

Compu Global Hyper Mega Net

Cloud Infrastructure Solutions

Our Team



Andrew Mullen
*Co-Director
System Admin*



Khalil Elkharbibi
Co-Director



Nalani Daniels
Project Manager



Dwayne Toler
Lead Architect

Introducing Quiz Network

Before



After



GitHub Repo
Source Code



quiz-network-server Public

main 1 branch 0 tags

yashksaini Create README.md

database	Create db.js
public	Add files via upload
react	Update README.md
routes	Update route.js
README.md	Create README.md
index.js	Update index.js
package.json	Update package.json

<https://quiz-network-lhfp.onrender.com/>



Quiz Network

Welcome Back

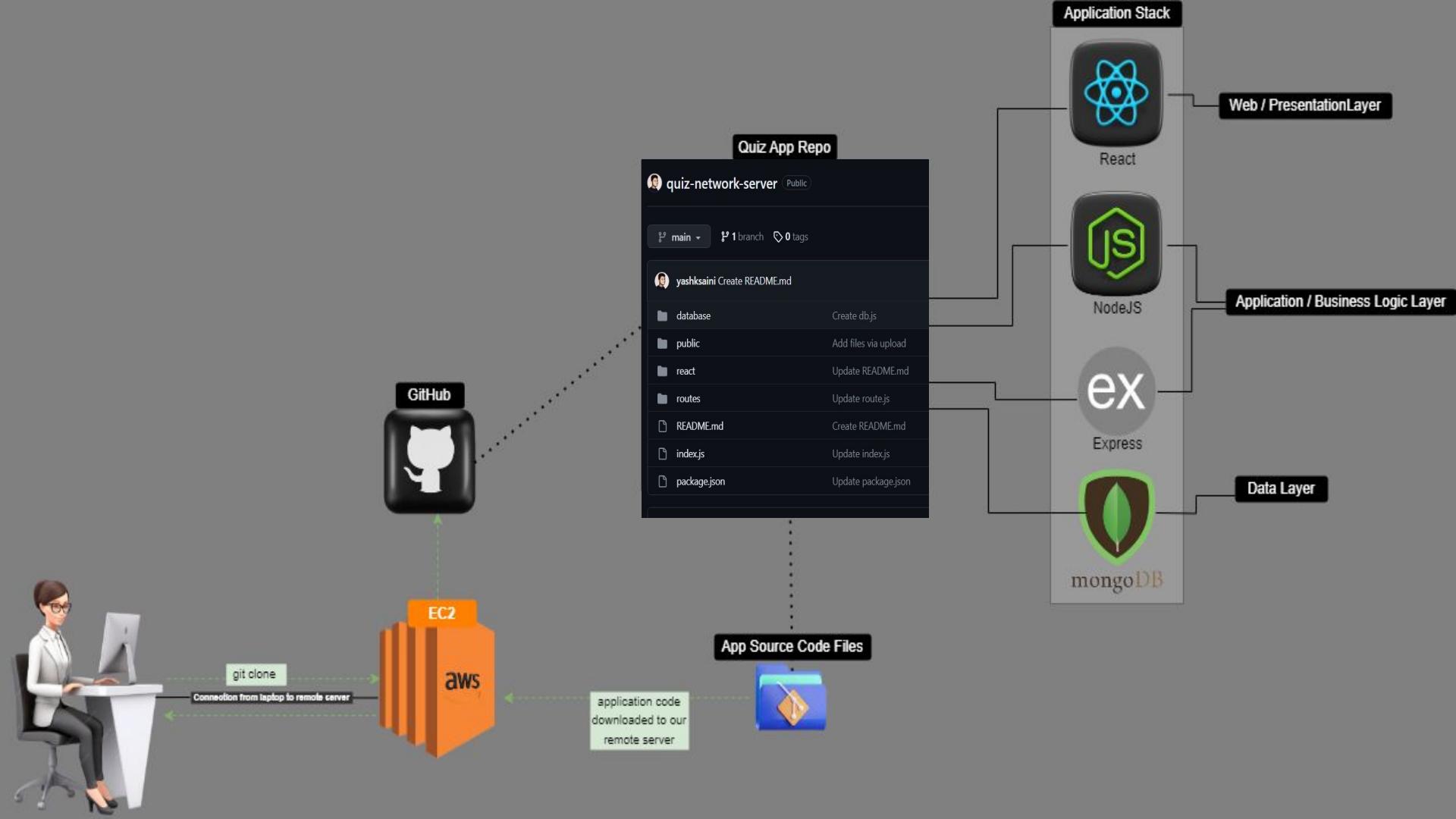
Please enter your details

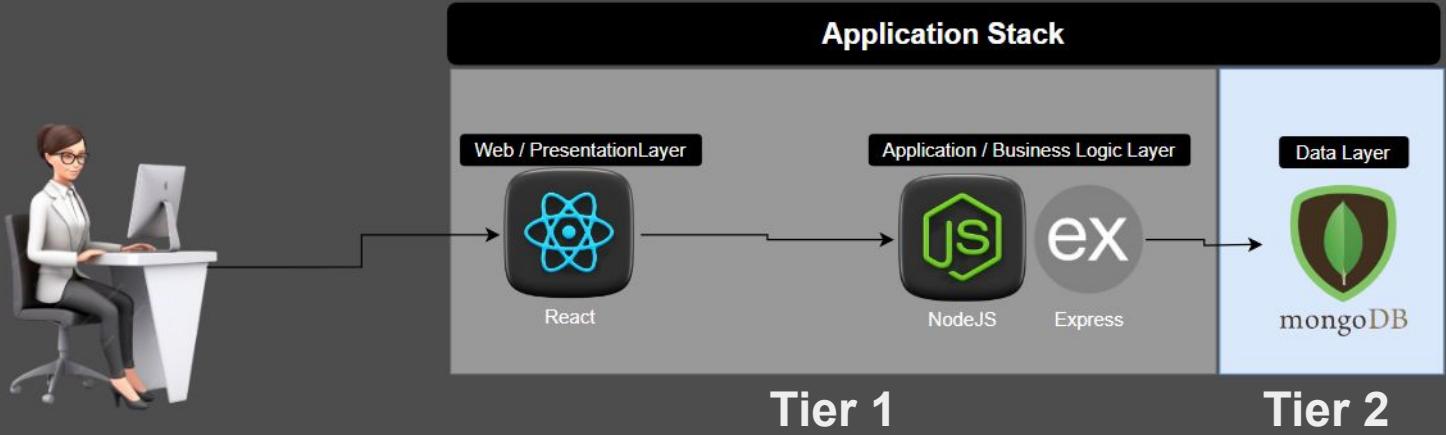
Username

Password

Log In

Don't have account? [Sign Up](#)



