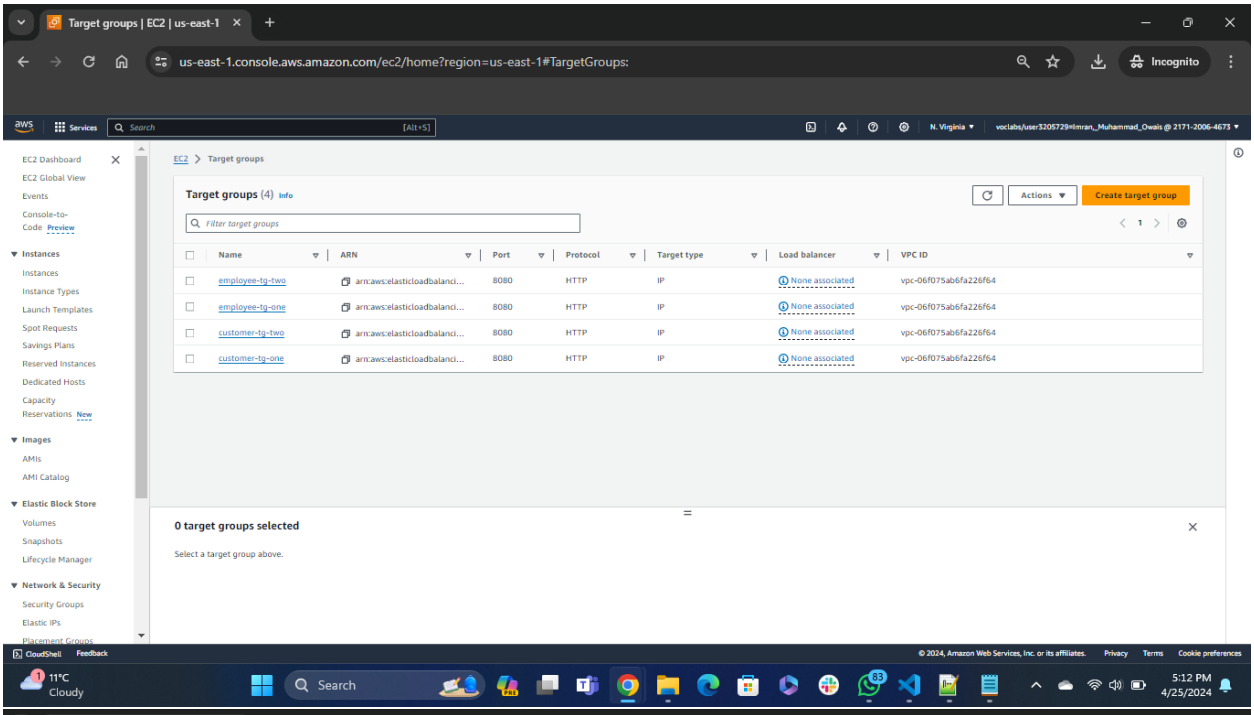
Target groups | EC2 | us-east-1
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#TargetGroups:
Incognito
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran_Muhammad_Owais @ 2171-2006-4673
EC2 Dashboard
EC2 Global View
Events
Console-to-Code Preview
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations New
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Placement Groups
EC2 > Target groups
Target groups (4) Info
Actions
Create target group
Filter target groups
Name
ARN
Port
Protocol
Target type
Load balancer
VPC ID
employee-tg-two
arn:aws:elasticloadbalanci...
8080
HTTP
IP
None associated
vpc-06f075ab6fa226f64
employee-tg-one
arn:aws:elasticloadbalanci...
8080
HTTP
IP
None associated
vpc-06f075ab6fa226f64
customer-tg-two
arn:aws:elasticloadbalanci...
8080
HTTP
IP
None associated
vpc-06f075ab6fa226f64
customer-tg-one
arn:aws:elasticloadbalanci...
8080
HTTP
IP
None associated
vpc-06f075ab6fa226f64
0 target groups selected
Select a target group above.
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Search
5:12 PM
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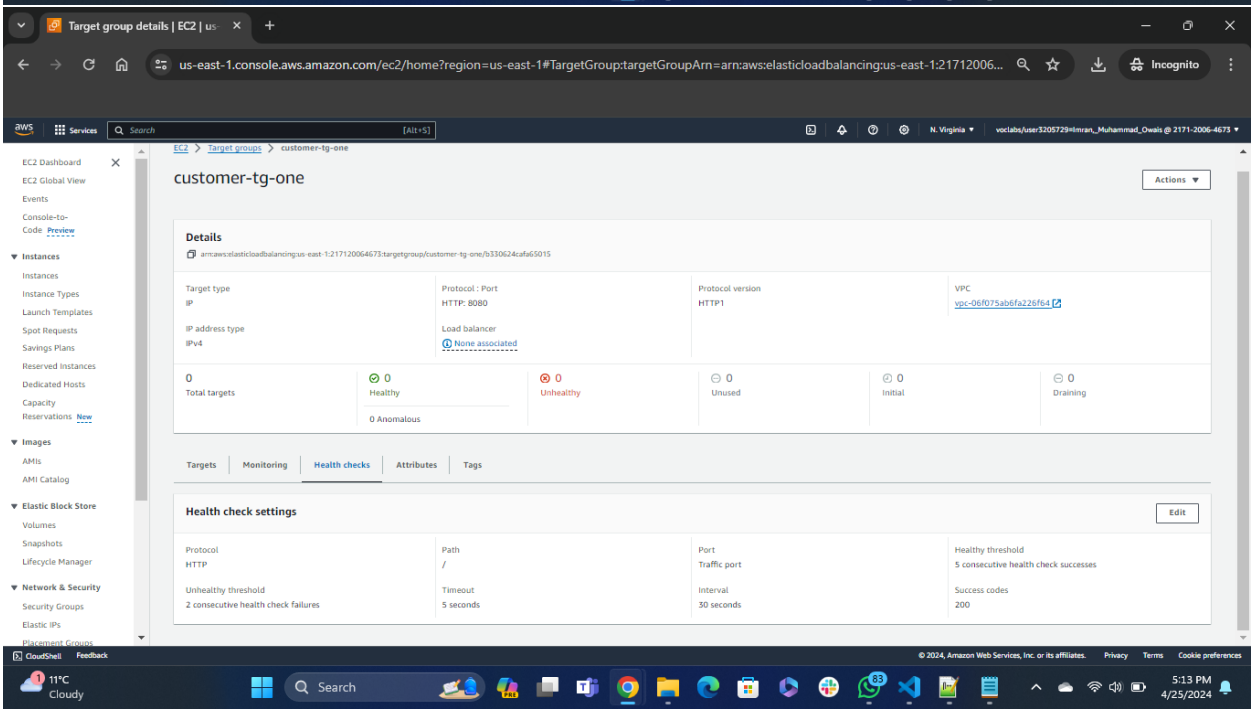
Target group details | EC2 | us-
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#TargetGroup:targetGroupArn=arn:aws:elasticloadbalancing:us-east-1:21712006...
Incognito
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran_Muhammad_Owais @ 2171-2006-4673
EC2 > Target groups > customer-tg-one
customer-tg-one
Actions
Details
arn:aws:elasticloadbalancing:us-east-1:217120064673:targetgroup/customer-tg-one/b330624cafa65015
Target type
IP
Protocol : Port
HTTP: 8080
Protocol version
HTTP1
VPC
vpc-06f075ab6fa226f64
IP address type
IPv4
Load balancer
None associated
0
Total targets
0
Healthy
0 Anomalous
0
Unhealthy
0
Unused
0
Initial
0
Draining
Targets
Monitoring
Health checks
Attributes
Tags
Health check settings
Edit
Protocol
HTTP
Path
/
Port
Traffic port
Healthy threshold
5 consecutive health check successes
Unhealthy threshold
2 consecutive health check failures
Timeout
5 seconds
Interval
30 seconds
Success codes
200
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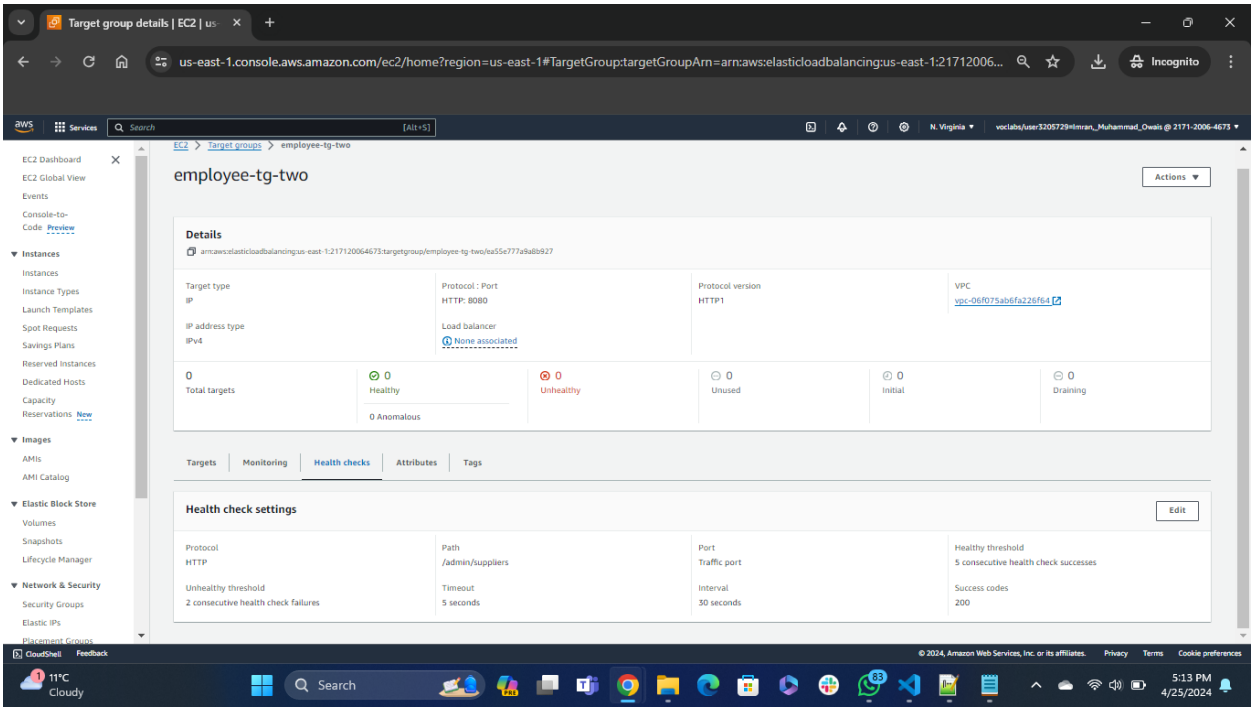
Target group details | EC2 | us-
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#TargetGroup:targetGroupArn=arn:aws:elasticloadbalancing:us-east-1:21712006...
Incognito
Services
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EC2 Dashboard
EC2 Global View
Events
Console-to-Code Preview
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations New
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
Network & Security
Security Groups
Elastic IPs
Placement Groups
EC2 > Target groups > employee-tg-two
employee-tg-two
Actions
Details
arn:aws:elasticloadbalancing:us-east-1:217120064673:targetgroup/employee-tg-two/ea55e777a9a8b927
Target type
IP
Protocol : Port
HTTP: 8080
Protocol version
HTTP1
VPC
vpc-06f075ab6fa226f64
IP address type
IPv4
Load balancer
None associated
0
Total targets
0
Healthy
0 Anomalous
0
Unhealthy
0
Unused
0
Initial
0
Draining
Targets
Monitoring
Health checks
Attributes
Tags
Health check settings
Edit
Protocol
HTTP
Path
/admin/suppliers
Port
Traffic port
Healthy threshold
5 consecutive health check successes
Unhealthy threshold
2 consecutive health check failures
Timeout
5 seconds
Interval
30 seconds
Success codes
200
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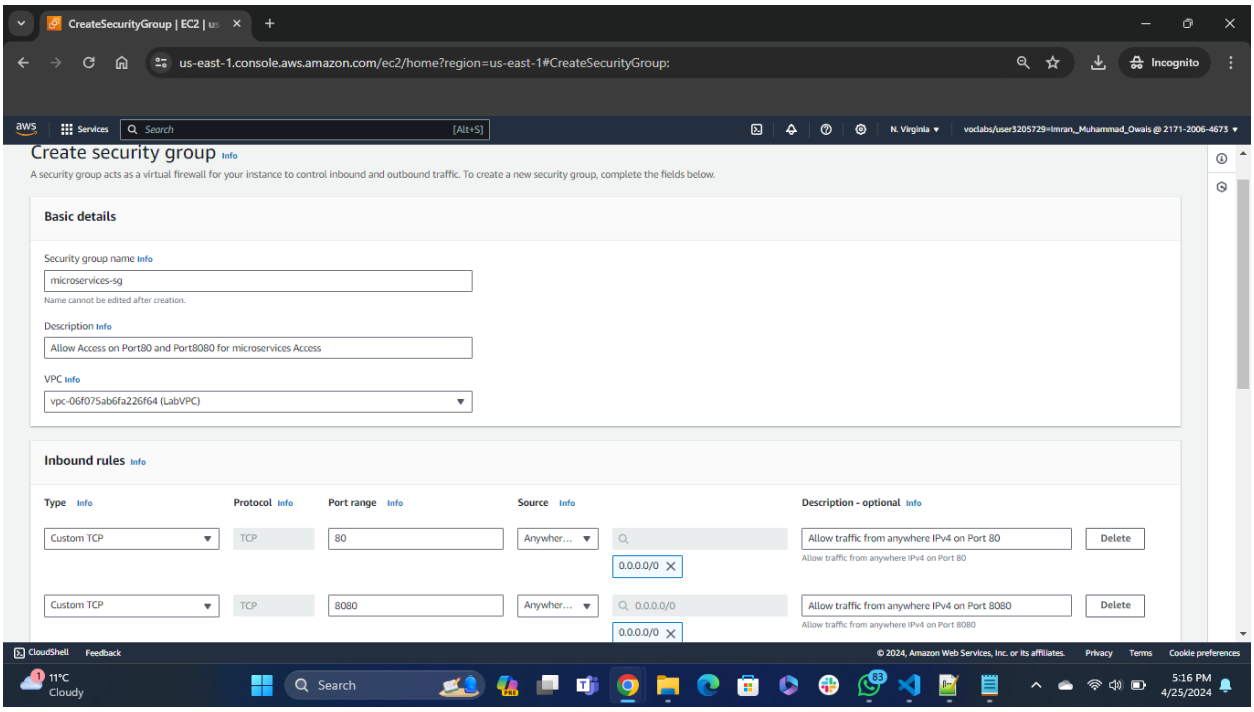
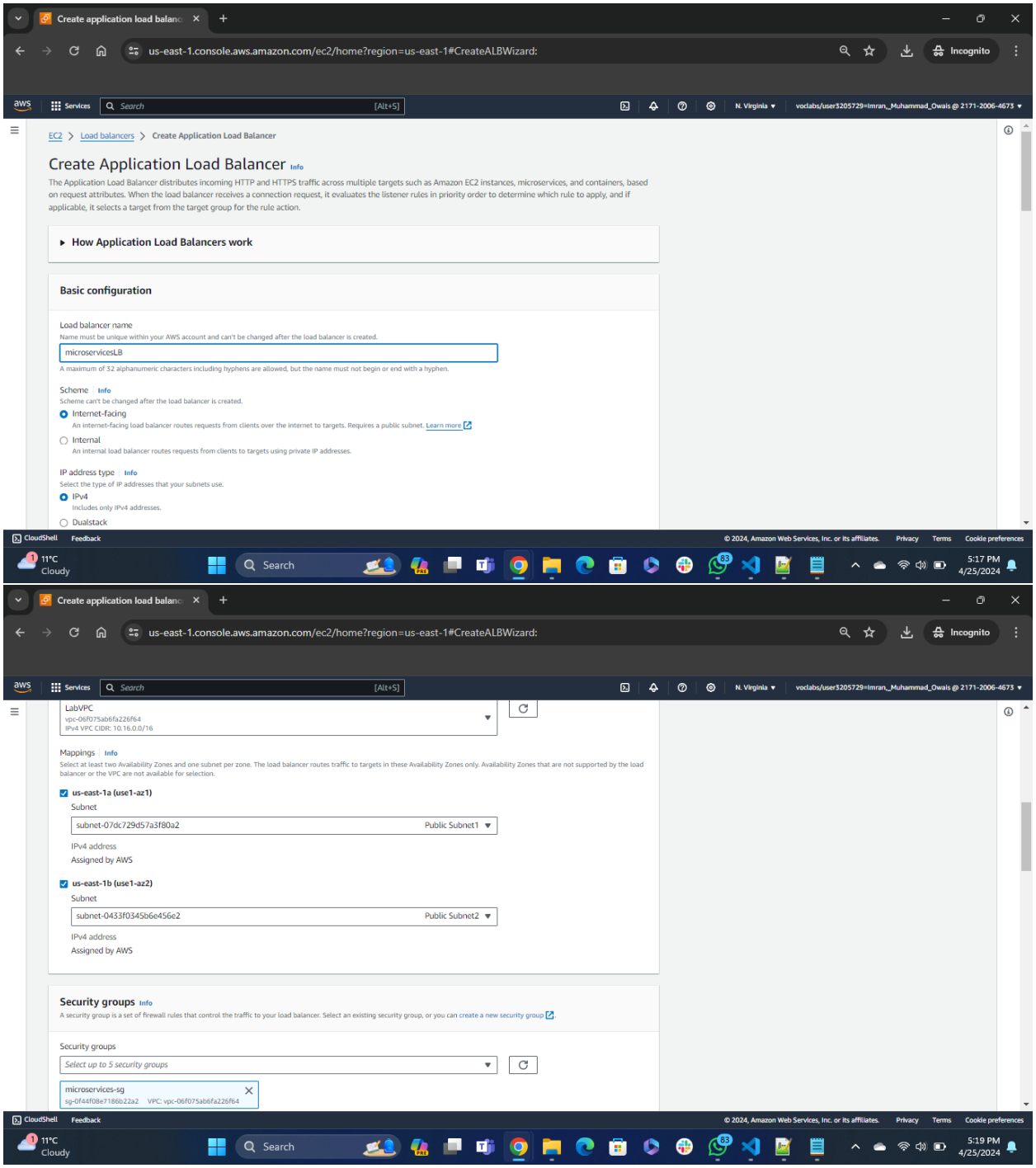
Task 6.2: Create a security group and an Application Load Balancer, and configure rules to route traffic

1. New EC2 security group microservice-sg, and allow inbound traffic on port 80 and 8080 from anywhere IPv4.



2. Create a LoadBalancer microservicesLB, making it internet facing for IPv4 address, in LabVPC, PublicSubnet1, and PublicSubnet2, and use the sg created in above step. Also configure two listeners, each listener will have two rules.


