

# Project Solution Screenshots

[URL01](#) - public GitHub repository for udapeople project

[URL02](#) - functioning front-end application in S3

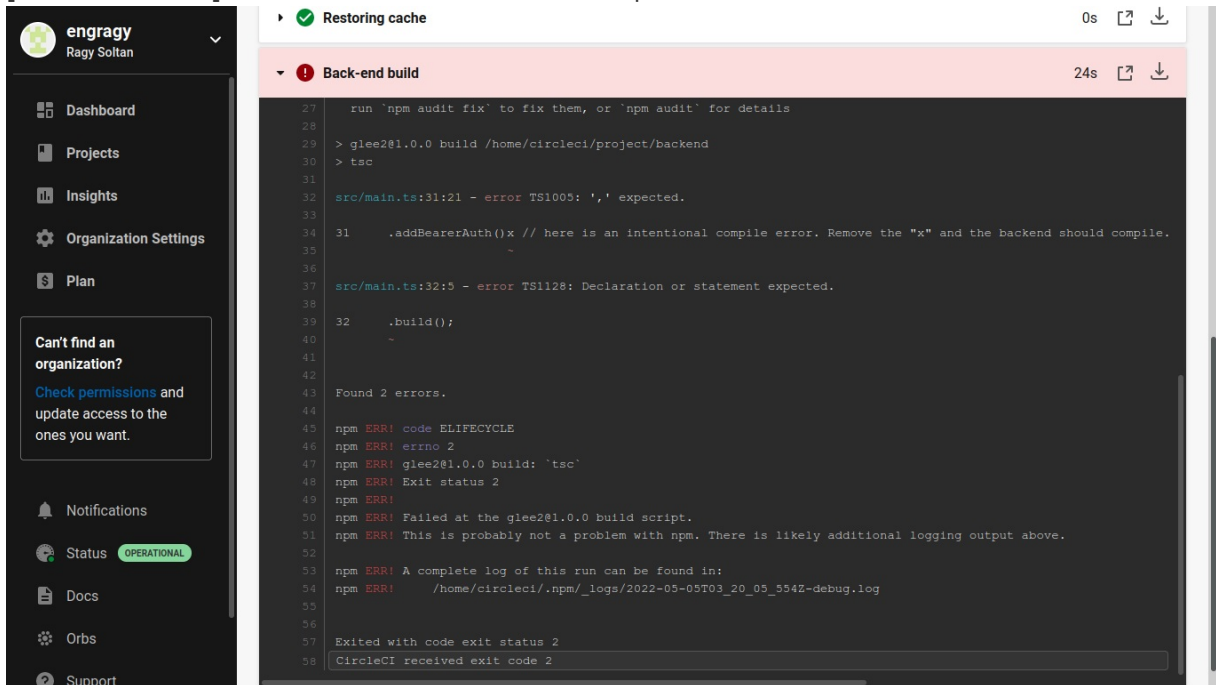
[URL03](#) - functioning front-end application in cloudfront

[URL04](#) - healthy back-end application

[URL05](#) - Evidence of Prometheus Server

## 1. Utilize Deployment Strategies to design and build CI/CD pipelines that support Continuous Delivery processes.

- A public git repository with your project code. [URL01](#)
- Console output of various pre-deploy job failure scenarios:
  - **[SCREENSHOT01]** Build Jobs that failed because of compile errors.



```
27 run 'npm audit fix' to fix them, or 'npm audit' for details
28
29 > glee2@1.0.0 build /home/circleci/project/backend
30 > tsc
31
32 src/main.ts:31:21 - error TS1005: ',' expected.
33
34 31 .addBearerAuth()x // here is an intentional compile error. Remove the "x" and the backend should compile.
35
36
37 src/main.ts:32:5 - error TS1128: Declaration or statement expected.
38
39 32 .build();
40
41
42
43 Found 2 errors.
44
45 npm ERR! code ELIFECYCLE
46 npm ERR! errno 2
47 npm ERR! glee2@1.0.0 build: `tsc`
48 npm ERR! Exit status 2
49 npm ERR!
50 npm ERR! Failed at the glee2@1.0.0 build script.
51 npm ERR! This is probably not a problem with npm. There is likely additional logging output above.
52
53 npm ERR! A complete log of this run can be found in:
54 npm ERR! /home/circleci/.npm/_logs/2022-05-05T03_20_05_554Z-debug.log
55
56
57 Exited with code exit status 2
58 CircleCI received exit code 2
```

- **[SCREENSHOT02]** Failed unit tests.