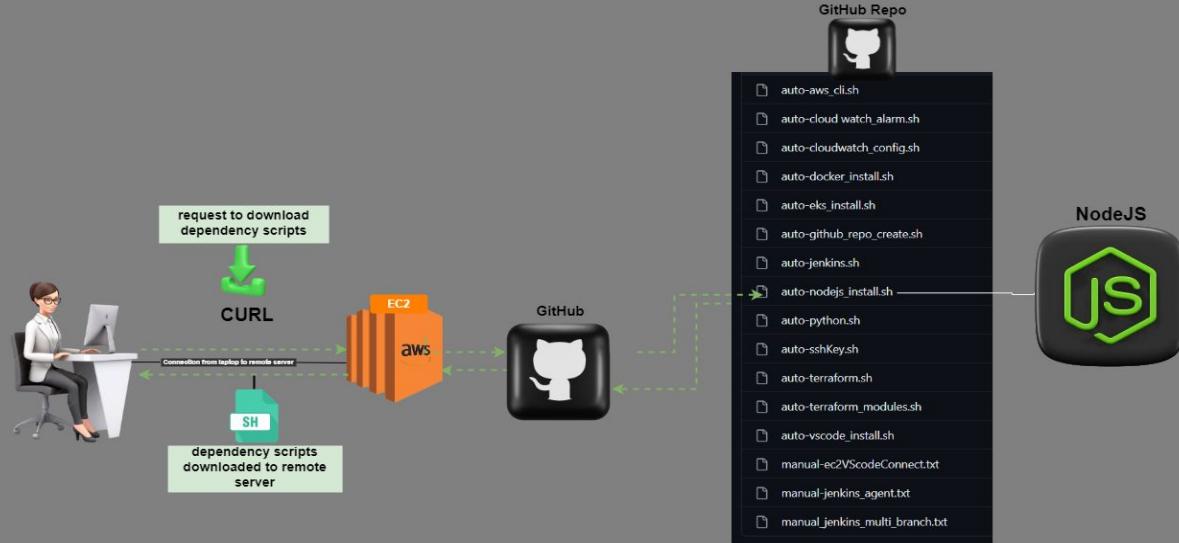


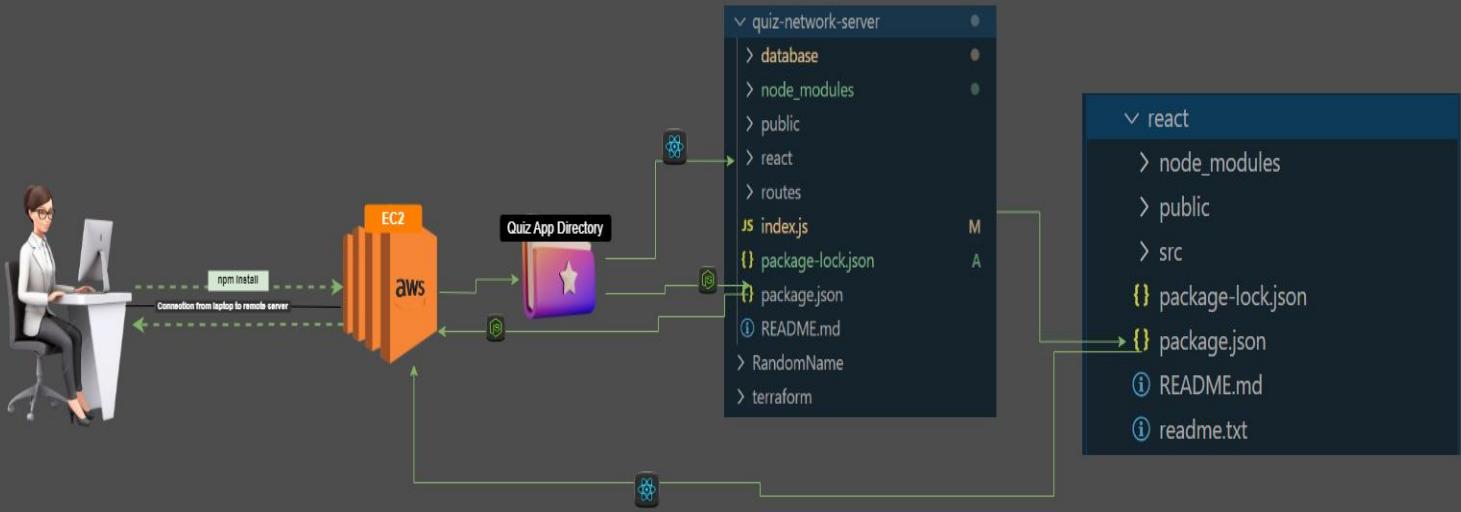


mongoDB

Managed Service







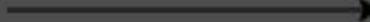
```
lse>::value' evaluates to false
npm ERR! make: *** [binding.target.mk:126: Release/obj.target/binding/src/binding.o] Error 1
npm ERR! gyp ERR! build error
npm ERR! gyp ERR! stack Error: `make` failed with exit code: 2
npm ERR! gyp ERR! stack     at ChildProcess.onExit (/home/ubuntu/docrepo/quiz-network-server/react/node_modules/node-gyp/lib/build.js:194:23)
npm ERR! gyp ERR! stack     at ChildProcess.emit (node:events:519:28)
npm ERR! gyp ERR! stack     at ChildProcess._handle.onexit (node:internal/child_process:294:12)
npm ERR! gyp ERR! System Linux 6.2.0-1016-aws
npm ERR! gyp ERR! command "/home/ubuntu/.nvm/versions/node/v21.4.0/bin/node" "/home/ubuntu/doctrepo/quiz-network-server/react/node_modules/node-gyp/bin/node-gyp.js" "rebuild" "--verbose" "--libsass_ext=" "--libsass_cflags=" "--libsass_ldflags=" "--libsass_library="
npm ERR! gyp ERR! cwd /home/ubuntu/doctrepo/quiz-network-server/react/node_modules/node-sass
npm ERR! gyp ERR! node -v v21.4.0
npm ERR! gyp ERR! node-gyp -v v8.4.1
npm ERR! gyp ERR! not ok
npm ERR! Build failed with error code: 1
```

```
npm ERR! A complete log of this run can be found in: /home/ubuntu/.npm/_logs/2023-12-10T12_39_03_015Z-debug-0.log
ubuntu@ip-172-31-86-253:~/doctrepo/quiz-network-server/react$ █
```



Does the app actually work?

What operating system is he using?

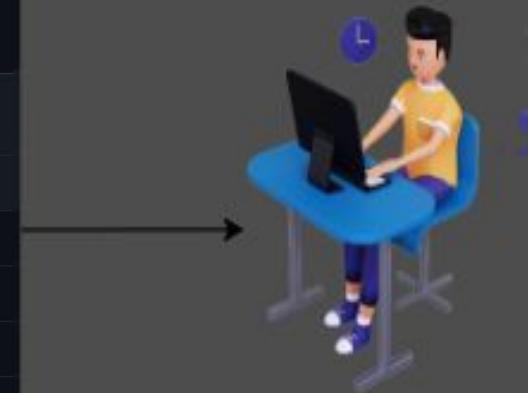


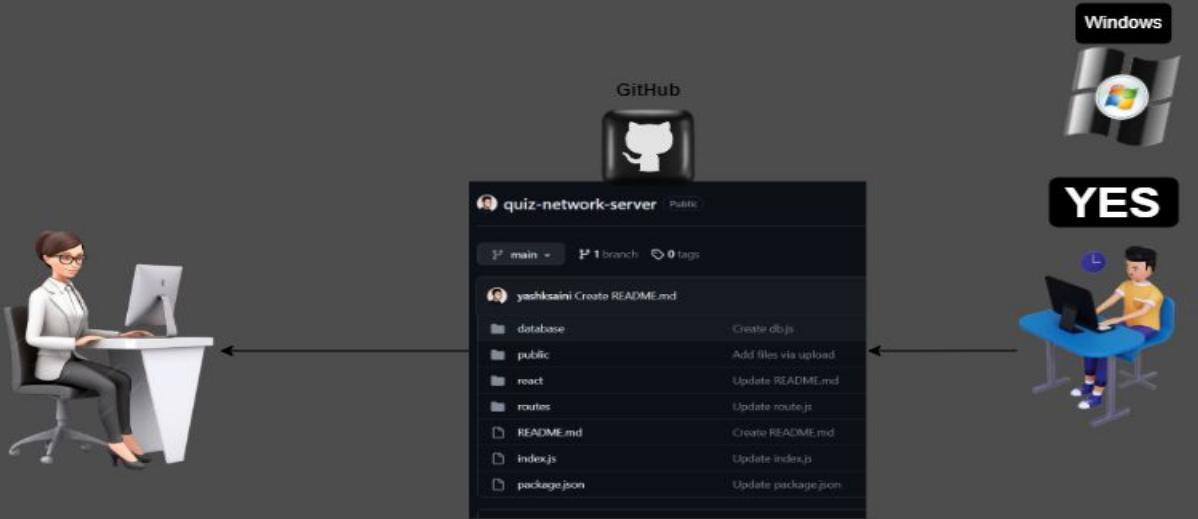
quiz-network-server Public

main 1 branch 0 tags

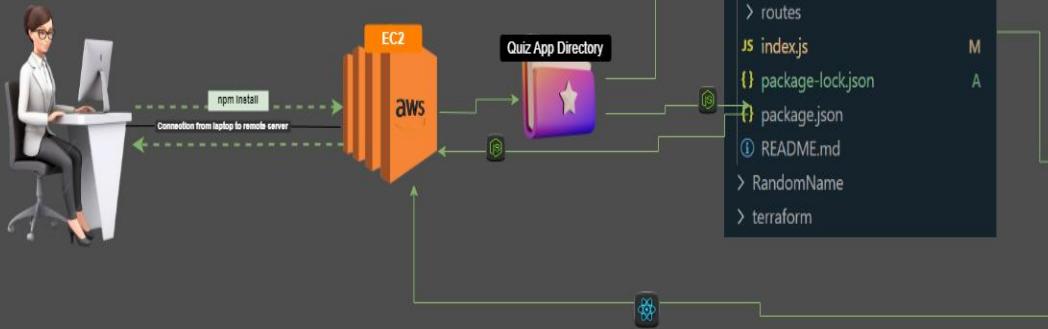
yashksaini Create README.md

File	Action
database	Create db.js
public	Add files via upload
react	Update README.md
routes	Update route.js
README.md	Create README.md
index.js	Update index.js
package.json	Update package.json





Local Windows OS



RUNS ON WINDOWS



```
Thank you for using core-js ( https://github.com/zloirock/core-js ) for polyfilling JavaScript standard library!
The project needs your help! Please consider supporting of core-js:
> https://opencollective.com/core-js
> https://patreon.com/zloirock
> bitcoin: bc1qlea7544qtsmj2rayg8lthvza9fau63ux0fstccz

Also, the author of core-js ( https://github.com/zloirock ) is looking for a good job -)

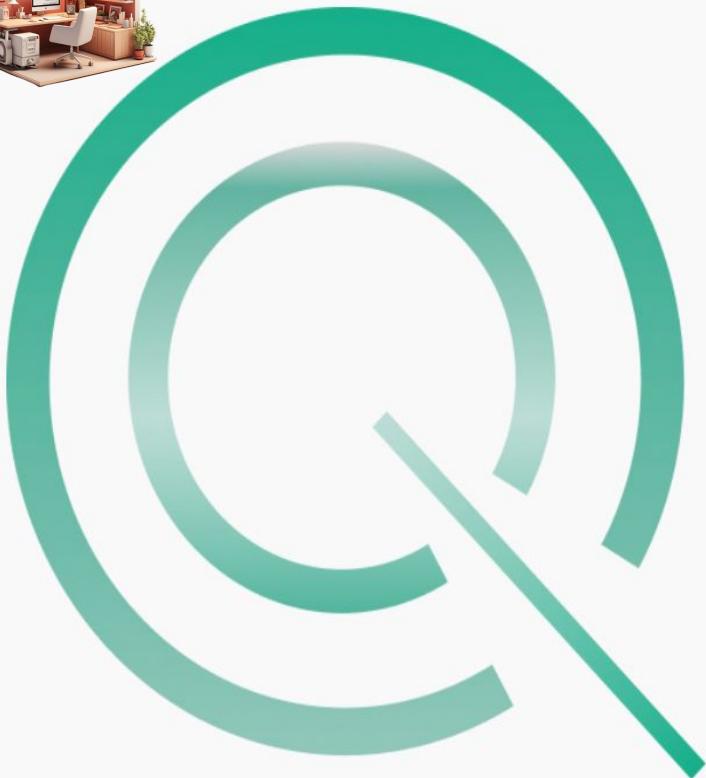
> core-js-pure@3.26.1 postinstall /home/ubuntu/docrepo/quiz-network-server/react/node_modules/core-js-pure
> node -e "try(require('./postinstall'))catch(e){}"

> node-sass@7.0.3 postinstall /home/ubuntu/docrepo/quiz-network-server/react/node_modules/node-sass
> node scripts/build.js
```

Local machine



→ http://localhost:3000



Quiz Network

Welcome Back

Please enter your details

Username

Password

Log In

Don't have account? [Sign Up](#)

2 QUESTIONS...

WINDOWS
CONTAINER???



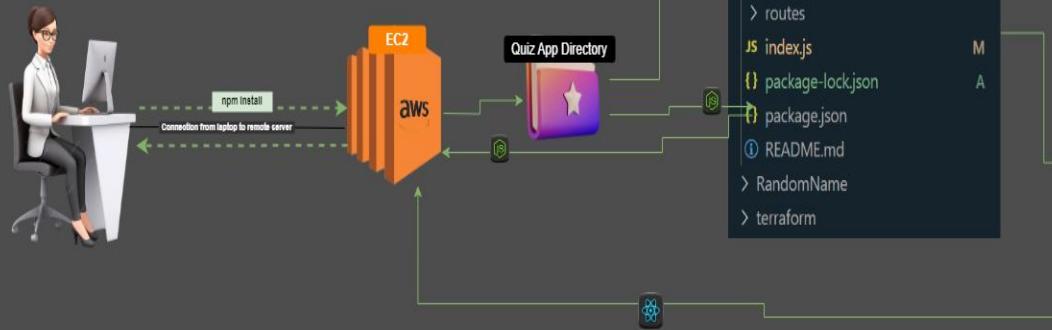
DEPENDENCY
VERSION??