Create application load balanc
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateALBWizard:
Incognito
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
EC2 > Load balancers > Create Application Load Balancer
Create Application Load Balancer Info
The Application Load Balancer distributes incoming HTTP and HTTPS traffic across multiple targets such as Amazon EC2 instances, microservices, and containers, based on request attributes. When the load balancer receives a connection request, it evaluates the listener rules in priority order to determine which rule to apply, and if applicable, it selects a target from the target group for the rule action.
How Application Load Balancers work
Basic configuration
Load balancer name
Name must be unique within your AWS account and can't be changed after the load balancer is created.
microservicesLB
A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.
Scheme Info
Scheme can't be changed after the load balancer is created.
Internet-facing
An internet-facing load balancer routes requests from clients over the internet to targets. Requires a public subnet. Learn more
Internal
An internal load balancer routes requests from clients to targets using private IP addresses.
IP address type Info
Select the type of IP addresses that your subnets use.
IPv4
Includes only IPv4 addresses.
Dualstack
CloudShell
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Create application load balanc
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateALBWizard:
Incognito
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
LabVPC
vpc-06f075ab6fa226f64
IPv4 VPC CIDR: 10.16.0.0/16
Mappings Info
Select at least two Availability Zones and one subnet per zone. The load balancer routes traffic to targets in these Availability Zones only. Availability Zones that are not supported by the load balancer or the VPC are not available for selection.
us-east-1a (use1-az1)
Subnet
subnet-07dc729d57a3f80a2
Public Subnet1
IPv4 address
Assigned by AWS
us-east-1b (use1-az2)
Subnet
subnet-0433f0345b6e456e2
Public Subnet2
IPv4 address
Assigned by AWS
Security groups Info
A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can create a new security group.
Security groups
Select up to 5 security groups
microservices-sg
sg-0f44f08e7186b22a2
VPC: vpc-06f075ab6fa226f64
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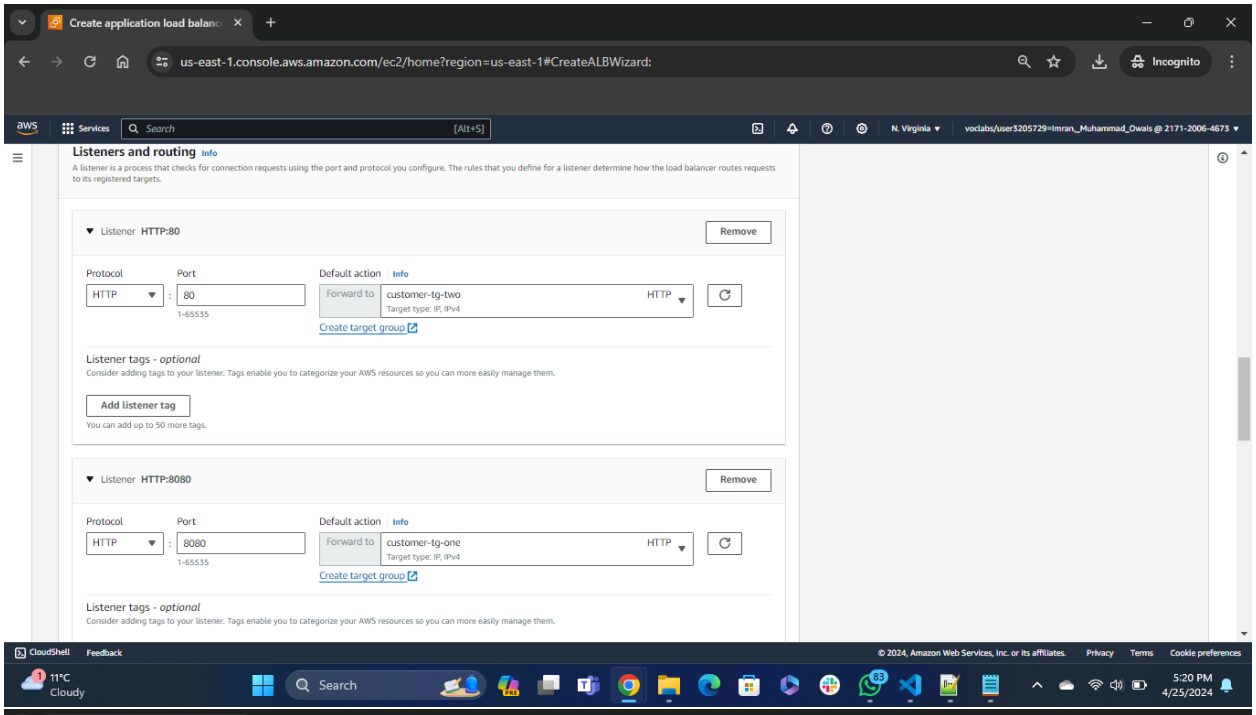
Create application load balanc
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateALBWizard:
Incognito
Services
Search
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N. Virginia
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Listeners and routing Info
A listener is a process that checks for connection requests using the port and protocol you configure. The rules that you define for a listener determine how the load balancer routes requests to its registered targets.
Listener HTTP:80
Remove
Protocol
Port
Default action Info
HTTP
80
1-65535
Forward to
customer-tg-two
Target type: IP, IPv4
HTTP
Create target group
Listener tags - optional
Consider adding tags to your listener. Tags enable you to categorize your AWS resources so you can more easily manage them.
Add listener tag
You can add up to 50 more tags.
Listener HTTP:8080
Remove
Protocol
Port
Default action Info
HTTP
8080
1-65535
Forward to
customer-tg-one
Target type: IP, IPv4
HTTP
Create target group
Listener tags - optional
Consider adding tags to your listener. Tags enable you to categorize your AWS resources so you can more easily manage them.
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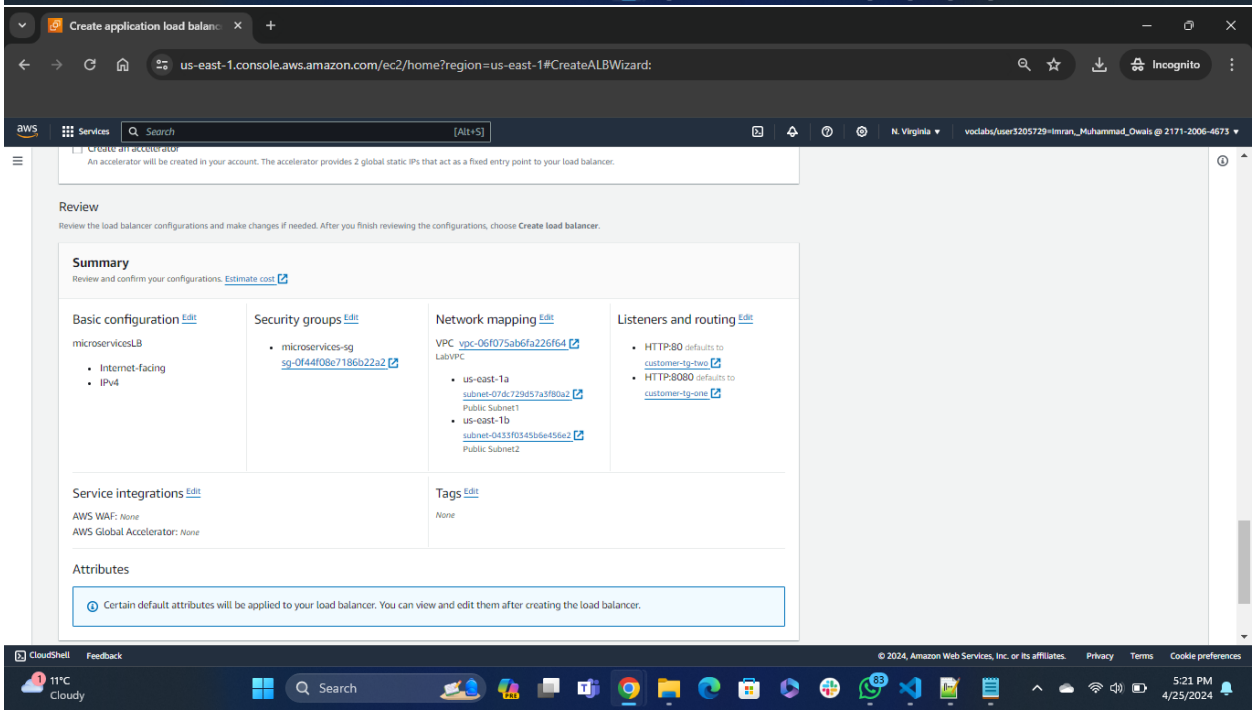
Create application load balanc
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateALBWizard:
Incognito
Services
Search
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N. Virginia
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An accelerator will be created in your account. The accelerator provides 2 global static IPs that act as a fixed entry point to your load balancer.
Review
Review the load balancer configurations and make changes if needed. After you finish reviewing the configurations, choose Create load balancer.
Summary
Review and confirm your configurations. Estimate cost
Basic configuration Edit
microservicesLB
Internet-facing
IPv4
Security groups Edit
microservices-sg
sg-0f44f08e7186b22a2
Network mapping Edit
VPC vpc-06f075ab6fa226f64
LabVPC
us-east-1a
subnet-07dc729d57a3f80a2
Public Subnet1
us-east-1b
subnet-0433f0345b6e456e2
Public Subnet2
Listeners and routing Edit
HTTP:80 defaults to
customer-tg-two
HTTP:8080 defaults to
customer-tg-one
Service integrations Edit
AWS WAF: None
AWS Global Accelerator: None
Tags Edit
None
Attributes
Certain default attributes will be applied to your load balancer. You can view and edit them after creating the load balancer.
CloudShell
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Cloudy
Search
5:21 PM
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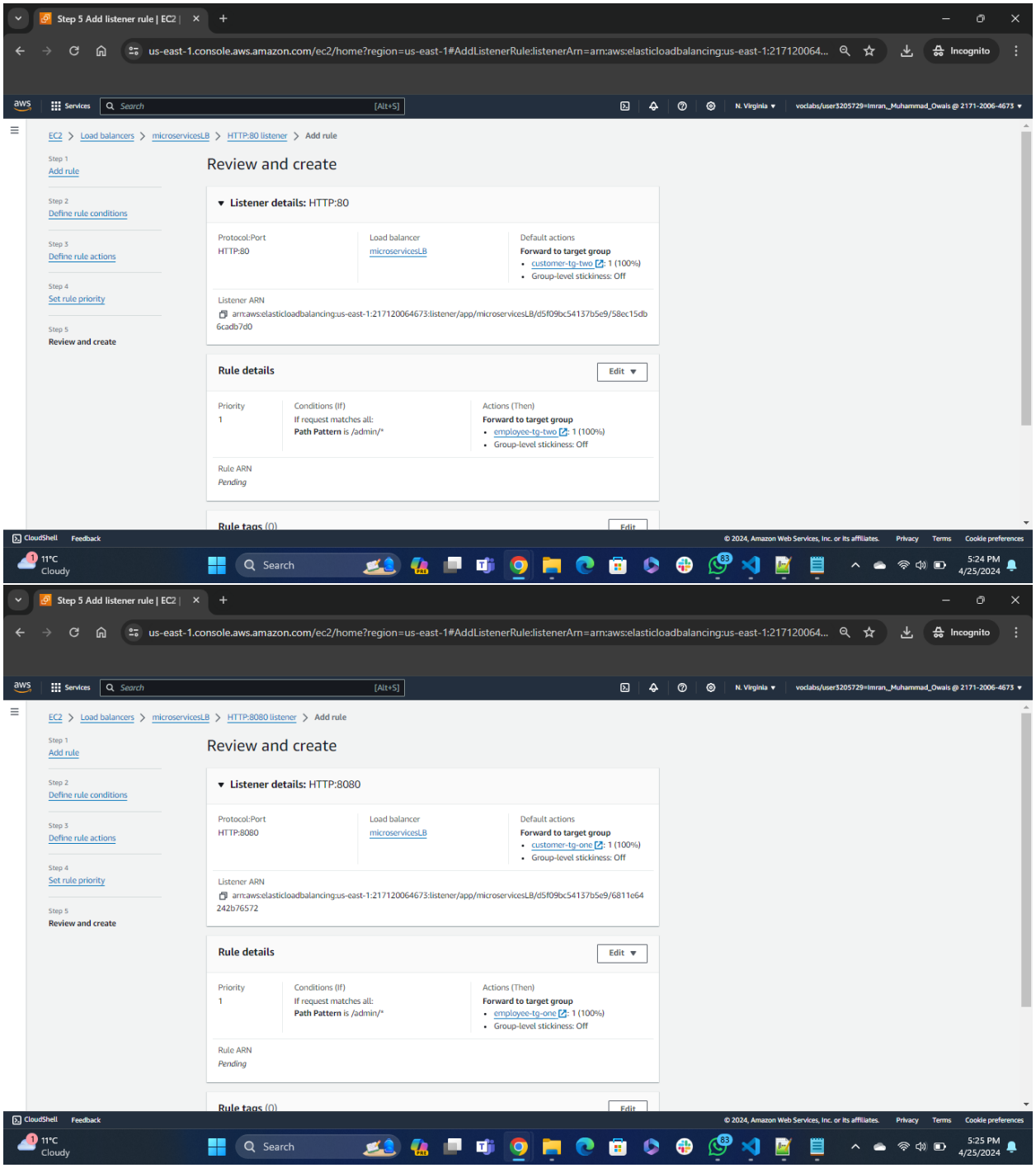
Step 5 Add listener rule | EC2 |
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AddListenerRule:listenerArn=arn:aws:elasticloadbalancing:us-east-1:217120064...
Incognito
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
EC2 > Load balancers > microservicesLB > HTTP:80 listener > Add rule
Step 1
Add rule
Step 2
Define rule conditions
Step 3
Define rule actions
Step 4
Set rule priority
Step 5
Review and create
Review and create
Listener details: HTTP:80
Protocol:Port
HTTP:80
Load balancer
microservicesLB
Default actions
Forward to target group
customer-tg-two: 1 (100%)
Group-level stickiness: Off
Listener ARN
arn:aws:elasticloadbalancing:us-east-1:217120064673:listener/app/microservicesLB/d5f09bc54137b5e9/58ec15db6cadb7d0
Rule details
Edit
Priority
1
Conditions (If)
If request matches all:
Path Pattern is /admin/*
Actions (Then)
Forward to target group
employee-tg-two: 1 (100%)
Group-level stickiness: Off
Rule ARN
Pending
Rule tags (0)
Edit
CloudShell
Feedback
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Cookie preferences
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Cloudy
Search
5:24 PM
4/25/2024

Step 5 Add listener rule | EC2 |
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AddListenerRule:listenerArn=arn:aws:elasticloadbalancing:us-east-1:217120064...
Incognito
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
EC2 > Load balancers > microservicesLB > HTTP:8080 listener > Add rule
Step 1
Add rule
Step 2
Define rule conditions
Step 3
Define rule actions
Step 4
Set rule priority
Step 5
Review and create
Review and create
Listener details: HTTP:8080
Protocol:Port
HTTP:8080
Load balancer
microservicesLB
Default actions
Forward to target group
customer-tg-one: 1 (100%)
Group-level stickiness: Off
Listener ARN
arn:aws:elasticloadbalancing:us-east-1:217120064673:listener/app/microservicesLB/d5f09bc54137b5e9/6811e64242b76572
Rule details
Edit
Priority
1
Conditions (If)
If request matches all:
Path Pattern is /admin/*
Actions (Then)
Forward to target group
employee-tg-one: 1 (100%)
Group-level stickiness: Off
Rule ARN
Pending
Rule tags (0)
Edit
CloudShell
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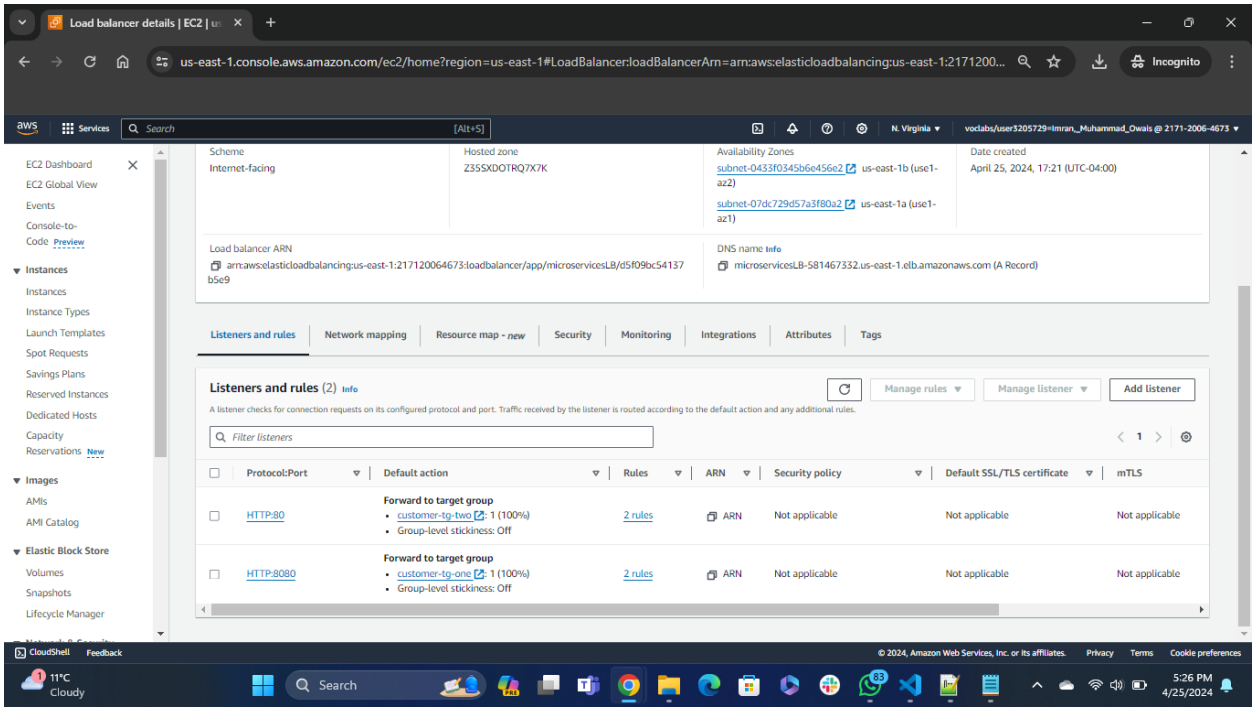
Load balancer details | EC2 | us-east-1
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LoadBalancer:loadBalancerArn=arn:aws:elasticloadbalancing:us-east-1:2171200...
Incognito
aws
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
EC2 Dashboard
EC2 Global View
Events
Console-to-Code Preview
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations New
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Snapshots
Lifecycle Manager
Scheme
Internet-facing
Hosted zone
Z3SSXDOTRQ7X7K
Availability Zones
subnet-0433f0345b6e456e2 us-east-1b (use1-az2)
subnet-07dc729d57a3f80a2 us-east-1a (use1-az1)
Date created
April 25, 2024, 17:21 (UTC-04:00)
Load balancer ARN
arn:aws:elasticloadbalancing:us-east-1:217120064673:loadbalancer/app/microservicesLB/d5f09bc54137b5e9
DNS name Info
microservicesLB-581467332.us-east-1.elb.amazonaws.com (A Record)
Listeners and rules
Network mapping
Resource map - new
Security
Monitoring
Integrations
Attributes
Tags
Listeners and rules (2) Info
A listener checks for connection requests on its configured protocol and port. Traffic received by the listener is routed according to the default action and any additional rules.
Manage rules
Manage listener
Add listener
Filter listeners
Protocol:Port
Default action
Rules
ARN
Security policy
Default SSL/TLS certificate
mTLS
HTTP:80
Forward to target group
customer-tg-two: 1 (100%)
Group-level stickiness: Off
2 rules
ARN
Not applicable
Not applicable
Not applicable
HTTP:8080
Forward to target group
customer-tg-one: 1 (100%)
Group-level stickiness: Off
2 rules
ARN
Not applicable
Not applicable
Not applicable
CloudShell
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Significance & Importance of this Task

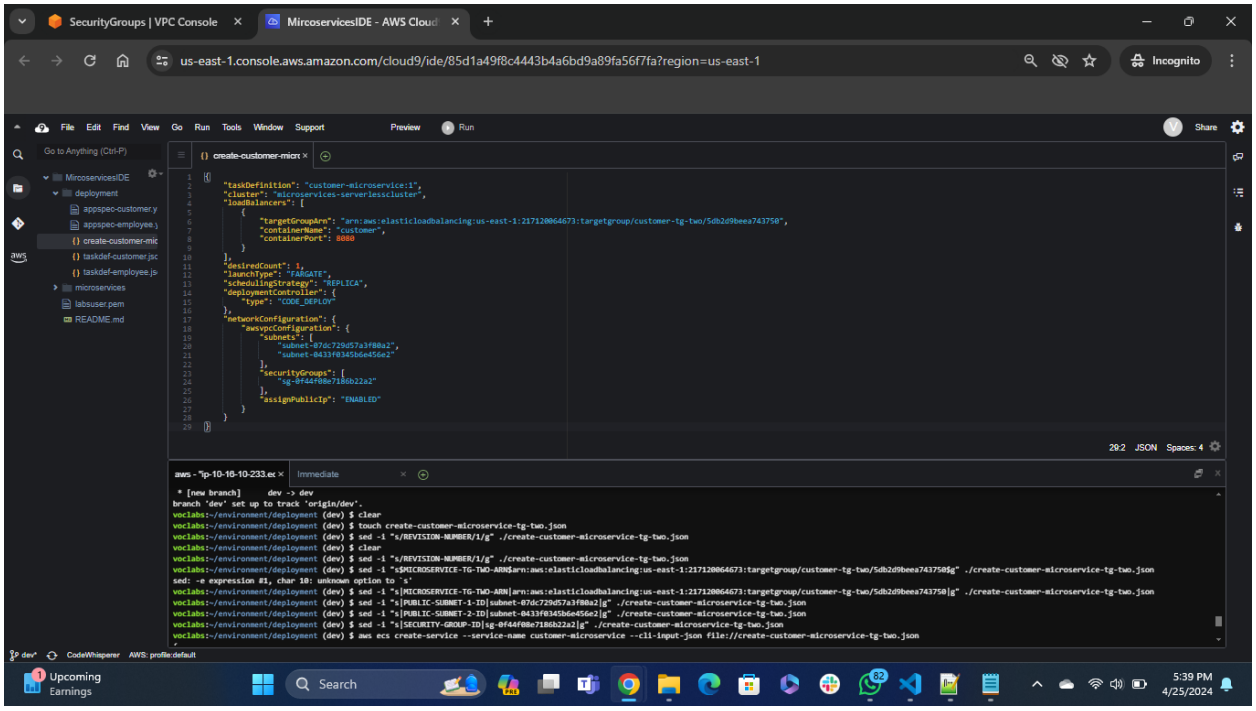
This task helps us in implementing:

- How target groups work and the way they can be used to route traffic between production and test environments based on pre-defined host port and application logic
- The reason of health check
- How load balancer control and decides that on which request, the traffic should be sent to which application host port.

Phase 7: Creating two Amazon ECS services

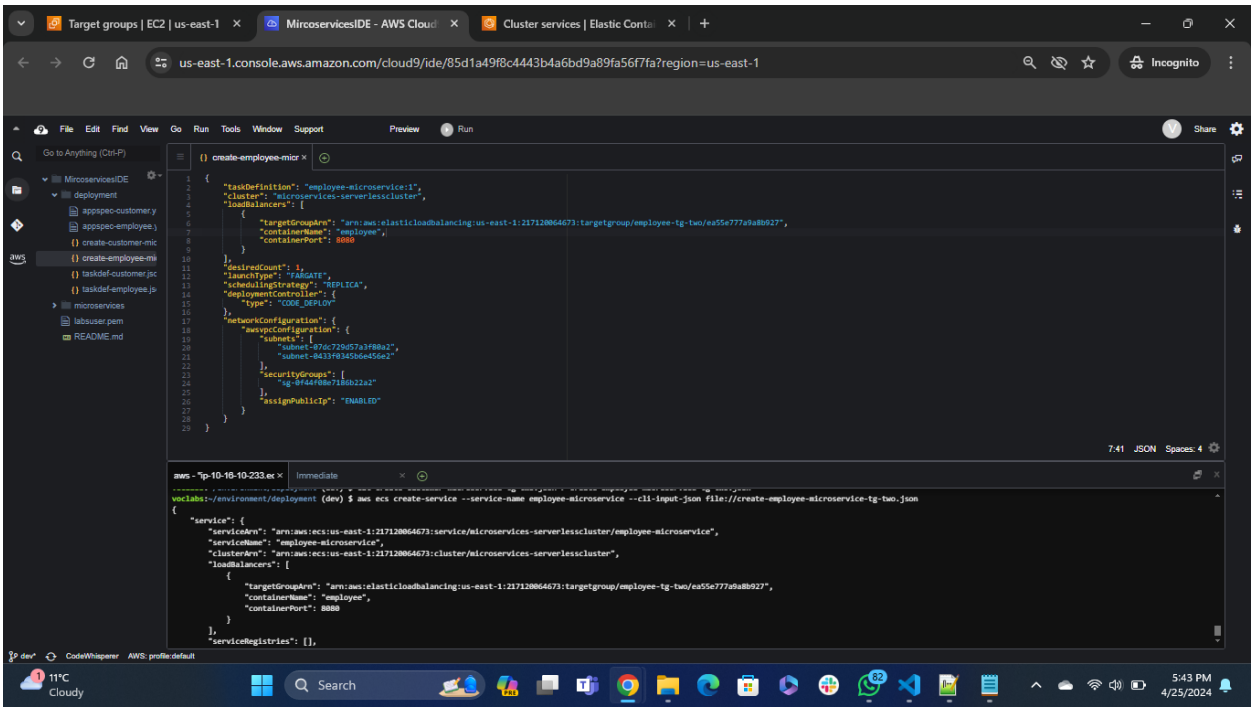
Task 7.1: Create the ECS service for the *customer* microservice