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- Dashboard
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Can't find an organization?

[Check permissions](#) and update access to the ones you want.

- Notifications
- Status OPERATIONAL
- Docs
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- Support

Restoring cache 4s

test Back-end 44s

```

273
276     33 |
277     34 |         // Assert
278     > 35 |         expect(employeeRepository.findById).toBeCalledWith(100);
279         |
280     36 |         expect(employeeRepository.save).toBeCalled();
281     37 |     });
282     38 | });
283
284     at src/modules/domain/employees/commands/handlers/employee-activator.handler.spec.ts:35:43
285     at fulfilled (src/modules/domain/employees/commands/handlers/employee-activator.handler.spec.ts:5:58)
286
287
288 Test Suites: 1 failed, 50 passed, 51 total
289 Tests:      1 failed, 78 passed, 79 total
290 Snapshots:  0 total
291 Time:        35.128s
292 Ran all test suites.
293 npm ERR! code ELIFECYCLE
294 npm ERR! errno 1
295 npm ERR! glee2@1.0.0 test: `jest --runInBand`
296 npm ERR! Exit status 1
297 npm ERR!
298 npm ERR! Failed at the glee2@1.0.0 test script.
299 npm ERR! This is probably not a problem with npm. There is likely additional logging output above.
300
301 npm ERR! A complete log of this run can be found in:
302 npm ERR!     /home/circleci/.npm/_logs/2022-05-05T03_44_51_008Z-debug.log
303
304
305 Exited with code exit status 1
306 CircleCI received exit code 1

```

- [SCREENSHOT03] Failure because of vulnerable packages.

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scan Back-end dependencies 12s

Your output is too large to display in the browser.  
Only the last 400000 characters are displayed.

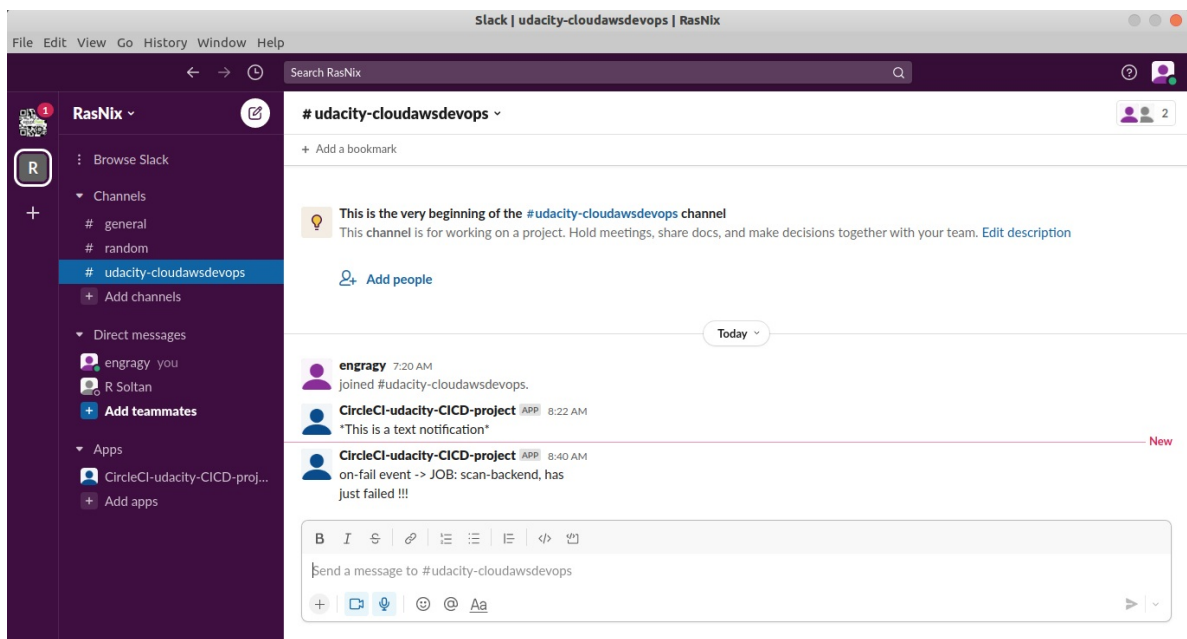
[Download the full output as a file](#)