NODE V21



Install NVM Use Node V14



```
quiz-network-server
  > database
  > node_modules
  > public
  > react
  > routes
  JS index.js
  {} package-lock.json
  {} package.json
  ⓘ README.md
  > RandomName
  > terraform
```

```
react
  > node_modules
  > public
  > src
  {} package-lock.json
  {} package.json
  ⓘ README.md
  ⓘ readme.txt
```

RUNS ON LINUX



NODE V14



```
added 355 packages from 142 contributors, removed 273 packages, updated 1351 packages and audited 1707 packages in 91.106s
```

```
254 packages are looking for funding
  run `npm fund` for details
```

```
found 5 vulnerabilities (4 moderate, 1 high)
  run `npm audit fix` to fix them, or `npm audit` for details
```

New major version of npm available! [6.14.18 → 10.2.5](#)
Changelog: <https://github.com/npm/cli/releases/tag/v10.2.5>
Run `npm install -g npm` to update!

ubuntu@ip-172-31-86-253:~/final-kube\$ npm start

```
> server@1.0.0 start /home/ubuntu/final-kube  
> node index.js
```

(node:1436956) [MONGOOSE] DeprecationWarning: Mongoose: the `strictQuery` option will be switched back to `false` by default in Mongoose 7. Use `mongoose.set('strictQuery', false);` if you want to prepare for this change. Or use `mongoose.set('strictQuery', true);` to suppress this warning.

(Use `node --trace-deprecation ...` to show where the warning was created)

Server is running

Database connected successfully



Quiz Network

Sign Up

Username

Lanilani

Full Name

Lani Lani

Create Password

.....|

Sign Up



cluster0.mjwldb... ...

My Queries

Databases

Search

▶ admin

▶ config

▶ kurafinalpj

▶ local

▶ test

 └ attempts

 └ questions

 └ quizzes

 └ sessions

 └ users



Documents

test.users



test.users

Documents

Aggregations

Schema

Explain Plan

Filter



Type a query: { field: 'value' }



ADD DATA



EXPORT COLLECTION

--v: 0

`_id: ObjectId('6573414782002a95bb0bf0a4')`
`username: "Lanilani"`
`password: "october5"`
`fullName: "Lanilani"`
`--v: 0`

`_id: ObjectId('65734c0a3b5359148a870829')`
`username: "Charles"`
`password: "qwerqwer"`
`fullName: "Charles"`
`--v: 0`



Create Quiz

My Quizzes

Quiz Title

Select Questions

+ Create Quiz

Create quiz

Questions

My Quizzes

Profile



Create quiz

Questions

My Quizzes

Profile

Add Question

Question Text

Which of these is a popular tool for continuous integration?

Option A

Docker

Option B

Jenkins

Option C

Kubernetes

Option D

All of the above

Select Answer

B

Add Question

Total Questions

Correct C

D

0

Correct D

DevOps Questions Test

X

Quiz Link

<https://quiz-network-lhfp.onrender.com/#/quiz/65757773cc3bb088e4f53b9b>

Play

Copy Link

Q. What is Docker primarily used for?



A. Managing configuration



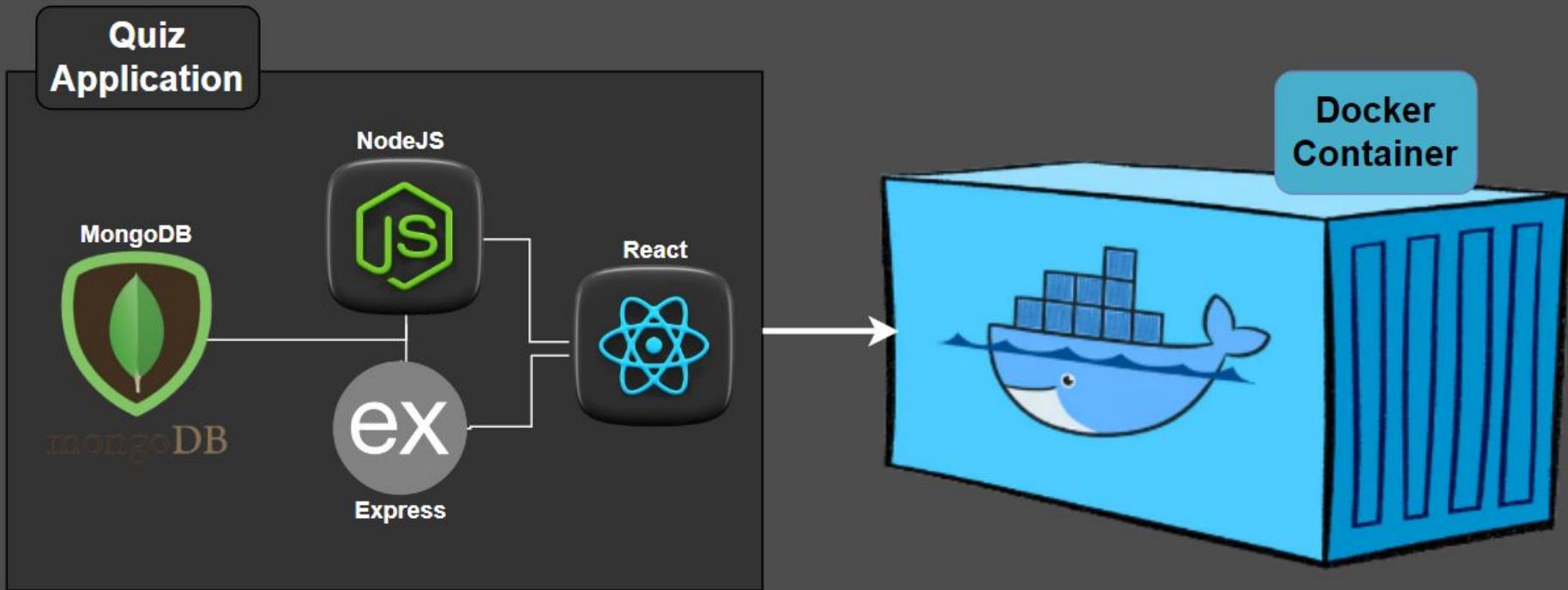
B. Managing code

C

Creating and managing

D

Creating & managing source



Frontend Docker Image

```
1  FROM node:14
2
3  WORKDIR /app
4
5  RUN git clone https://github.com/djtoler/finalKube.git .
6
7  WORKDIR /app/react
8
9  RUN npm install
10
11 EXPOSE 3000
12
13 CMD ["npm", "start"]
```



Backend Docker Image

```
1  FROM node:14
2
3  WORKDIR /app
4
5  RUN git clone https://github.com/djtoler/finalKube.git .
6
7  RUN npm install --force
8
9  EXPOSE 8000
10
11 CMD ["npm", "start"]
```



Frontend Docker Image

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1  FROM node:14
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5  RUN git clone https://github.com/djtoler/finalKube.git .
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13 CMD ["npm", "start"]
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Backend Docker Image

```
1  FROM node:14
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6
7  RUN npm install --force
8
9  EXPOSE 8000
10
11 CMD ["npm", "start"]
```



docker
Compose



Quiz Network

Welcome Back

Please enter your details

Username

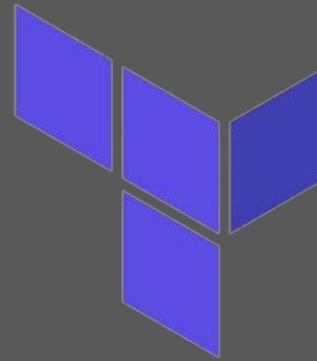
Password

Log In

Don't have account? [Sign Up](#)



