

Project Solution Screenshots

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

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

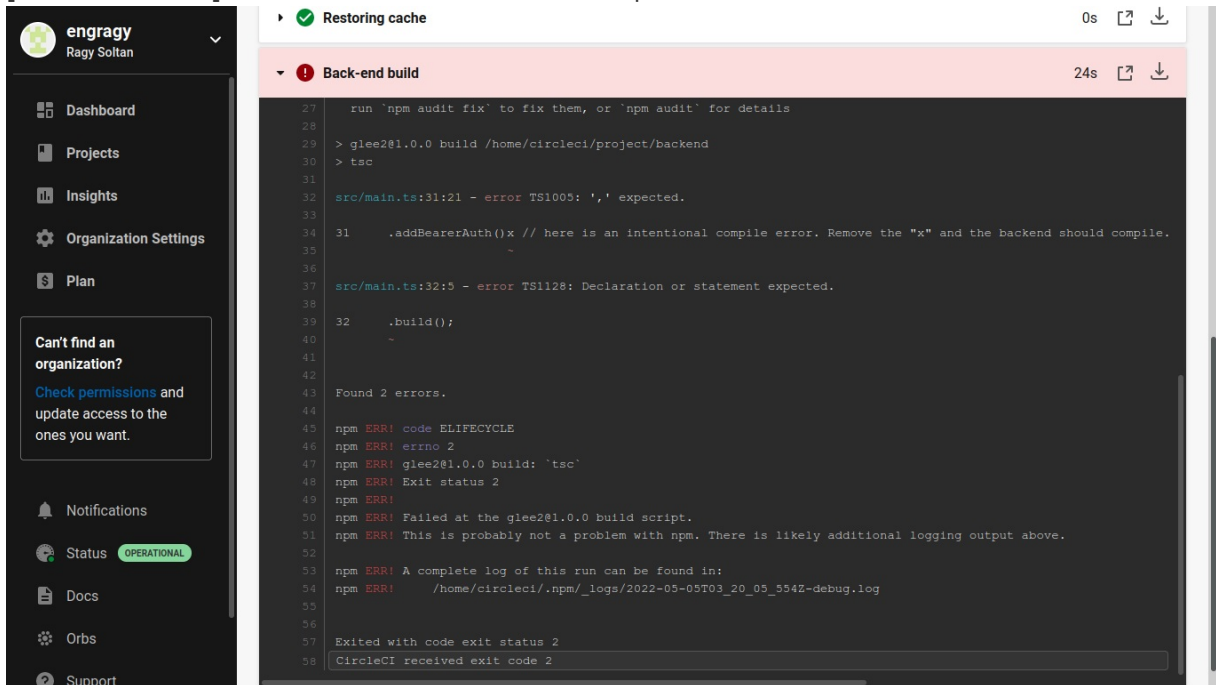
[URL03](#) - functioning front-end application in cloudfront

[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 Found 2 errors.
43
44 npm ERR! code ELIFECYCLE
45 npm ERR! errno 2
46 npm ERR! glee2@1.0.0 build: 'tsc'
47 npm ERR! Exit status 2
48 npm ERR!
49 npm ERR! Failed at the glee2@1.0.0 build script.
50 npm ERR! This is probably not a problem with npm. There is likely additional logging output above.
51
52 npm ERR! A complete log of this run can be found in:
53 npm ERR! /home/circleci/.npm/_logs/2022-05-05T03_20_05_554Z-debug.log
54
55 Exited with code exit status 2
56
57 CircleCI received exit code 2
```

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

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- Dashboard
- Projects
- Insights
- Organization Settings
- Plan

Can't find an organization?

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

- Notifications
- Status OPERATIONAL
- Docs
- Orbs
- 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.