5570	Moderate	Prototype Pollution in Ajv
5571	Package	ajv
5572	Patched in	>=6.12.3
5573	Dependency of	glee-jwks-rsa
5574	Path	glee-jwks-rsa > request > har-validator > ajv
5575	More info	<a href="https://github.com/advisories/GHSA-v88g-cgmw-v5xw">https://github.com/advisories/GHSA-v88g-cgmw-v5xw</a>
5576	Moderate	Prototype Pollution in Ajv
5577	Package	ajv
5578	Patched in	>=6.12.3
5579	Dependency of	winston-loggly-bulk
5580	Path	winston-loggly-bulk > node-loggly-bulk > request > har-validator > ajv
5581	More info	<a href="https://github.com/advisories/GHSA-v88g-cgmw-v5xw">https://github.com/advisories/GHSA-v88g-cgmw-v5xw</a>

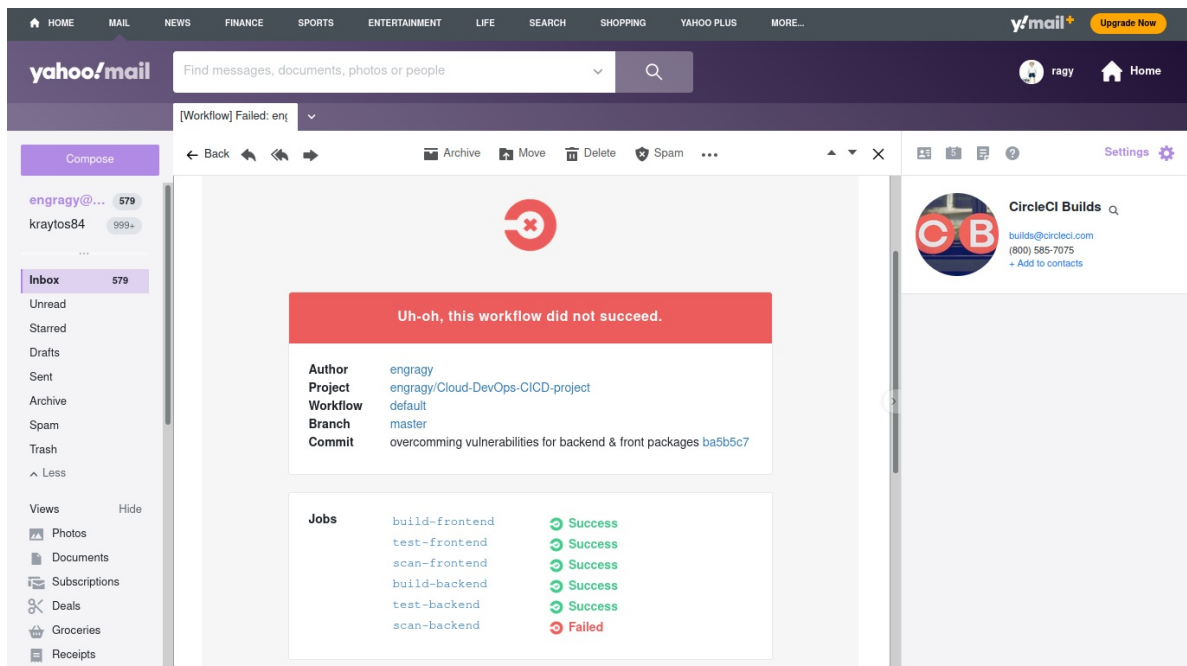
found 629 vulnerabilities (2 low, 141 moderate, 369 high, 117 critical) in 1389 scanned packages  
run 'npm audit fix' to fix 495 of them.

- [SCREENSHOT04] An alert from one of your failed builds.

- Slack notification



#### ■ Email notification



## 2. Utilize a Configuration Management Tool to Accomplish Deployment to Cloud-Based Servers

- [SCREENSHOT05] Console output of appropriate failure for infrastructure creation job (using CloudFormation).

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Orbs

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Spin up environment

1s

Preparing environment variables

0s

Checkout code

0s

yum install -y tar gzip

6s

Ensure back-end infrastructure exists

1m 6s

Destroy environments

1s

```

1 #!/bin/bash -eo pipefail
2 aws cloudformation deploy \
3   --template-file .circleci/files/backend.yml \
4   --tags project=udapeople \
5   --stack-name "udapeople-backend-${CIRCLE_WORKFLOW_ID:0:7}" \
6   --parameter-overrides ID="${CIRCLE_WORKFLOW_ID:0:7}"
7
8
9 Waiting for changeset to be created..
10 Waiting for stack create/update to complete
11
12 Failed to create/update the stack. Run the following command
13 to fetch the list of events leading up to the failure
14 aws cloudformation describe-stack-events --stack-name udapeople-backend-91212ff
15
16 Exited with code exit status 255
17 CircleCI received exit code 255

```

- [SCREENSHOT06] Console output of a smoke test job that is failing appropriately.