kubernetes



HashiCorp

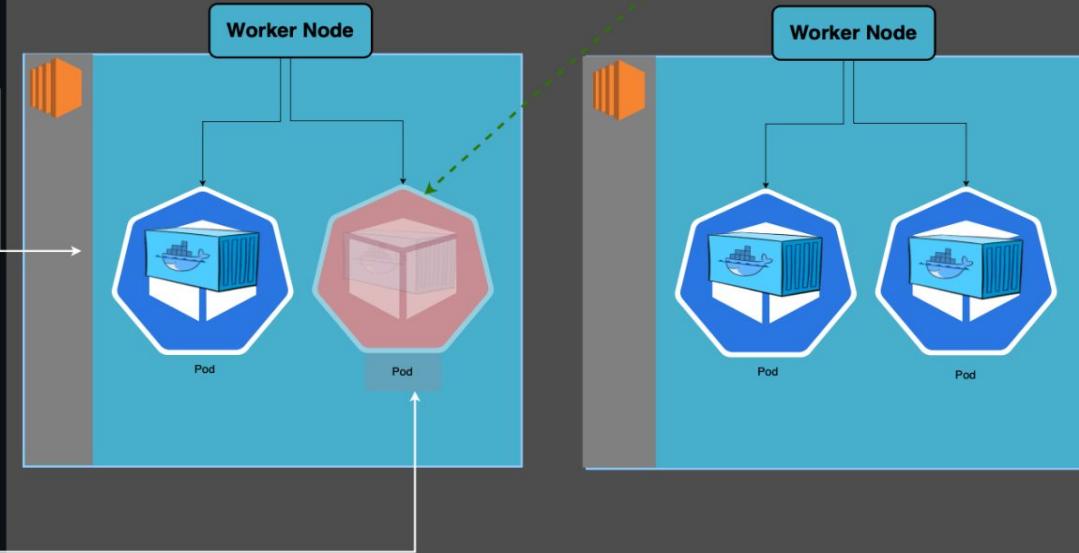
Terraform



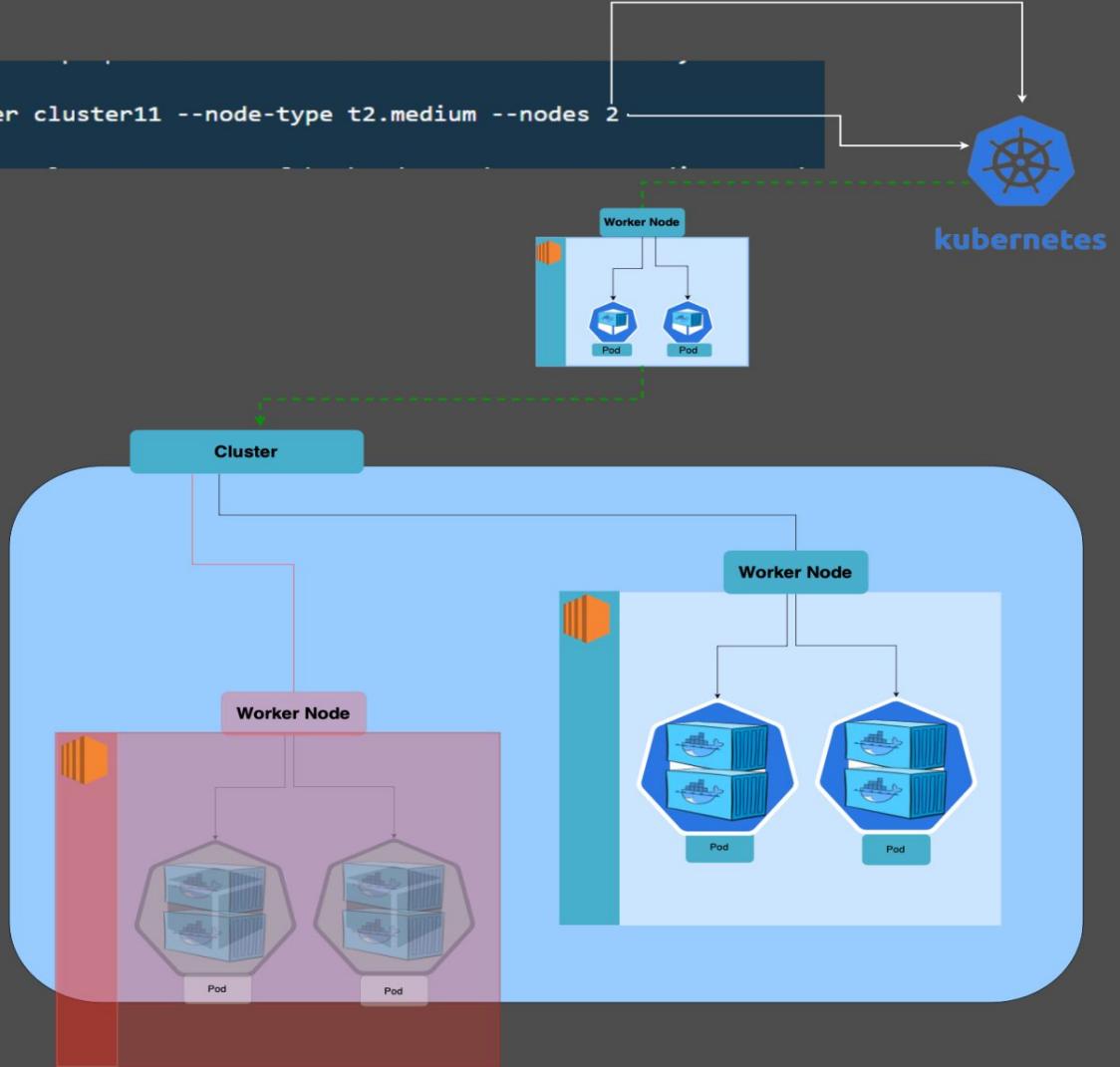
kubernetes

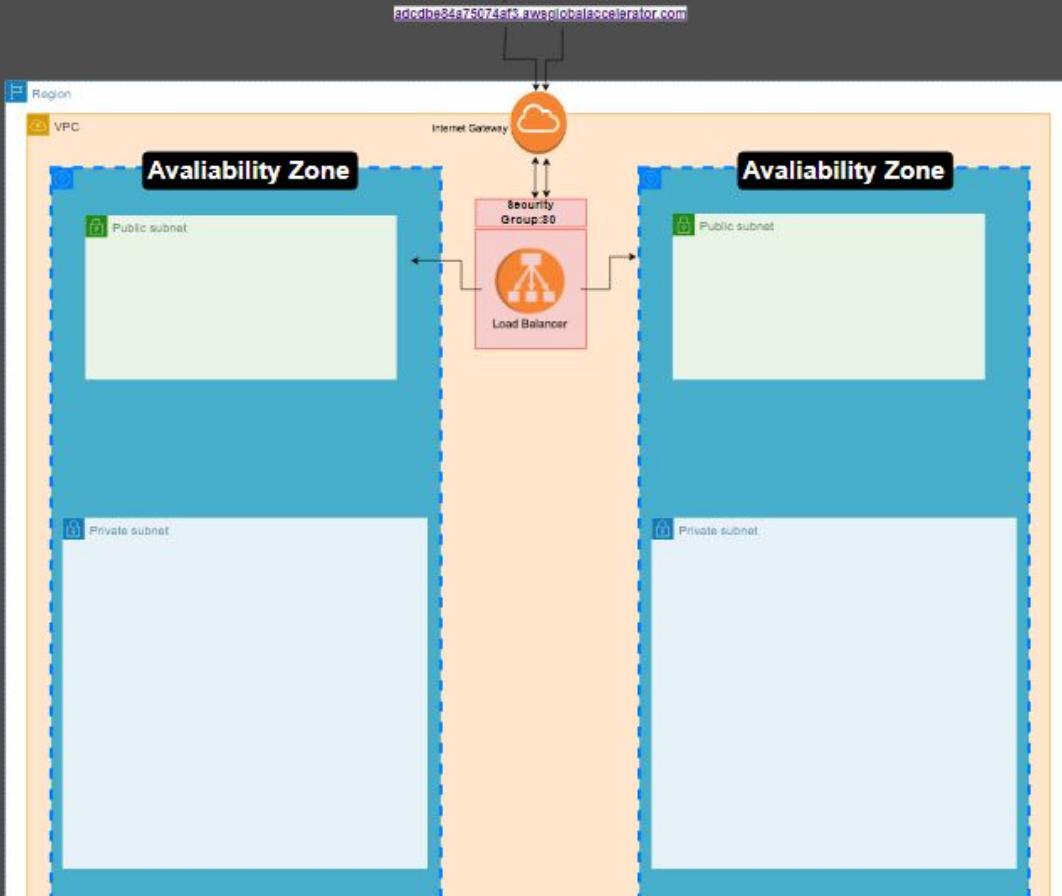
deployment.yaml

```
1  apiVersion: apps/v1
2  kind: Deployment
3  metadata:
4    name: fpj-frontend-app
5  spec:
6    replicas: 2
7    selector:
8      matchLabels:
9        app: fpjfe
10   template:
11     metadata:
12       labels:
13         app: fpjfe
14     spec:
15       containers:
16         - name: fpjfe
17           image: djtoler/frontkube1:latest
18           ports:
19             - containerPort: 3000
```



```
64  
65 eksctl create nodegroup --cluster cluster11 --node-type t2.medium --nodes 2  
66
```