1. In the deployment directory in Cloud9, create a new file named create-customer-microservice-tg-two.json

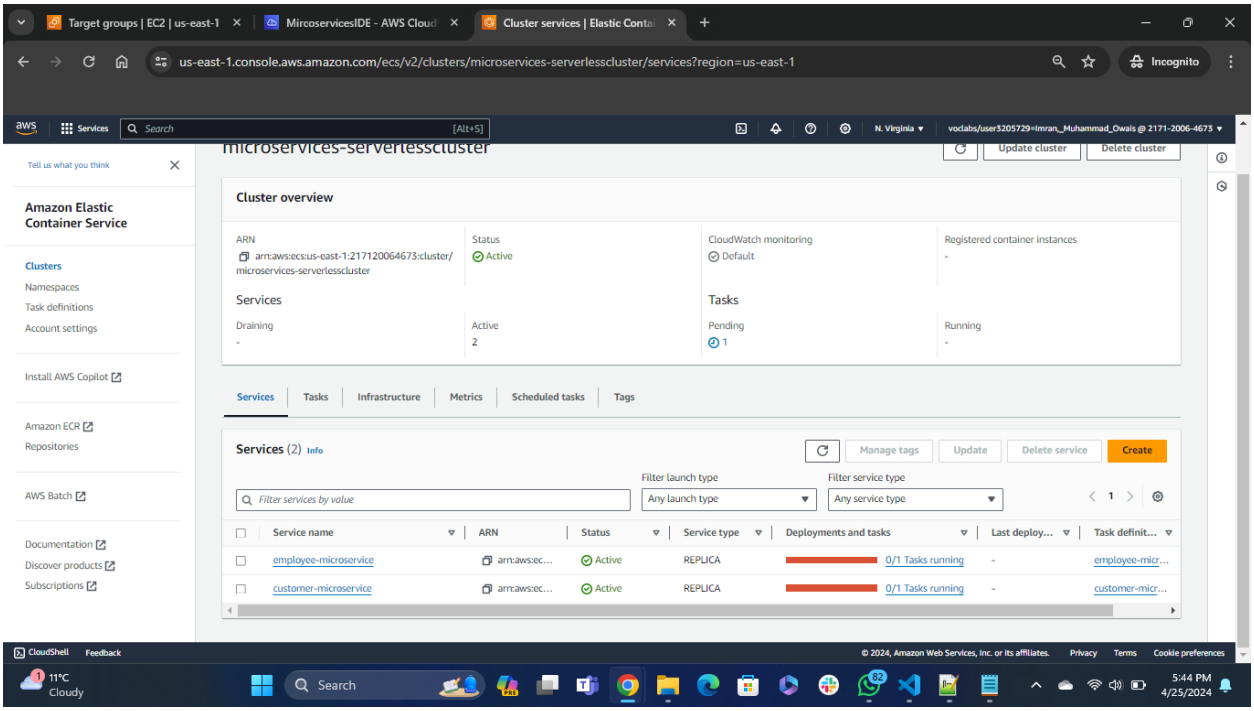


Task 7.2: Create the Amazon ECS service for the *employee* microservice

1. In the deployment directory in Cloud9, create a new file named create-employee-microservice-tg-two.json



Verifying task in AWS ECS


Target groups | EC2 | us-east-1
MircoservicesIDE - AWS Cloud
Cluster services | Elastic Contai
us-east-1.console.aws.amazon.com/ecs/v2/clusters/microservices-serverlesscluster/services?region=us-east-1
Incognito
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran_Muhammad_Owais @ 2171-2006-4673
Tell us what you think
Amazon Elastic Container Service
Clusters
Namespaces
Task definitions
Account settings
Install AWS Copilot
Amazon ECR
Repositories
AWS Batch
Documentation
Discover products
Subscriptions
microservices-serverlesscluster
Update cluster
Delete cluster
Cluster overview
ARN
arn:aws:ecs:us-east-1:217120064673:cluster/microservices-serverlesscluster
Status
Active
CloudWatch monitoring
Default
Registered container instances
-
Services
Draining
-
Active
2
Tasks
Pending
1
Running
-
Services
Tasks
Infrastructure
Metrics
Scheduled tasks
Tags
Services (2) Info
Manage tags
Update
Delete service
Create
Filter services by value
Filter launch type
Any launch type
Filter service type
Any service type
Service name
ARN
Status
Service type
Deployments and tasks
Last deploy...
Task definit...
employee-microservice
arn:aws:ec...
Active
REPLICA
0/1 Tasks running
employee-micr...
customer-microservice
arn:aws:ec...
Active
REPLICA
0/1 Tasks running
customer-micr...
CloudShell
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Search
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Significance & Importance of this Task

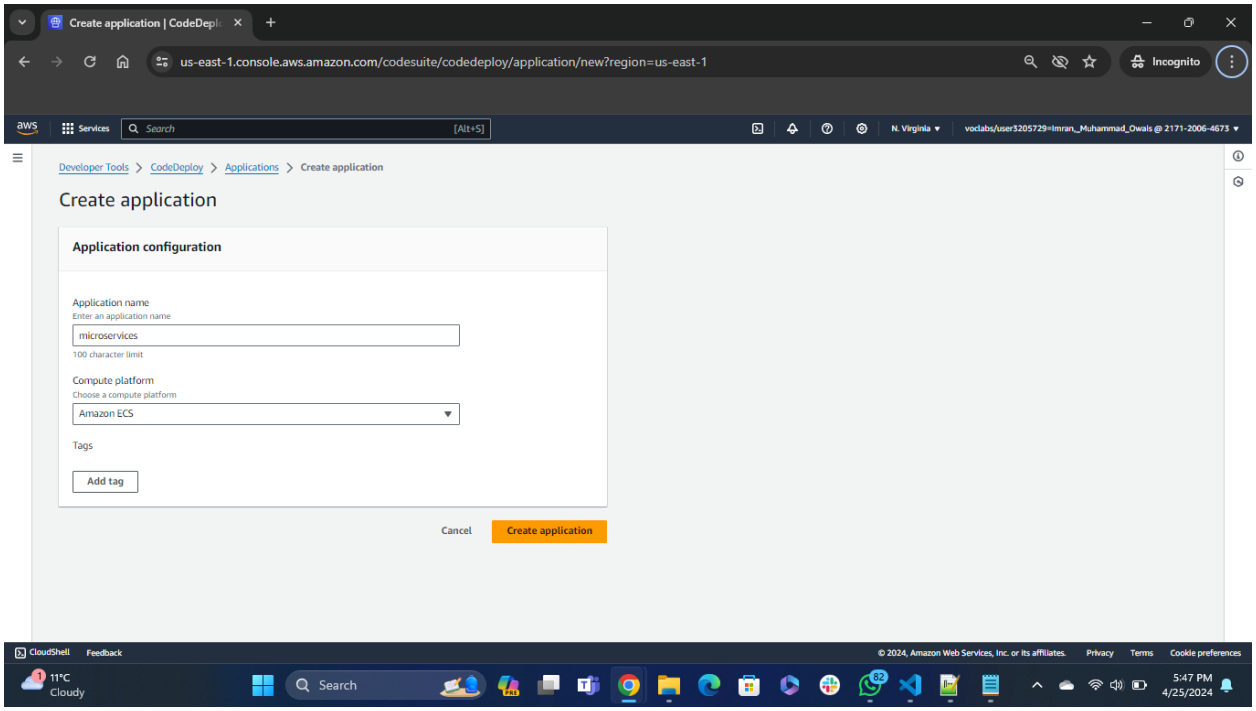
This task helps us in implementing:

- How Create Services on AWS ECS to deploy different microservices by pulling their images from an AWS ECR repository.

Phase 8: Configuring CodeDeploy and CodePipeline

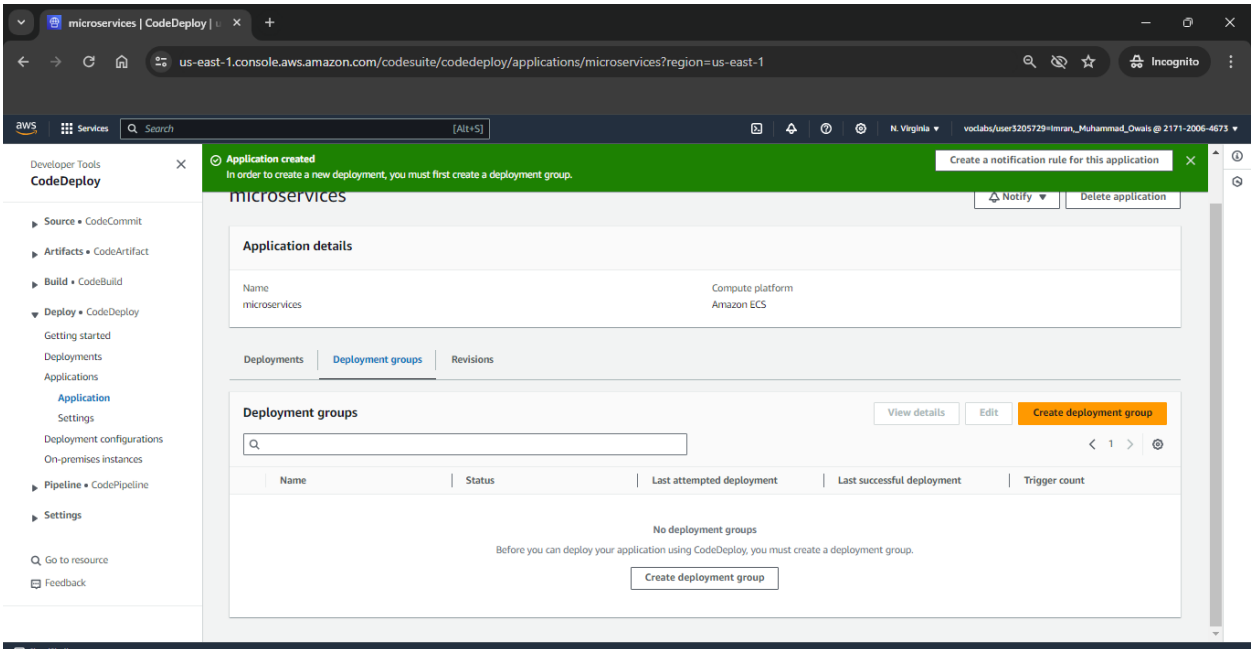
Task 8.1: Create a CodeDeploy application and deployment groups

1. Create AWS CodeDeploy application by the name of microservices.



2. Create a Deployment Group for the microservices-customer with the below config

```
Deployment Group name: microservices-customer
Service Role: ARN for DeployRole
Environment Configuration:
      ECS Cluster Name: microservices-serverlesscluster
      ECS Service Name: customer-microservice
Load Balancer Section:
      Load balancer name: microservicesLB
      Production Listener Port: HTTP: 80
      Test Listener Port: HTTP: 8080
      Target group 1 name: customer-tg-two
      Target group 2 name: customer-tg-one
Deployment Settings:
      Traffic Rerouting: Reroute traffic immediately
      Deployment Configuration: CodeDeployDefault.ECSAllAtOnce
      Original Revision termination: Days: 0, Hours: 0, Minutes: 5
```


microservices | CodeDeploy
us-east-1.console.aws.amazon.com/codesuite/codedeploy/applications/microservices?region=us-east-1
Incognito
Services
Search
[Alt+5]
N. Virginia
voclabs/user3205729=Imran_Muhammad_Owais @ 2171-2006-4673
Developer Tools
CodeDeploy
Source • CodeCommit
Artifacts • CodeArtifact
Build • CodeBuild
Deploy • CodeDeploy
Getting started
Deployments
Applications
Application
Settings
Deployment configurations
On-premises instances
Pipeline • CodePipeline
Settings
Go to resource
Feedback
Application created
In order to create a new deployment, you must first create a deployment group.
Create a notification rule for this application
microservices
Notify
Delete application
Application details
Name
microservices
Compute platform
Amazon ECS
Deployments
Deployment groups
Revisions
Deployment groups
View details
Edit
Create deployment group
Name
Status
Last attempted deployment
Last successful deployment
Trigger count
No deployment groups
Before you can deploy your application using CodeDeploy, you must create a deployment group.
Create deployment group
CloudShell
Feedback
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Cookie preferences
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Cloudy
Search
5:47 PM
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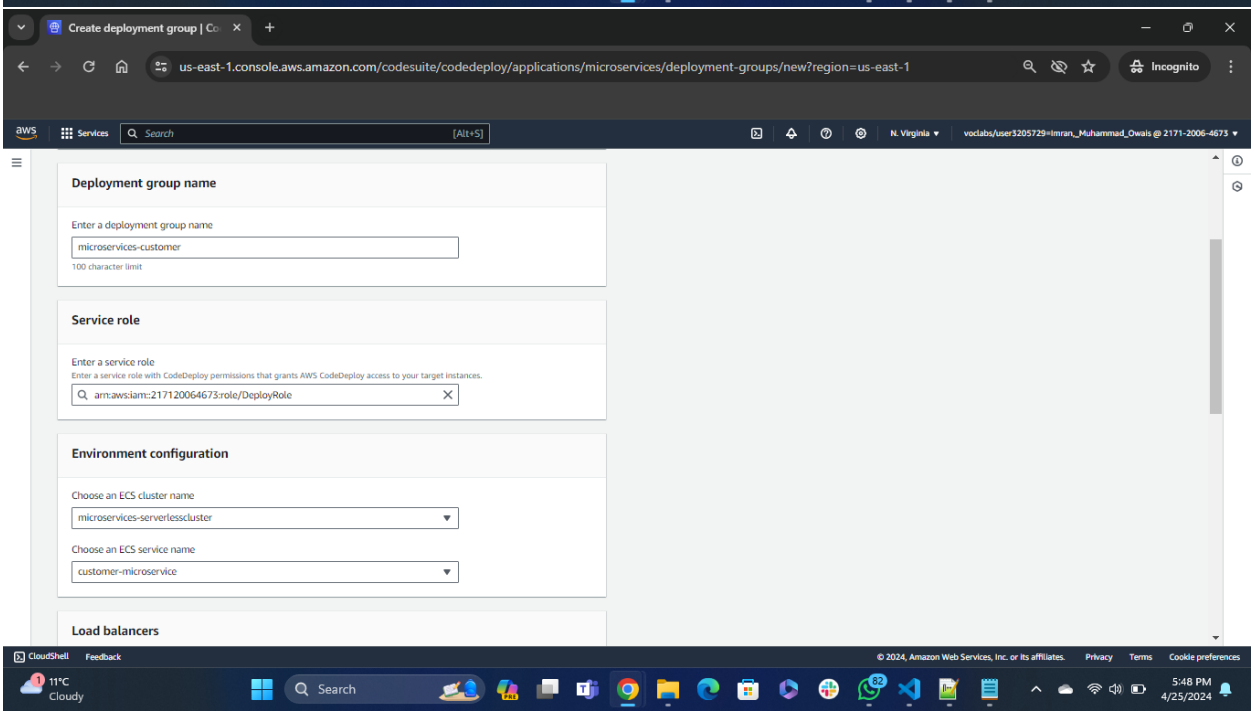
Create deployment group | Co
us-east-1.console.aws.amazon.com/codesuite/codedeploy/applications/microservices/deployment-groups/new?region=us-east-1
Incognito
Services
Search
[Alt+5]
N. Virginia
voclabs/user3205729=Imran_Muhammad_Owais @ 2171-2006-4673
Deployment group name
Enter a deployment group name
microservices-customer
100 character limit
Service role
Enter a service role
Enter a service role with CodeDeploy permissions that grants AWS CodeDeploy access to your target instances.
arn:aws:iam::217120064673:role/DeployRole
Environment configuration
Choose an ECS cluster name
microservices-serverlesscluster
Choose an ECS service name
customer-microservice
Load balancers
CloudShell
Feedback
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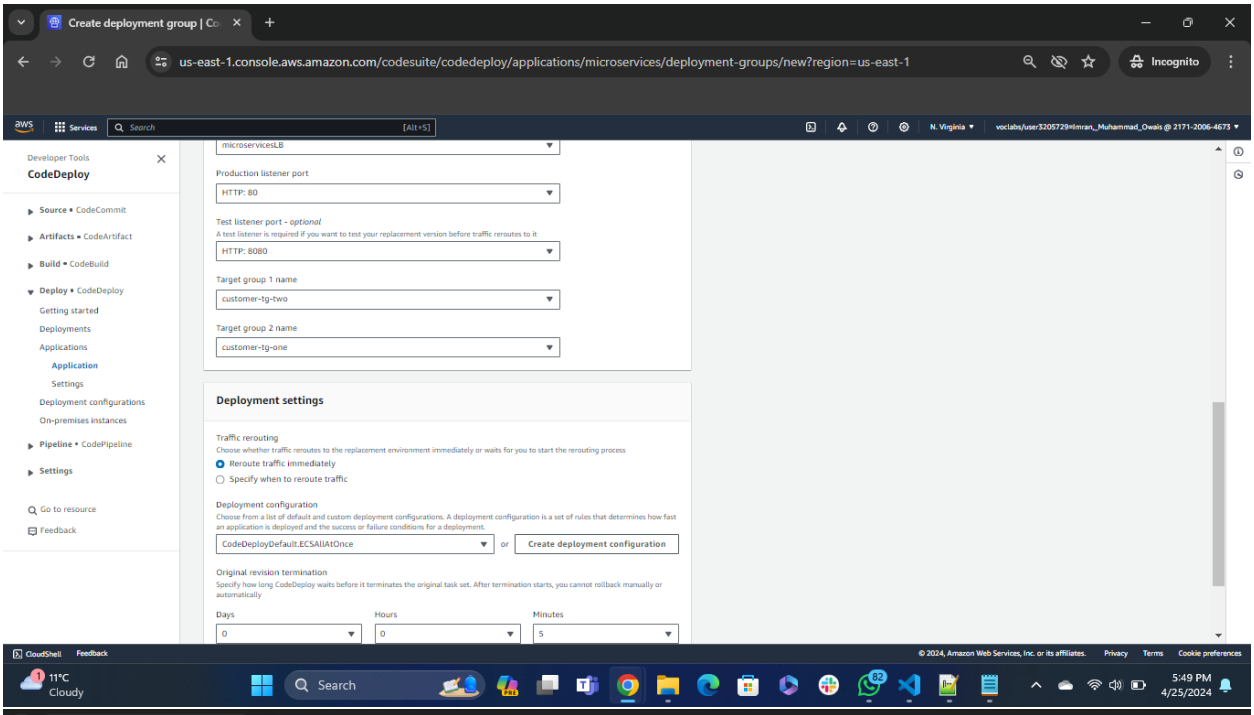
Create deployment group | Co
us-east-1.console.aws.amazon.com/codesuite/codedeploy/applications/microservices/deployment-groups/new?region=us-east-1
Incognito
Developer Tools
CodeDeploy
Source • CodeCommit
Artifacts • CodeArtifact
Build • CodeBuild
Deploy • CodeDeploy
Getting started
Deployments
Applications
Application
Settings
Deployment configurations
On-premises instances
Pipeline • CodePipeline
Settings
Go to resource
Feedback
microservicesLB
Production listener port
HTTP: 80
Test listener port - optional
A test listener is required if you want to test your replacement version before traffic reroutes to it
HTTP: 8080
Target group 1 name
customer-tg-two
Target group 2 name
customer-tg-one
Deployment settings
Traffic rerouting
Choose whether traffic reroutes to the replacement environment immediately or waits for you to start the rerouting process
Reroute traffic immediately
Specify when to reroute traffic
Deployment configuration
Choose from a list of default and custom deployment configurations. A deployment configuration is a set of rules that determines how fast an application is deployed and the success or failure conditions for a deployment.
CodeDeployDefault.ECSAllAtOnce
or
Create deployment configuration
Original revision termination
Specify how long CodeDeploy waits before it terminates the original task set. After termination starts, you cannot rollback manually or automatically
Days
Hours
Minutes
0
0
5
CloudShell
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Search
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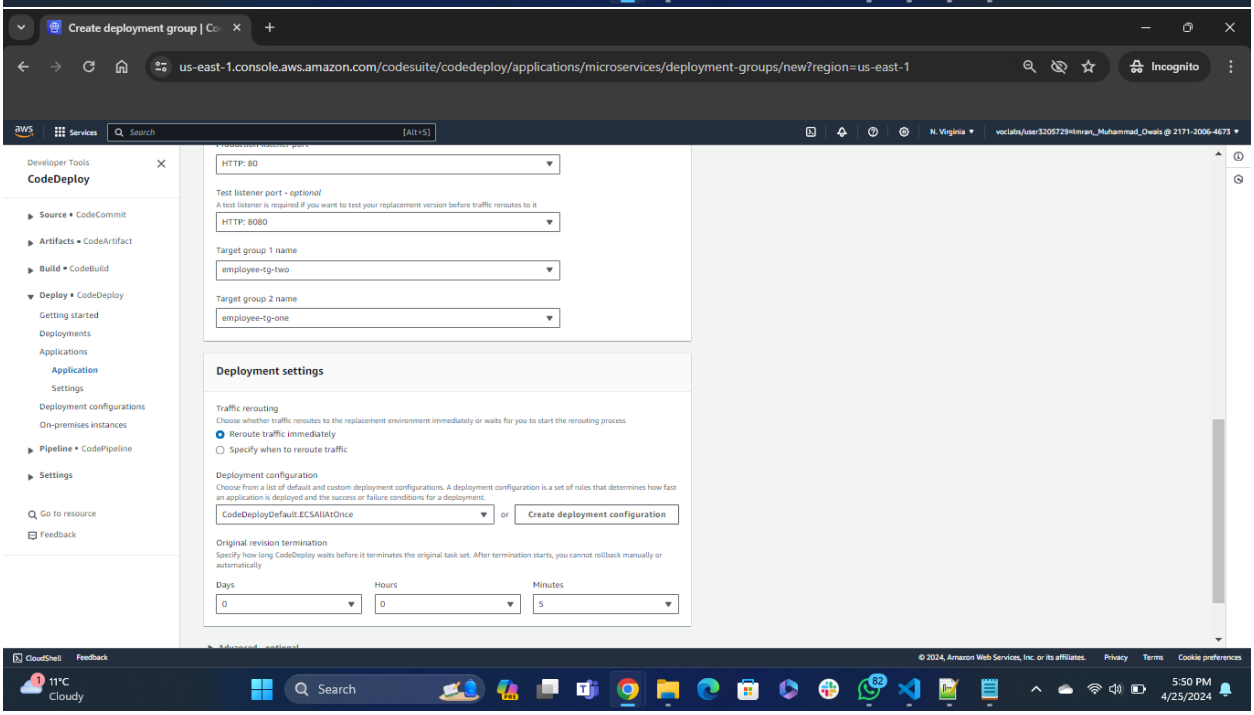
Create deployment group | Co
us-east-1.console.aws.amazon.com/codesuite/codedeploy/applications/microservices/deployment-groups/new?region=us-east-1
Incognito
Developer Tools
CodeDeploy
Source • CodeCommit
Artifacts • CodeArtifact
Build • CodeBuild
Deploy • CodeDeploy
Getting started
Deployments
Applications
Application
Settings
Deployment configurations
On-premises instances
Pipeline • CodePipeline
Settings
Go to resource
Feedback
HTTP: 80
Test listener port - optional
A test listener is required if you want to test your replacement version before traffic reroutes to it
HTTP: 8080
Target group 1 name
employee-tg-two
Target group 2 name
employee-tg-one
Deployment settings
Traffic rerouting
Choose whether traffic reroutes to the replacement environment immediately or waits for you to start the rerouting process
Reroute traffic immediately
Specify when to reroute traffic
Deployment configuration
Choose from a list of default and custom deployment configurations. A deployment configuration is a set of rules that determines how fast an application is deployed and the success or failure conditions for a deployment.
CodeDeployDefault.ECSAllAtOnce
or
Create deployment configuration
Original revision termination
Specify how long CodeDeploy waits before it terminates the original task set. After termination starts, you cannot rollback manually or automatically
Days
Hours
Minutes
0
0
5
CloudShell
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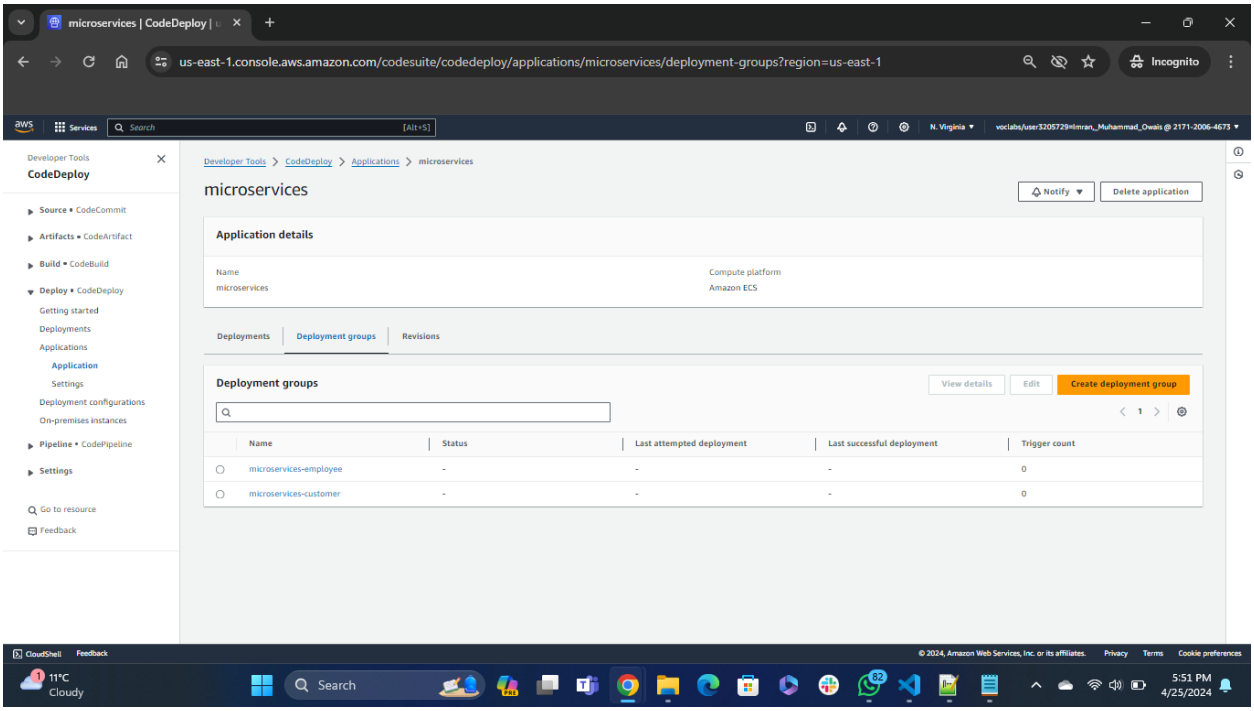