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Docs

Orbs

Support

Spin up environment

1s

Preparing environment variables

0s

Checkout code

0s

Install dependencies

37s

Backend smoke test

0s

Frontend smoke test.

0s

```

1 #!/bin/bash -eo pipefail
2 URL="http://udapeople-${CIRCLE_WORKFLOW_ID:0:7}.s3-website-us-east-1.amazonaws.com/#/employees"
3 echo ${URL}
4 if curl -s ${URL} | grep "Welcome"
5 then
6   # Change this to 0 after the job fails
7   exit 1
8 else
9   exit 1
10 fi
11
12 http://udapeople-be94b17.s3-website-*****.amazonaws.com/#/employees
13 Welcome
14
15 Exited with code exit status 1
16 CircleCI received exit code 1

```

- [SCREENSHOT07] Console output of a successful rollback after a failed smoke test.

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Check permissions and update access to the ones you want.

Notifications

Status OPERATIONAL

Docs

Orbs

Support

Frontend smoke test.

0s

```

1 #!/bin/bash -eo pipefail
2 URL="http://udapeople-${CIRCLE_WORKFLOW_ID:0:7}.s3-website-us-east-1.amazonaws.com/#/employees"
3 echo $URL
4 if curl -s $URL | grep "Welcome"
5 then
6     # Change this to 0 after the job fails
7     exit 1
8 else
9     exit 1
10 fi
11
12 http://udapeople-7584139.s3-website-*****.amazonaws.com/#/employees
13 Welcome
14
15 Exited with code exit status 1
16 CircleCI received exit code 1

```

Destroy environments

2s

```

1 #!/bin/bash -eo pipefail
2 aws cloudformation delete-stack --stack-name udapeople-backend-${CIRCLE_WORKFLOW_ID:0:7}
3 # empty and remove frontend S3 bucket
4 aws s3 rm s3://udapeople-${CIRCLE_WORKFLOW_ID:0:7} --recursive
5 aws cloudformation delete-stack --stack-name udapeople-frontend-${CIRCLE_WORKFLOW_ID:0:7}
6
7 delete: s3://udapeople-7584139/53ad4ccb01ee8a5a302d.js
8 delete: s3://udapeople-7584139/2fa692cd5bfc83c228c0ab271e4388c.woff
9 delete: s3://udapeople-7584139/1ceff9123b66b50a7d3cb5b221160855.eot
10 delete: s3://udapeople-7584139/bundle.js
11 delete: s3://udapeople-7584139/index.html
12 delete: s3://udapeople-7584139/224b6d9d16679dab02826a2a7ea705eb.ttf
13 delete: s3://udapeople-7584139/images/6ab15f4239b7d187935cf6f64ec3313bf-kiwi.svg
14 delete: s3://udapeople-7584139/7d234c755f55c47d2c5a.js
15 CircleCI received exit code 0

```

Revert migrations

31s

```

1 #!/bin/bash -eo pipefail
2 # check kvdb(used key), to get the migration state for the workflow id
3 echo "some url is https://kvdb-1-udapeople-com.amazonaws.com/udapeople-${CIRCLE_WORKFLOW_ID:0:7}"

```

- [SCREENSHOT08] Console output of successful promotion of new version to production in CloudFront.

Dashboard

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Notifications

Status OPERATIONAL

Docs

Orbs

Support

Parallel runs

1 / 16 parallel runs

0 04:00

Use parallelism to run faster tests

Go to Docs

X

Spin up environment

1s

Preparing environment variables

0s

Checkout code

0s

Install dependencies

16s

Update cloudfront distribution

3m 42s

```

1 #!/bin/bash -eo pipefail
2 # Change the initial stack name, as applicable to you
3 aws cloudformation deploy \
4     --template-file .circleci/files/cloudfront.yml \
5     --stack-name InitialStack \
6     --parameter-overrides WorkflowID="udapeople-${CIRCLE_WORKFLOW_ID:0:7}" \
7     --tags project=udapeople
8
9
10 Waiting for changeset to be created..
11 Waiting for stack create/update to complete
12 Successfully created/updated stack - InitialStack
13 CircleCI received exit code 0

```

- [SCREENSHOT09] Console output of successful cleanup job that removes old S3 bucket and EC2 instance.