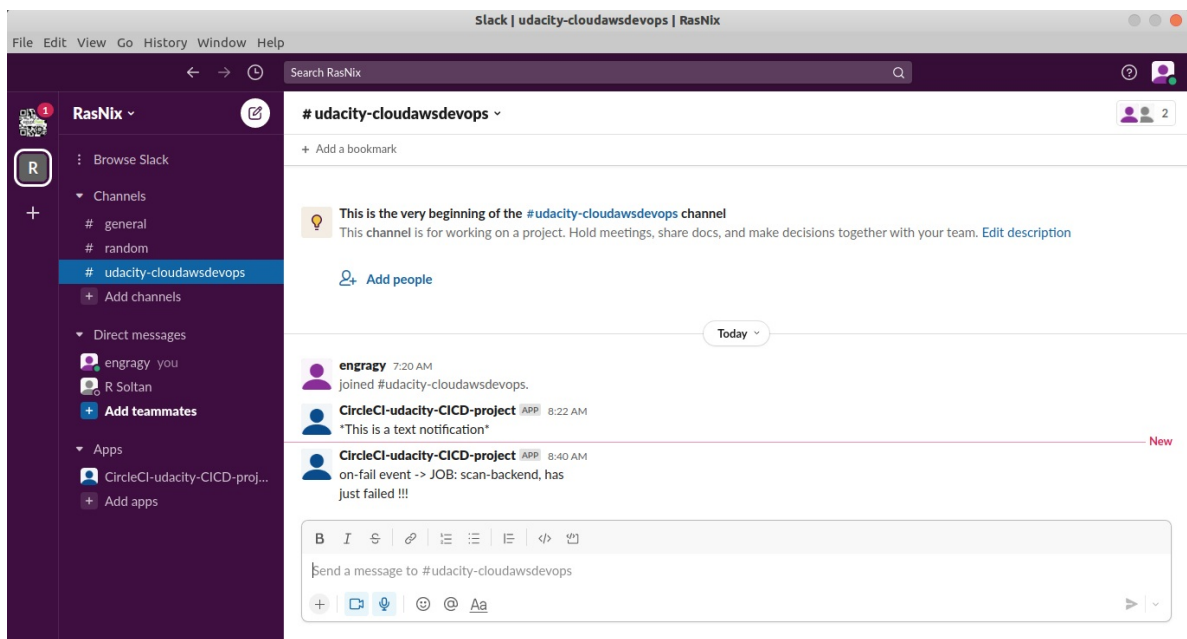
[Download the full output as a file](#)

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	https://github.com/advisories/GHSA-v88g-cgmw-v5xw
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	https://github.com/advisories/GHSA-v88g-cgmw-v5xw

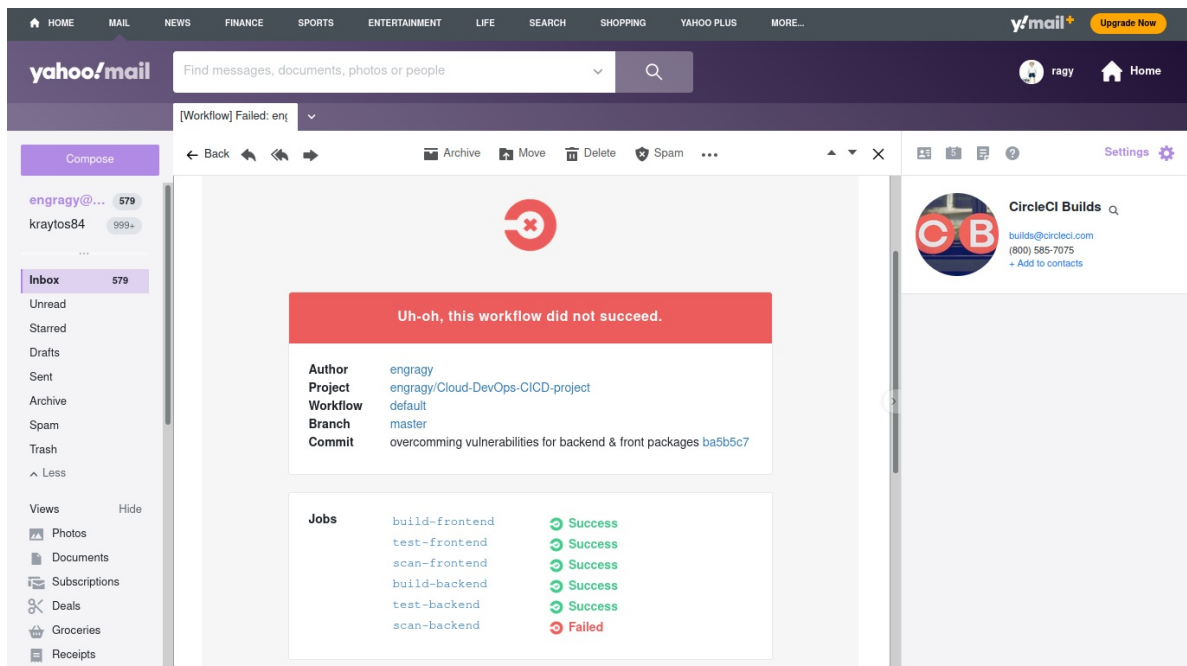
5582
5583
5584
5585
5586
5587
5588
5589
5590
5591
5592
5593
5594
5595
5596 found 629 vulnerabilities (2 low, 141 moderate, 369 high, 117 critical) in 1389 scanned packages
5597 run 'npm audit fix' to fix 495 of them.