3. Create a Deployment Group for the microservices-employee using the above step and change
   - Deployment group name to microservice-employee
   - ECS Service Name to employee-microservice
   - Target group 1 Name to employee-tg-two
   - Target group 2 Name to employee-tg-one

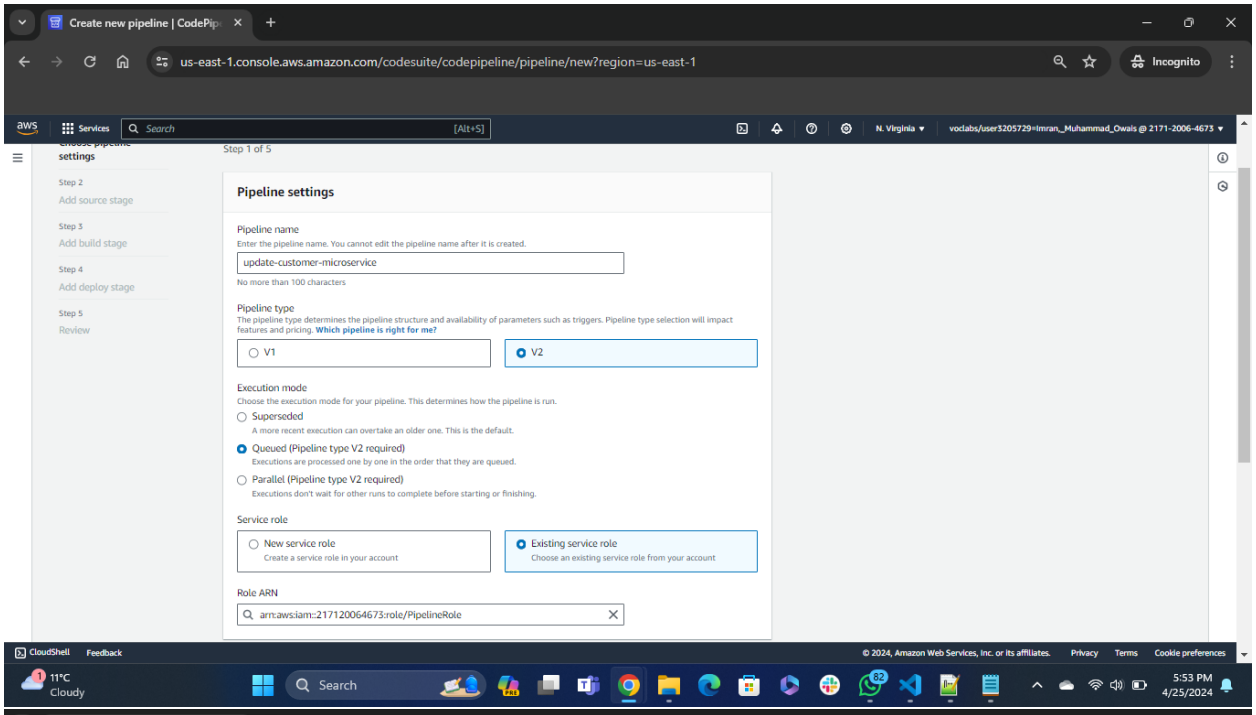
Task 8.2: Create a pipeline for the *customer* microservice

1. Create a Pipeline for Customer Microservice using the name update-customer-microservice.

2. Edit the *update-customer-microservice* pipeline to add another *source*.
    a. In the **Edit: Source** section, choose **Edit stage**, then add an action with these details:
        i. **Action name:** Image
        ii. **Action provider:** Amazon ECR
        iii. **Repository name:** customer
        iv. **Image tag:** latest
        v. **Output artifacts:** image-customer
3. Edit the *deploy* action of the *update-customer-microservice* pipeline.
    a. Edit the **update-customer-microservice** pipeline
        i. In the **Edit: Deploy** section, choose **Edit stage**, then add an input artifact as described below:
            1. On the **Deploy Amazon ECS (Blue/Green)** card, choose the edit (pencil) icon.
            2. Under **Input artifacts**, choose **Add** and then choose **image-customer**.

            Note: You should now have *SourceArtifact* and *image-customer* as listed input artifacts.

        ii. Under **Dynamically update task definition image**, for **Input artifact with image details**, choose **image-customer**.
        iii. For **Placeholder text in the task definition**, enter IMAGE1_NAME


Create new pipeline | CodePip
us-east-1.console.aws.amazon.com/codesuite/codepipeline/pipeline/new?region=us-east-1
Incognito
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=imran._Muhammad_Owais @ 2171-2006-4673
Step 1 of 5
Step 2
Add source stage
Step 3
Add build stage
Step 4
Add deploy stage
Step 5
Review
Pipeline settings
Pipeline name
Enter the pipeline name. You cannot edit the pipeline name after it is created.
update-customer-microservice
No more than 100 characters
Pipeline type
The pipeline type determines the pipeline structure and availability of parameters such as triggers. Pipeline type selection will impact features and pricing. Which pipeline is right for me?
V1
V2
Execution mode
Choose the execution mode for your pipeline. This determines how the pipeline is run.
Superseded
A more recent execution can overtake an older one. This is the default.
Queued (Pipeline type V2 required)
Executions are processed one by one in the order that they are queued.
Parallel (Pipeline type V2 required)
Executions don't wait for other runs to complete before starting or finishing.
Service role
New service role
Create a service role in your account
Existing service role
Choose an existing service role from your account
Role ARN
arn:aws:iam::217120064673:role/PipelineRole
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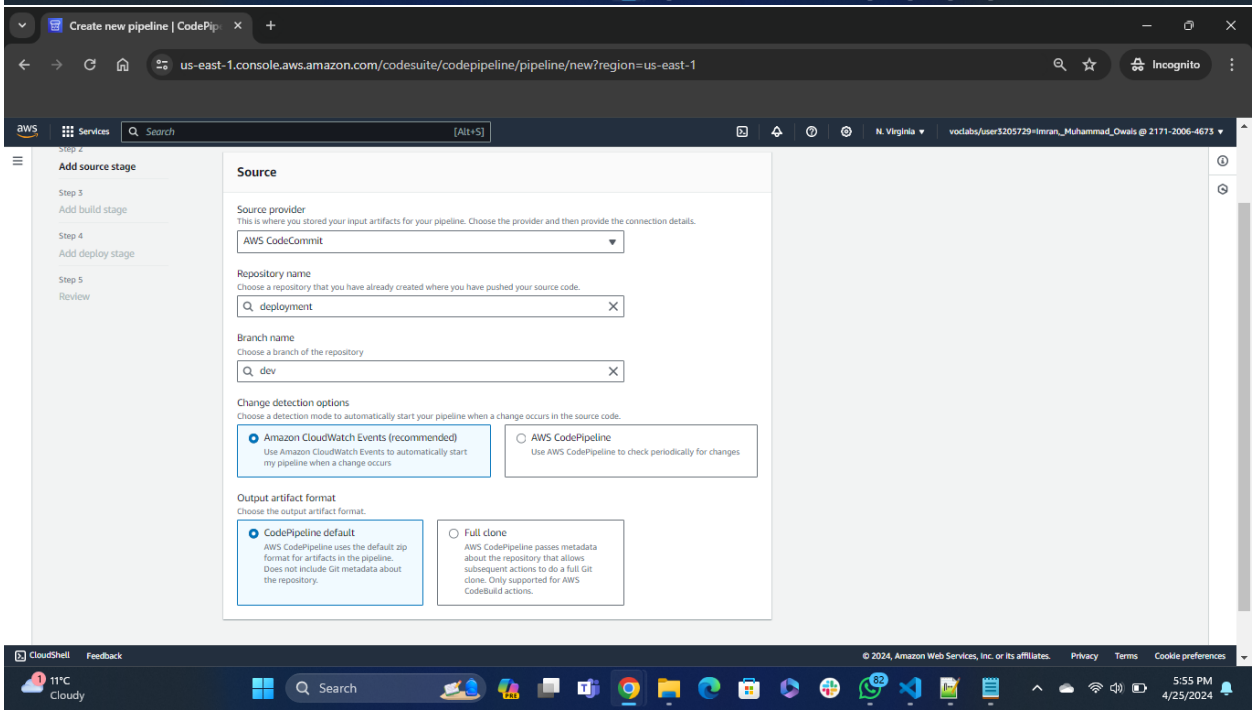
Create new pipeline | CodePip
us-east-1.console.aws.amazon.com/codesuite/codepipeline/pipeline/new?region=us-east-1
Incognito
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=imran._Muhammad_Owais @ 2171-2006-4673
Step 2
Add source stage
Step 3
Add build stage
Step 4
Add deploy stage
Step 5
Review
Source
Source provider
This is where you stored your input artifacts for your pipeline. Choose the provider and then provide the connection details.
AWS CodeCommit
Repository name
Choose a repository that you have already created where you have pushed your source code.
deployment
Branch name
Choose a branch of the repository
dev
Change detection options
Choose a detection mode to automatically start your pipeline when a change occurs in the source code.
Amazon CloudWatch Events (recommended)
Use Amazon CloudWatch Events to automatically start my pipeline when a change occurs
AWS CodePipeline
Use AWS CodePipeline to check periodically for changes
Output artifact format
Choose the output artifact format.
CodePipeline default
AWS CodePipeline uses the default zip format for artifacts in the pipeline. Does not include Git metadata about the repository.
Full clone
AWS CodePipeline passes metadata about the repository that allows subsequent actions to do a full Git clone. Only supported for AWS CodeBuild actions.
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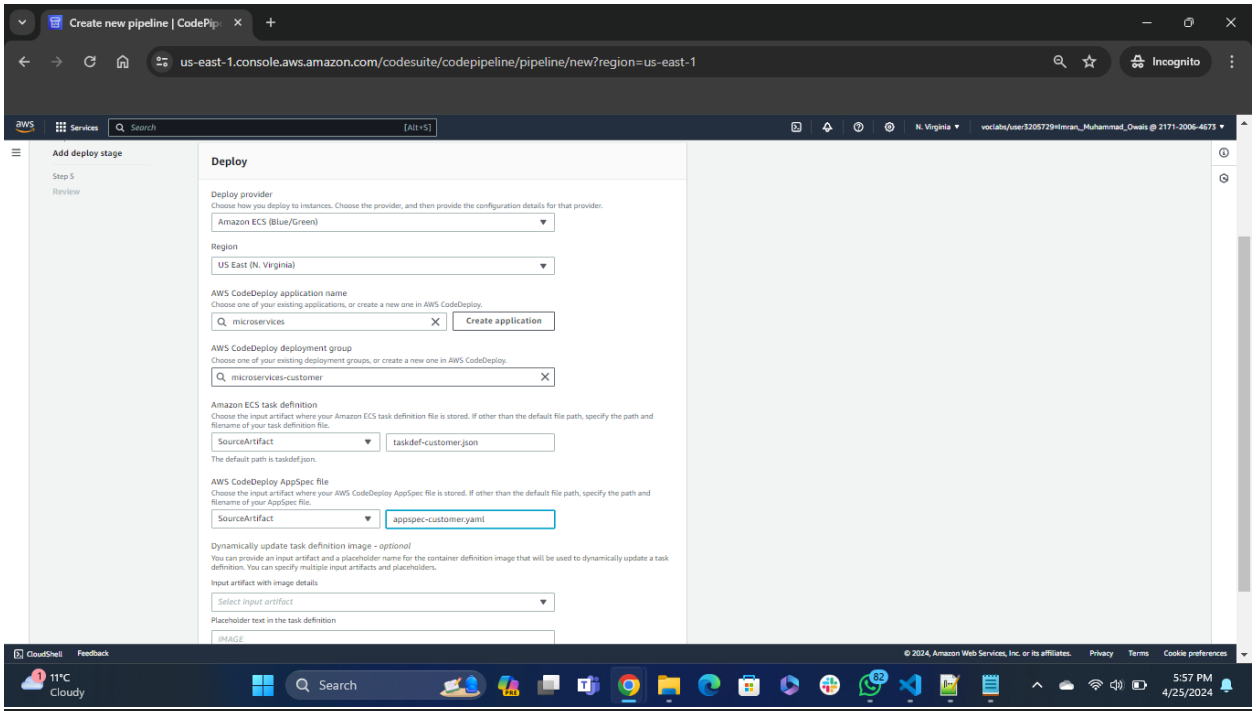
Create new pipeline | CodePip
us-east-1.console.aws.amazon.com/codesuite/codepipeline/pipeline/new?region=us-east-1
Incognito
Add deploy stage
Step 5
Review
Deploy
Deploy provider
Choose how you deploy to instances. Choose the provider, and then provide the configuration details for that provider.
Amazon ECS (Blue/Green)
Region
US East (N. Virginia)
AWS CodeDeploy application name
Choose one of your existing applications, or create a new one in AWS CodeDeploy.
microservices
Create application
AWS CodeDeploy deployment group
Choose one of your existing deployment groups, or create a new one in AWS CodeDeploy.
microservices-customer
Amazon ECS task definition
Choose the input artifact where your Amazon ECS task definition file is stored. If other than the default file path, specify the path and filename of your task definition file.
SourceArtifact
taskdef-customer.json
The default path is taskdef.json.
AWS CodeDeploy AppSpec file
Choose the input artifact where your AWS CodeDeploy AppSpec file is stored. If other than the default file path, specify the path and filename of your AppSpec file.
SourceArtifact
appspec-customer.yaml
Dynamically update task definition image - optional
You can provide an input artifact and a placeholder name for the container definition image that will be used to dynamically update a task definition. You can specify multiple input artifacts and placeholders.
Input artifact with image details
Select input artifact
Placeholder text in the task definition
IMAGE
CloudShell
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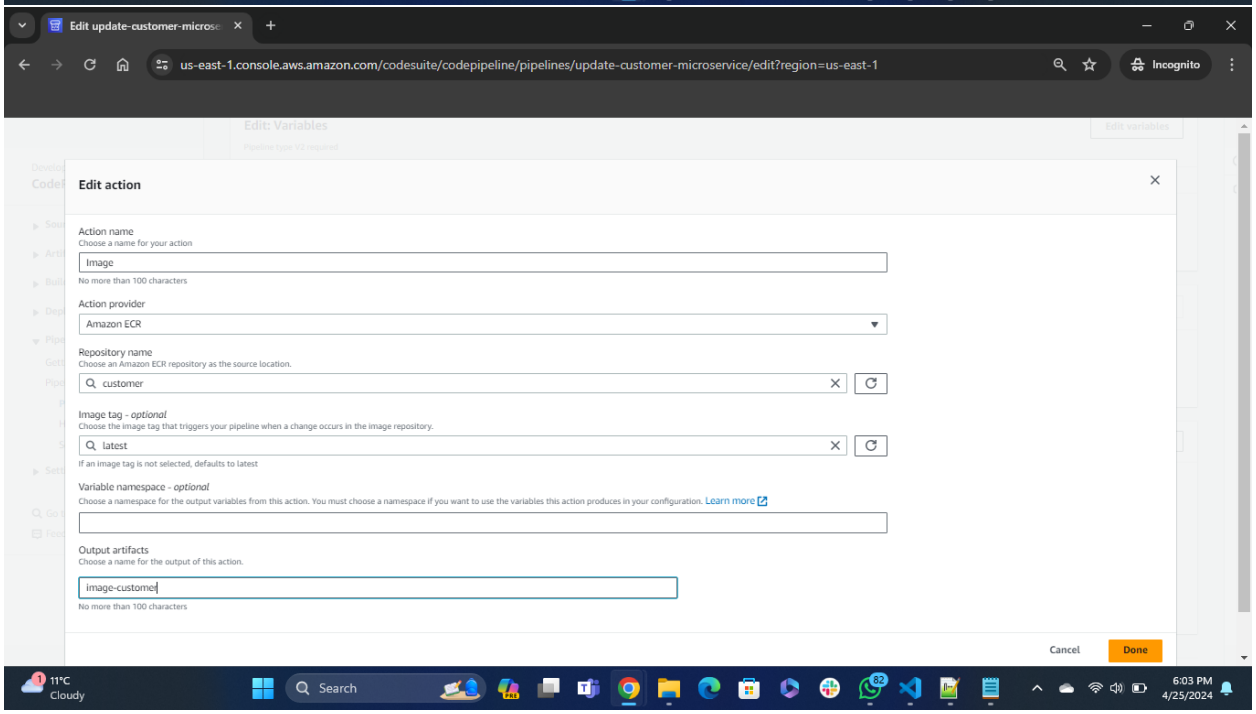
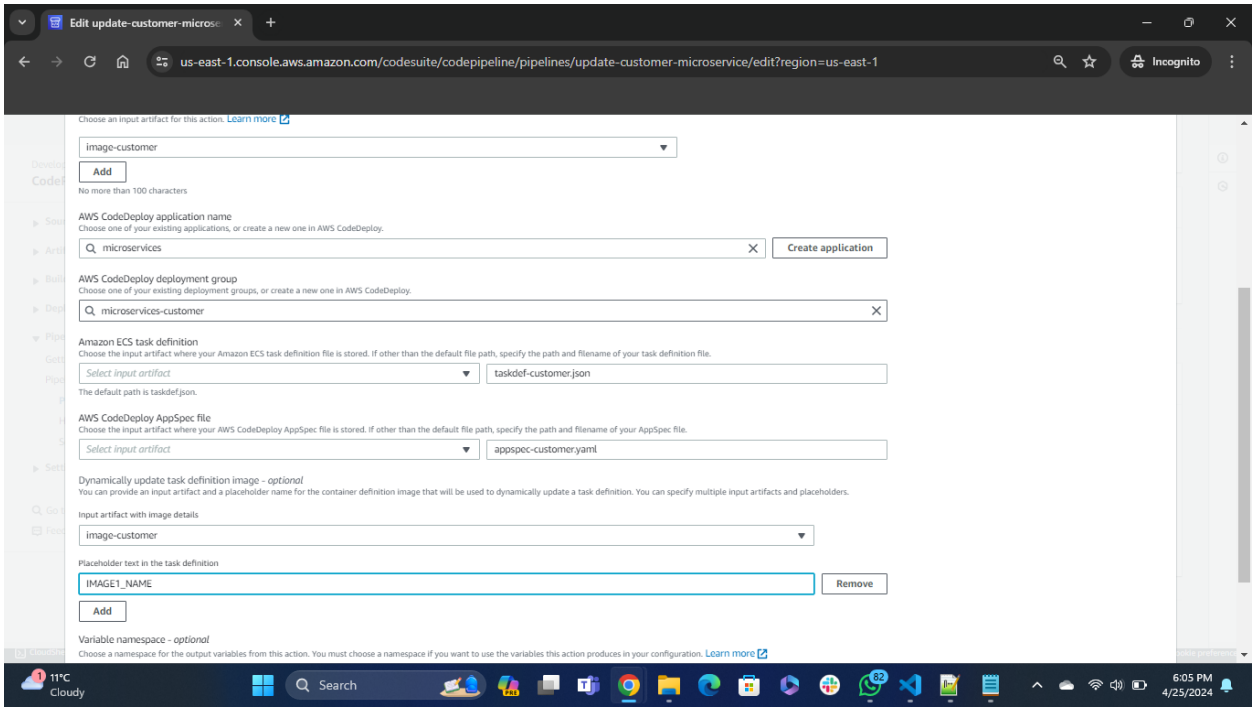
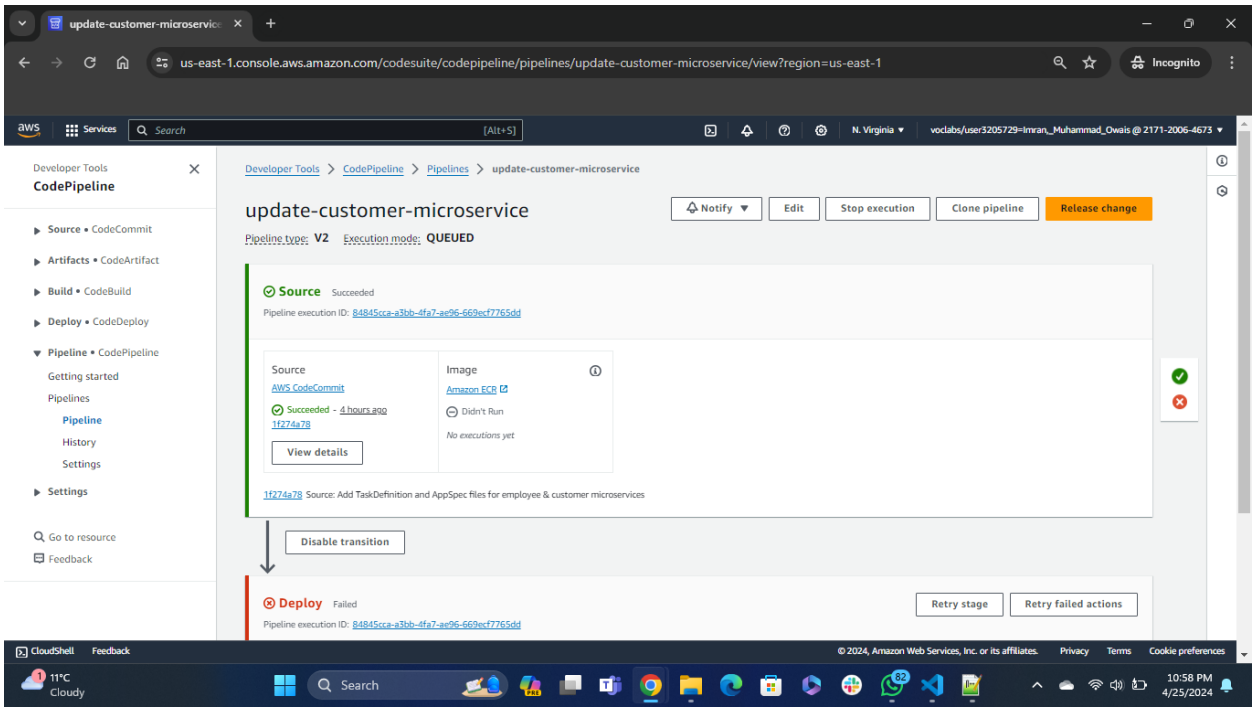