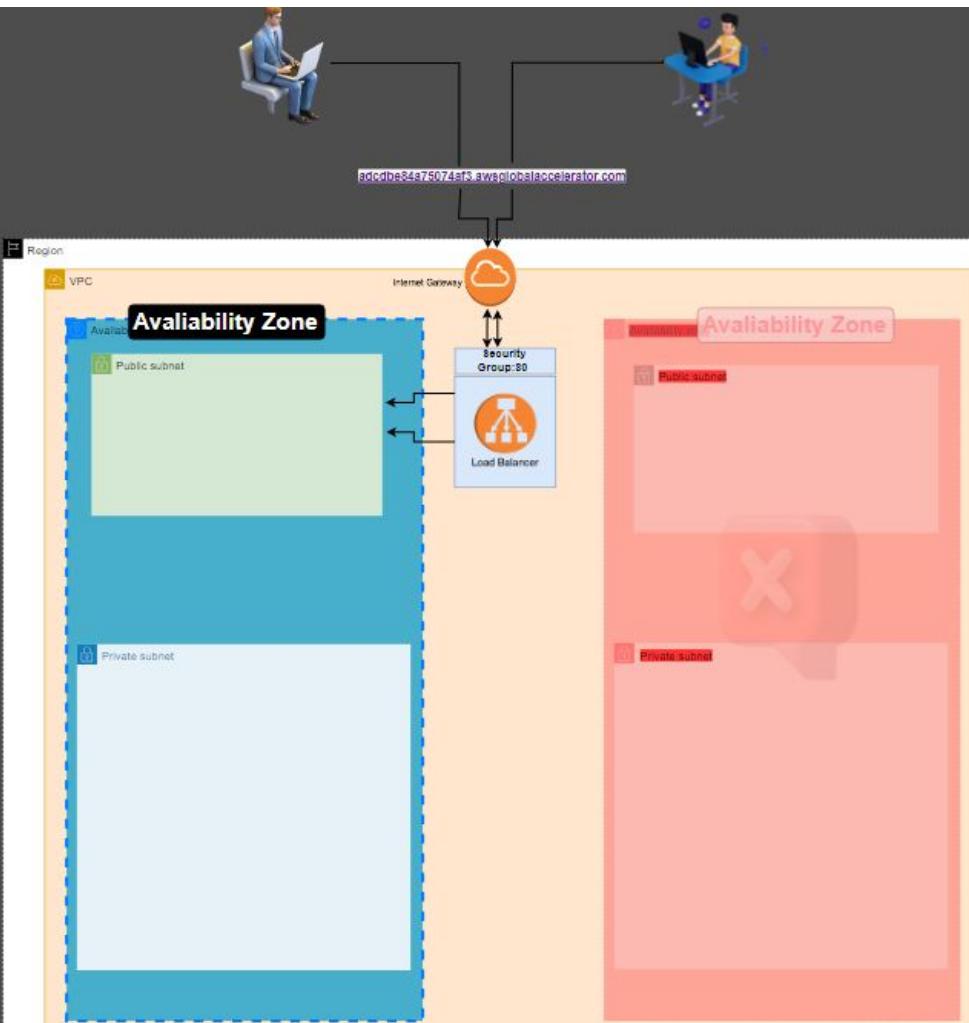


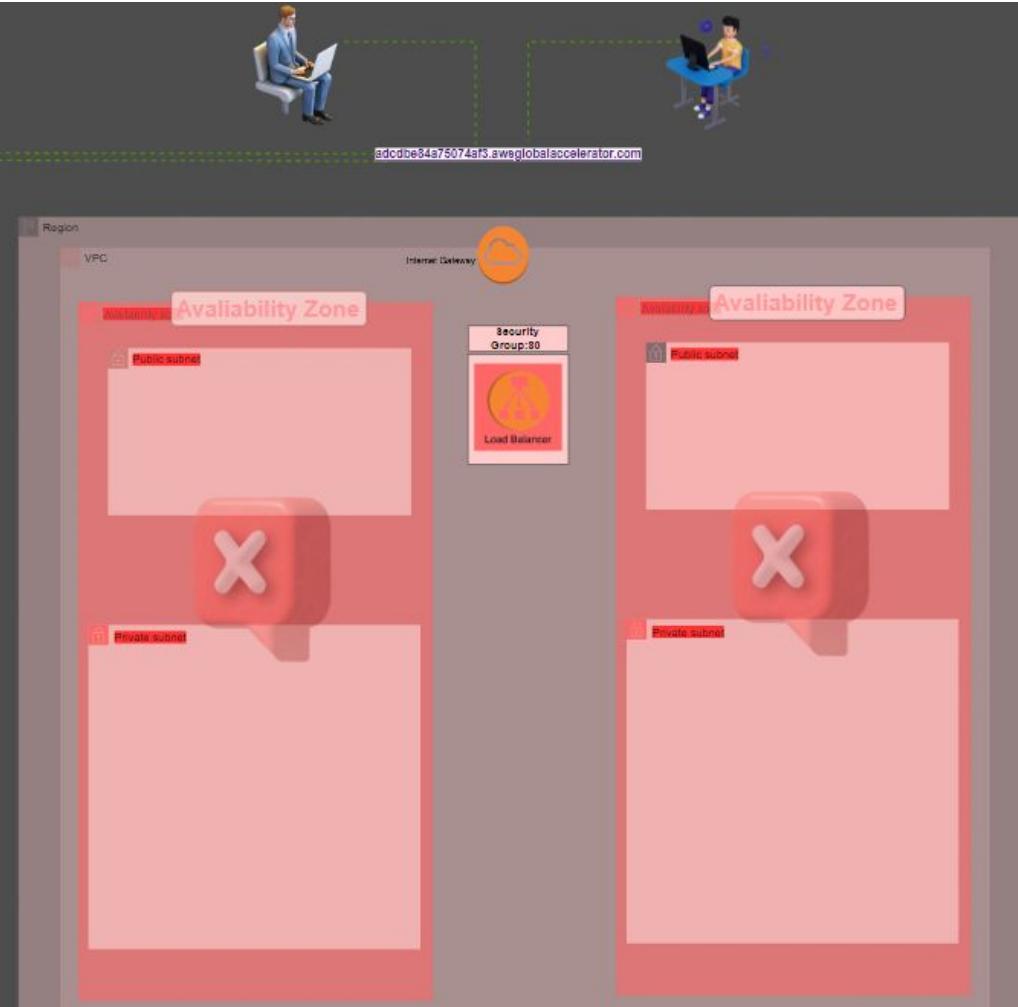


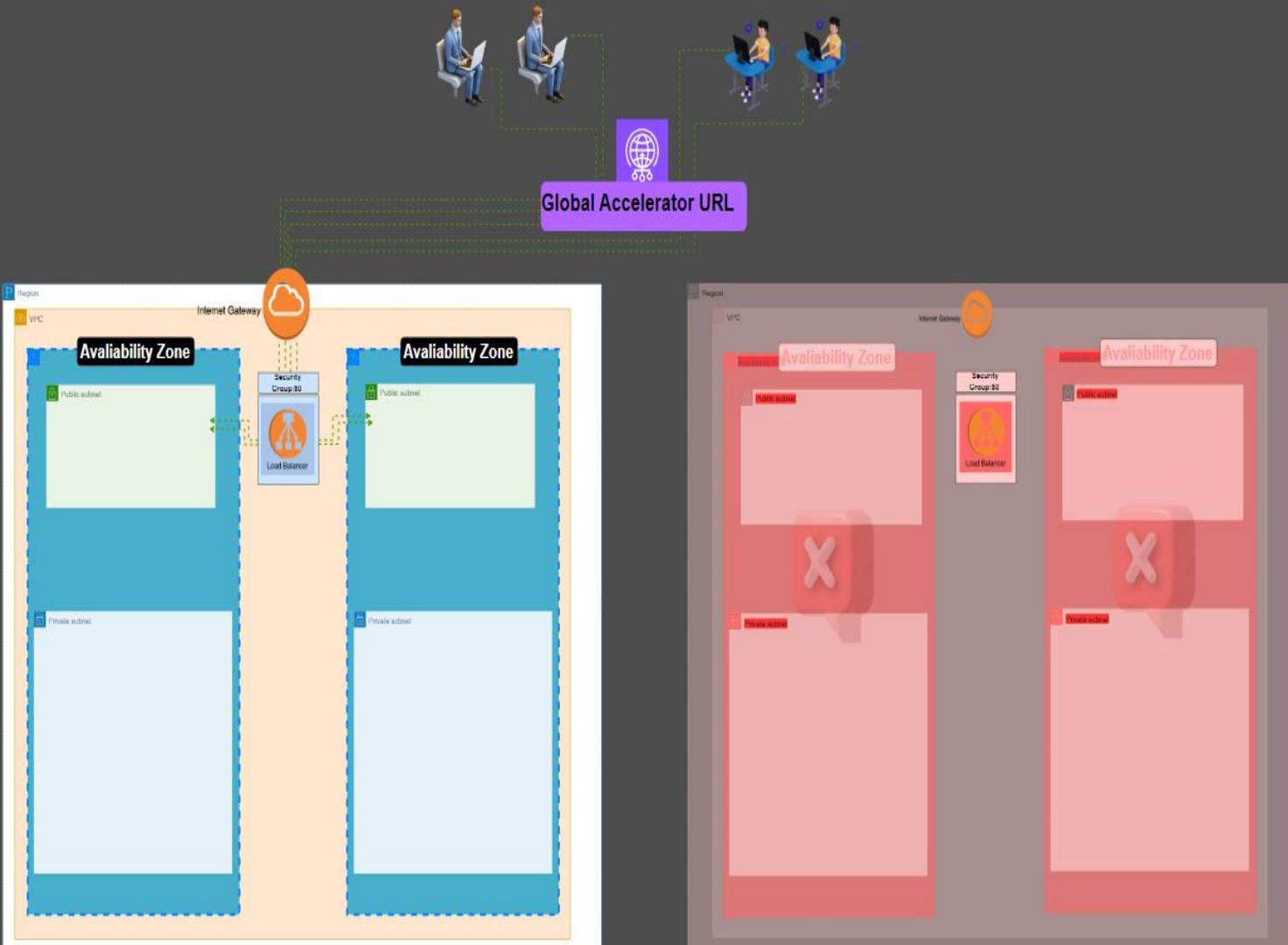
Terraform

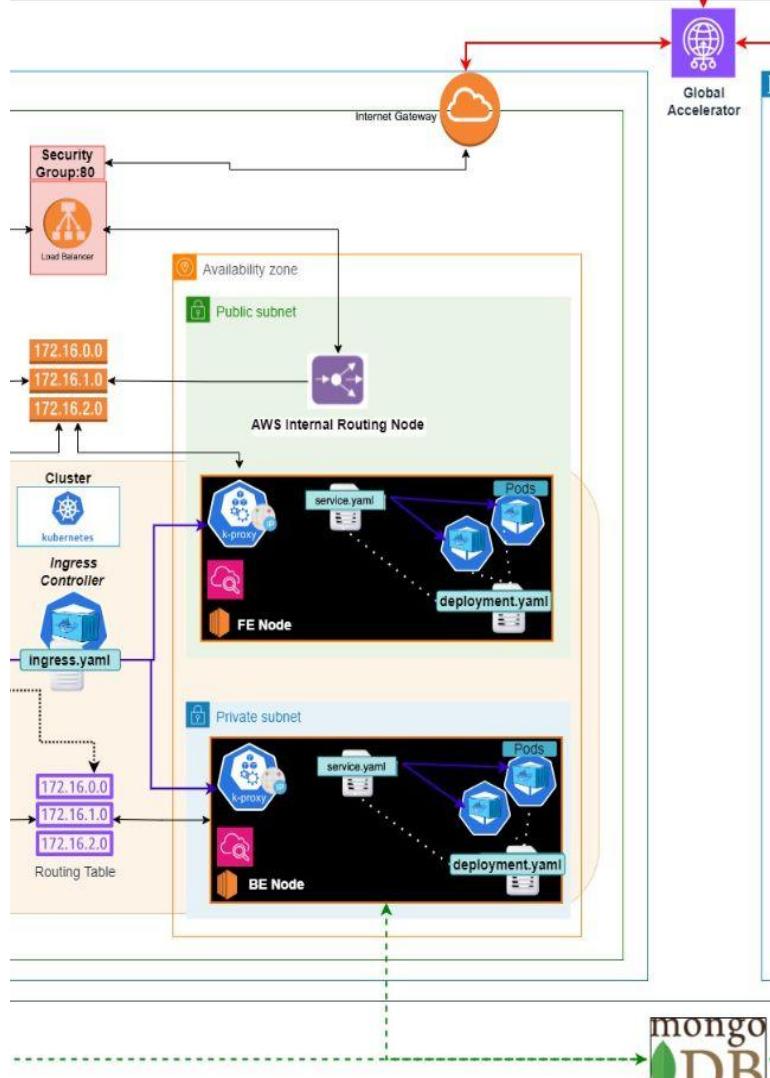


Terraform









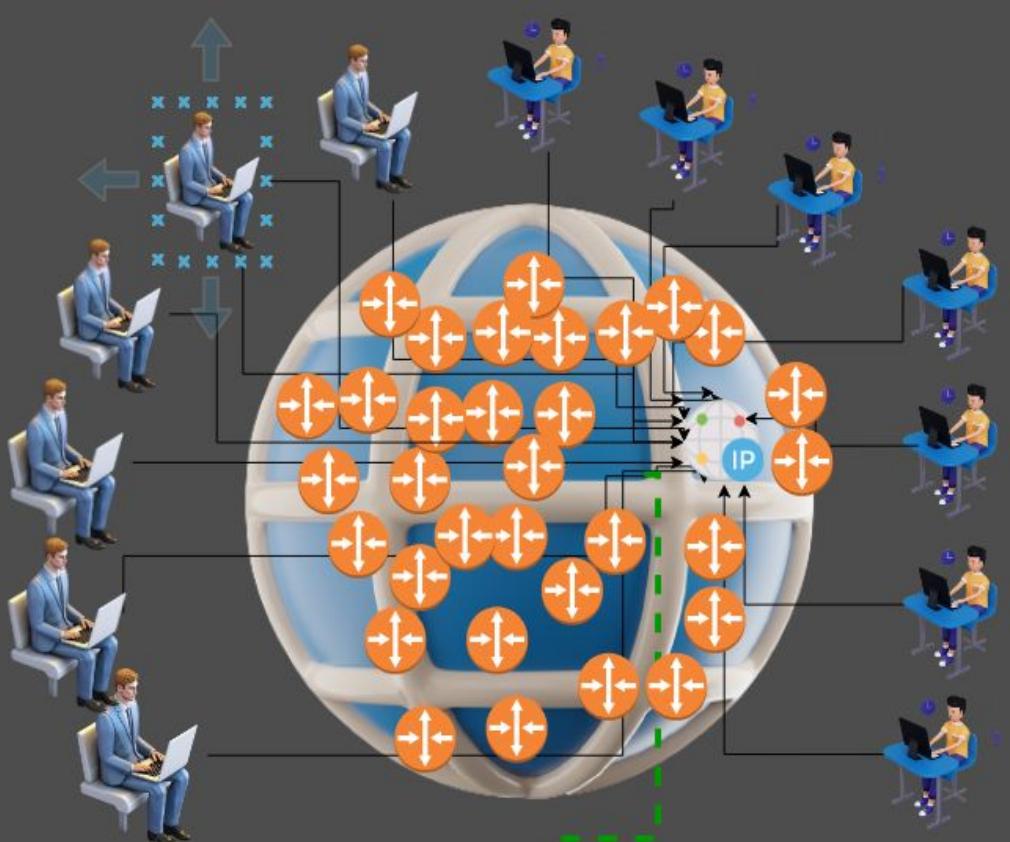