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Parallelism speeds up tests by splitting them across multiple executors.

- ✓ Spin up environment 5s
- ✓ Preparing environment variables 0s
- ✓ Checkout code 0s
- ✓ Remove old stacks and files 2s

```

1 #!/bin/bash -eo pipefail
2 # retrieve old workflow
3 export OldWorkflowID=$(curl -k https://kvdb.io/6QF3Cy5gQ9q7Q7DtVXVxm/oldid_${CIRCLE_WORKFLOW_ID:0:7})
4 echo "${OldWorkflowID}"
5 aws s3 rm "s3://udapeople-${OldWorkflowID}" --recursive
6 aws cloudformation delete-stack --stack-name "udapeople-backend-${OldWorkflowID}"
7 aws cloudformation delete-stack --stack-name "udapeople-frontend-${OldWorkflowID}"
8
9
10 % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
11                               Dload  Upload  Total   Spent    Left   Speed
12 f85df7e
13 delete: s3://udapeople-f85df7e/2fa692cd55bfc83c228c0ab271e4388c.woff
14 delete: s3://udapeople-f85df7e/c96808dc3b8f501blcde.js
15 delete: s3://udapeople-f85df7e/224b6d9d16679dab02826a2a7ea705eb.ttf
16 delete: s3://udapeople-f85df7e/bundle.js
17 delete: s3://udapeople-f85df7e/index.html
18 delete: s3://udapeople-f85df7e/images/6ab15f4239b7d187935cf6f4ec3313bf-kiwi.svg
19 delete: s3://udapeople-f85df7e/7d234c755f55c47d2c5a.js
20 delete: s3://udapeople-f85df7e/1ceff9123b66b50a7d3cb5b221160855.eot
21 CircleCI received exit code 0
  
```

- [SCREENSHOT010] Evidence that deploy jobs only happen on master branch.

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Dashboard Project Branch Workflow

All Pipelines > Cloud-DevOps-CICD-project > dev-branch > default

default Success Insights Rerun ...

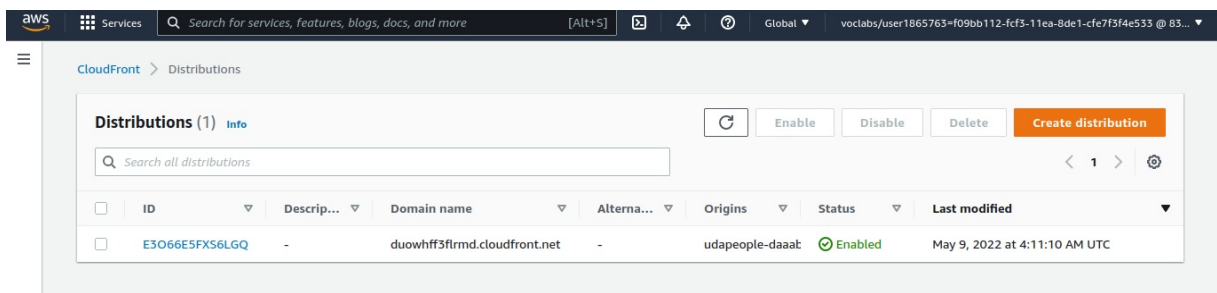
Duration / Finished	Branch	Commit	Author & Message
1m 44s / 1s ago	dev-branch	4329acb	1st commit in development branch

```

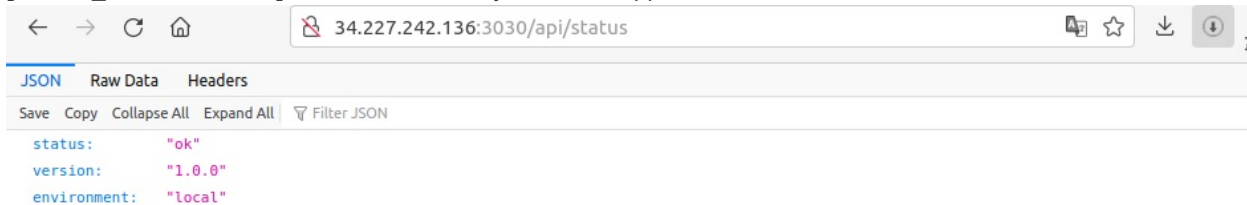
graph LR
    build-frontend[build-frontend 27s] --> scan-frontend[scan-frontend 47s]
    build-frontend --> test-frontend[test-frontend 1m 6s]
    build-backend[build-backend 26s] --> scan-backend[scan-backend 1m 1s]
    build-backend --> test-backend[test-backend 57s]
  