Edit update-customer-microse
us-east-1.console.aws.amazon.com/codesuite/codepipeline/pipelines/update-customer-microservice/edit?region=us-east-1
Incognito
Edit: Variables
Edit action
Action name
Choose a name for your action
Image
No more than 100 characters
Action provider
Amazon ECR
Repository name
Choose an Amazon ECR repository as the source location.
customer
Image tag - optional
Choose the image tag that triggers your pipeline when a change occurs in the image repository.
latest
If an image tag is not selected, defaults to latest
Variable namespace - optional
Choose a namespace for the output variables from this action. You must choose a namespace if you want to use the variables this action produces in your configuration. Learn more
Output artifacts
Choose a name for the output of this action.
image-customer
No more than 100 characters
Cancel
Done
11°C
Cloudy
Search
6:03 PM
4/25/2024

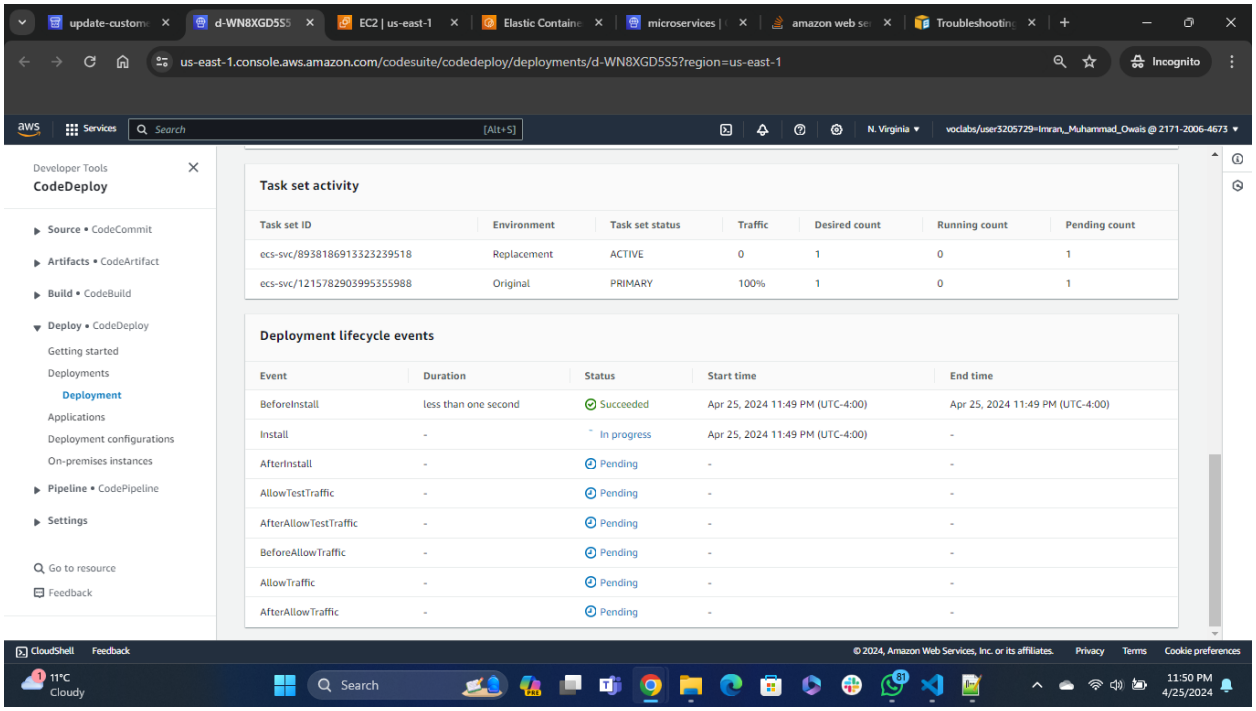

Edit update-customer-microse
us-east-1.console.aws.amazon.com/codesuite/codepipeline/pipelines/update-customer-microservice/edit?region=us-east-1
Incognito
Choose an input artifact for this action. Learn more
image-customer
Add
No more than 100 characters
AWS CodeDeploy application name
Choose one of your existing applications, or create a new one in AWS CodeDeploy.
microservices
Create application
AWS CodeDeploy deployment group
Choose one of your existing deployment groups, or create a new one in AWS CodeDeploy.
microservices-customer
Amazon ECS task definition
Choose the input artifact where your Amazon ECS task definition file is stored. If other than the default file path, specify the path and filename of your task definition file.
Select input artifact
taskdef-customer.json
The default path is taskdef.json.
AWS CodeDeploy AppSpec file
Choose the input artifact where your AWS CodeDeploy AppSpec file is stored. If other than the default file path, specify the path and filename of your AppSpec file.
Select input artifact
appspec-customer.yaml
Dynamically update task definition image - optional
You can provide an input artifact and a placeholder name for the container definition image that will be used to dynamically update a task definition. You can specify multiple input artifacts and placeholders.
Input artifact with image details
image-customer
Placeholder text in the task definition
IMAGE1_NAME
Remove
Add
Variable namespace - optional
Choose a namespace for the output variables from this action. You must choose a namespace if you want to use the variables this action produces in your configuration. Learn more
11°C
Cloudy
Search
6:05 PM
4/25/2024

Task 8.3: Test the CI/CD pipeline for the *customer* microservice

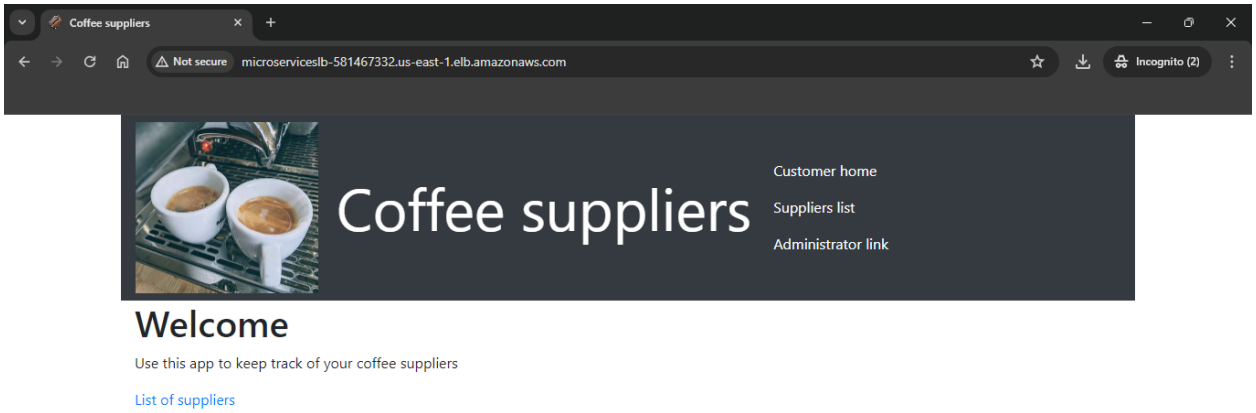
1. Launch a deployment of the customer microservice on Amazon ECS on Fargate by Clicking on Release Change on Codepipeline

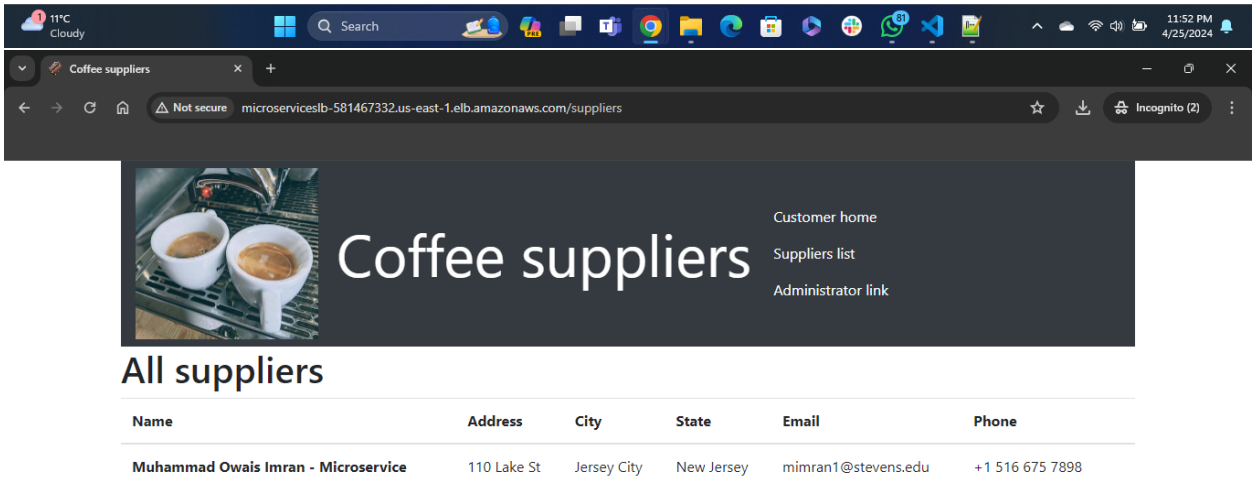


2. Observe the progress in CodeDeploy.

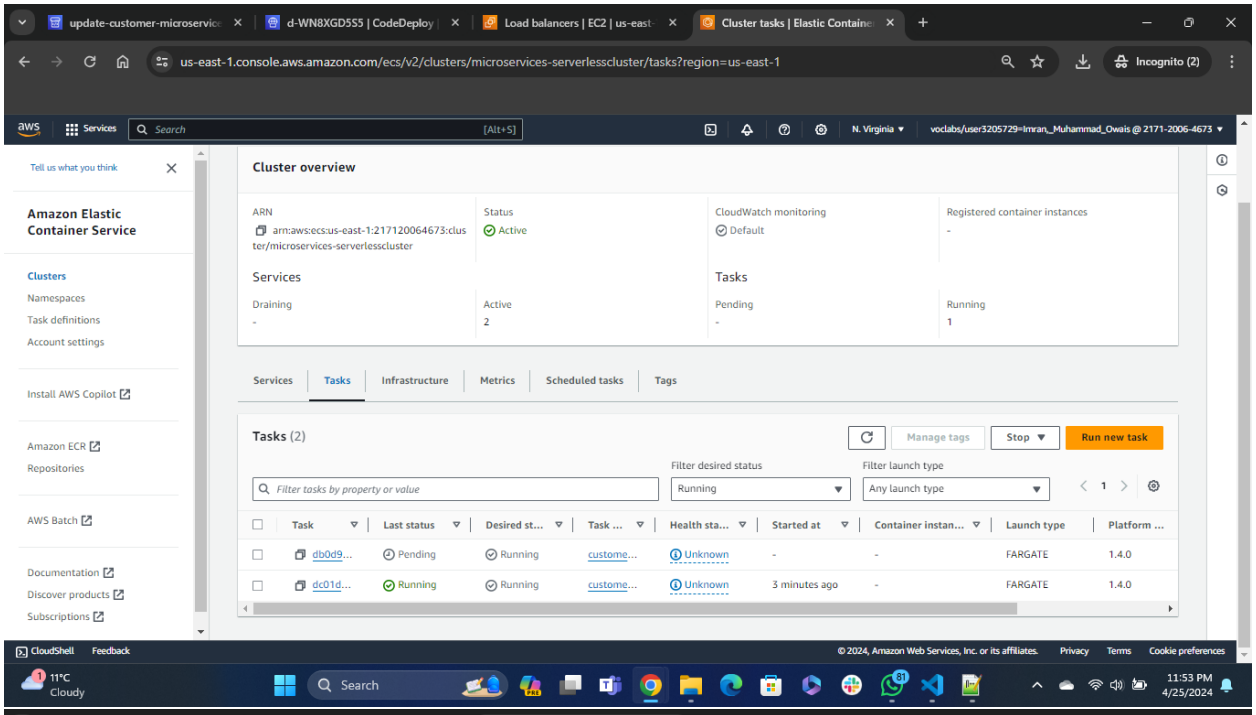


3. Load the customer microservice in a new tab and see if it is working properly by copying the DNS name of LoadBalancer.





4. Observe the ECS cluster services and load balancer target group setting (we can see that the forward to option of both listener rule is now same due to traffic forwarding and test deployment successful


update-customer-microservic
d-WN8XGD5S5 | CodeDeploy
Load balancers | EC2 | us-east-
Cluster tasks | Elastic Containe
us-east-1.console.aws.amazon.com/ecs/v2/clusters/microservices-serverlesscluster/tasks?region=us-east-1
Incognito (2)
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran_Muhammad_Owais @ 2171-2006-4673
Tell us what you think
Amazon Elastic Container Service
Clusters
Namespaces
Task definitions
Account settings
Install AWS Copilot
Amazon ECR
Repositories
AWS Batch
Documentation
Discover products
Subscriptions
Cluster overview
ARN
arn:aws:ecs:us-east-1:217120064673:cluster/microservices-serverlesscluster
Status
Active
CloudWatch monitoring
Default
Registered container instances
-
Services
Draining
-
Active
2
Tasks
Pending
-
Running
1
Services
Tasks
Infrastructure
Metrics
Scheduled tasks
Tags
Tasks (2)
Manage tags
Stop
Run new task
Filter desired status
Running
Filter launch type
Any launch type
Filter tasks by property or value
Task
Last status
Desired st...
Task ...
Health sta...
Started at
Container instan...
Launch type
Platform ...
db0d9...
Pending
Running
custome...
Unknown
-
-
FARGATE
1.4.0
dc01d...
Running
Running
custome...
Unknown
3 minutes ago
-
FARGATE
1.4.0
CloudShell
Feedback
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Terms
Cookie preferences
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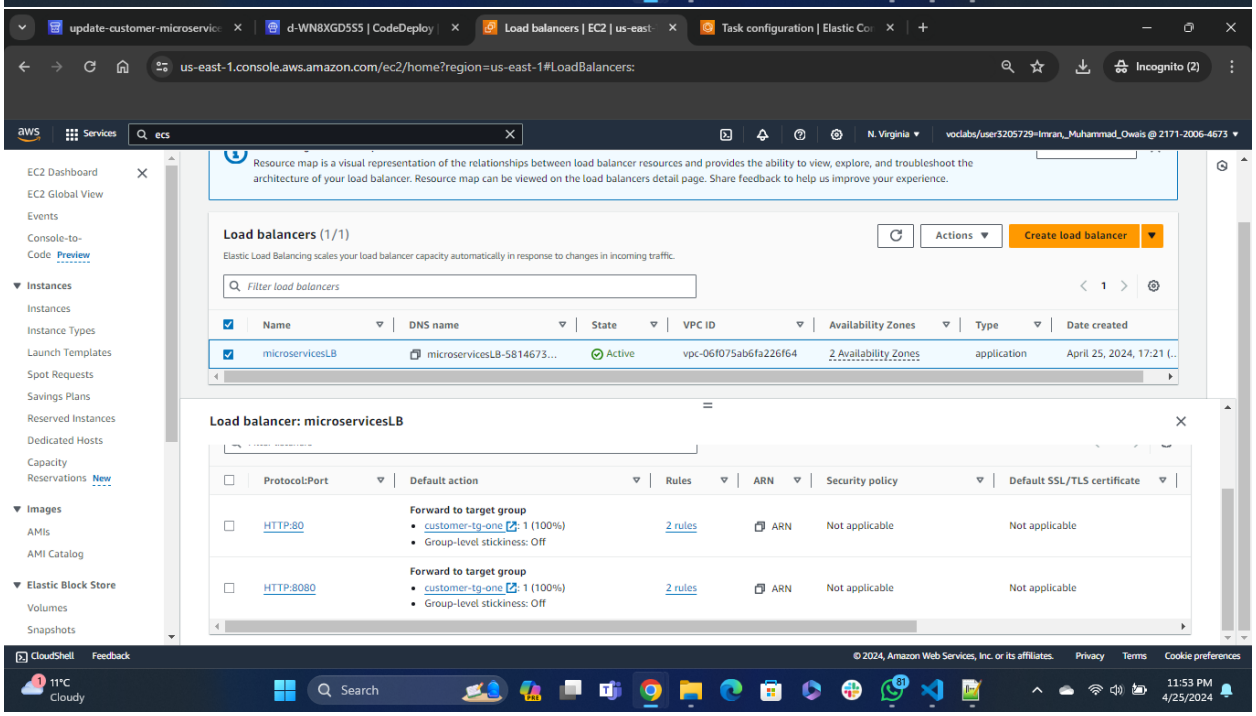
Cloudy
Search
11:53 PM
4/25/2024


update-customer-microservic
d-WN8XGD5S5 | CodeDeploy
Load balancers | EC2 | us-east-
Task configuration | Elastic Co
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LoadBalancers:
Incognito (2)
Services
ecs
N. Virginia
voclabs/user3205729=Imran_Muhammad_Owais @ 2171-2006-4673
EC2 Dashboard
EC2 Global View
Events
Console-to-Code Preview
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations New
Images
AMIs
AMI Catalog
Elastic Block Store
Volumes
Snapshots
Resource map is a visual representation of the relationships between load balancer resources and provides the ability to view, explore, and troubleshoot the architecture of your load balancer. Resource map can be viewed on the load balancers detail page. Share feedback to help us improve your experience.
Load balancers (1/1)
Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.
Actions
Create load balancer
Filter load balancers
Name
DNS name
State
VPC ID
Availability Zones
Type
Date created
microservicesLB
microservicesLB-5814673...
Active
vpc-06f075ab6fa226f64
2 Availability Zones
application
April 25, 2024, 17:21 (...
Load balancer: microservicesLB
Protocol:Port
Default action
Rules
ARN
Security policy
Default SSL/TLS certificate
HTTP:80
Forward to target group
customer-tg-one: 1 (100%)
Group-level stickiness: Off
2 rules
ARN
Not applicable
Not applicable
HTTP:8080
Forward to target group
customer-tg-one: 1 (100%)
Group-level stickiness: Off
2 rules
ARN
Not applicable
Not applicable
CloudShell
Feedback
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Cloudy
Search
11:53 PM
4/25/2024

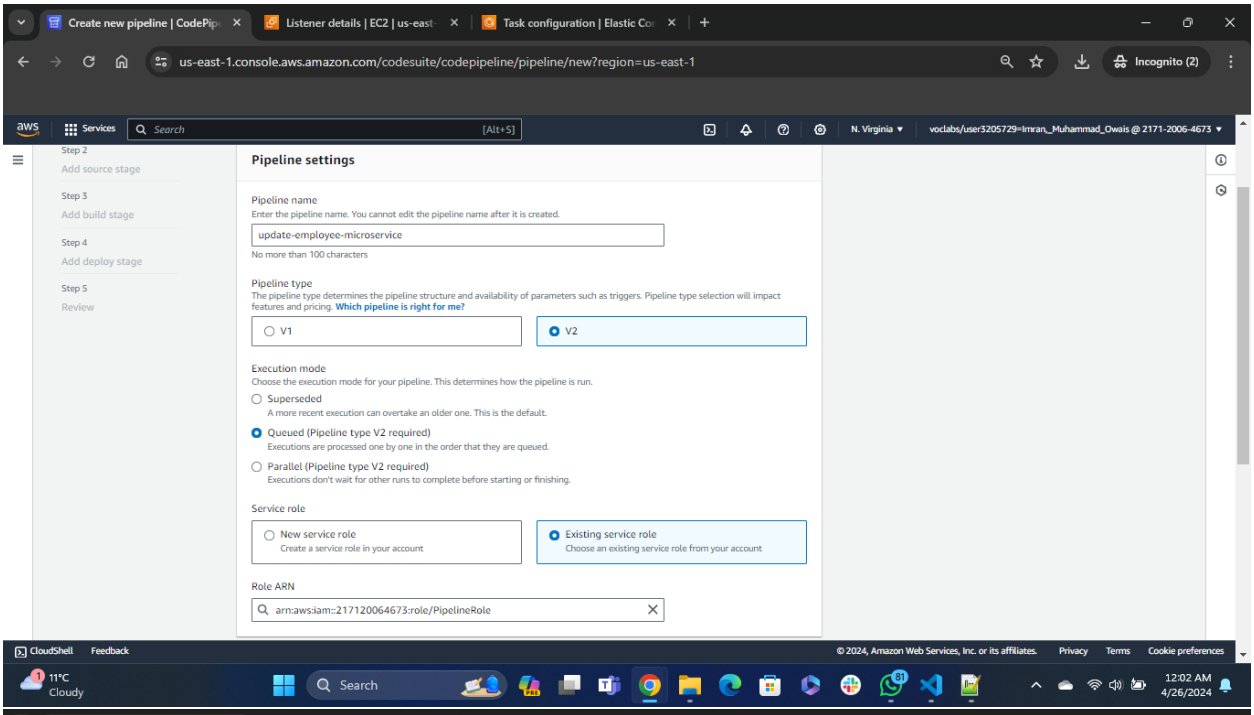
Task 8.4: Create a pipeline for the *employee* microservice

1. Create a Pipeline for Employee Microservice using the name update-employee-microservice.

2. Edit the *update-employee-microservice* pipeline to add another *source*.
    a. In the **Edit: Source** section, choose **Edit stage**, then add an action with these details:
        i. **Action name:** Image
        ii. **Action provider:** Amazon ECR
        iii. **Repository name:** employee
        iv. **Image tag:** latest
        v. **Output artifacts:** image-employee
3. Edit the *deploy* action of the *update-employee-microservice* pipeline.
    a. Edit the **update-employee-microservice** pipeline
        i. In the **Edit: Deploy** section, choose **Edit stage**, then add an input artifact as described below:
            1. On the **Deploy Amazon ECS (Blue/Green)** card, choose the edit (pencil) icon.
            2. Under **Input artifacts**, choose **Add** and then choose **image-employee**.