Managed service

Anycast IP technique



Traditional routing



1 IP Address

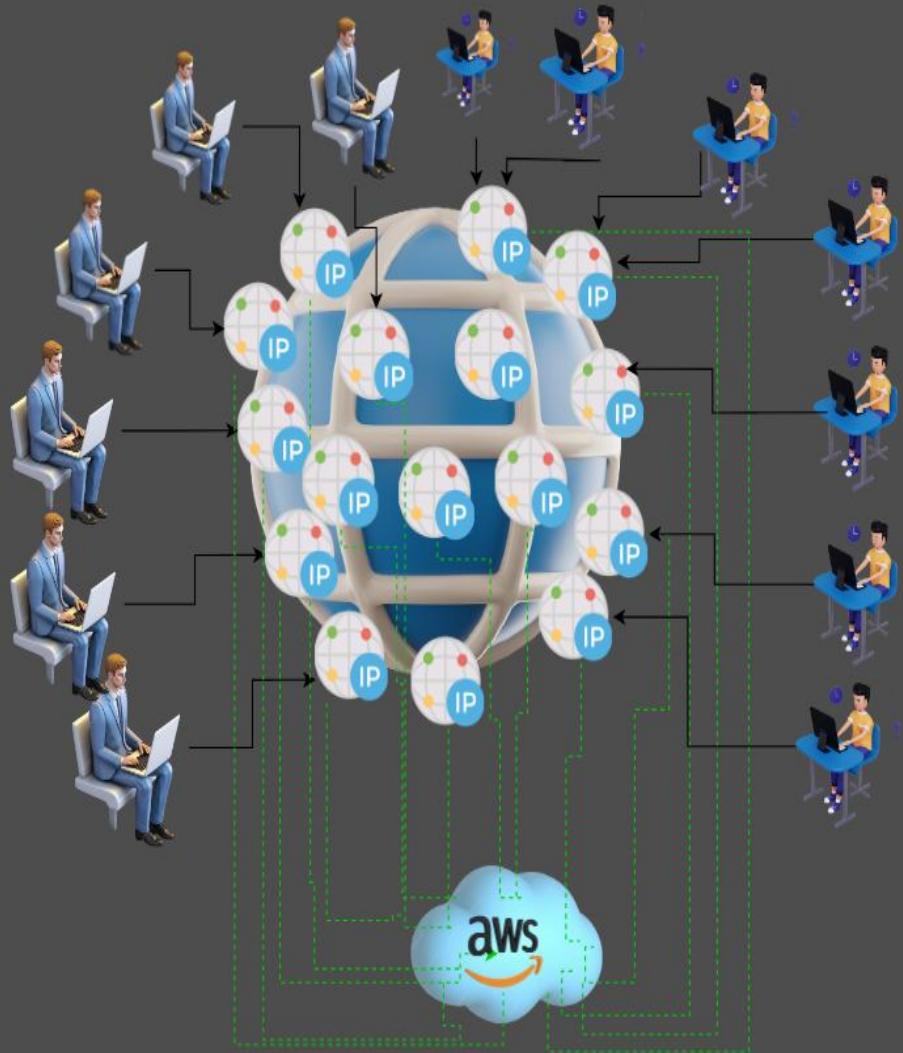


1 Location
Multiple
Routers



AWS Global Accelerator

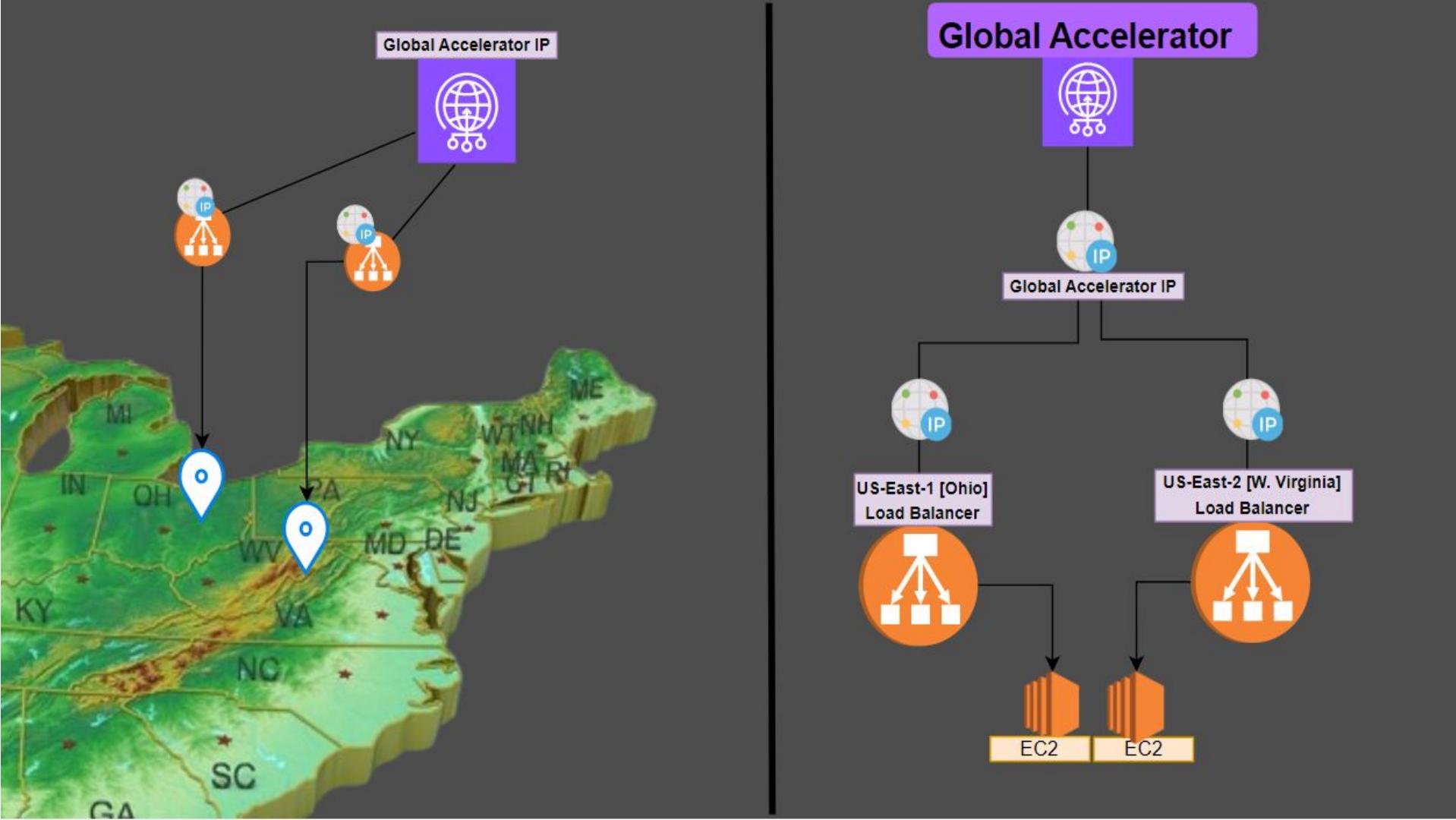
Anycast IP routing