```

- Evidence of deployed and functioning front-end application
  - in an S3 bucket [URL02](#)
  - in CloudFront. [URL03](#)



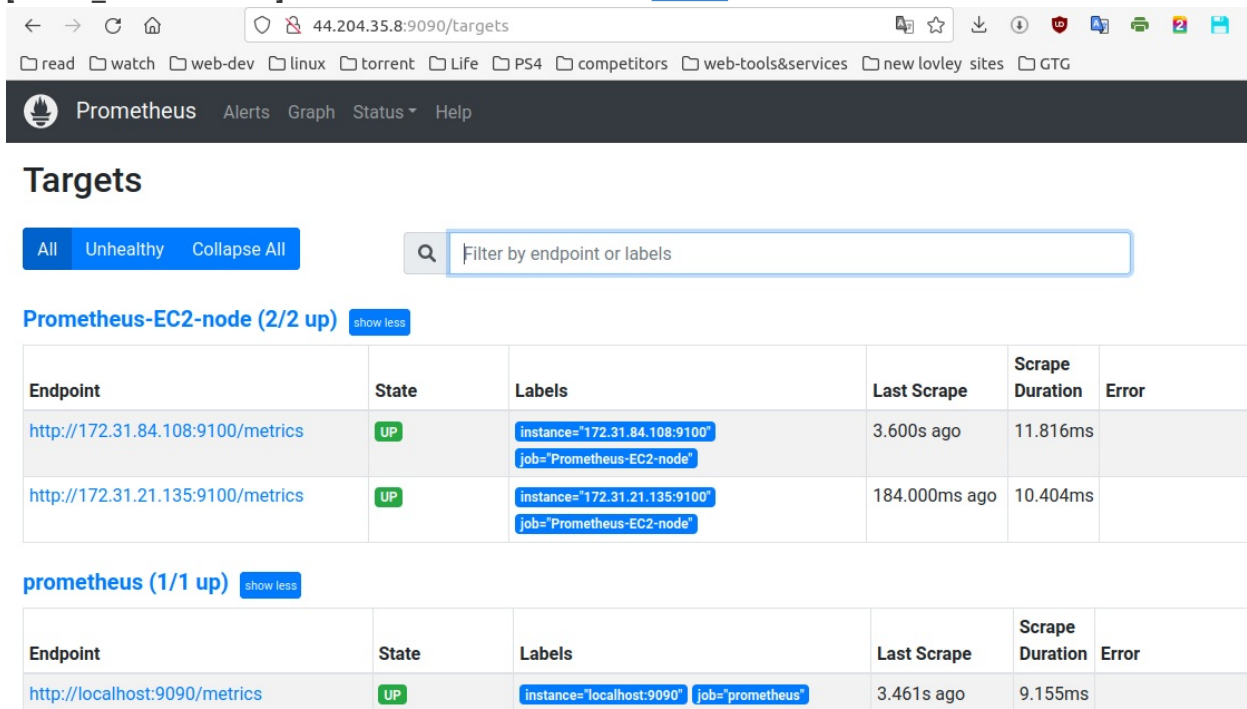


- [URL04\_SCREENSHOT] Evidence of healthy back-end application. [URL04](#)