            Note: You should now have *SourceArtifact* and *image-employee* as listed input artifacts.

        ii. Under **Dynamically update task definition image**, for **Input artifact with image details**, choose **image-employee**.
        iii. For **Placeholder text in the task definition**, enter IMAGE1_NAME


Create new pipeline | CodePip
Listener details | EC2 | us-east-
Task configuration | Elastic Co
us-east-1.console.aws.amazon.com/codesuite/codepipeline/pipeline/new?region=us-east-1
Incognito (2)
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran_Muhammad_Owais @ 2171-2006-4673
Step 2
Add source stage
Step 3
Add build stage
Step 4
Add deploy stage
Step 5
Review
Pipeline settings
Pipeline name
Enter the pipeline name. You cannot edit the pipeline name after it is created.
update-employee-microservice
No more than 100 characters
Pipeline type
The pipeline type determines the pipeline structure and availability of parameters such as triggers. Pipeline type selection will impact features and pricing. Which pipeline is right for me?
V1
V2
Execution mode
Choose the execution mode for your pipeline. This determines how the pipeline is run.
Superseded
A more recent execution can overtake an older one. This is the default.
Queued (Pipeline type V2 required)
Executions are processed one by one in the order that they are queued.
Parallel (Pipeline type V2 required)
Executions don't wait for other runs to complete before starting or finishing.
Service role
New service role
Create a service role in your account
Existing service role
Choose an existing service role from your account
Role ARN
arn:aws:iam::217120064673:role/PipelineRole
CloudShell
Feedback
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Cookie preferences
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Cloudy
Search
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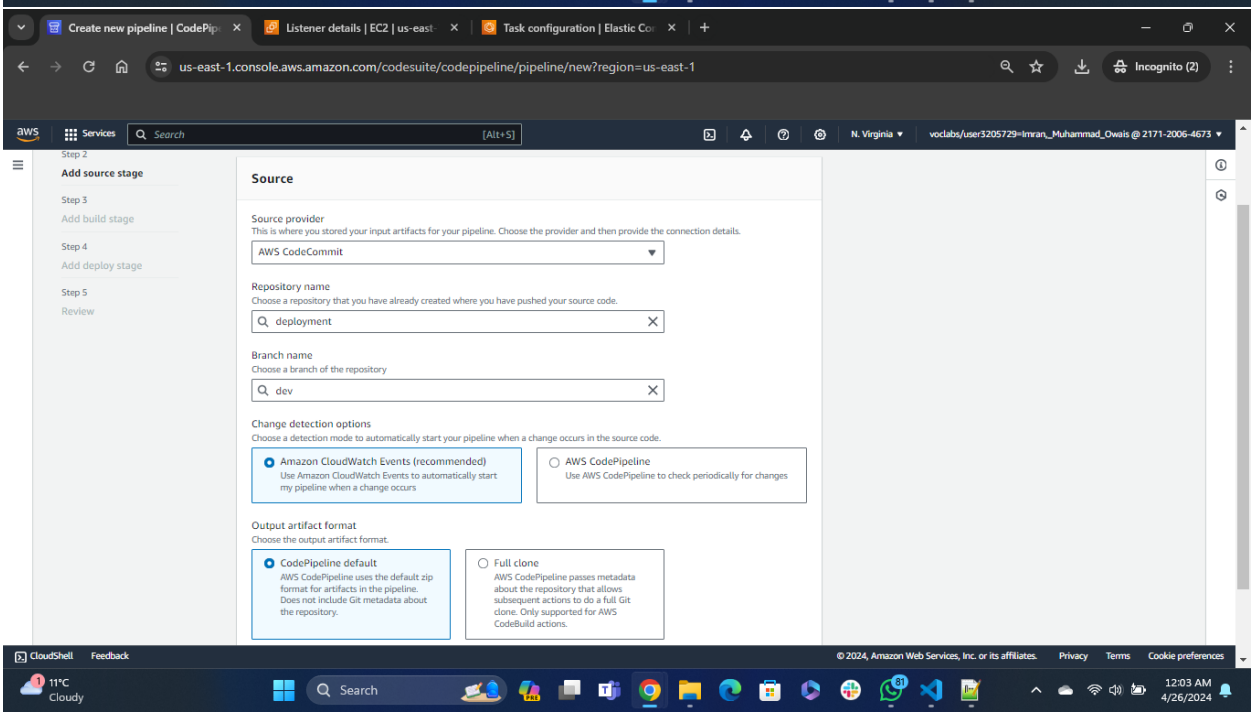
4/26/2024


Create new pipeline | CodePip
Listener details | EC2 | us-east-
Task configuration | Elastic Co
us-east-1.console.aws.amazon.com/codesuite/codepipeline/pipeline/new?region=us-east-1
Incognito (2)
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran_Muhammad_Owais @ 2171-2006-4673
Step 2
Add source stage
Step 3
Add build stage
Step 4
Add deploy stage
Step 5
Review
Source
Source provider
This is where you stored your input artifacts for your pipeline. Choose the provider and then provide the connection details.
AWS CodeCommit
Repository name
Choose a repository that you have already created where you have pushed your source code.
deployment
Branch name
Choose a branch of the repository
dev
Change detection options
Choose a detection mode to automatically start your pipeline when a change occurs in the source code.
Amazon CloudWatch Events (recommended)
Use Amazon CloudWatch Events to automatically start my pipeline when a change occurs
AWS CodePipeline
Use AWS CodePipeline to check periodically for changes
Output artifact format
Choose the output artifact format.
CodePipeline default
AWS CodePipeline uses the default zip format for artifacts in the pipeline. Does not include Git metadata about the repository.
Full clone
AWS CodePipeline passes metadata about the repository that allows subsequent actions to do a full Git clone. Only supported for AWS CodeBuild actions.
CloudShell
Feedback
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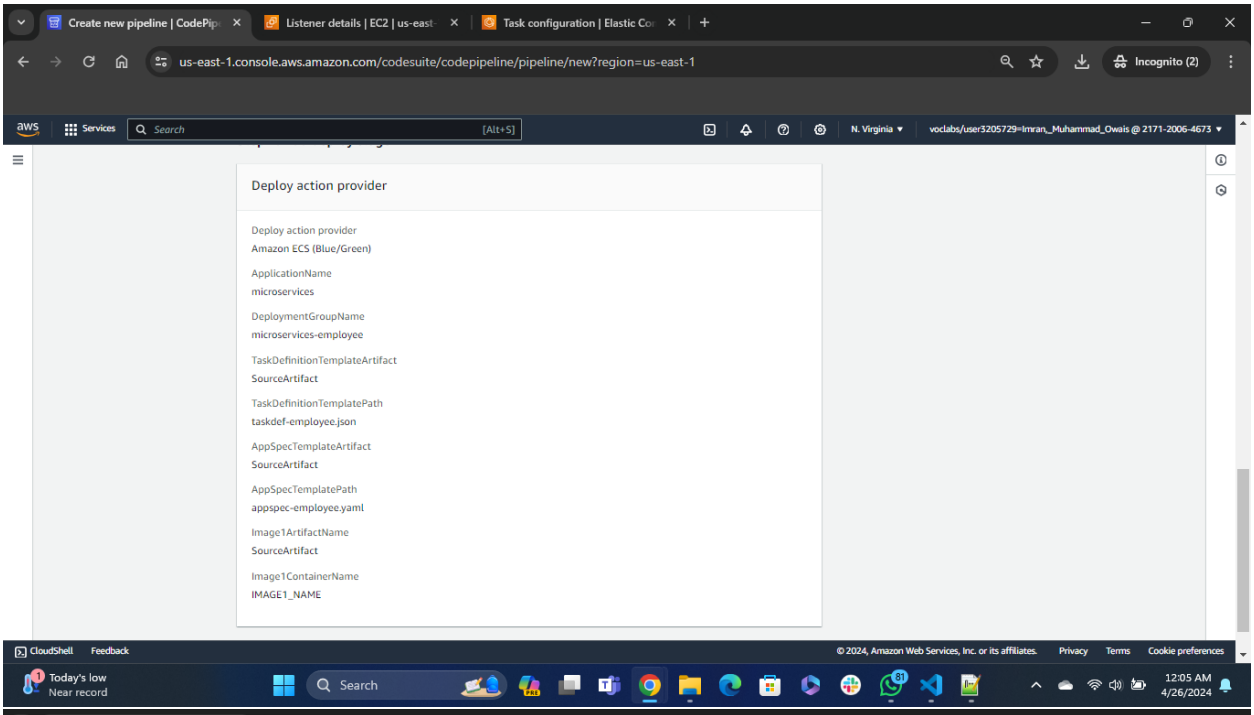
Create new pipeline | CodePip
Listener details | EC2 | us-east-
Task configuration | Elastic Co
us-east-1.console.aws.amazon.com/codesuite/codepipeline/pipeline/new?region=us-east-1
Incognito (2)
aws
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
Deploy action provider
Deploy action provider
Amazon ECS (Blue/Green)
ApplicationName
microservices
DeploymentGroupName
microservices-employee
TaskDefinitionTemplateArtifact
SourceArtifact
TaskDefinitionTemplatePath
taskdef-employee.json
AppSpecTemplateArtifact
SourceArtifact
AppSpecTemplatePath
appspec-employee.yaml
Image1ArtifactName
SourceArtifact
Image1ContainerName
IMAGE1_NAME
CloudShell
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Cookie preferences
Today's low
Near record
Search
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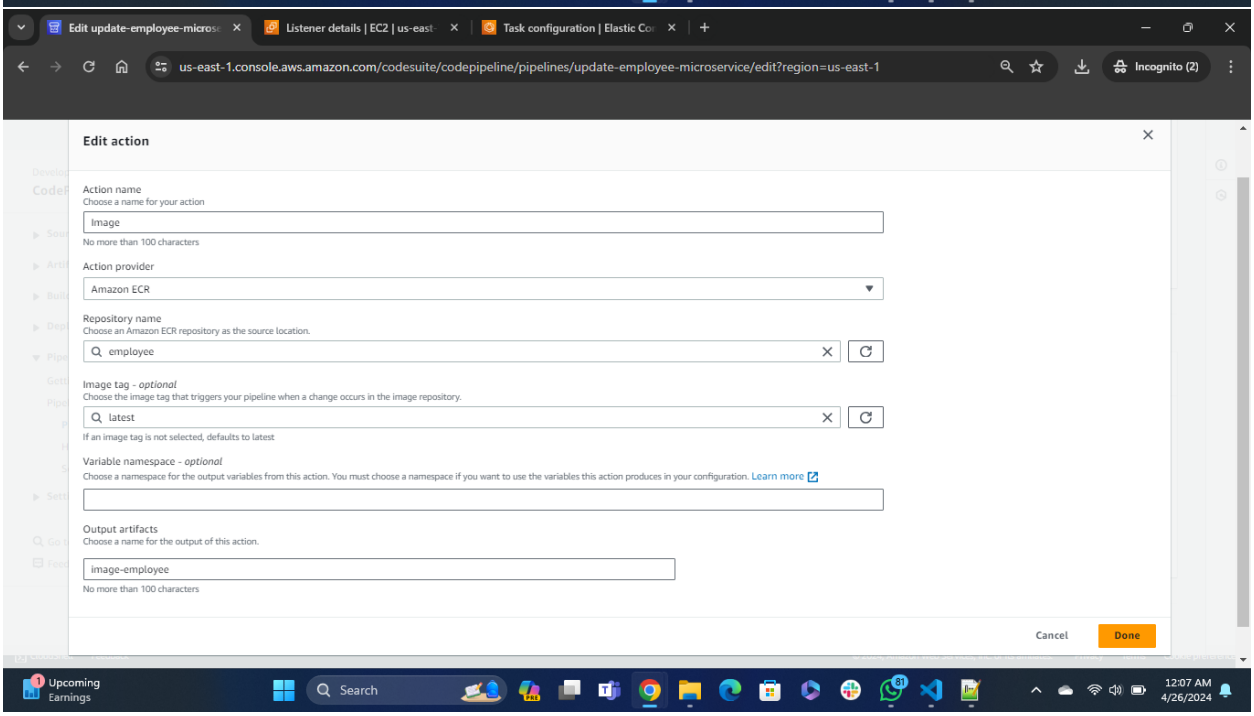
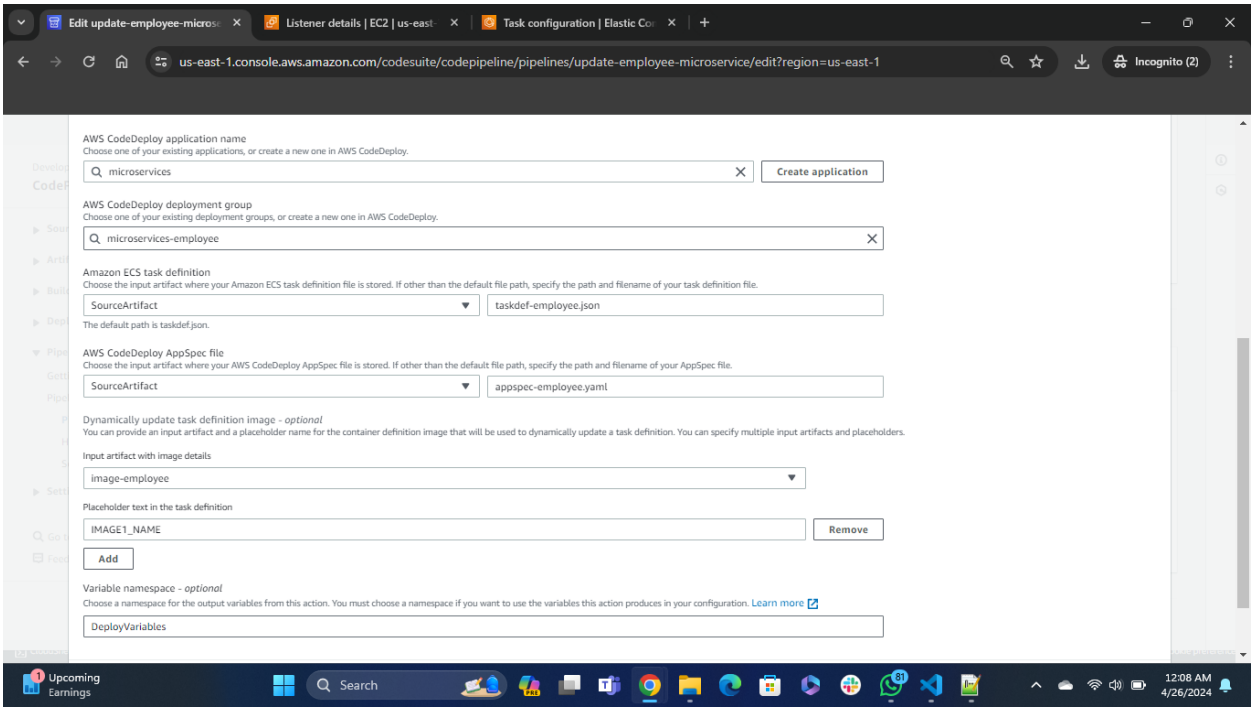
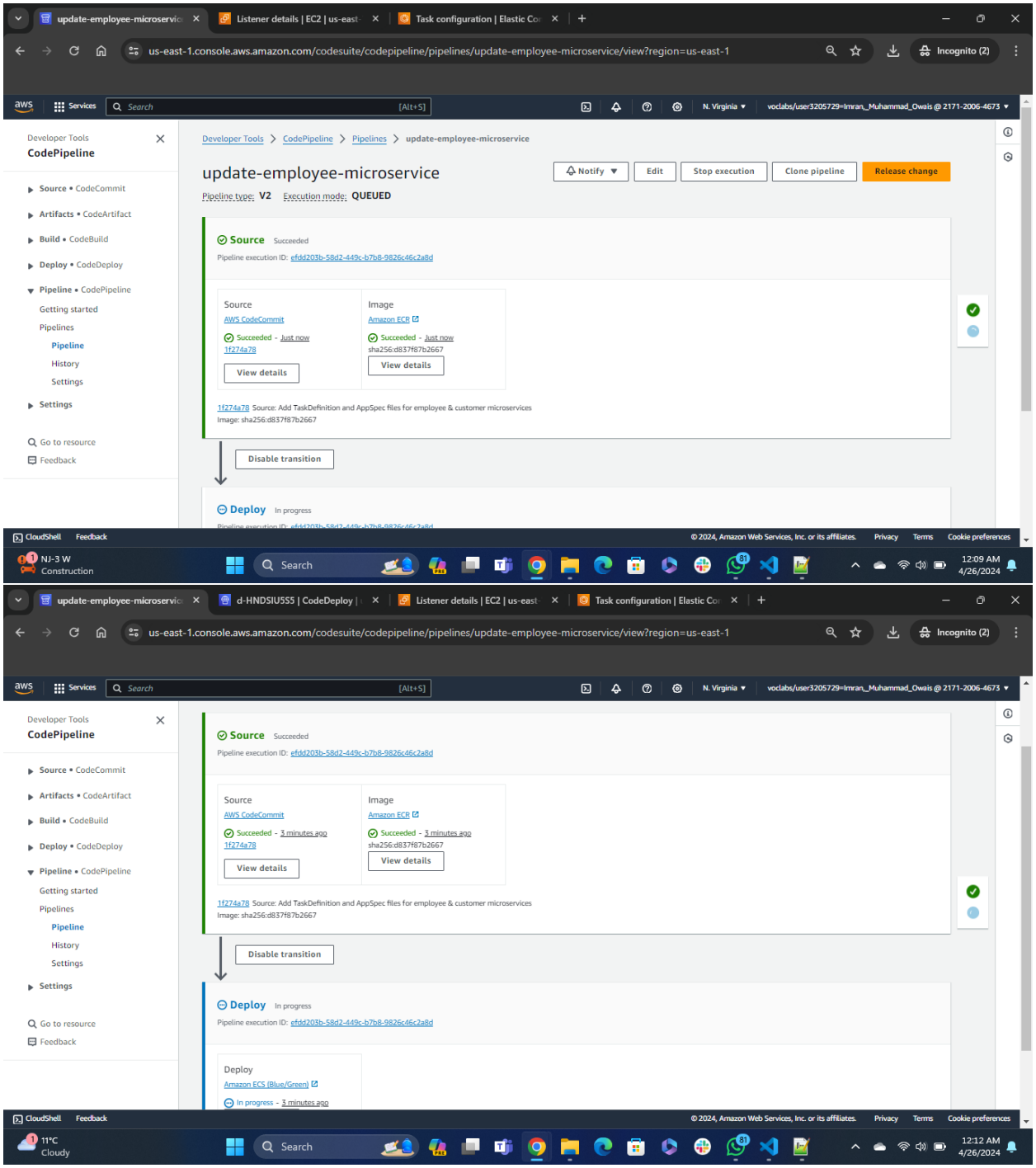

Edit update-employee-microse
Listener details | EC2 | us-east-
Task configuration | Elastic Co
us-east-1.console.aws.amazon.com/codesuite/codepipeline/pipelines/update-employee-microservice/edit?region=us-east-1
Incognito (2)
Edit action
Action name
Choose a name for your action
Image
No more than 100 characters
Action provider
Amazon ECR
Repository name
Choose an Amazon ECR repository as the source location.
employee
Image tag - optional
Choose the image tag that triggers your pipeline when a change occurs in the image repository.
latest
If an image tag is not selected, defaults to latest
Variable namespace - optional
Choose a namespace for the output variables from this action. You must choose a namespace if you want to use the variables this action produces in your configuration. Learn more
Output artifacts
Choose a name for the output of this action.
image-employee
No more than 100 characters
Cancel
Done
Upcoming
Earnings
Search
12:07 AM
4/26/2024


Edit update-employee-microse
Listener details | EC2 | us-east-
Task configuration | Elastic Co
us-east-1.console.aws.amazon.com/codesuite/codepipeline/pipelines/update-employee-microservice/edit?region=us-east-1
Incognito (2)
AWS CodeDeploy application name
Choose one of your existing applications, or create a new one in AWS CodeDeploy.
microservices
Create application
AWS CodeDeploy deployment group
Choose one of your existing deployment groups, or create a new one in AWS CodeDeploy.
microservices-employee
Amazon ECS task definition
Choose the input artifact where your Amazon ECS task definition file is stored. If other than the default file path, specify the path and filename of your task definition file.
SourceArtifact
taskdef-employee.json
The default path is taskdef.json.
AWS CodeDeploy AppSpec file
Choose the input artifact where your AWS CodeDeploy AppSpec file is stored. If other than the default file path, specify the path and filename of your AppSpec file.
SourceArtifact
appspec-employee.yaml
Dynamically update task definition image - optional
You can provide an input artifact and a placeholder name for the container definition image that will be used to dynamically update a task definition. You can specify multiple input artifacts and placeholders.
Input artifact with image details
image-employee
Placeholder text in the task definition
IMAGE1_NAME
Remove
Add
Variable namespace - optional
Choose a namespace for the output variables from this action. You must choose a namespace if you want to use the variables this action produces in your configuration. Learn more
DeployVariables
Upcoming
Earnings
Search
12:08 AM
4/26/2024