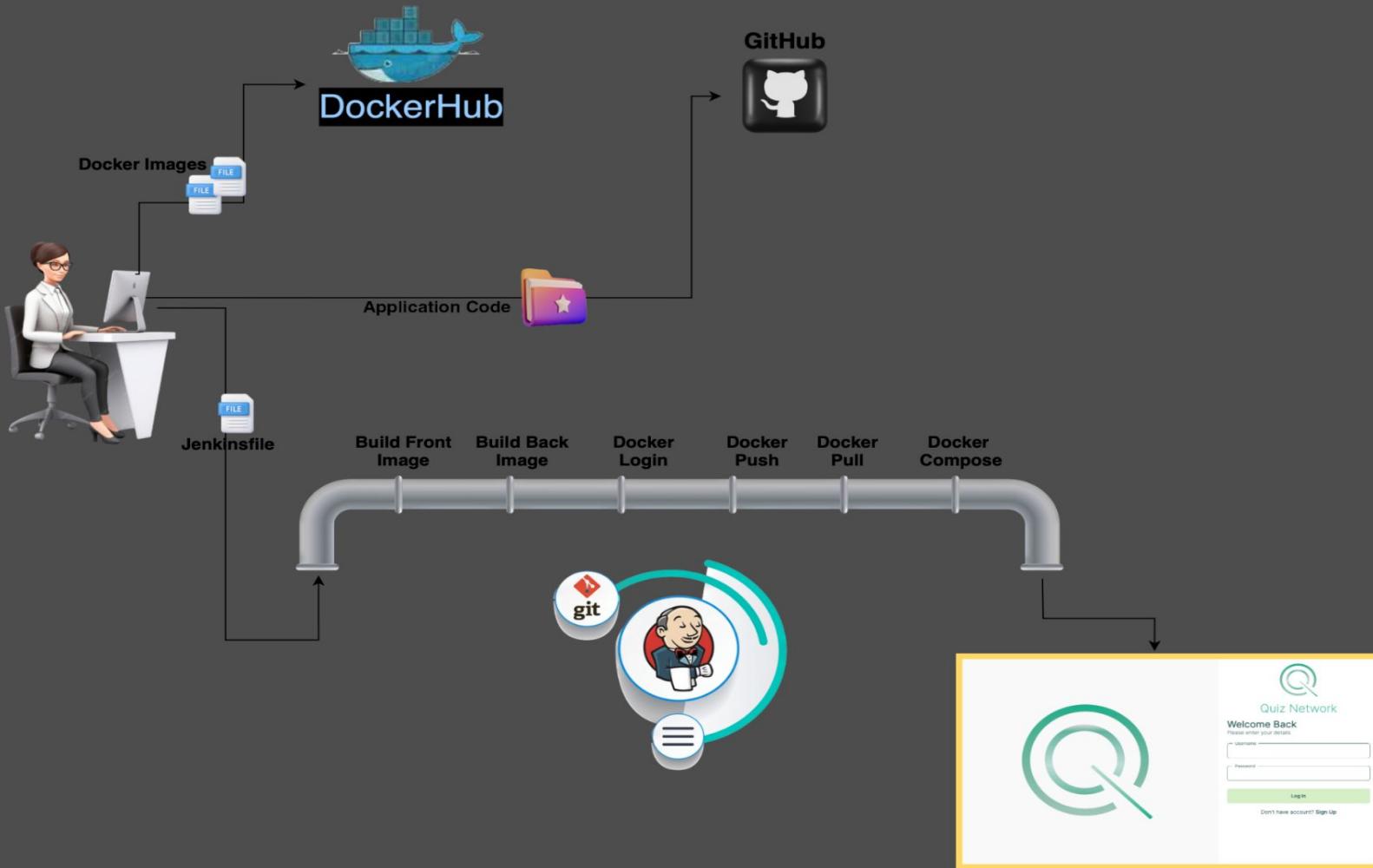


Same Address



Multiple Locations





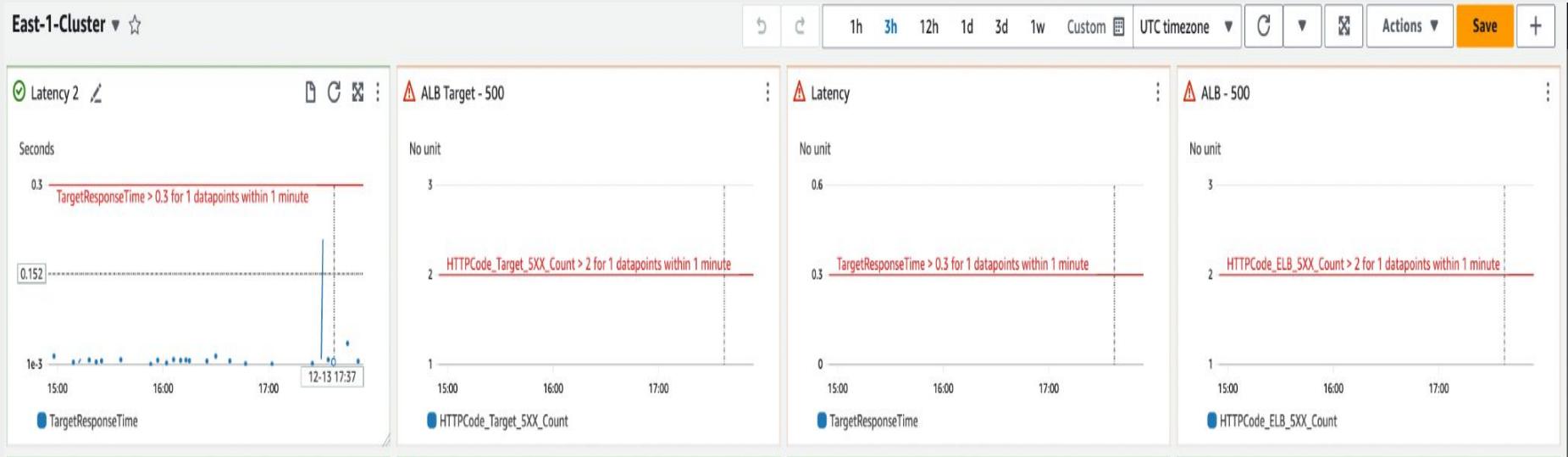
Demo

[Watch Me Work](#)

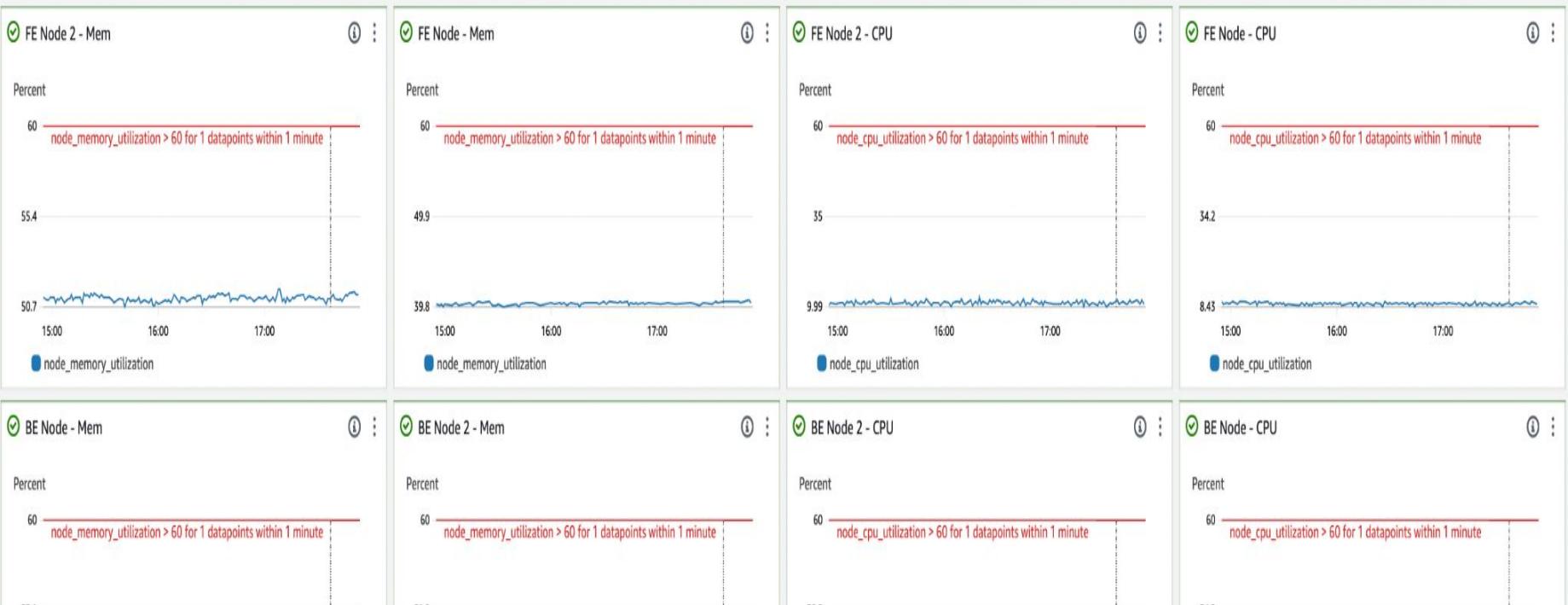
How Ensure Our Application Is Reliable?