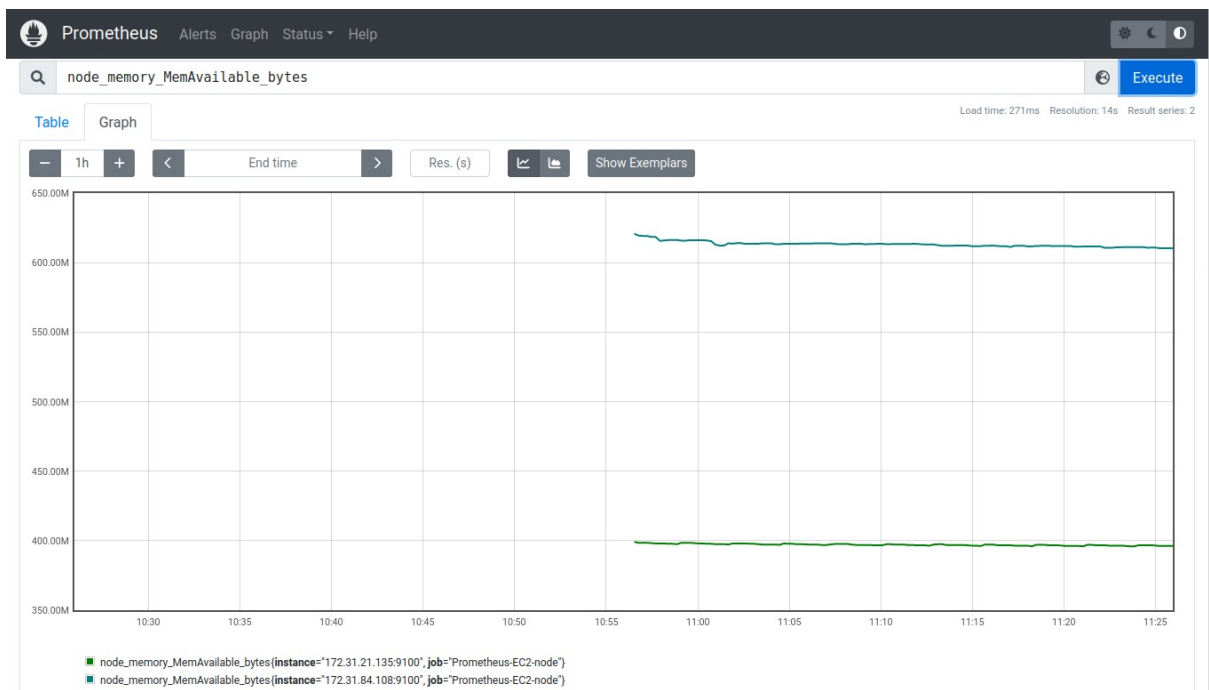


## Surface critical server errors for diagnosis using centralized logging.

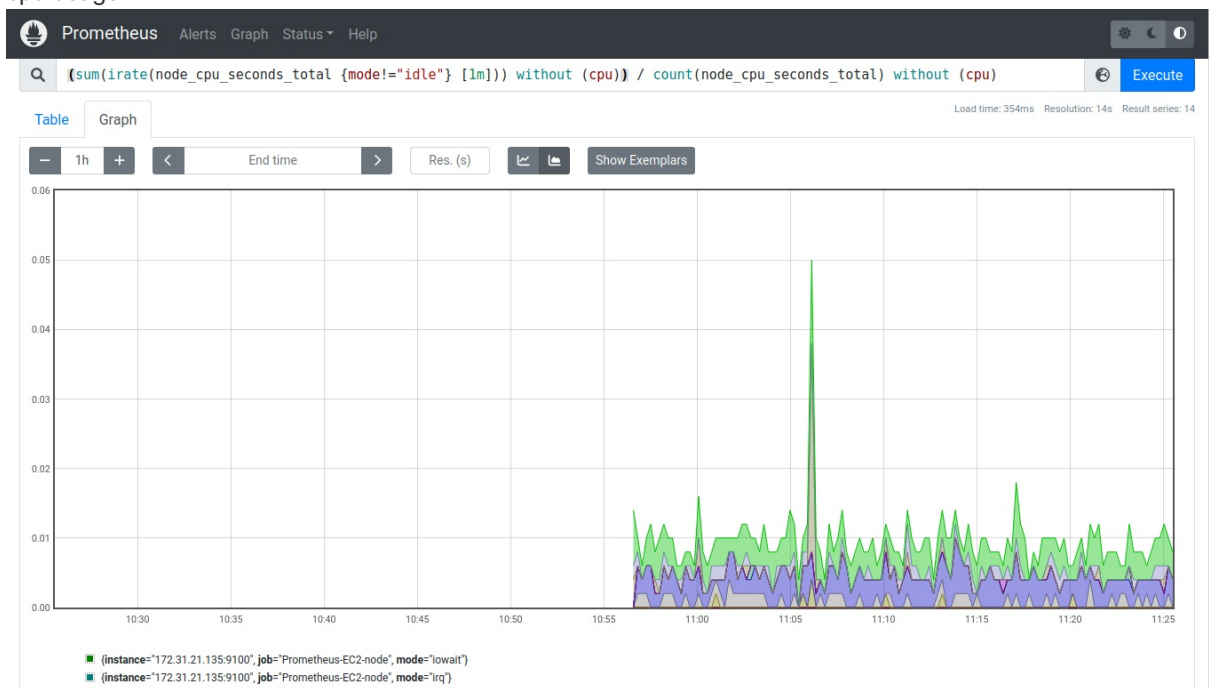
- [URL05\_SCREENSHOT] Evidence of Prometheus Server. [URL05](#)