Task 8.5: Test the CI/CD pipeline for the *employee* microservice

1. Launch a deployment of the employee microservice on Amazon ECS on Fargate by Clicking on Release Change on Codepipeline


update-employee-microservic
Listener details | EC2 | us-east-
Task configuration | Elastic Co
us-east-1.console.aws.amazon.com/codesuite/codepipeline/pipelines/update-employee-microservice/view?region=us-east-1
Incognito (2)
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
Developer Tools
CodePipeline
Source • CodeCommit
Artifacts • CodeArtifact
Build • CodeBuild
Deploy • CodeDeploy
Pipeline • CodePipeline
Getting started
Pipelines
Pipeline
History
Settings
Settings
Go to resource
Feedback
Developer Tools > CodePipeline > Pipelines > update-employee-microservice
update-employee-microservice
Notify
Edit
Stop execution
Clone pipeline
Release change
Pipeline type: V2
Execution mode: QUEUED
Source
Succeeded
Pipeline execution ID: efdd203b-58d2-449c-b7b8-9826c46c2a8d
Source
AWS CodeCommit
Succeeded - Just now
1f274a78
View details
Image
Amazon ECR
Succeeded - Just now
sha256:d837f87b2667
View details
1f274a78 Source: Add TaskDefinition and AppSpec files for employee & customer microservices
Image: sha256:d837f87b2667
Disable transition
Deploy
In progress
CloudShell
Feedback
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Terms
Cookie preferences
NJ-3 W
Construction
Search
12:09 AM
4/26/2024

update-employee-microservic
d-HNDSIU5S5 | CodeDeploy |
Listener details | EC2 | us-east-
Task configuration | Elastic Co
us-east-1.console.aws.amazon.com/codesuite/codepipeline/pipelines/update-employee-microservice/view?region=us-east-1
Incognito (2)
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
Developer Tools
CodePipeline
Source • CodeCommit
Artifacts • CodeArtifact
Build • CodeBuild
Deploy • CodeDeploy
Pipeline • CodePipeline
Getting started
Pipelines
Pipeline
History
Settings
Settings
Go to resource
Feedback
Source
Succeeded
Pipeline execution ID: efdd203b-58d2-449c-b7b8-9826c46c2a8d
Source
AWS CodeCommit
Succeeded - 3 minutes ago
1f274a78
View details
Image
Amazon ECR
Succeeded - 3 minutes ago
sha256:d837f87b2667
View details
1f274a78 Source: Add TaskDefinition and AppSpec files for employee & customer microservices
Image: sha256:d837f87b2667
Disable transition
Deploy
In progress
Pipeline execution ID: efdd203b-58d2-449c-b7b8-9826c46c2a8d
Deploy
Amazon ECS (Blue/Green)
In progress - 3 minutes ago
CloudShell
Feedback
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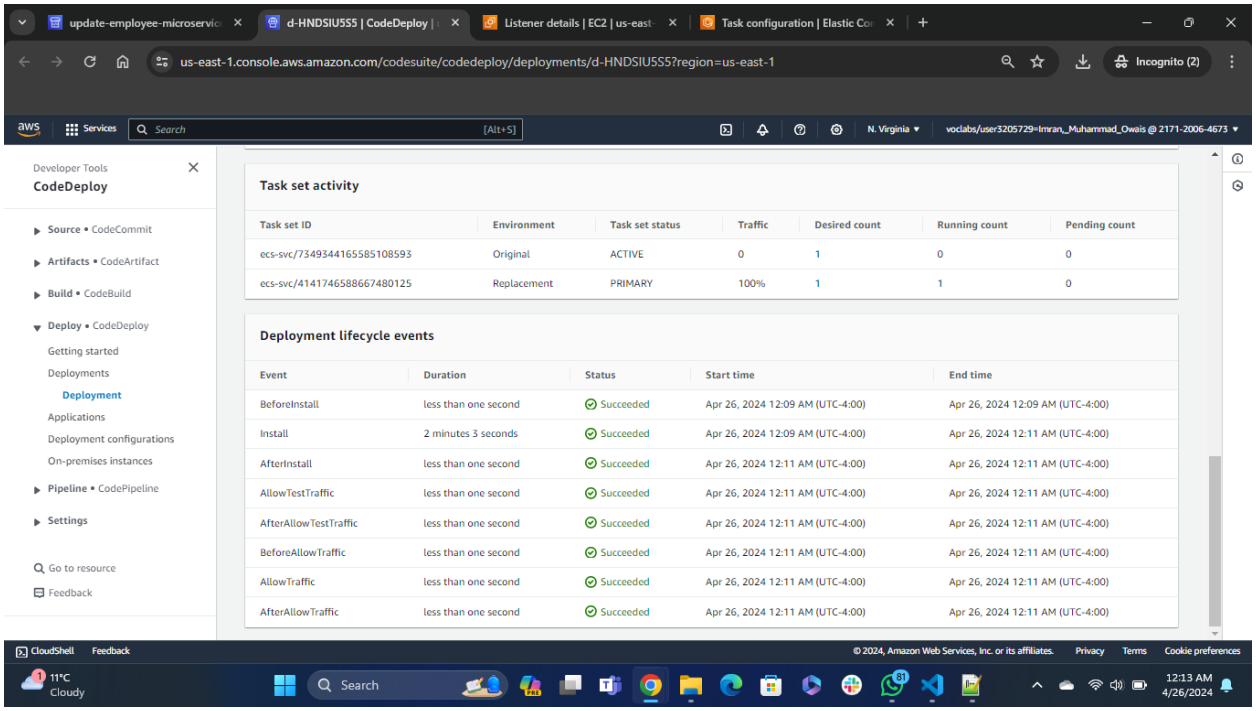
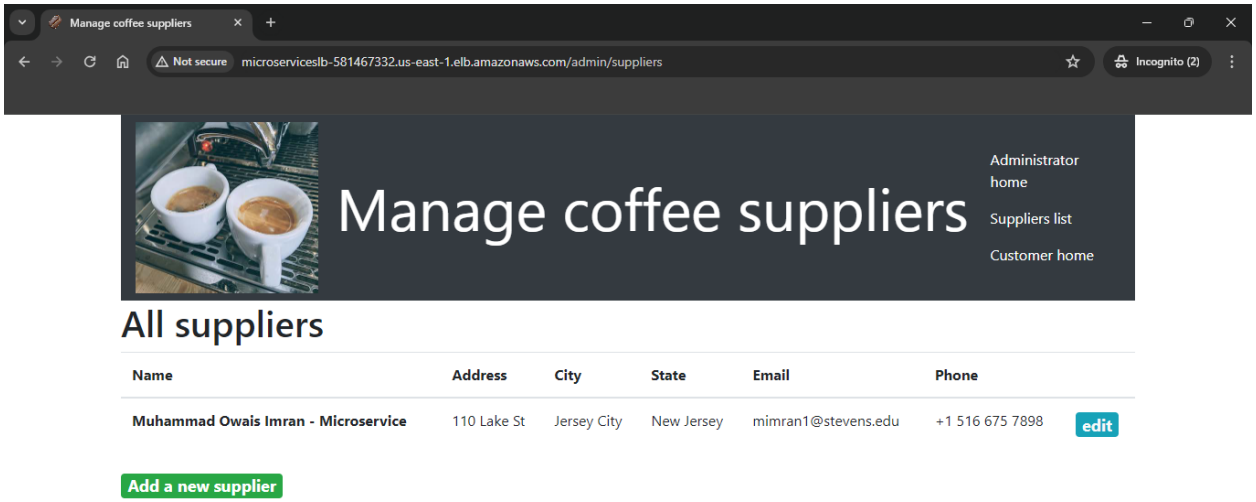
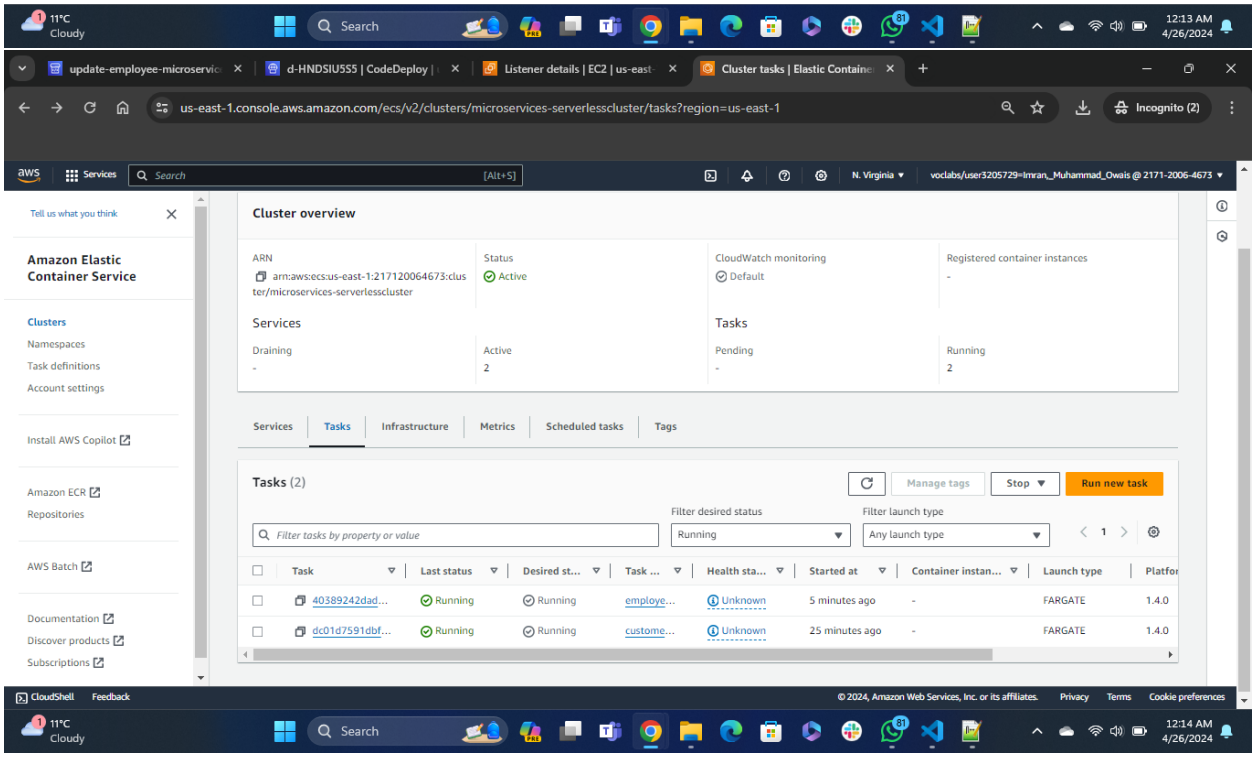
Privacy
Terms
Cookie preferences
11°C
Cloudy
Search
12:12 AM
4/26/2024



2. Check if admin link is working properly


Manage coffee suppliers
Not secure
microserviceslb-581467332.us-east-1.elb.amazonaws.com/admin/suppliers
Incognito (2)
Manage coffee suppliers
Administrator home
Suppliers list
Customer home
All suppliers
Name
Address
City
State
Email
Phone
Muhammad Owais Imran - Microservice
110 Lake St
Jersey City
New Jersey
mimran1@stevens.edu
+1 516 675 7898
edit
Add a new supplier


11°C
Cloudy
Search
12:13 AM
4/26/2024
update-employee-microservic
d-HNDSIU5S5 | CodeDeploy
Listener details | EC2 | us-east-
Cluster tasks | Elastic Containe
us-east-1.console.aws.amazon.com/ecs/v2/clusters/microservices-serverlesscluster/tasks?region=us-east-1
Incognito (2)
aws
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
Tell us what you think
Amazon Elastic Container Service
Clusters
Namespaces
Task definitions
Account settings
Install AWS Copilot
Amazon ECR
Repositories
AWS Batch
Documentation
Discover products
Subscriptions
Cluster overview
ARN
arn:aws:ecs:us-east-1:217120064673:cluster/microservices-serverlesscluster
Status
Active
CloudWatch monitoring
Default
Registered container instances
Services
Draining
Active
2
Tasks
Pending
Running
2
Services
Tasks
Infrastructure
Metrics
Scheduled tasks
Tags
Tasks (2)
Manage tags
Stop
Run new task
Filter tasks by property or value
Filter desired status
Running
Filter launch type
Any launch type
Task
Last status
Desired st...
Task ...
Health sta...
Started at
Container instan...
Launch type
40389242dad...
Running
employe...
Unknown
5 minutes ago
FARGATE
1.4.0
dc01d7591dbf...
Running
custome...
Unknown
25 minutes ago
FARGATE
1.4.0
CloudShell
Feedback
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Privacy
Terms
Cookie preferences
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Cloudy
Search
12:14 AM
4/26/2024

Significance & Importance of this Task

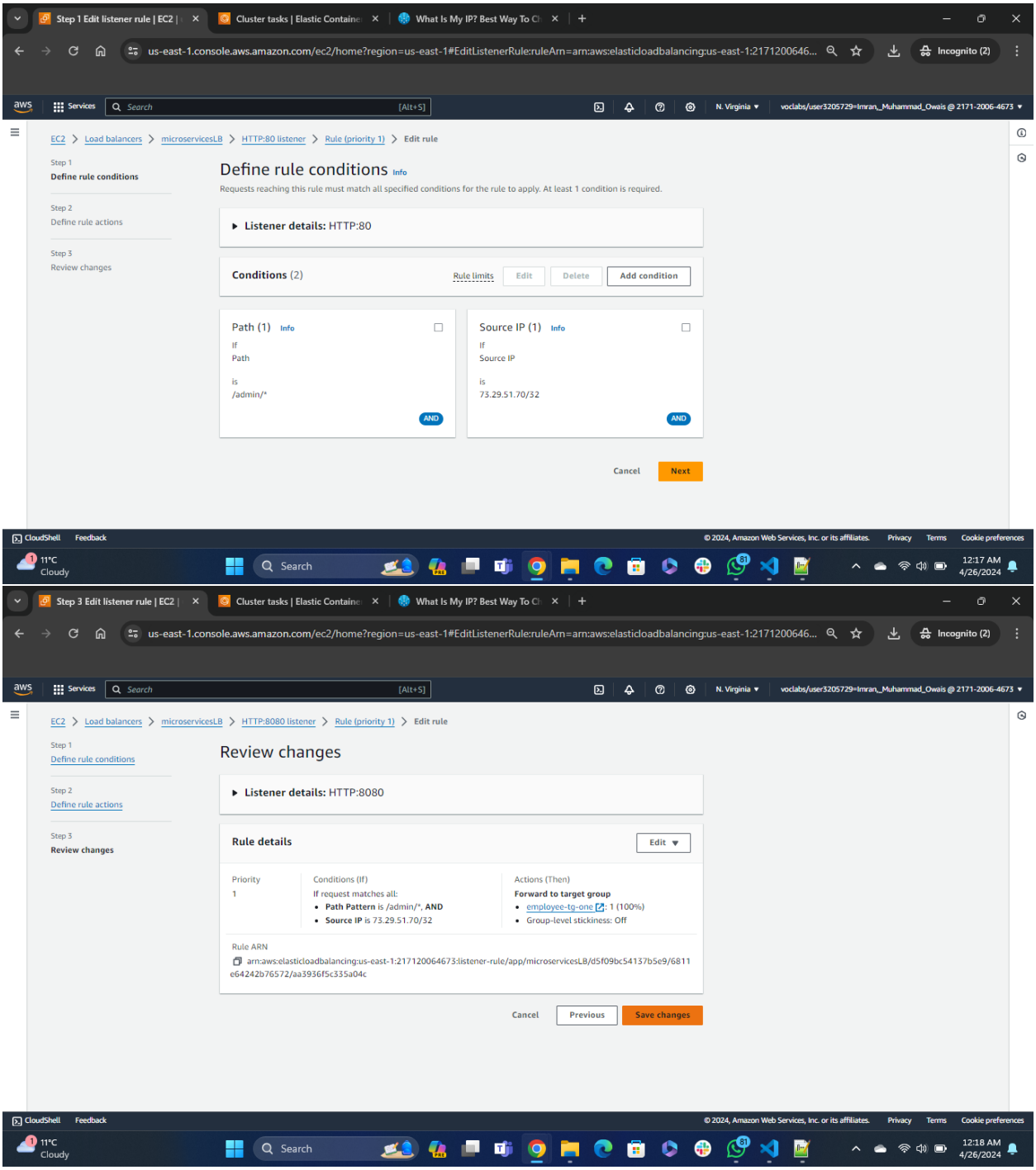
This task helps us in implementing:

- How to automate this entire application deployment process with zero interaction of the developers with the production environment.
- The infrastructure and workflow of AWS CodePipeline and its integration with AWS CodeDeploy, AWS ECR, and AWS CodeCommit.

Phase 9: Adjusting the microservice code to cause a pipeline to run again

Task 9.1: Limit access to the *employee* microservice

1. Edit the rules for HTTP: 80 and HTTP:8080 listener rules to restrict access to /admin/* routes to your IP address only.


Step 1 Edit listener rule | EC2 |
Cluster tasks | Elastic Containe
What Is My IP? Best Way To Ch
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#EditListenerRule:ruleArn=arn:aws:elasticloadbalancing:us-east-1:2171200646...
Incognito (2)
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
EC2 > Load balancers > microservicesLB > HTTP:80 listener > Rule (priority 1) > Edit rule
Step 1
Define rule conditions
Step 2
Define rule actions
Step 3
Review changes
Define rule conditions Info
Requests reaching this rule must match all specified conditions for the rule to apply. At least 1 condition is required.
Listener details: HTTP:80
Conditions (2)
Rule limits
Edit
Delete
Add condition
Path (1) Info
If
Path
is
/admin/*
AND
Source IP (1) Info
If
Source IP
is
73.29.51.70/32
AND
Cancel
Next
CloudShell
Feedback
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Privacy
Terms
Cookie preferences
11°C
Cloudy
Search
12:17 AM
4/26/2024

Step 3 Edit listener rule | EC2 |
Cluster tasks | Elastic Containe
What Is My IP? Best Way To Ch
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#EditListenerRule:ruleArn=arn:aws:elasticloadbalancing:us-east-1:2171200646...
Incognito (2)
Services
Search
[Alt+S]
N. Virginia
voclabs/user3205729=Imran,_Muhammad_Owais @ 2171-2006-4673
EC2 > Load balancers > microservicesLB > HTTP:8080 listener > Rule (priority 1) > Edit rule
Step 1
Define rule conditions
Step 2
Define rule actions
Step 3
Review changes
Review changes
Listener details: HTTP:8080
Rule details
Edit
Priority
1
Conditions (If)
If request matches all:
Path Pattern is /admin/*, AND
Source IP is 73.29.51.70/32
Actions (Then)
Forward to target group
employee-tg-one: 1 (100%)
Group-level stickiness: Off
Rule ARN
arn:aws:elasticloadbalancing:us-east-1:217120064673:listener-rule/app/microservicesLB/d5f09bc54137b5e9/6811e64242b76572/aa3936f5c335a04c
Cancel
Previous
Save changes
CloudShell
Feedback
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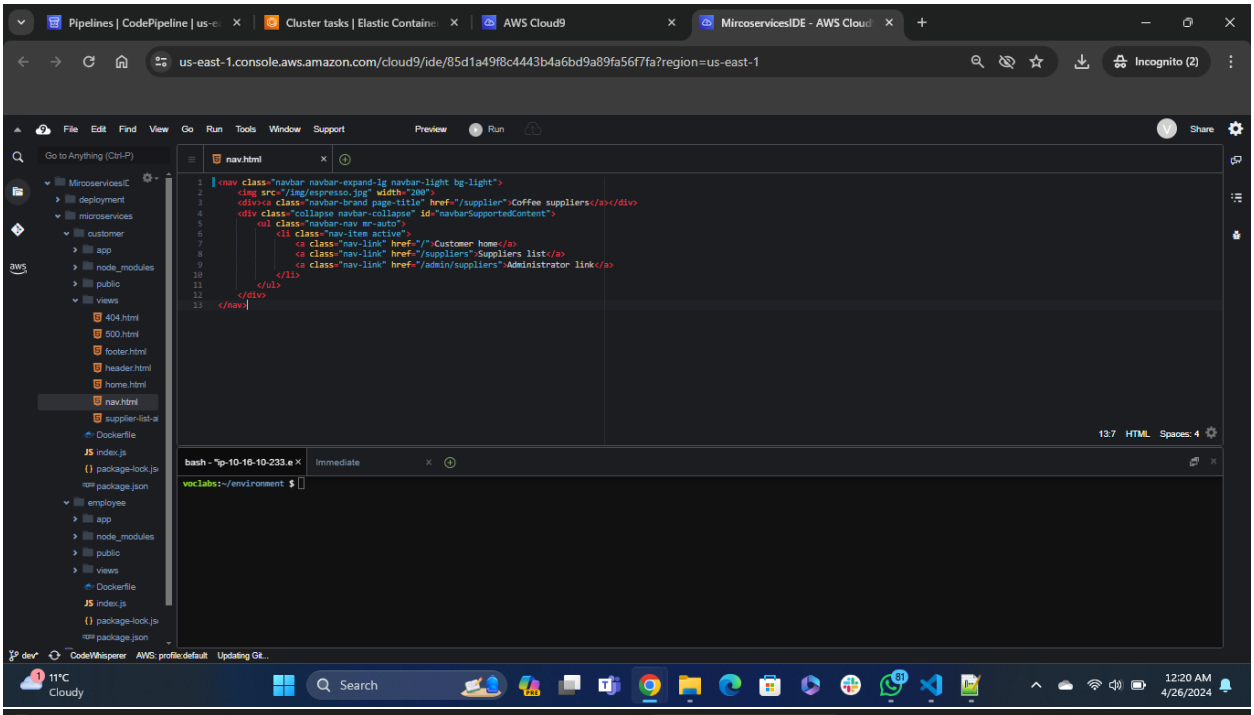
Privacy
Terms
Cookie preferences
11°C
Cloudy
Search
12:18 AM
4/26/2024

Task 9.2: Adjust the UI for the *employee* microservice and push the updated image to Amazon ECR

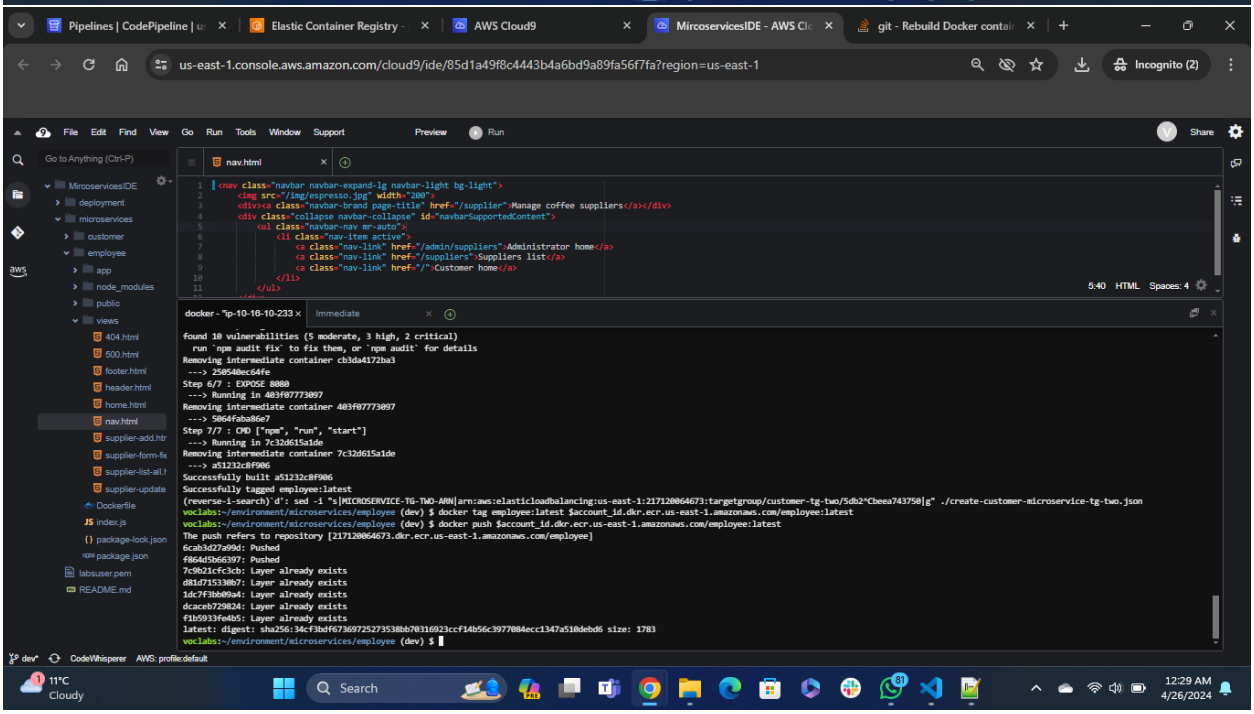
1. Adjust the navigation bar theme of employee microservice from light to dark, and create a new docker image, and push the newly created docker image onto ECR to detect this change.