- [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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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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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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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.

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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

Parallelism speeds up tests by splitting them across multiple executors.

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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Can't find an organization?

Check permissions and update access to the ones you want.

Notifications

Status OPERATIONAL

Docs

Orbs

Support

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=$(curl -k https://kvdb.io/6QF3Cy5gQ9g7Q7DtVXVxm/oldid_${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
11 100 7 100 7 0 0 51 0 --:--:-- --:--:-- --:--:-- 51
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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Notifications

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Docs

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Support

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

build-frontend 27s

build-backend 26s

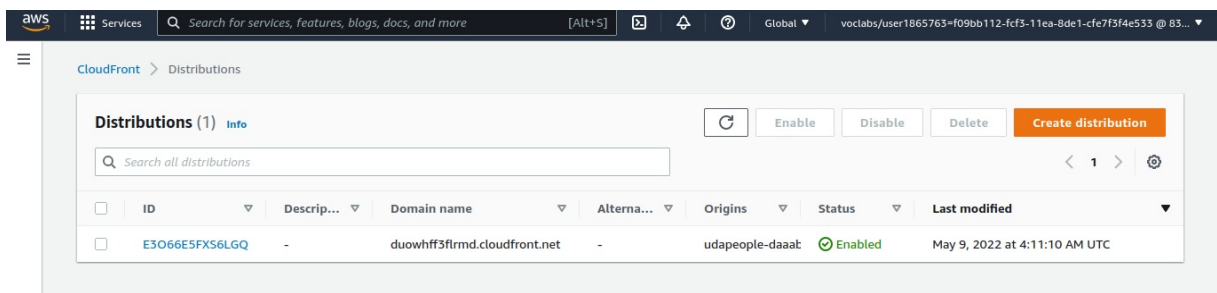
scan-frontend 47s

test-frontend 1m 6s

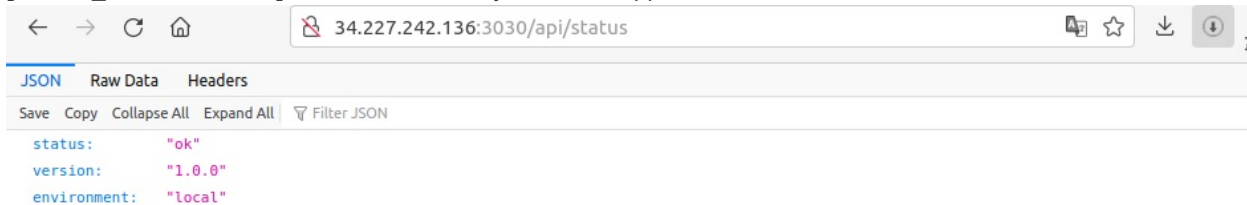
scan-backend 1m 1s

test-backend 57s

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

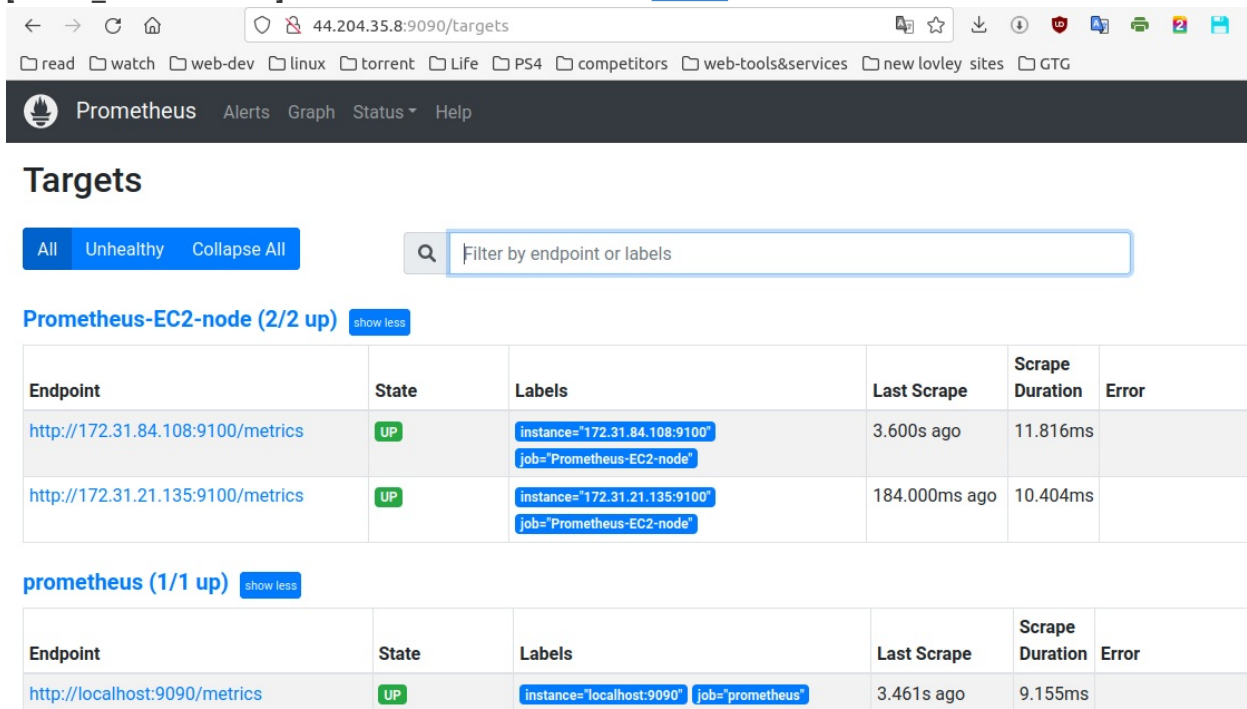


- [URL04_SCREENSHOT] Evidence of healthy back-end application. [URL04](#)

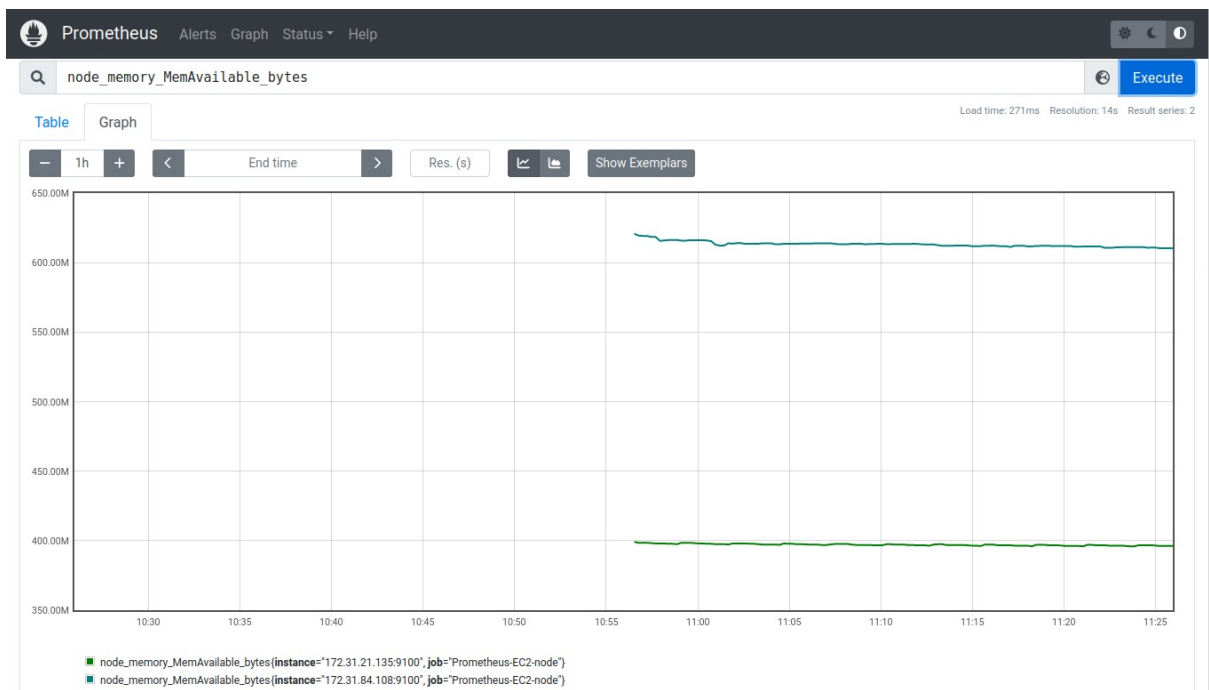


Surface critical server errors for diagnosis using centralized logging.

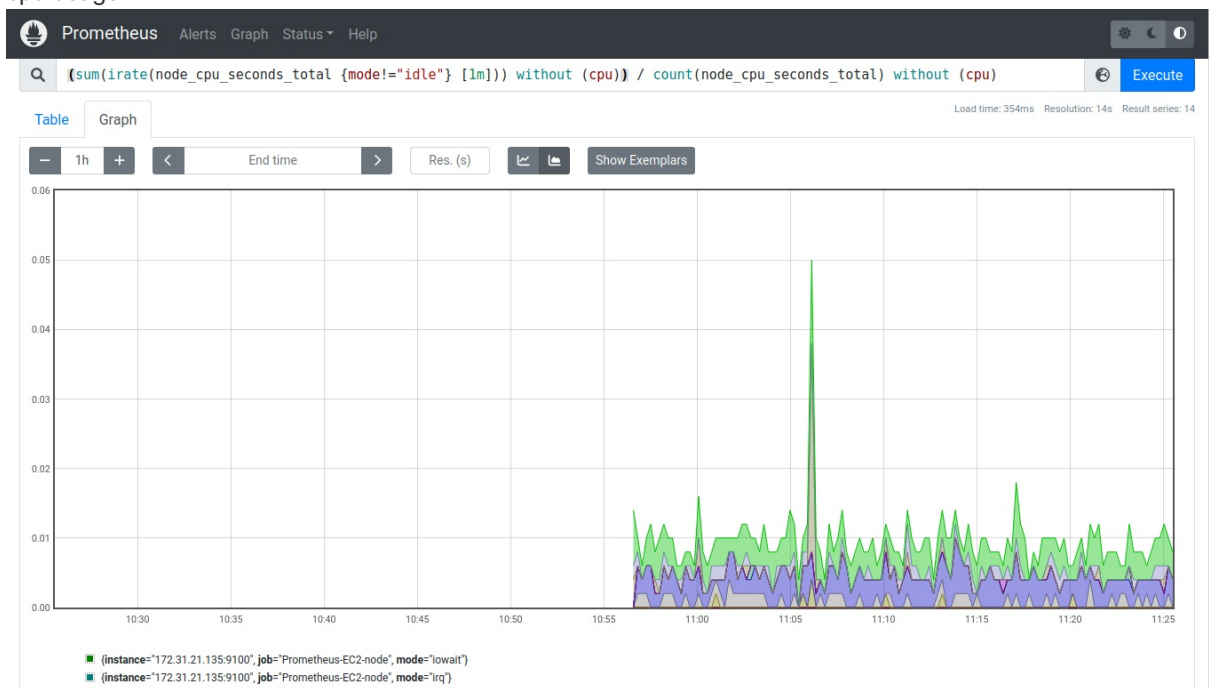