- [SCREENSHOT11] Evidence that Prometheus is monitoring EC2 instances
  - memory

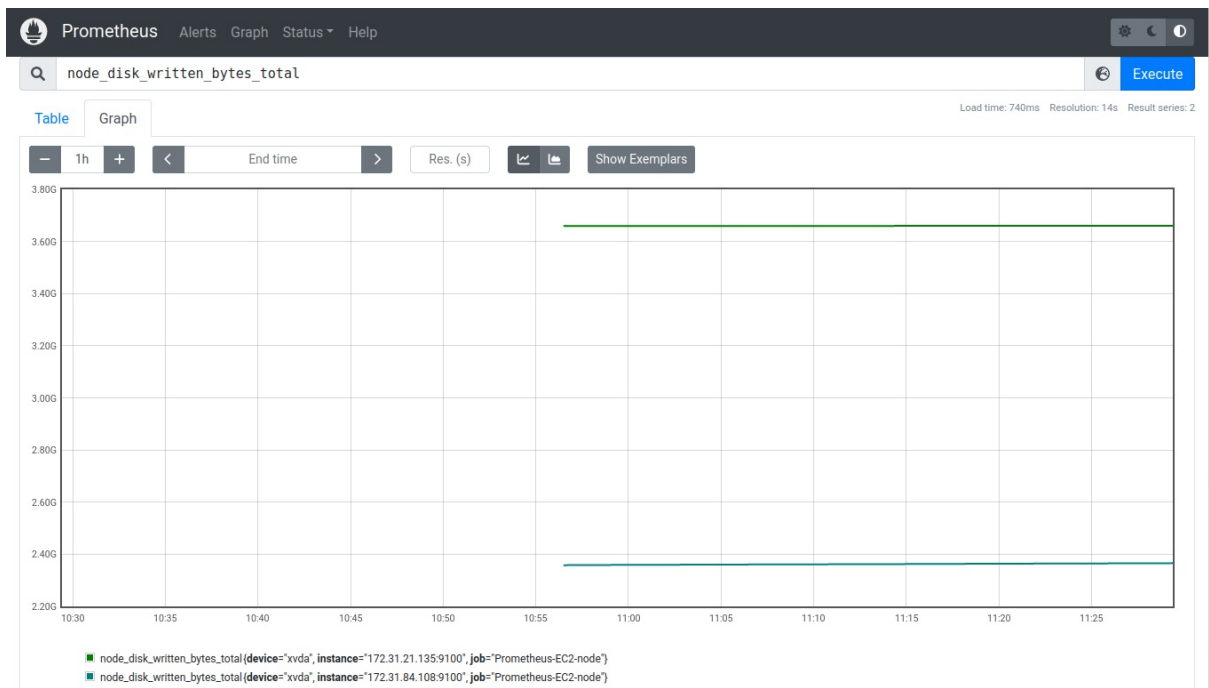


cpu usage



disk usage of





- [SCREENSHOT12] Evidence that Prometheus and AlertManager send alerts when certain conditions exist in the EC2 instance.

The image shows a screenshot of a Yahoo! Mail inbox. The email is from `kraytos84@gmail.com` to `engragy@yahoo.co.uk`, dated Tuesday, May 10 at 12:57 PM. The subject is `[FIRING:1] (InstanceDown 172.31.1.232:9100 EC2-node prometheus critical)`. The email body contains a red banner with the text `1 alert for` and a blue button labeled `View In Alertmanager`. Below the button, the text `[1] Firing` is displayed. The `Labels` section lists: `alertname = InstanceDown`, `instance = 172.31.1.232:9100`, `job = EC2-node`, `monitor = prometheus`, and `severity = critical`. The `Annotations` section lists: `description = of job has been down for more than 1 minutes.` and `summary = Instance is down`. A `Source` link is also present.