2.


Pipelines | CodePipeline | us-e
Cluster tasks | Elastic Containe
AWS Cloud9
MircoservicesIDE - AWS Cloud
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito (2)
File Edit Find View Go Run Tools Window Support Preview Run Share
Go to Anything (Ctrl-P)
nav.html
<nav class="navbar navbar-expand-lg navbar-light bg-light">
<img src="/img/espresso.jpg" width="200">
Coffee suppliers

<ul class="navbar-nav mr-auto">
<li class="nav-item active">
Customer home
Suppliers list
Administrator link

</nav>
13:7 HTML Spaces: 4
bash - "ip-10-16-10-233.e
Immediate
voclabs:~/environment $
dev*
CodeWhisperer
AWS: profile:default
Updating Git...
11°C
Cloudy
Search
12:20 AM
4/26/2024

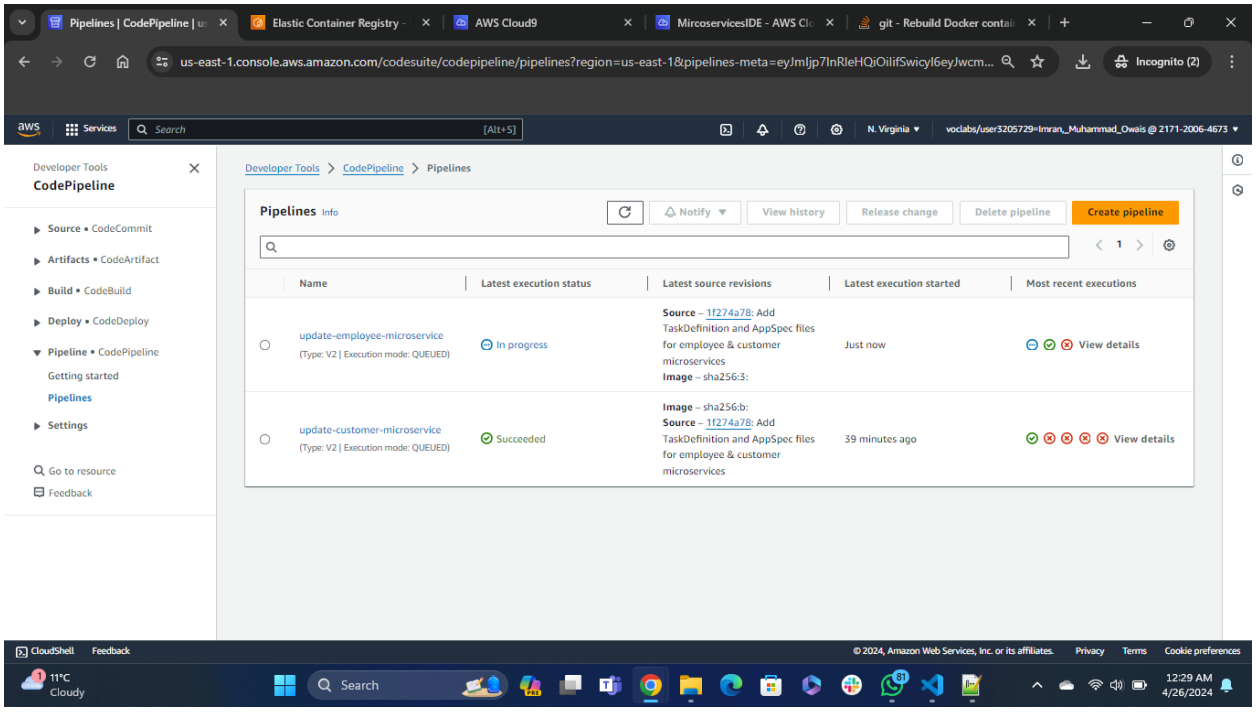

Pipelines | CodePipeline | us
Elastic Container Registry
AWS Cloud9
MircoservicesIDE - AWS Clo
git - Rebuild Docker contai
us-east-1.console.aws.amazon.com/cloud9/ide/85d1a49f8c4443b4a6bd9a89fa56f7fa?region=us-east-1
Incognito (2)
File Edit Find View Go Run Tools Window Support Preview Run Share
nav.html
<nav class="navbar navbar-expand-lg navbar-light bg-light">
<img src="/img/espresso.jpg" width="200">
Manage coffee suppliers

<ul class="navbar-nav mr-auto">
<li class="nav-item active">
Administrator home
Suppliers list
Customer home

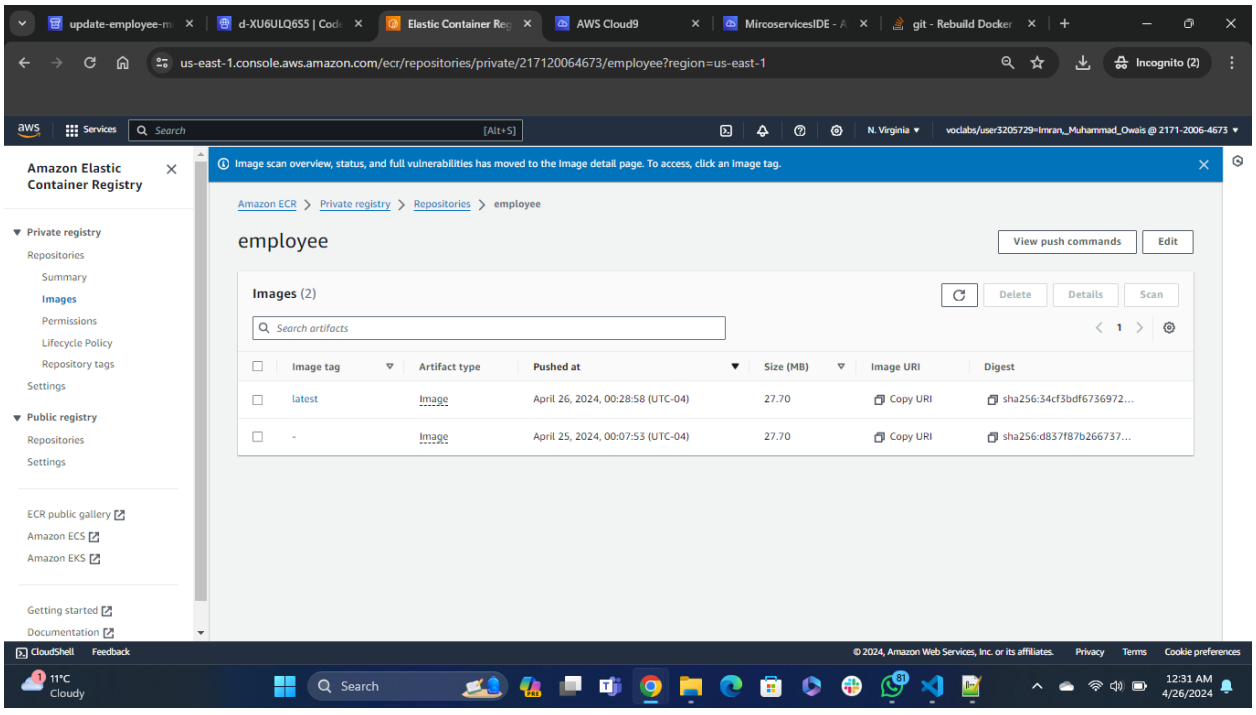
5:40 HTML Spaces: 4
docker - "ip-10-16-10-233
Immediate
found 10 vulnerabilities (5 moderate, 3 high, 2 critical)
run `npm audit fix` to fix them, or `npm audit` for details
Removing intermediate container cb3da4172ba3
---> 250540ec64fe
Step 6/7 : EXPOSE 8080
---> Running in 403f07773097
Removing intermediate container 403f07773097
---> 5064faba86e7
Step 7/7 : CMD ["npm", "run", "start"]
---> Running in 7c32d615a1de
Removing intermediate container 7c32d615a1de
---> a51232c8f906
Successfully built a51232c8f906
Successfully tagged employee:latest
(reverse-i-search)`d': sed -i "s|MICROSERVICE-TG-TWO-ARN|arn:aws:elasticloadbalancing:us-east-1:217120064673:targetgroup/customer-tg-two/5db2*Cbeea743750|g" ./create-customer-microservice-tg-two.json
voclabs:~/environment/microservices/employee (dev) $ docker tag employee:latest $account_id.dkr.ecr.us-east-1.amazonaws.com/employee:latest
voclabs:~/environment/microservices/employee (dev) $ docker push $account_id.dkr.ecr.us-east-1.amazonaws.com/employee:latest
The push refers to repository [217120064673.dkr.ecr.us-east-1.amazonaws.com/employee]
6cab3d27a99d: Pushed
f864d5b66397: Pushed
7c9b21cfc3cb: Layer already exists
d81d715330b7: Layer already exists
1dc7f1b09a4: Layer already exists
dcaceb729824: Layer already exists
f1b5933fe4b5: Layer already exists
latest: digest: sha256:34cf3bdf67369725273538bb70316923ccf14b56c3977084ecc1347a510debd6 size: 1783
voclabs:~/environment/microservices/employee (dev) $
dev*
CodeWhisperer
AWS: profile:default
11°C
Cloudy
Search
12:29 AM
4/26/2024

Task 9.3: Confirm that the *employee* pipeline ran and the microservice was updated

1. Observe that the employee pipeline run was executed.

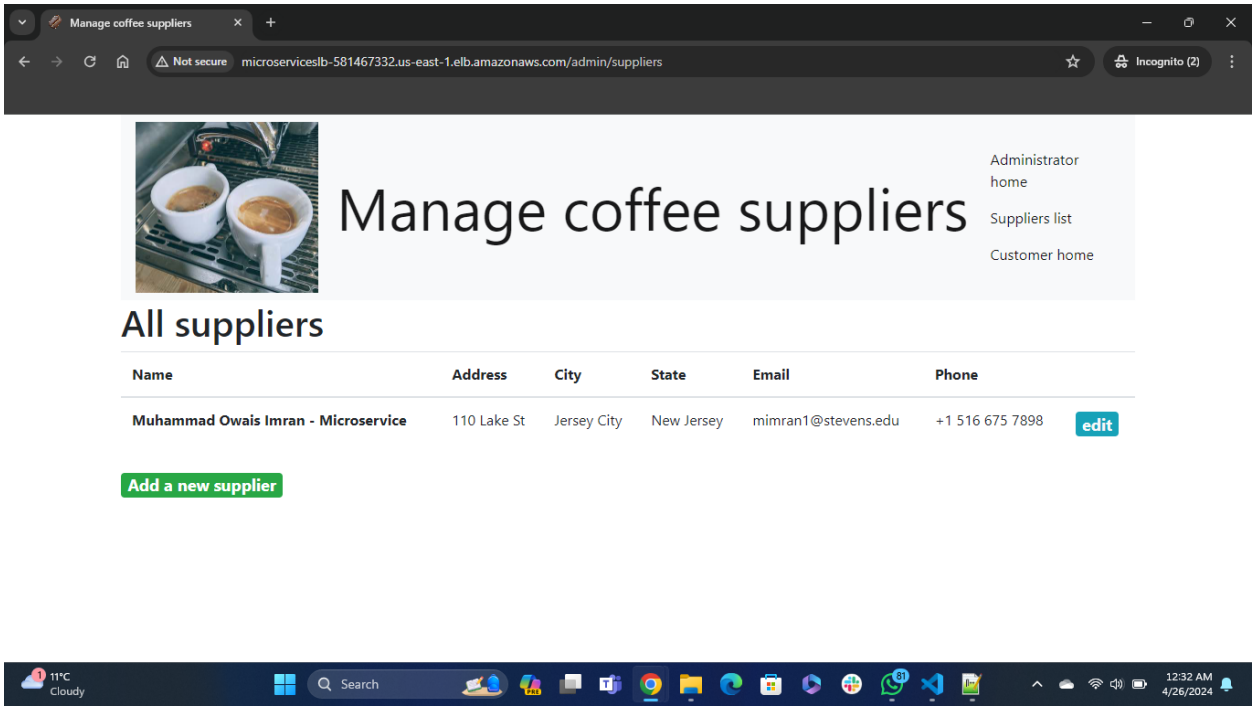


2. Verify after successful run, image was uploaded onto ECR.

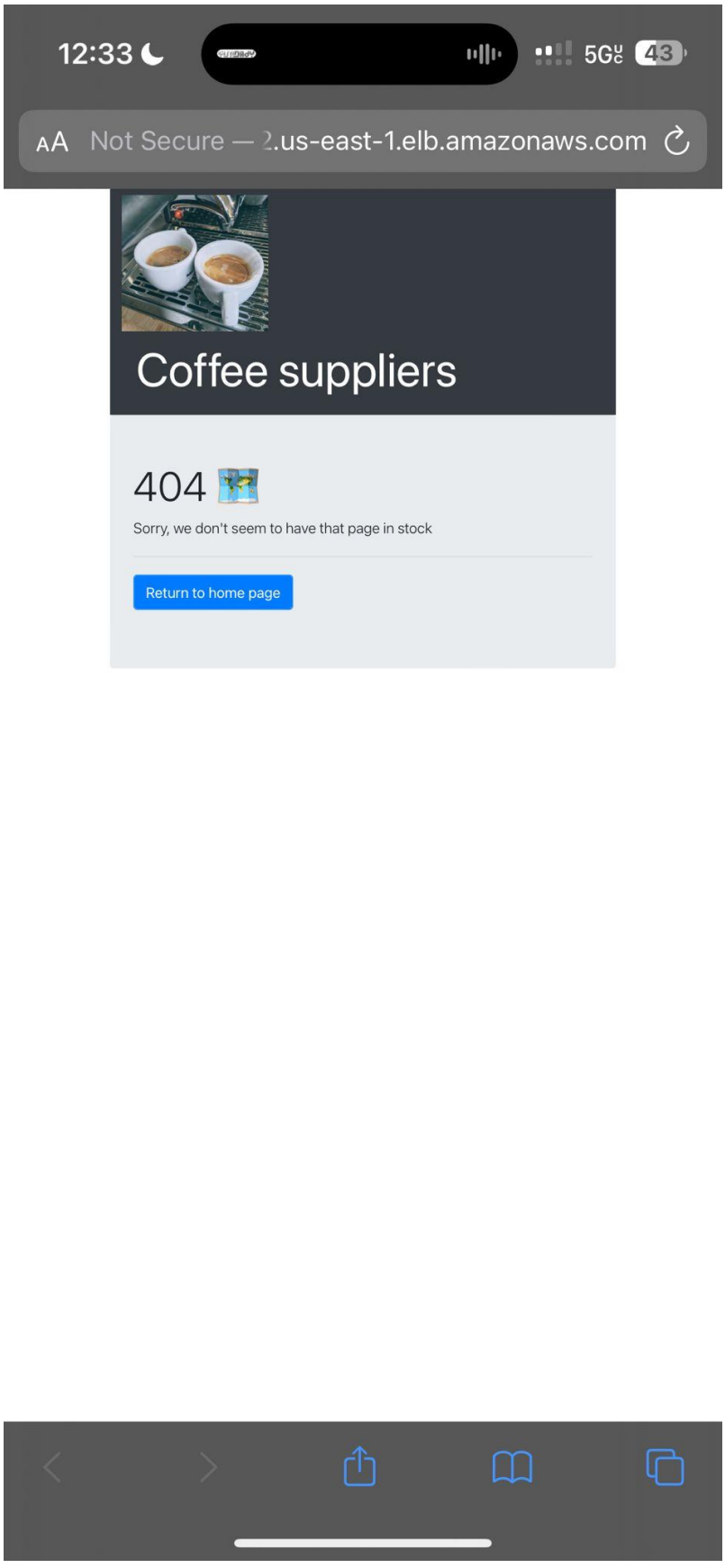


Task 9.4: Test access to the *employee* microservice

1. Access website with the same machine IP

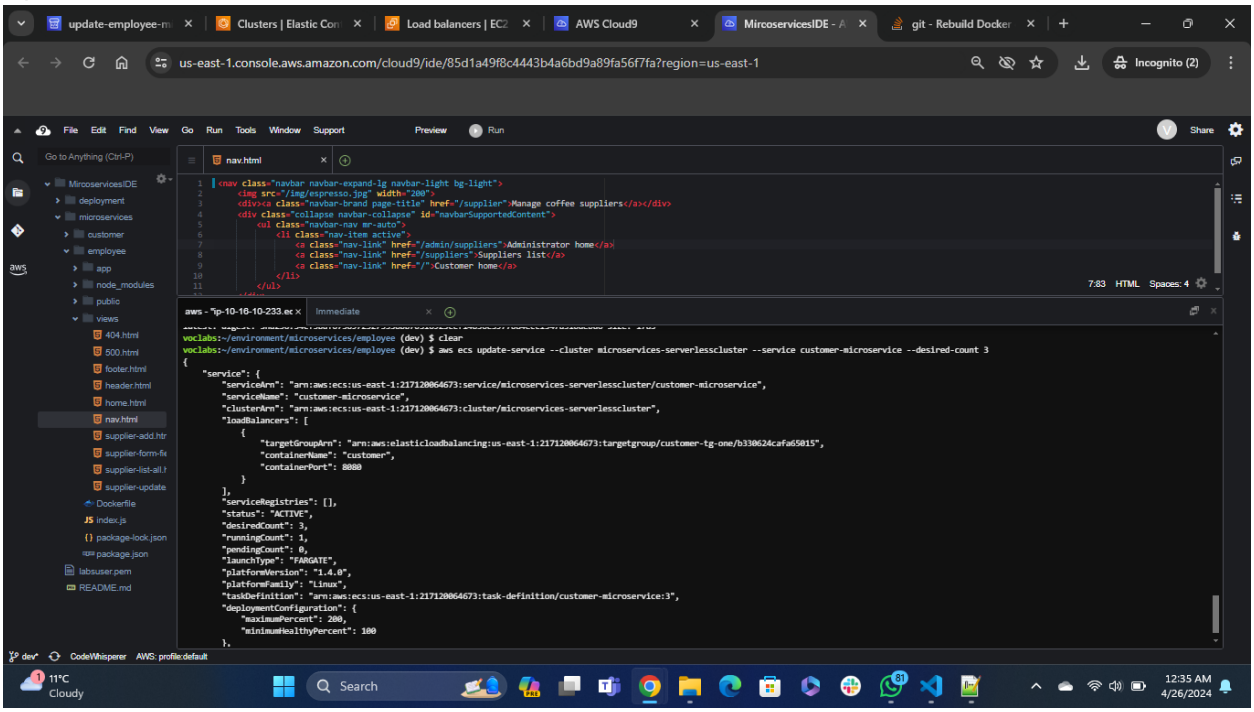


2. Access website with another device allocated a different Public IP

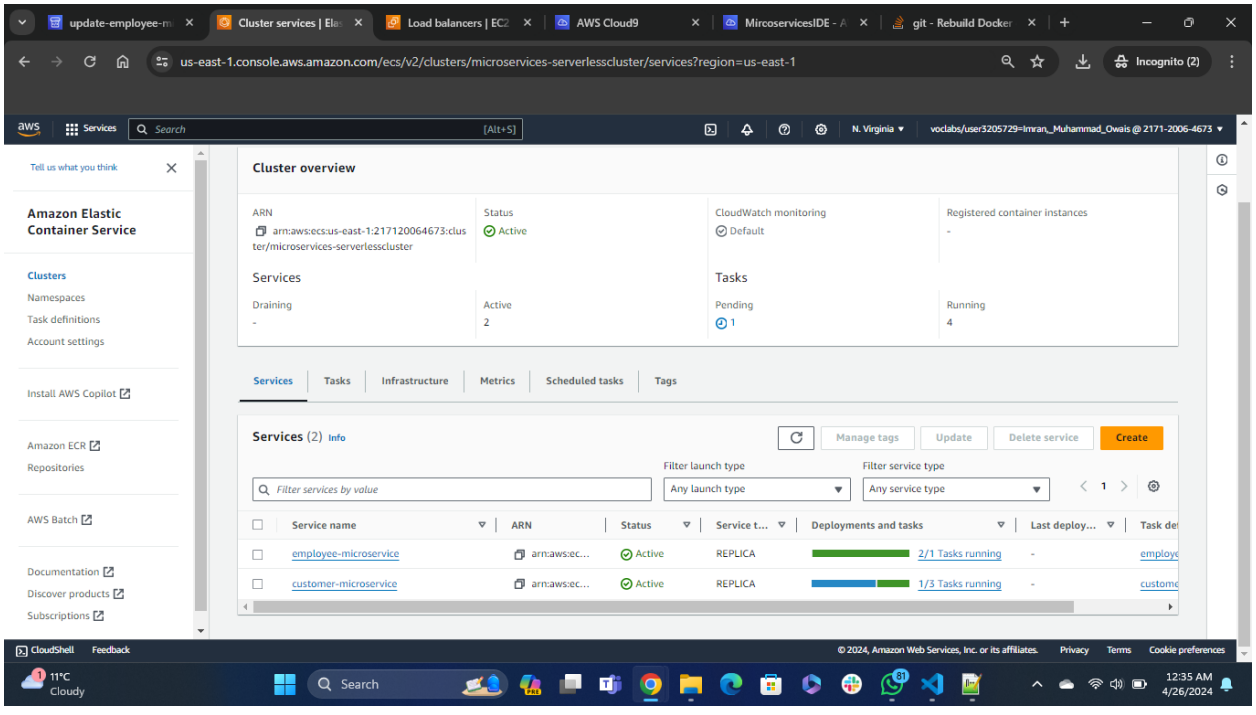

12:33
5G
43
AA
Not Secure — 2.us-east-1.elb.amazonaws.com
Coffee suppliers
404
Sorry, we don't seem to have that page in stock
Return to home page

Task 9.5: Scale the *customer* microservice

1. Update the customer microservice to run 3 containers



2. Check the change in ECS Tasks, we can see for customer service, running task are now x/3



Significance & Importance of this Task

This phase prepares us and gives us an overview of the immense power of AWS ECS and its services in terms of scalability and flexibility. It helps in realizing how easily we can upscale an application without doing any difficult server-side configuration. We just need to run a simple command, and within a few moments, our application can be scaled easily.

Moreover, we also learnt how microservice can help in upscaling a specific part of application as compared to monolithic architecture.

Example, the supplier part is something where the admin is responsible for adding/updating/deleting data, this part of application won't be used by most of the application users, however the customer facing side can have a huge user base. So, if we were to use a monolithic architecture, we have to upscale the entire application, which would upscale the admin part of application as well, which won't have any positive impact on resource consumption.