- [URL05_SCREENSHOT] Evidence of Prometheus Server. [URL05](#)



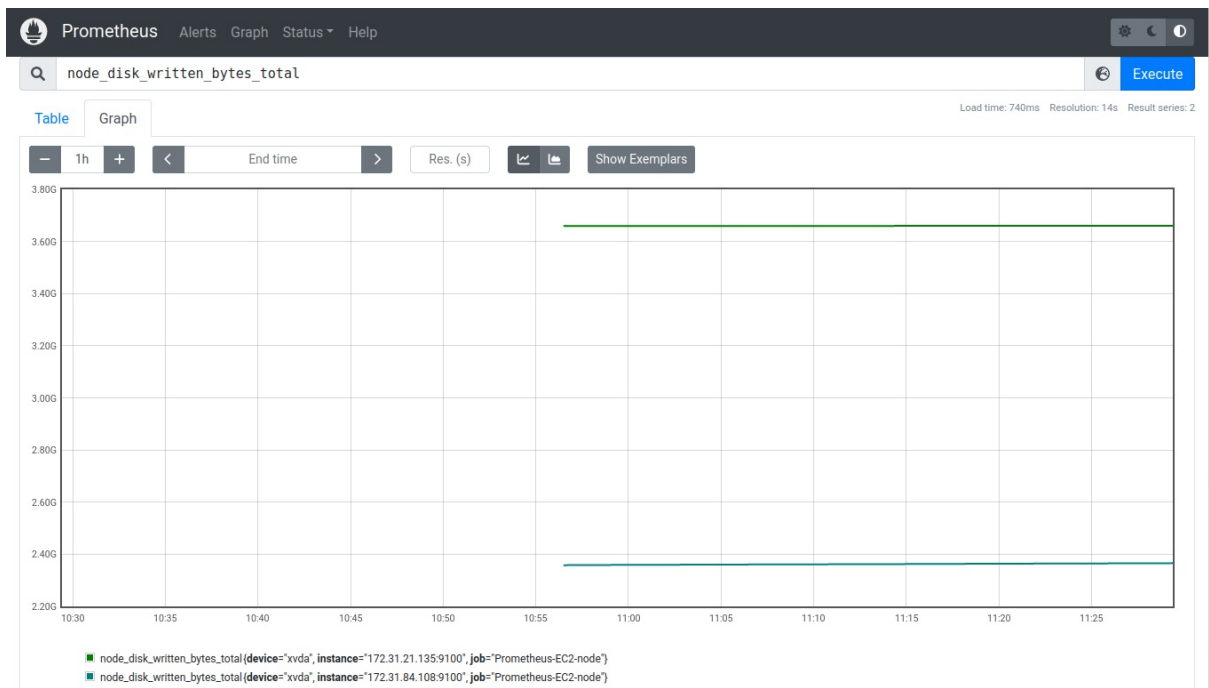
- [SCREENSHOT11] Evidence that Prometheus is monitoring EC2 instances
 - memory



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 Tue, 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 this, the alert details are shown:

[1] Firing

Labels
alertname = InstanceDown
instance = 172.31.1.232:9100
job = EC2-node
monitor = prometheus
severity = critical

Annotations
description = of job has been down for more than 1 minutes.
summary = Instance is down
[Source](#)