Monitoring
Scalability

US-East-1 Dashboard

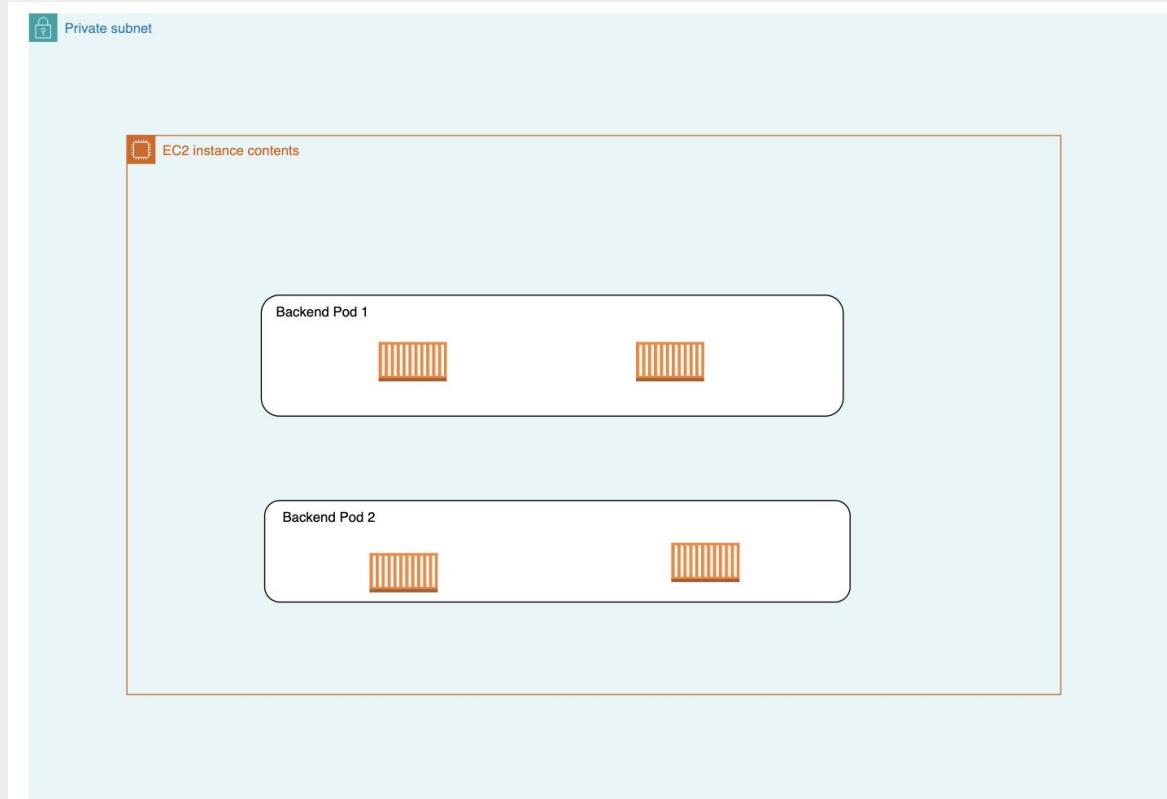


US-East-1 Dashboard



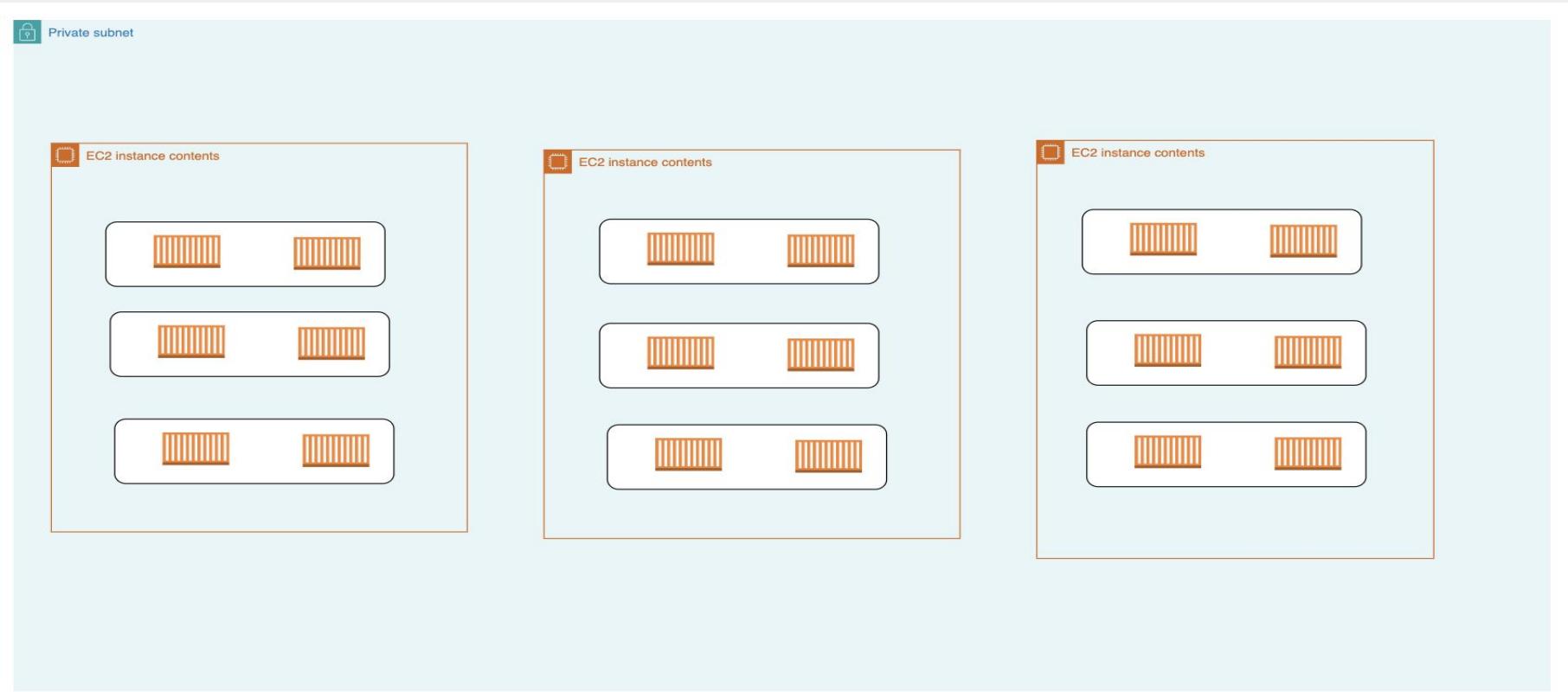
Scalability

Horizontal Pod Autoscaler

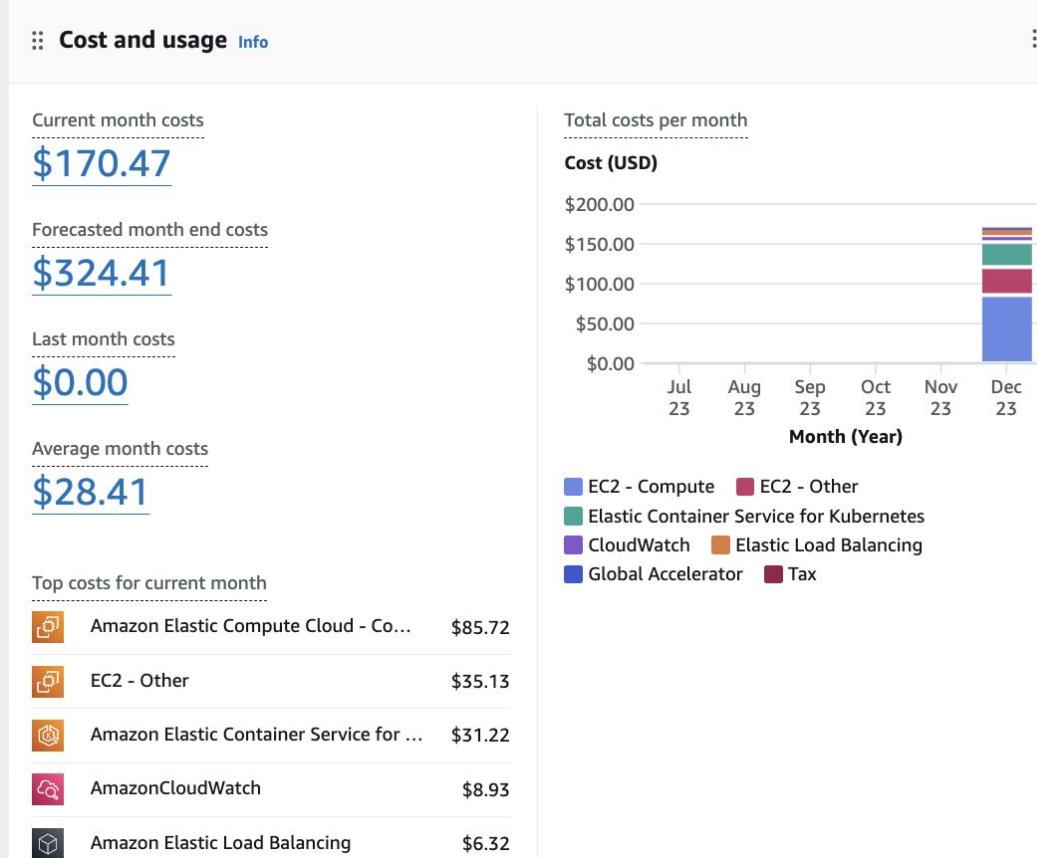


Scalability

Cluster Autoscaler



Budget





```
<ThreadGroup guiclass="ThreadGroupGui" testclass="ThreadGroup" testname="blitz-c4" enabled="true">
    <stringProp name="ThreadGroup.on_sample_error">continue</stringProp>
    <elementProp name="ThreadGroup.main_controller" elementType="LoopController" guiclass="LoopControllerGui" testname="LoopController">
        <boolProp name="LoopController.continue_forever">false</boolProp>
        <stringProp name="LoopController.loops">1</stringProp>
    </elementProp>
    <stringProp name="ThreadGroup.num_threads">100000</stringProp>
    <stringProp name="ThreadGroup.ramp_time">10000</stringProp>
    <boolProp name="ThreadGroup.scheduler">true</boolProp>
    <stringProp name="ThreadGroup.duration">1800000</stringProp>
    <stringProp name="ThreadGroup.delay">0</stringProp>
    <boolProp name="ThreadGroup.same_user_on_next_iteration">true</boolProp>
</ThreadGroup>
<hashTree>
    <HTTPSamplerProxy guiclass="HttpTestSampleGui" testclass="HTTPSamplerProxy" testname="HTTPSamplerProxy">
        <elementProp name="HTTPSampler.Arguments" elementType="Arguments" guiclass="ArgumentsGui" testname="Arguments">
            <collectionProp name="Arguments.arguments"/>
        </elementProp>
        <stringProp name="HTTPSampler.domain">adcdbe84a75074af3.awsglobalaccelerator.com</stringProp>
        <stringProp name="HTTPSampler.port">443</stringProp>
        <stringProp name="HTTPSampler.path">/</stringProp>
        <stringProp name="HTTPSampler.method">GET</stringProp>
    </HTTPSamplerProxy>

```

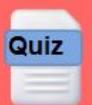
99790 .01,75001,HTTP Request,Non HTTP response code:
99791 .18,75002,HTTP Request,Non HTTP response code:
99792 .27,75000,HTTP Request,Non HTTP response code:
99793 .57,75003,HTTP Request,Non HTTP response code:
99794 .66,75000,HTTP Request,Non HTTP response code:
99795 .72,75005,HTTP Request,Non HTTP response code:
99796 .86,75003,HTTP Request,Non HTTP response code:
99797 .57,75004,HTTP Request,Non HTTP response code:
99798

189 Min:	3 Max:	902 Err	0 (0.00%) Active
535 Min:	9 Max:	75008 Err	312 (0.47%) Active
420 Min:	3 Max:	75008 Err	312 (0.31%)

99.4%

EXTRACT

extract data
from req.body



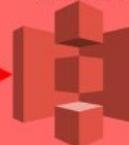
create new
Quiz object



turn Quiz
object to JSON



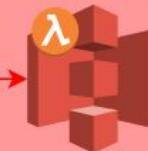
upload JSON
Quiz to S3



lambda function
triggered



lambda function
downloads Quiz
from S3



lambda function sends
formats request, send to
OpenAI & get
recommended Quiz
questions in response



LOAD

ETL



lambda function
formats response
from OpenAI &
uploads to S3

Triggers (1) Info

 Find triggers



Trigger



S3: [fp-extract-quiz-data](#)

arn:aws:s3:::fp-extract-quiz-data

▶ Details

main ➔ fpfeatures / lambda / lambda_function.py

Ubuntu new start

Code Blame 122 lines (90 loc) · 4.61 KB ⚡ Code 55% faster with GitHub Copilot

```
1 import boto3
2 import json
3 from openai import OpenAI
4 from botocore.exceptions import NoCredentialsError
5 import random
6
7
8 client = OpenAI()
9 print("Running code")
10
11 s3 = boto3.client('s3')
12
13 def get_latest_s3_file(bucket_name):
14     """Retrieve the latest JSON file from an S3 bucket."""
15     response = s3.list_objects_v2(Bucket=bucket_name)
16
17     # Check if the bucket is not empty and has contents
18     if 'Contents' in response:
19         # Filter out only JSON files and sort them by the last modified date
20         json_files = [file for file in response['Contents'] if file['Key'].endswith('.json')]
21         json_files_sorted = sorted(json_files, key=lambda x: x['LastModified'], reverse=True)
22
23     # Return the name of the latest JSON file
24     return json_files_sorted[0]['Key'] if json_files_sorted else None
25
return None
```

Wrap Up

Technical Backup slides

